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From 'Négritude' to Energy Sovereignty: A Study of Senegal's Energy Transition and the Tensions Surrounding Accusations of Green Neo-Colonialism

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Abstract

This research examines the historical, political, and normative foundations of the energy transition in Senegal from a central question: how does Négritude, as a philosophical framework of the reappropriation of sovereignty, make it possible to illuminate the contemporary stakes of the Senegalese energy transition, and to what extent is this process traversed by dynamics pertaining to green neocolonialism? The main argument advanced is that the energy transition in Senegal does not constitute merely a technical transformation oriented toward decarbonization, but a political moment inscribed within a long historical trajectory, marked by the passage from a colonial order structurally antagonistic to any form of energy sovereignty toward a contemporary attempt at the material, strategic, and symbolic reappropriation of the energy system. By mobilizing Négritude as a political counter-ontology, the thesis argues that energy sovereignty must be understood not only as control over resources, but as the expression of a collective capacity for self-determination inherited from the struggles of decolonization. Nevertheless, this dynamic remains ambivalent; while the energy transition may strengthen the margins of sovereignty, it may also reconfigure asymmetrical relations of dependence through climate norms, financial conditionalities, and technological dependencies, pertaining to what the critical literature designates as green neocolonialism.

The research is based on a multidimensional methodological approach combining historical analysis, a qualitative interpretative approach, and the use of quantitative data drawn from international energy institutions. It relies on the study of archives and documentary sources, the critical analysis of theoretical frameworks in political philosophy and in the political economy of energy, the use of energy statistical data, as well as on semi-structured interviews aimed at shedding light on the logic of the actors involved. The findings show, first, that Senegalese energy sovereignty cannot be understood independently of the initial colonial denial that structured a durable material dependence; second, that the Senegalese energy transition constitutes a hybrid process articulating gas, renewables, energy security, and development imperatives, revealing a sovereignty in construction rather than a stabilized state; third, that the hypothesis of green neocolonialism pertains neither to mere rhetoric nor to a fatality, but to a field of real tensions within which power, dependence, and climate justice are reconfigured. The principal contribution of this thesis lies in the original articulation between postcolonial political philosophy, the political economy of energy, and political ecology, proposing a decolonial reading of the energy transition as a simultaneous space of emancipation and reconfiguration of power relations, and reinscribing the energy question at the heart of contemporary debates on sovereignty, climate justice, and self-determination in the Global South.

Keywords: Négritude; Energy Sovereignty; Energy Transition; Green Neocolonialism; Energy Justice; Senegal

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List of Abbreviations

AfDB - African Development Bank
AFD - French Development Agency
BOO - Build, Own, Operate
BOT - Build, Operate, Transfer
CBDR - Common but Differentiated Responsibilities
CCDR - Country Climate and Development Report
CCS - Carbon Capture and Storage
CJEU - Court of Justice of the European Union
COP - Conference of the Parties
DFIs - Development Finance Institutions
ECOWAS - Economic Community of West African States
EIB - European Investment Bank
EPC - Engineering, Procurement and Construction
ESMAP - Energy Sector Management Assistance Program
FWA - French West Africa
FPIC - Free, Prior and Informed Consent
GCF - Green Climate Fund
GEF - Global Environment Facility
GTA - Grand Tortue Ahmeyim
GW - Gigawatt
HFO - Heavy Fuel Oil
IEA - International Energy Agency
IFC - International Finance Corporation
IFIs - International Financial Institutions
IISD - International Institute for Sustainable Development
ILO - International Labour Organization
ILCP - Integrated Least-Cost Plan
IMF - International Monetary Fund
IPCC - Intergovernmental Panel on Climate Change
IPG - International Partners Group
IRD - French National Research Institute for Sustainable Development
IRENA - International Renewable Energy Agency

JETP - Just Energy Transition Partnership

KfW - Kreditanstalt für Wiederaufbau

kWh - Kilowatt-hour

LNG - Liquefied Natural Gas

LPDSE - Energy Sector Development Policy Letter

MRV - Measurement, Reporting and Verification

MW - Megawatt

NDC - Nationally Determined Contribution

NRGI - Natural Resource Governance Institute

O&M - Operations and Maintenance

OECD - Organisation for Economic Co-operation and Development

OMVS - Organisation for the Development of the Senegal River

PPA - Power Purchase Agreement

PPPs - Public-Private Partnerships

PSE - Emerging Senegal Plan

R&D - Research and Development

SDGs - Sustainable Development Goals

SENELEC - National Electricity Company of Senegal

TWh - Terawatt-hour

UN - United Nations

UNCTAD - United Nations Conference on Trade and Development

UNDP - United Nations Development Programme

UNFCCC - United Nations Framework Convention on Climate Change

WAPP - West African Power Pool

WIPO - World Intellectual Property Organization

Introduction

From the very outset of his election in 2024, President Bassirou Diomaye Faye, supported by his Prime Minister Ousmane Sonko, expressed his intention to revise the contracts governing the exploitation of Senegalese hydrocarbons, which he considered excessively unfavorable to his country, by initiating an audit of the extractive sector as well as the establishment of a review commission tasked with inventorying the contracts signed by Senegal in the field of hydrocarbon exploitation. In this regard, he declared on 29 September 2024, during an interview with the Qatari channel Al Jazeera: "If the foreign parties have not respected the commitments and obligations imposed upon them by law in Senegal, or by the contracts they have signed, it will obviously be necessary to return to greater equity and a more balanced contractual framework". At the same time, in the past, Prime Minister Ousmane Sonko had denounced agreements signed, in his view, to the detriment of Senegal, "which will receive only 10 percent of the profits generated by hydrocarbon production". These statements are embedded within a specific historical context; Senegal's recent entry into the circle of hydrocarbon producing countries, marking a major geopolitical turning point transforming energy from a question of supply into a central issue of sovereignty, redistribution and development trajectory. This political moment reveals a broader problem, namely the contemporary limits of energy sovereignty in Senegal, within a globalized energy system characterized by interdependence, asymmetries of power and the reconfiguration of centre periphery relations.

Within the academic literature, mobilized here in an interpretative manner, these tensions have been analyzed through several normative and critical frameworks. The works of Iris Marion Young conceptualize structural injustice as resulting from institutional systems producing durable asymmetries of power and capacities, while Vittorio Bufacchi proposes interpreting the denial of sovereignty as a systemic political wrong. Margaret Moore, for her part, emphasizes sovereignty as a normative requirement of autonomy and collective control over resources. These contributions illuminate the historical dynamics of dependence and domination inherited from colonialism, yet the literature remains largely fragmented when it comes to articulating postcolonial political philosophy, energy sovereignty and the contemporary energy transition. In particular, few studies have explored the manner in which a philosophical framework emerging from decolonization, such as Négritude, may illuminate the material and geopolitical stakes of energy in a context of global climate transition, nor how this transition itself may

reproduce or reconfigure logics of domination in the form of green neocolonialism. The present research situates itself precisely within this theoretical and empirical interstice; it rests upon an integrated conceptual clarification.

Négritude, defined by Aimé Césaire (1987) as “the simple recognition of the fact of being Black, and the acceptance of this fact, of our destiny as Black people, of our history and of our culture”, designates a literary and political movement born in the late 1930s bringing together Francophone writers to reclaim Black identity and culture. In this respect, the concept of Négritude, with universal vocation, stands as a figure denouncing colonialism and Western domination. Grounding the analysis in Négritude and its intellectual legacies constitutes a deliberate theoretical choice and an explicit positioning. In this perspective, as elaborated by Césaire, Senghor and Damas, Négritude first constitutes an ontological reappropriation of self, memory, history and dignity, preceding any political emancipation. It does not limit itself to contesting the material structures of domination, but seeks a transformation of the imaginaries and symbolic conditions through which a people conceive themselves as a collective subject. As such, it may be understood as a critique of the instrumental rationality inherited from colonialism and as an attempt to refound political dignity, thereby sketching a proto sovereigntist moment even prior to formal state sovereignty. Applied to the energy domain, this perspective, although Négritude does not explicitly address energy, remains heuristically fruitful. Indeed, by denouncing extraction, alienation and renewed forms of dependence, and by valorizing the relationship to territory and the capacity for collective self-definition, it makes it possible to interpret energy sovereignty as a contemporary material translation of the intuitions of Négritude; understood here as the effective political capacity to control resources, infrastructures and energy trajectories in accordance with national priorities, within a structurally interdependent global system. It therefore refers not only to the control of resources or to techno-economic choices, but to the affirmation of a power to be, to speak and to decide; in other words, to a reappropriation of the world by oneself. In parallel, the energy transition is generally understood, in its institutional meaning, as the shift from carbon intensive energy systems toward low carbon systems (IEA, 2021; IPCC, 2022). Finally, green neocolonialism, as an analytical tool of political ecology, illustrates the weight of postcolonial dynamics, designating in the academic literature a contemporary version of imperial practices whereby developed states, corporations and international organizations impose environmental policies and projects, particularly within the framework of the energy transition, upon developing

countries, thereby reproducing logics of extraction, exploitation and domination under the cover of ecological legitimacy.

Thus, while the literature on the energy transition largely analyzes technical, economic and climatic dimensions, it has often neglected its long historical depth, its political meaning in terms of sovereignty, as well as its possible inscription within the continuity of imperial relations. This research adopts both an analytical and a normative perspective; it neither seeks to propose a general theory of the energy transition, nor to reduce it to a mere instrument of domination, but rather to analyze how a concrete material process, the Senegalese energy transition, becomes a space of tension between sovereignty, climate justice and the reconfiguration of power relations. In this sense, this research aims to demonstrate and analyze the passage from a colonial system imposed upon Senegal under French tutelage through French West Africa, structurally antagonistic to energy sovereignty; to the progressive emergence of state sovereignty and subsequently energy sovereignty through the contributions of Négritude and later Pan-Africanism. In this respect, the case study of the Senegalese energy transition makes it possible to observe how energy sovereignty translates into practice, by examining its materialization, tensions and limits. Ultimately, examining the hypothesis of green neocolonialism within the framework of the Senegalese energy transition makes it possible not merely to analyze the transition as such, but to interrogate its political and normative significance, constructing an ambivalent portrait regarding the perpetuation of existing power relations. Thus, the following question arises; how does Négritude, as a philosophical framework of the reappropriation of sovereignty, shed light the contemporary stakes of the energy transition in Senegal, and to what extent is this process confronted with forms of green neocolonialism?

This research is grounded in a multidimensional methodological approach combining qualitative and quantitative methods. It relies, on the one hand, on the analysis of primary documentary sources and archival materials, enabling a contextualized reconstruction of the object of study by retracing the historical and institutional dynamics relevant to the research problem. On the other hand, it mobilizes a critical and interpretative analysis of theoretical and conceptual frameworks drawn from the academic literature, in order to situate the reasoning within existing scholarly debates. Furthermore, the study exploits and analyzes statistical and scientific data produced by specialized international institutions, notably the International Energy Agency and the International Renewable Energy Agency, in order to empirically

substantiate the arguments advanced. Finally, qualitative semi structured interviews were conducted in order to collect complementary empirical data and to illuminate actors' logics, thereby contributing to a process of methodological triangulation.

In this respect, the secondary objectives of this research are threefold; first, to historicize Senegalese energy sovereignty by demonstrating that it cannot be understood independently of the initial colonial denial; second, to empirically analyze the energy transition as a political process structured by trade-offs between development, energy security and climatic constraints; third, to critically evaluate the hypothesis of green neocolonialism in order to clarify its conditions, limits and normative implications. The principal contribution of this thesis therefore lies in the original articulation between postcolonial political philosophy, the political economy of energy and political ecology. It proposes a normative genealogy of energy sovereignty, conceptualizes the energy transition as a space of sovereignty and not solely as a technical transformation, and elucidates green neocolonialism as a possible contemporary modality of the reconfiguration of imperial relations. It thus contributes to debates in international political theory, energy transition studies and climate justice, by introducing a decolonial reading of energy sovereignty empirically grounded in the Senegalese case, while showing that the transition may simultaneously constitute a vector of emancipation and a space for the reproduction of structural asymmetries. Finally, the structure of the thesis reflects this analytical progression.

Indeed, the first part establishes the historical and normative genealogy of energy sovereignty, from the colonial system of French West Africa to the progressive construction of a Senegalese energy policy, showing how Négritude ontologically grounds the possibility of a sovereign subject. Then, the second part analyzes the Senegalese energy transition in its concrete materiality, by examining the recomposition of the energy system, the instruments of the transition and its social, political and climatic implications. Finally, the third part interrogates the political meaning of this transition through the hypothesis of green neocolonialism, by evaluating the tensions between climate justice, dependence and sovereignty, before proposing the conditions for a sovereign, solidaristic and Pan-African energy transition. Taken together, this development seeks to demonstrate that the energy transition in Senegal is not merely a technical or economic process, but a historical moment in which the fundamental question of sovereignty is once again at stake.

Literature Review

A first body of scholarship situates the energy question within a long history of dependence and extraversion, showing that sovereignty, and even more so energy sovereignty, cannot be conceived as a simple contemporary institutional variable, but as a historical product of centre periphery relations. Theories of dependency and the political economy of development (Prebisch; Amin; Rodney) conceptualize peripheral specialization, extraction and value transfer as structural mechanisms of underdevelopment, which durably lock postcolonial economies into constrained trajectories. Within this framework, infrastructure is not neutral, it is a material operator of the colonial and postcolonial order. On the historico political level, the African colonial state has been described as a dispositif of administration and coercion oriented toward metropolitan accumulation rather than toward the endogenous formation of capacities (Crawford Young). This type of approach directly illuminates the manner in which colonization, under the tutelage of French West Africa, established itself as a system structurally antagonistic to energy sovereignty, where energy becomes an instrument of administration, extraction and control, and not a lever of productive autonomy. The works on the politics of infrastructure and on energy as a technology of power, notably Mitchell's argument on carbon democracy, extend this displacement. Indeed, the energy regime shapes capacities for collective action, forms of governability and relations of force. Energy, in brief, is not merely a sector; it is an architecture of power. However, although this literature powerfully explains the structural production of dependence, it furthermore tends either to undertheorize the normative dimension of sovereignty as a requirement of historical justice, or to treat sovereignty at a macro level, state or world economy, without accounting for its symbolic and ontological conditions of possibility.

A second body of scholarship, emerging from postcolonial studies, African intellectual history and political philosophy, addresses the colonial production of the denial of being (Fanon; Mudimbe; Mbembe) and the critical responses that rehabilitate a collective subject capable of self-expression, projection and the claim to self-determination. Within this constellation, Négritude (Césaire, Senghor, Damas) appears as a counter ontology, it does not merely denounce material exploitation, it reconstructs the symbolic conditions of dignity and political capacity. In this respect, and through the contributions of various theorists, Négritude constitutes a founding moment, which transforms political impossibility, produced by the colonial order, into a horizon of self-determination; it renders sovereignty thinkable by

rehabilitating subjectivity. In addition, this reading is supported by a careful analysis of internal divergences; rupture in Césaire and Damas, dialogical humanism in Senghor, critique of alienation and stigma, and debates on the risk of essentialization highlighted by Fanon. Thus, within the framework of this analysis, an interpretative, rather than doctrinal, mobilization of certain postcolonial frameworks is assumed. For example, Mudimbe and Mbembe do not literally theorize Négritude as subjectivation, but their analyses render intelligible Négritude as a historical response to epistemic and ontological disqualification.

A third body of scholarship in political philosophy and normative theory allows clarification of what sovereignty signifies when related to control over resources and capacities for self-determination. Theories of territory, notably that of Margaret Moore, justify territorial rights through their role in securing the material conditions of self-determination, including political control over resources located on the territory, although the application of Moore to the energy sector constitutes an acknowledged normative extension. Furthermore, the normative framework mobilized accounts for structural injustice (Bufacchi, 2012) and systemic injustice (Iris Marion Young, 2011) in order to qualify the colonial denial of sovereignty as a cumulative and intergenerational wrong. By adopting the idea that injustice may be inscribed within structures and produce persistent disadvantages independently of individual intentions (Bufacchi), and that ordinary social processes may place groups under systematic threat of domination or deprivation (Young), failed energy sovereignty is conceptualized as incapacity produced by an institutional architecture. In parallel, through Young's conceptualization, the social connection model is mobilized in order to think the postcolonial continuity of asymmetries through chains of political responsibility not reducible to fault. Nevertheless, these normative frameworks are rarely applied to the African energy transition other than through general notions such as justice, equity and differentiated responsibility. This approach therefore possesses only contributive potential, it specifies normative criteria of energy sovereignty, decisional autonomy, institutional capacities and prospective autonomy, and links them to a colonial genealogy.

In parallel, the literature on energy transitions and climate governance (IEA and IPCC; Bulkeley et al., 2014; Biermann and Pattberg, 2012; Falkner, 2016; Bernstein and Cashore, 2012) emphasizes transformations of infrastructures, instruments, investments and regulation within a context of multi actor and multi-level coordination. These works are useful for understanding why the transition is reducible neither to a technological substitution nor to a

purely domestic policy, but constitutes a reconfiguration of socio technical, financial and institutional arrangements. In this sense, this research inscribes itself within this intellectual legacy while anchoring it in a hybrid case, a country combining the rise of renewables and the valorization of gas as a transition energy, within a context of energy poverty, budgetary constraints and climate commitments. The literature on energy justice (Sovacool; Heffron and McCauley) offers here a decisive analytical lever, it allows evaluation of transitions through the distribution of costs and benefits and through the capacity to reduce the energy divide. This research explicitly mobilizes these frameworks in order to show that access to energy must be understood as an enabling condition of capabilities (Sen), and that the transition may either reduce or reconfigure territorial and socio-economic inequalities. Empirically, the divide is objectified, national access rate, urban rural gaps, and interpreted as the result of logics of profitability, territorial hierarchization and differentiated financing capacities. Finally, works on development finance and governance through expertise (Best; Gabor; Li; Ferguson; OECD on blended finance) illuminate instrumentation; financing is not merely a resource, it is a mechanism of priority setting.

A fifth body of scholarship, emerging from political ecology, decolonial studies and critical climate justice (Escobar; Guha; Neumann; Santos; Sultana; Bhambra and Newell), conceptualizes green colonialism as the reconfiguration of imperial logics under the aegis of ecological legitimacy. This thesis proposes precisely this analytical displacement; to think the transition not merely as a technical transformation, but as a possible space of imperial continuity and of decolonization, by defining green neocolonialism as a contemporary mechanism of exogenous orientation of Southern trajectories, extraction, dependence and hierarchies. This literature also emphasizes the plurality of terms, eco imperialism, green grabbing, carbon colonialism, and the fact that the category is increasingly mobilized by actors themselves affected by forms of extractivism and dispossession. In addition, this research does not remain at the level of general diagnosis. The hypothesis of green neocolonialism is tested in precise dispositifs; first, through the qualitative study of scientific cooperation, IRD, then through financial and institutional cooperation, AFD. The IRD study highlights a structuring ambivalence, co production and capacity building on the one hand, asymmetries of framing, indicators and resources on the other, with the idea that standards determine what becomes demonstrable and fundable. Likewise, the analysis of AFD concludes prudently; the hypothesis of green neocolonialism is neither fully confirmed nor entirely rejected; direct coercive

domination is not evidenced, but persistent financial, normative and technological asymmetries appear, describing a space of asymmetric interdependence.

At the intersection of these five bodies, a central gap emerges; these literatures engage little with one another. Postcolonial and Négritude scholarship illuminates subjectivation and ontological wrong, but rarely articulates with the political economy of energy systems. Conversely, the literature on the energy transition and low carbon energy provides socio technical and governance tools, but tends to neutralize, or externalize, the question of historical justice and sovereignty as reparation for a structural denial. Finally, the literature on green colonialism identifies imperial continuities, but often lacks fine grained empirical analyses by instruments, finance, expertise, standards and partnerships, in a West African case where the transition is simultaneously constrained, access and energy poverty, and reconfigured by entry into the gas era. Thus, this research distinguishes itself through a triple extension. First, through a genealogical extension, the Senegalese energy transition is repositioned within a long history of infrastructures and incapacities produced by the colonial order, which allows energy sovereignty to be understood as a problem of historical justice as much as of technique. Next, through a philosophical and normative extension, Négritude is mobilized as a heuristic framework of reappropriation of sovereignty enabling subjectivation and then self-determination, not in order to artificially energize a literary movement, but to propose a reading of energy sovereignty as the material translation of an ontological reappropriation, capacity to be, to speak and to decide. Finally, through an instrumental extension, the hypothesis of green neocolonialism is tested at the level of concrete mechanisms, scientific cooperation, financing and programmatic framing, leading to a nuanced result; the uncovering of structural asymmetries without reduction to a simple and univocal schema of domination.

Theoretical Framework

The theoretical framework of this thesis rests upon an integrated articulation between historical neo institutionalism, a socio ideational approach to sovereignty and a critical political economy of the energy transition, in order to explain the conditions of emergence, limitation and reconfiguration of energy sovereignty in Senegal. From the perspective of historical neo institutionalism, energy sovereignty is understood as a historically instituted capacity, shaped by long institutional trajectories marked by path dependence, unequal distribution of capacities and the persistent effects of the colonial order. French West Africa is thus conceptualized as a

structured system of extraversion and dependence that organized the initial impossibility of energy autonomy, whose effects extend into contemporary institutional constraints. However, sovereignty is not reduced to an institutional variable, a socio ideational approach, inspired by sociological institutionalism, makes it possible to integrate the role of representations, legitimacy and political subjectivation. Within this framework, Négritude is mobilized as a founding moment of ontological and symbolic reappropriation, rendering collective self-determination politically thinkable and legitimate, and influencing contemporary political choices in matters of resource control, contractual renegotiation and strategic orientation of the energy system. This articulation between institutions and imaginaries is complemented by a critical political economy reading of the energy transition, which apprehends it as a space of reconfiguration of power relations within which sovereignty may be simultaneously strengthened and constrained. The concept of green neocolonialism is here mobilized as an analytical category to designate the mechanisms through which climate norms, financial conditionalities, technological dependencies and international governance dispositifs may frame the decisional autonomy of states in transition, producing a form of conditioned sovereignty. On the normative level, the thesis adopts a substantive conception of sovereignty founded upon decisional autonomy, institutional capacity and effective control over resources, and mobilizes the theory of structural injustice in order to interpret the historical denial of sovereignty as incapacity produced by durable institutional configurations rather than as a simple endogenous deficit. Within this conceptual framework, the dependent variable corresponds to the degree of substantive energy sovereignty in the Senegalese transition, while the independent variables include the colonial institutional legacy, the strength of the ideational framework of sovereign reappropriation and the intensity of external transition constraints, mediated by state capacity, contractual structures and choices of energy instruments. This framework makes it possible to formulate a central hypothesis according to which the Senegalese energy transition constitutes a hybrid process; it tends to strengthen capacities of sovereignty when it is grounded in a political and institutional reappropriation of resources, but it may simultaneously reconfigure structural dependencies when the energy trajectory remains framed by external governance mechanisms, thereby producing a constitutive tension between energy sovereignty and green neocolonialism.

Methodology

This research adopts a mixed-methods approach combining qualitative and quantitative strategies in order to conduct a theoretically guided empirical analysis and produce analytically valid and falsifiable findings. Given the single-case design focused on Senegal, the study privileges analytical depth over statistical generalization, while using quantitative data to contextualize structural trends. The empirical strategy follows a theory-driven logic "Theory, Hypothesis, Empirical test", where the analysis of energy transition and sovereignty is interpreted through an institutional and critical political economy framework.

The research design is structured around a qualitative case study methodology, complemented by documentary and statistical analysis. Case selection follows a purposive strategy: Senegal constitutes a theoretically relevant and analytically revealing case due to its hybrid energy trajectory combining emerging hydrocarbon production, renewable expansion, and international climate governance constraints. This configuration allows the study to examine the interaction between sovereignty, transition and external dependency within a single empirical setting.

Data collection relies on four main sources. First, documentary and archival analysis was conducted using primary institutional documents, policy frameworks, legal texts and international agreements in order to reconstruct the historical and institutional trajectory of energy governance. Second, the study uses statistical and scientific data produced by specialized international institutions such as the International Energy Agency (IEA), the International Renewable Energy Agency (IRENA) and the World Bank. These datasets provide quantitative indicators on energy production, transition dynamics and structural constraints. The most recent official data available were systematically used; however, a methodological limitation must be acknowledged, as institutional datasets are not always fully up to date, which may slightly affect temporal precision while not altering structural trends.

Third, the research incorporates two qualitative case studies based on semi-structured instruments designed to test the hypothesis of green neocolonialism within Franco-Senegalese cooperation. The first case concerns the 'Institut de Recherche pour le Développement' (French National Research Institute for Sustainable Development - IRD). A written semi-structured qualitative questionnaire was completed manually by a second-year doctoral researcher affiliated with the Eco&Sol laboratory, involved at a peripheral level in energy and climate

research projects in Senegal. The instrument examined indicators related to scientific agenda-setting, project governance, data and intellectual property management, and endogenous capacity-building. Responses were analyzed using thematic coding and interpretive qualitative analysis, with particular attention to exogenous framing mechanisms (donor influence, metrics and standards), asymmetries in decision-making and resource control, and hierarchies in scientific visibility. Findings were triangulated with Science and Technology Studies literature, critical climate justice scholarship, and institutional sources on scientific diplomacy, in order to assess whether the cooperation strengthens endogenous capacities or reproduces structural asymmetries compatible with the green neocolonialism hypothesis (Appendix B). The second qualitative case examines the 'Agence Française de Développement' (French Development Agency - AFD). A semi-structured interview was conducted via videoconference with an AFD officer involved in energy transition projects in Senegal. The interview was conducted in French, transcribed in full, and then translated into English by the author; for the sake of methodological transparency, the original French transcript and its English translation are provided in Appendix C. While time constraints limited full coverage of all planned questions, the semi-structured format enabled in-depth exploration of key themes. Analysis followed thematic coding and interpretive qualitative methods, focusing on institutional framing, financial conditionality mechanisms, and discursive constructions of climate justice. Results were triangulated with policy documents, institutional sources and academic literature in order to evaluate the relationship between climate justice and financial governance in Senegal's energy transition.

Variables were operationalized through qualitative and contextual indicators. The dependent variable corresponds to the degree of substantive energy sovereignty, measured through institutional capacity, control over resources and policy autonomy. Independent variables include colonial institutional legacy, ideational reappropriation of sovereignty, and external transition constraints (financial, technological and normative). Coding procedures followed an inductive–deductive approach, combining theory-guided categories with emergent empirical themes.

Finally, analytical techniques combine interpretive qualitative analysis, process tracing and comparative triangulation between empirical evidence, theoretical frameworks and statistical data. This methodological triangulation strengthens internal validity and allows the study to identify causal mechanisms linking energy transition, sovereignty formation and structural

dependency. While the single-case design limits external generalization, it enables a deep explanatory understanding of the political and structural dynamics shaping energy transition in postcolonial contexts.

PART I - From French West Africa to energy sovereignty

This first part seeks to restore Senegalese energy sovereignty in its historical depth, by showing that it cannot be understood independently of the colonial order which initially organized its impossibility. French West Africa (FWA), constituted at the end of the nineteenth century as an integrated and hierarchical imperial space, was neither a simple administrative framework nor a transitional stage toward modernity. It formed a coherent political, economic and technical system, structured by productive extraversion, colonial specialization, decisional centralization and technological dependence. Within this configuration, the colonized territories were integrated as extractive peripheries serving metropolitan accumulation, while industrialization, technical mastery and control of infrastructures, particularly energy infrastructures, remained externalized. Energy, far from being a neutral domain, functioned there as an instrument of administration, extraction and control, rendering any material autonomy structurally impossible. Within this framework, the use of the concept of energy sovereignty is not anachronistic but retrospectively assumed, it makes it possible to normatively qualify the colonial denial of control over resources, capacities and decision.

The objective of this part is to establish that contemporary Senegalese energy sovereignty can only be understood from this original denial, but also from the philosophical reconstruction that rendered its reappropriation thinkable. Négritude thus appears as a founding moment, by rehabilitating dignity, subjectivity and the historical capacity of the colonized subject, it transforms a political impossibility into a horizon of self-determination. This part therefore fulfills a function of political genealogy, it historically legitimizes the question, normatively grounds energy sovereignty and shows that the energy transition pertains to a problematic of historical justice as much as of technique, while conceptually equipping the subsequent analysis of green neocolonialism.

Thus, Chapter I analyzes French West Africa as a colonial system structurally antagonistic to any form of energy sovereignty. Then, Chapter II shows how Négritude ontologically refounds the possibility of a sovereign subject. Finally, Chapter III retraces the progressive construction of an energy policy in Senegal since independence, within a framework of regional interdependences and multi-level governance, revealing energy sovereignty as a historical, situated and progressively instituted capacity.

CHAPTER I – French West Africa as a colonial system structurally antagonistic to energy sovereignty

This first chapter aims to establish that French West Africa, and more specifically Senegal, cannot be understood as a simple administrative framework or a transitional stage toward modernity, but as a coherent colonial system whose economic, institutional and ideological logics were structurally antagonistic to any form of sovereignty, and in particular to energy sovereignty. The objective is twofold; on the one hand, to reconstruct the historical and structural mechanisms through which the Senegalese territory was integrated into an extraverted imperial economy, organized around productive specialization, surplus extraction and the locking of strategic industrialization; on the other hand, to show that this configuration pertains neither to a conjunctural delay nor to an endogenous incapacity, but to an organized denial of political and institutional capacities, rendering structurally impossible the emergence of present or future energy autonomy.

To this end, we shall first analyze FWA as an extraverted imperial economy, highlighting the continuity of logics of conquest, dependence and exploitation, the role of ontological denial in legitimizing dispossession, the imperial division of labour and the absence of strategic industrialization as a locking of productive autonomy (1.1). Then, we will examine the materialization of these logics in the energy sector, by showing that colonial infrastructures are selective, centralized and oriented toward the needs of administration and the export economy, rather than toward universal access or endogenous development (1.2). Finally, we intend shift the analysis onto the normative terrain by establishing that the colonial system produces an organized sovereign powerlessness, then substantively defining sovereignty as autonomy, capacities and control over resources, before qualifying the denial of energy sovereignty as a structural, cumulative and intergenerational political wrong, thereby illuminating contemporary tensions surrounding the energy transition and green neocolonialism (1.3).

1.1 French West Africa as an extroverted imperial economy

This section aims to demonstrate that FWA, and more specifically Senegal, cannot be apprehended as a simple administrative framework or as an economy in transition toward modernity, but rather as a coherent imperial economic system, structured around logics of extraversion, productive specialization and institutional dependence. The colonial economic organization pertains neither to a conjunctural delay nor to an endogenous incapacity, but to a

set of political, ideological and productive choices designed to durably integrate the Senegalese territory into an imperial division of labour subordinated to metropolitan interests.

To achieve this, we will first retrace the historical modalities through which Senegal was integrated into the French colonial order, from conquest to the institutionalization of empire, highlighting the continuity of mechanisms of dependence and exploitation (1.1.1). Next, we intend to analyze ontological denial as the ideological foundation of colonial domination, a prerequisite for the political and economic exclusion of colonized societies (1.1.2). We then seek to conceptualize colonial specialization and the imperial division of labour as instruments of political domination, organizing an economy oriented toward export and the capture of value (1.1.3). Finally, we will demonstrate that the absence of strategic industrialization constitutes a deliberate institutional locking, producing a durable technological dependence and rendering structurally impossible any form of productive autonomy (1.1.4). Taken together, this analysis prepares the ground for the study of colonial energy infrastructures, conceived as central mecahnisms of administration, extraction and control.

1.1.1 Senegal's integration into the French colonial order as a process of conquest, dependence and exploitation (17th century - 1895)

The integration of Senegal into the French colonial order cannot be understood as a contingent succession of political or commercial events, but as the establishment of a commanditarian system of domination and as a structured historical process of conquest, subordination and exploitation, whose internal coherence reveals the underlying logic of the imperial economy. The purpose of this analysis is therefore to formulate the historical diagnosis of colonial dependence.

From the seventeenth century onward, the establishment of French trading posts in Saint Louis (1659) and on Gorée inaugurated a European presence grounded in the slave trade and in the forced insertion of the Senegalese territory into the Atlantic economy. This initial phase, marked by slave trading and by the asymmetrical commerce of primary products, constitutes the first matrix of colonial dependence, by durably reorienting regional commercial circuits toward exogenous outlets controlled by European trading houses (Rodney, 1972)[1].

[1] Rodney does not directly examine 17th century Senegal, nor does he explicitly employ the concept of "colonial dependency" for that period; his analysis of the Atlantic slave trade is used here in an interpretative sense to retrospectively illuminate mechanisms of wealth transfer and subordinate integration, in a reading notably inspired by Samir Amin.

Far from remaining limited to a mercantile logic, this commercial presence gradually evolved toward territorial conquest and toward explicit politico military domination, particularly during the nineteenth century. The military campaigns conducted against the precolonial kingdoms and chieftaincies, Waalo, Cayor, Baol, Djolof, reflect the transition from a trading post capitalism to an imperialism of occupation, founded upon territorial conquest and direct administration, grounded in relations of power, coercion and status differentiation of populations (Cooper, 2005). “Pacification”, a colonial euphemism designating armed violence, economic destruction and forced population displacement, thus constitutes a founding violence of the colonial order, in the sense articulated by Aimé Césaire when he describes colonization as a “system of reification” grounded in force and dehumanization (Césaire, 1955)[2].

This conquest was accompanied by a profound reconfiguration of local sovereignties. Through unequal treaties, protectorates and the establishment of auxiliary chieftaincies, indigenous political authorities were either marginalized or integrated in a subordinate manner into the colonial dispositif. As Frederick Cooper emphasizes, the colonial empire was not based on egalitarian integration, but on institutionalized status differentiation, which hierarchized populations and concentrated decisional capacity in the hands of imperial administration (Cooper, 2005). This differentiation found explicit juridical expression in the Code de l’Indigénat, which instituted an exceptional regime for colonized populations, placing them outside common law and consecrating their structural exclusion from political citizenship and sovereignty. The creation of French West Africa in 1895 formalized this political architecture, by centralizing economic, fiscal and administrative decisions at the regional level under metropolitan authority.

In parallel, the integration of Senegal into the colonial economy operated through forced insertion into Atlantic commercial circuits, first through the slave trade, then through so called legitimate commerce. The ports of Gorée and Saint Louis played a central role in the transfer

[2] The reference to Aimé Césaire stems from an interpretative mobilization of his conception of colonialism as a system of structural violence and dehumanization, applied here to the context of the campaigns of conquest in Senegal: "They prove that colonization, I repeat, dehumanizes even the most civilized man; that colonial action, colonial enterprise, colonial conquest, based on contempt for the indigenous man and justified by this contempt, inevitably tends to change the one who undertakes it; that the colonizer, who, to ease his conscience, accustoms himself to seeing the other as a beast, trains himself to treat him as a beast" (Césaire, 1955, p. 21). All translations from French sources are the author's own, unless otherwise indicated, in the framework of this chapter.

of populations and subsequently of commodities for the benefit of European economies. Walter Rodney demonstrates that this process did not constitute merely an unequal exchange, but rather a systemic process of plunder, which disarticulated African economies and obstructed endogenous accumulation (Rodney, 1972). During the nineteenth century, this dynamic translated into increasing specialization in the export of primary products and into growing dependence on imports of French manufactured goods, rendering the Senegalese economy structurally vulnerable to fluctuations in metropolitan demand (Amin, 1973).

Colonial taxation and forced labour constituted central instruments of this extraction of surplus[3]. The establishment of the capitation tax compelled populations to enter the colonial monetary economy in order to pay taxes unilaterally imposed. This fiscal constraint was inseparable from the massive recourse to forced labour, corvées, labour requisitions, for the construction of infrastructures, roads, ports, administrative buildings, and for export crops. Utsa Patnaik (2018) [4] shows that these fiscal and coercive mechanisms must be understood as forms of imperial transfer of wealth, "imperial drain", in which the colony indirectly financed metropolitan accumulation. Samir Amin interprets these mechanisms as constitutive of a dependent economy, in which surplus extraction prevents autonomous expanded reproduction and locks development trajectories (Amin, 1971).

Agricultural specialization, and particularly the development of groundnut monoculture, crystallizes this logic of extractive colonialism. From the mid nineteenth century onward, the colonial administration and French trading houses actively encouraged groundnut production, which rapidly became the principal export crop. On the eve of the twentieth century, groundnuts represented more than 80 percent of the value of Senegalese agricultural exports (Coquery Vidrovitch, 1985). This specialization did not aim at local development, but at supplying metropolitan industries and markets, transformation and value added being externalized toward France. In this regard, Césaire (1955) states that he speaks of "development of agriculture oriented solely toward the benefit of the metropoles, of seizures of products, of seizures of raw materials" (p. 24). Samir Amin analyzes this type of configuration as a structural disarticulation, in which the colonial economy is organized around a dominant extraverted sector incapable of generating endogenous spillover effects (Amin, 1971). Furthermore, Rodney underlines that

[3] "Surplus extraction" refers to the mechanisms by which a portion of surplus product or labor is appropriated asymmetrically, to the detriment of local reinvestment.

[4] Utsa Patnaik is used here as a general theoretical framework for analyzing the fiscal and coercive mechanisms of imperial wealth transfer, developed mainly on the basis of the Indian case. Its application to the context of FWA is an interpretative reading, based on comparable colonial mechanisms.

this forced specialization constitutes one of the central mechanisms of underdevelopment, by confining colonial economies to subordinate functions within global capitalism (Rodney, 1972).

Thus, far from constituting a transitional phase toward modernity, the colonial integration of Senegal appears as the historical construction of a structural dependence and as a process of commanditarian colonialism and plunder, grounded in conquest, the coercive reorganization of local economies and the systematic extraction of surplus. This empirical diagnosis confirms that dependence is neither a historical accident nor an internal deficit, but the intentional product of a coherent colonial order, as a functional object, whose effects extend well beyond the formal period of domination.

1.1.2 Ontological denial as the ideological foundation of colonialism

French colonialism cannot be understood as a mere enterprise of territorial conquest or economic exploitation. It rests, more fundamentally, upon an ontological denial of colonized societies, that is, upon a hierarchy of being which constructs African populations as radically other, inferior and politically incomplete. This ideological operation constitutes neither an accompanying discourse nor a moral justification a posteriori, it is the normative condition of possibility of the colonial order. This denial of recognition constitutes a prerequisite for the denial of sovereignty, rendering conceptually unthinkable the political and economic autonomy of colonized territories. Indeed, without this prior disqualification of the political being of the colonized, the dispossession of resources, juridical exception, imposed productive specialization and institutional exclusion would be politically indefensible and administratively untenable.

In fact, the category of “barbarism”, central in colonial discourses, does not pertain to a neutral cultural description, but to an instrument of power. It functions as a technology of classification that renders the other governable, reformable and punishable. As Domenico Losurdo demonstrates, Western political modernity was constructed upon a persistent distinction between fully human subjects and those relegated to a zone of infra humanity, where the

principles of liberty and equality cease to apply (Losurdo, 2011)[5]. In the colonial context, this ontological hierarchy unfolds through recurrent discursive repertoires, infantilization of colonized peoples presented as "minors", animalization and bestialization which depoliticize their agency, systematic doubt cast upon their rationality and negation of any proper historicity. Thus, the following expressions cited by Césaire (1955) illustrate this argument, "You know the refrain, Negroes are great children" and "These Negroes cannot even imagine what freedom is. They do not desire it, they do not claim it" (p. 48). Far from being marginal, these representations constitute an apparatus of governmentality that does not merely describe colonial reality, but actively produces it.

Then, the doctrine of the "civilizing mission" formalizes this ontological hierarchy into a coherent political reasoning, the supposed inferiority of colonized societies grounds a moral duty of civilization, which in turn authorizes a right of interference, an administration of exception and a coercive reorganization of local economies. In his 1885 speech before the Chamber of Deputies, Jules Ferry states without ambiguity "that the superior races have a right, because they have a duty. They have the duty to civilize the inferior races" (Ferry, 1885), transforming ontological inequality into a normative principle. As Hannah Arendt emphasizes, modern imperialism does not merely exploit, it naturalizes domination by presenting it as a historical and moral necessity, particularly through recourse to race as a political category (Arendt, 1951).

This hierarchy of being translates into a systematic denial of political rationality. African societies are described as devoid of state, law, property or general interest, any plurality of political forms being deliberately conflated with an absence of politics. Frantz Fanon, insisting that the colonial world is "a Manichean world", where the colonized is assigned to a zone of non being, demonstrates that this negation of political capacity is not a cognitive error, but a process of colonial production of incapacity, through which the colonized is constituted as incapable of governing himself in order to legitimize his durable exclusion from spheres of decision (Fanon, 1961). Indirect rule, the instrumentalization of chieftaincies and the drastic

[5] Losurdo (2011) analyzes Western political modernity as being based on the exclusion of certain groups from the scope of universal rights. The application of this framework to the colonial category of "barbarism" is based on an interpretative reading, combining the history of ideas and an analysis of colonial discourse.

restriction of political representation are not pragmatic compromises, but the direct institutional effects of this ontological denial.

Colonial violence, initially foundational, is progressively normalized through its administrative and juridical translation. Aimé Césaire emphasizes that this normalization constitutes the core of colonialism, violence ceases to appear as an exception and becomes the very order of things, producing a world in which arbitrariness is routinized and morally justified, "there can now be only violence, corruption and barbarism" (Césaire, 1955, p. 59).

Thus, this ontological denial ultimately plays a decisive role in the justification of economic extraction. If colonized societies are deemed backward or incapable of rationally valorizing their resources, their territory appears underutilized and their dispossession as an enterprise of "development". Albert Sarraut thus affirms that colonization consists in "making wealth produce where there were only inert forces" (Sarraut, 1923), discursively erasing pre-existing labour, knowledge and economic systems. The capture of resources and imposed productive specialization are then presented not as plunder, but as beneficial rationalization.

However, it is important to clarify that this does not imply the existence of a homogeneous and perfectly coherent colonial ideology. Colonial discourses are traversed by tensions, contradictions and debates, notably between assimilation and association. Nevertheless, as Achille Mbembe shows, these variations do not invalidate the existence of discursive regularities that render intelligible the political and economic exclusion of the colonized and transform domination into self-evidence (Mbembe, 2000). In this sense, ontological denial does not constitute a mere ideological background, it is the foundation upon which African sovereignty is rendered conceptually unthinkable, durably preparing the forms of institutional and strategic dependence analyzed in the following sections.

1.1.3 Colonial specialization and the imperial division of labour: an economy designed for extroversion

The colonial specialization of Senegal cannot be understood as the result of an efficient allocation of factors of production or of a simple comparative advantage. It is inscribed within

an imperial division of labour [6] which hierarchically organizes productive functions between the metropole and the colonial territories. Within this architecture, the centre, the French metropole and its commercial extensions, concentrates industrial transformation, finance, investment and economic decision, while the colonial periphery, colonial Senegal, is assigned to subordinate functions, primary production, extraction of raw materials and supply of labour. The agricultural specialization of Senegal, particularly around groundnuts, gum arabic and other raw products, thus constitutes the economic translation of an imperial political order. Accordingly, this analysis seeks to conceptualize, in the language of political economy, what the empirical analysis of the Senegalese case (1.1.1) and the ideological framework of ontological denial (1.1.2) have brought to light, the economic translation of colonial hierarchy.

This imperial division of labour rests upon a clearly identifiable functional assignment. The Senegalese economy is structured to supply metropolitan markets with low value added raw materials, while activities of industrial transformation, refining, processing and commercialization are located outside the territory. Samir Amin characterizes this type of configuration as an extraverted economy, that is, an economy whose productive structures are oriented outward and articulated to the needs of the centre, rather than to internal dynamics of reproduction (Amin, 1973). In *L'Afrique de l'Ouest bloquée*, he emphasizes that the colonial economy is organized according to the requirements of metropolitan accumulation, and not according to the development of local productive forces (Amin, 1976).

The exclusive orientation toward export constitutes a second structuring feature of this imperial economy. Agricultural, fiscal and land policies are designed to maximize exportable volumes, particularly in the groundnut sector, which became at the turn of the twentieth century the pillar of the Senegalese economy (Coquery Vidrovitch, 1985). This export logic is not merely commercial, it structures the entirety of infrastructure and investment choices. Ports, railways and roads are conceived as technologies of flow, linking production zones to shipping points, without fostering internal economic integration or the formation of a coherent domestic market. Frederick Cooper analyzes colonial economies as a form of asymmetric integration, in which

[6] The "imperial division of labor" refers here to the hierarchical organization of productive functions between the center and the periphery within an imperial space, and not simply to an international division of labor based on comparative advantages.

the colony is connected to the centre, while remaining weakly articulated internally on the economic level (Cooper, 2005).

Thus, the vertical integration of value chains under metropolitan control constitutes a central element of this architecture. In the case of groundnuts, production is local, but transport, insurance, transformation and commercialization are dominated by French actors. Surplus value is realized outside the territory, while the local productive fabric remains weakly capitalized and poorly diversified. This capture of value through the integration of African economies into colonial world trade operated through modalities that organized a structural transfer of surplus toward European economies (Rodney, 1972).

Finally, this extraverted orientation has durable macroeconomic consequences. Dependence on primary commodity exports exposes the colonial economy to fluctuations of international markets and to prices determined outside the territory. Raúl Prebisch demonstrated that this peripheral specialization in low value-added primary goods is accompanied by a structural deterioration of the terms of trade, reinforcing the gap between centre and periphery (Prebisch, 1950)[7]. In the Senegalese case, value added is captured downstream in the chain, during phases of industrial transformation and commercialization, largely controlled by metropolitan trading houses and industries.

1.1.4 The absence of strategic industrialisation as an institutional deadlock for the economy, a source of structural dependance and the impossibility of productive autonomy

The absence of industrialization in colonial Senegal cannot be interpreted as a simple technical delay, an insufficiency of capital or an inadequacy of factors of production. It is, on the contrary, inscribed within a structural locking specific to the imperial economy, through which local productive capacities are durably constrained in order to preserve the colonial division of labour. Within this configuration, industrialization is not merely absent; it is rendered structurally improbable, insofar as it would come into tension with the function assigned to the colonial territory as a supplier of raw materials and an outlet for metropolitan

[7] Prebisch does not work empirically on Senegal; his framework is based on Latin America. However, he himself claims that the center/periphery analysis has general applicability, and his framework has been widely used for Africa.

manufactured goods, in accordance with the analysis of the disarticulation of peripheral economies proposed by Samir Amin (1973).

This locking first manifests itself through the geography of colonial investment, overwhelmingly oriented toward infrastructures necessary for export, ports, railways, collection roads, warehouses, rather than toward the constitution of local industrial capacities. As Catherine Coquery Vidrovitch (1985) has shown, colonial public expenditure in FWA privileges equipment facilitating the circulation of products toward the metropole, while processing industries, when they exist, remain marginal, weakly capitalized and closely dependent upon French trading houses. The absence of heavy industries, metallurgy, chemistry, mechanics, must therefore be understood not as a deficit of resources or labour, but as the structural effect of an imperial economy organized around the export of primary products and the industrial centralization at the centre.

This orientation is further reinforced by a systematic externalization of strategic goods necessary for the reproduction of the economy. Machines, industrial equipment, processing technologies and complex infrastructures are imported, designed and maintained according to metropolitan standards. This material dependence is accompanied by an organizational dependence, namely that maintenance, planning and technical expertise remain largely controlled by external actors, which Samir Amin analyzes as a structural technological dependence characteristic of peripheral economies, marked by the incapacity to produce, adapt or autonomously master key technologies (Amin, 1988). The colonial economy is thus inscribed within an extraverted mode of reproduction, whose continuity depends upon permanent flows of technologies, knowledge and decisions situated outside the territory.

These different mechanisms, orientation of investments and importation of strategic goods, produce a cumulative technological dependence, whose effects extend well beyond the colonial period. As Frederick Cooper emphasizes, the institutional and technical configurations established under empire tend to durably structure postcolonial economic trajectories, by fixing frameworks of action, modes of management and supply networks that do not disappear with the formal end of colonial domination (Cooper, 2005). These legacies thus continue to constrain the room for manoeuvre of postcolonial states in matters of industrial policy.

In this respect, it is within this framework that the energy question must be situated, without yet analyzing it directly. Energy is not a neutral sector; it constitutes a material condition of

industrialization, productivity and strategic autonomy. By preventing the emergence of heavy industries and of local technical capacities, the colonial order renders structurally impossible the mastery of complex energy infrastructures, production, maintenance, planning, which remain under metropolitan control. As Timothy Mitchell has demonstrated, energy infrastructures are never simple technical supports, but mechansim of power which organize capacities for collective action and relations of dependence (Mitchell, 2011). In the colonial context, this framework makes it possible to understand how industrial locking prepares the conditions of a durable energy dependence.

In sum, the absence of strategic industrialization in colonial Senegal constitutes neither an anomaly nor a failure of the imperial project, but one of its expected outcomes. By blocking access to technical capacities, by externalizing strategic sectors and by institutionalizing technological dependence, the colonial economy produces a structural impossibility of productive autonomy. This configuration provides the material foundation upon which colonial energy apparatus are organized, analyzed in the following section, and illuminates contemporary forms of dependence not as postcolonial failures, but as deeply rooted institutional legacies.

Thus, the logics of extraversion, specialization and dependence highlighted in the imperial economy of FWA do not remain abstract, they materialize in concrete technical mechanism. Accordingly, the analysis of colonial energy infrastructures makes it possible to grasp precisely how these logics translate into practice.

1.2 Colonial energy infrastructures as mechanisms of administration, extraction, and control

In continuation of the analysis of the structural logics of the colonial system, this section examines their concrete materialization within the energy sector in Senegal during the colonial period. Far from pertaining to a neutral technical domain or to a mere vector of modernization, energy appears as an eminently political object, whose organization primarily responds to the imperatives of imperial administration and of the export economy. The energy infrastructures established do not aim at the productive autonomy of the territory, nor at the satisfaction of the needs of the colonized population, but are inscribed within a coherent dispositif of control, extraction and domination, structurally dependent upon the metropole. The objective is therefore to demonstrate that these infrastructures in no way constitute the beginnings of an

energy sovereignty, but fully participate in the reproduction of the colonial relation of power. To this end, we will first examine the organization of the colonial energy system in Senegal, by highlighting its institutional and functional logics (1.2.1), before demonstrating how energy operates as a central vector of colonial domination, at once economic, administrative and political (1.2.2).

1.2.1 Organisation of the colonial energy system in Senegal

The organization of the colonial energy system in Senegal cannot be understood as an incomplete or insufficient dispositif when measured against a later ideal of development, but rather as a selective, hierarchical and functional architecture, designed to respond to the specific needs of imperial administration and of the export economy. Energy is never conceived there as a public good nor as a lever of territorial development, but as a technical instrument of government, intended to sustain the circulation of goods, the functioning of the administrative apparatus and the activity of metropolitan enterprises. A qualitative analysis of this organization therefore makes it possible to demonstrate that colonial energy dependence does not result from a technical constraint, but from an intended institutional configuration, closely articulated with the logics of extraversion highlighted in the previous section.

A first structuring feature lies in the absence of any territorial energy policy specific to Senegal. No coherent energy strategy is formulated at the scale of the territory; decisions relating to supply, infrastructures and uses of energy are taken at the level of the administration of FWA or directly from the metropole. Colonial technical services, public works, ports, railways, function as relays executing orientations defined outside the territory, without effective participation of local authorities in the definition of priorities (Cooper, 2005)[8]. This extra local governance reflects a non-recognition of energy as an issue of internal development.

This decisional centralization is accompanied by a structural dependence on imported fuels, which constitutes the material foundation of the colonial energy system. From the nineteenth century onward, imported coal occupied a central place in Senegal's energy supply, particularly for ports and railways. The port of Dakar was equipped as early as 1858 with a coal depot intended for the refuelling of ships and the operation of port infrastructures, illustrating the

[8] Cooper (2005) does not specifically analyze colonial energy policies; his contribution is used here at a structural level to characterize forms of imperial government and the role of colonial technical services as instruments of extra-local enforcement, an analytical framework applied in this section to the energy sector.

priority accorded to commercial flows and imperial navigation[9]. From the beginning of the twentieth century, imported petroleum products supplemented this supply, notably for urban lighting, transport and generators used by the administration and European enterprises, as evidenced by historical studies on colonial energy and port infrastructures (Ardurat, 2002).

The central element is not merely dependence on imported fuels, but the absence of any strategy of exploration or local energy production. No significant investment is undertaken in the search for endogenous energy resources, nor in the development of local capacities for primary energy production. This configuration cannot be reduced to a technical delay or to a lack of geological knowledge; it is inscribed within a broader logic of extraversion, accompanied by a technological dependence previously outlined (Amin, 1971; 1973). Senegal's energy supply is thus conceived as an external flow to be secured, rather than as a sector to be locally developed.

Furthermore, the selectivity of the colonial energy system appears particularly clearly in the priority allocation of energy to imperial infrastructures. Indeed, the electrification of Dakar, formalized through a concession granted in 1909 to a private company, illustrates this logic; electricity was first intended for urban lighting, colonial services and European economic activities, within a perimeter strictly delimited by the concession contract (Ardurat, 2002)[10]. Rural areas, where the majority of the population resided, remained almost entirely excluded from access to energy, as did local productive uses such as crafts or small industries.

Finally, the colonial energy system functioned as a dispositif of government, insofar as it directly contributed to the exercise of administrative power. Urban lighting, telecommunications, motorized and railway transport reinforced the capacity of surveillance, coordination and intervention of the colonial administration. The contributions of Mitchell (2011) discussed previously effectively demonstrate that energy infrastructures are never simple technical supports, because they organize relations of power by structuring capacities for collective action and by producing specific forms of dependence.

1.2.2 Energy as a vehicle for colonial domination

[9] Technical port reports indicate the existence of coal storage facilities as early as the mid-19th century, intended to supply ships and power the port of Dakar (Entreprises coloniales, 2024).
[10] Electricity concessions define perimeters, uses, and priority beneficiaries, effectively excluding any logic of universal access or local productive development.

The empirical findings established previously invite a move beyond a strictly technical reading of the colonial energy system in order to propose a political qualification. Energy functions in Senegal as a technique of government, insofar as it structures the capacities for action of imperial administration, hierarchizes spaces and organizes durable forms of decisional dependence. The control of energy flows thus appears inseparable from the control of territories and populations, transforming infrastructure into a central instrument of colonial domination.

A first element lies in the analytical equivalence between control of energy flows and territorial control. Infrastructures of supply, distribution and maintenance of energy materially condition the locations where the colonial state can circulate, administer, produce and extract. The centralization of energy decisions, planning, financing, technical standards, at the level of the administration of FWA or of the metropole does not merely reflect administrative rationalization, but institutes a structural dependence of colonial territories upon external decision making centres. As Michel Foucault has shown, modern governmentality[11] rests precisely upon the capacity to "conduct conduct" through material apparatus that frame the possible rather than through direct coercion (Foucault, 1977-1978)[12]. In the colonial context, energy constitutes one of these dispositifs, it delimits governable spaces and renders any local autonomy materially inoperative in the absence of control over-flows. From a post Foucauldian perspective, several works have extended the analysis of governmentality by emphasizing the role of material infrastructures in the production of power. Timothy Mitchell (2011) thus demonstrates that energy systems do not merely support public action, but configure the very forms of political participation, administrative control and collective decision. Energy therefore appears as a political technology that organizes differentiated capacities for action among actors, rather than as a simple technical support.

Moreover, as briefly noted earlier, this energy hierarchy is accompanied by a systematic exclusion of colonized populations from strategic choices relating to energy. Colonized populations participate neither in the planning of networks, nor in the definition of priorities of use, nor in budgetary arbitrations. This exclusion is not solely institutional; it produces effects

[11] The use of Foucauldian categories in a colonial context requires methodological caution. As Thijs Willaert shows, the notion of governmentality in particular, but also discipline and biopower, developed on the basis of European experiences, function as 'traveling concepts' whose analytical scope depends on their historical recontextualization. Their use in colonial studies does not imply universal application, but rather a translation and reformulation adapted to the specific configurations of colonial power. Foucauldian concepts are thus used here as situated analytical tools, rather than as a generalizable theoretical model (Willaert, n.d.).

[12] Although Foucault does not directly analyze energy infrastructures, energy is interpreted here as a specific case of material devices of government.

of political subjectivation. By being deprived of any capacity to intervene in energy infrastructures, colonized societies are constructed as external to the sphere of strategic decision, their needs being depoliticized and relegated to the rank of secondary constraints. Achille Mbembe shows that in the post colony, power materializes precisely in these mechanisms which render sovereign asymmetry both visible and routinized (Mbembe, 2001). Energy thus contributes to the production of a political order in which dependence appears natural, even inevitable.

Finally, a further mechanism resides in the naturalization of domination through technique. Inequalities of access to energy, the concentration of infrastructures and dependence on imports are presented as technical or economic constraints, obscuring their profoundly political character. This depoliticization operates through recourse to expertise, technical standards and administrative procedures, which transform choices of power into apparent necessities. Foucault identifies this process as one of the cores of modern governmentality, normalization, through which relations of domination are stabilized in the form of routines and standards (Foucault, 2004). Mitchell extends this analysis by showing how energy infrastructures render certain forms of power "self-evident" and therefore difficult to contest, precisely because they are inscribed within durable material 'dispositifs' (Mitchell, 2009).

These mechanisms, moreover, produce effects of continuity that extend far beyond the colonial period. Decisional centralization, dependence on energy imports, externalization of expertise and spatial hierarchization of networks create path dependence effects that durably condition postcolonial energy trajectories. Energy, as a material condition of industrialization and of strategic autonomy, thus becomes a nodal point of the structural dependence inherited from the colonial order. As Mitchell emphasizes, infrastructures do not disappear with the political regimes that produced them; they continue to structure capacities for collective action long after the formal end of domination (Mitchell, 2011).

Thus, the colonial energy organization in Senegal institutes a genuine regime of power. These energy mechanisms fully acquire meaning only when repositioned within the colonial institutional architecture, which rendered any sovereign capacity of decision structurally impossible, thereby opening the analysis of the colonial production of sovereign powerlessness (1.3.1).

However, understanding energy as a vector of domination is not enough. We must now politically qualify what these mechanisms make impossible in terms of collective autonomy. The following section therefore shifts the analysis from the infrastructural to the normative realm, showing that the colonial order produces organized sovereign powerlessness and that the denial of energy sovereignty constitutes a structural political wrong.

1.3 Denial of sovereignty as a structural political wrong

Having highlighted the historical, economic and institutional logics of colonial domination, it is now necessary to qualify its political and moral scope. The issue is no longer to observe the absence of sovereignty in Senegal under the colonial regime, but to demonstrate that the colonial institutional framework actively produced a structural incapacity to exercise it, particularly in strategic sectors such as energy. Sovereignty cannot be reduced to a juridical status; it presupposes institutional capacities, forms of decisional autonomy and effective control over resources, the impossibility of which the colonial order precisely organizes. This section therefore seeks to establish that the denial of energy sovereignty constitutes a structural and intergenerational political wrong, whose effects extend beyond the colonial period. To this end, the analysis will first show how the colonial institutional system produces an organized sovereign powerlessness (1.3.1), then will normatively establish the substantive conditions of sovereignty, understood as autonomy, capacities and control over resources (1.3.2), before proposing a critical reading of the denial of sovereignty as a structural and systemic injustice, thereby illuminating its contemporary extensions (1.3.3).

1.3.1 The colonial production of sovereign impotence

It is no longer a matter here of describing colonial structures nor of analyzing their economic or technical effects, but of qualifying their political and normative scope. More precisely, this analysis argues that the colonial institutional system does not merely formally deny the sovereignty of Senegal, but actively produces a structural incapacity to exercise it. Sovereignty cannot, indeed, be reduced to an abstract juridical status; it presupposes effective institutional capacities whose absence the colonial architecture systematically organizes. Colonialism thus appears not as a simple suspension of sovereignty, but as a dispositif producing an organized sovereign powerlessness.

First, this architecture resides in the extreme centralization of decisions. Colonial power is structured according to a radical verticality, where strategic decisions are taken either in Paris or by the Governor General of FWA, without real autonomy granted to the territories (Cooper, 2005). This centralization does not result from a contingent administrative choice, but from a mode of government founded upon the exogeneity of power, colonial territories are administered, not governed. Frederick Cooper thus emphasizes that the colonial state was never conceived as a state capable of producing endogenous political capacities (Cooper, 2002). Within this framework, strategic sectors, including energy, are defined as exogenous objects to the colonized society, removed from any territorial deliberation. The political effect of this centralization is decisive. It deprives the territory of any capacity for sovereign planning and renders institutionally unthinkable the formulation of an autonomous sectoral strategy.

This exogeneity of power is reinforced by the near total absence of competent local institutions. The colonial system provides neither territorial ministries, nor autonomous sectoral authorities, nor endogenous planning frameworks. Existing technical administrations remain strictly subordinated to metropolitan norms, budgets and orientations (Coquery Vidrovitch, 1985). This does not constitute an institutional delay, but a structuring void. In the absence of local decision-making bodies, there exists literally no locus where sovereignty could be exercised. As Allen Buchanan (2004) underlines, political sovereignty requires minimal institutional capacities. Their absence does not merely signify administrative weakness, but a normative invalidation of any effective political autonomy. Energy sovereignty, as a sectoral capacity, is thus blocked upstream, before even being able to emerge as a political question.

Moreover, this institutional architecture is accompanied by a systematic political and social exclusion. Colonized populations are entirely excluded from decision making processes, while local elites are marginalized or appointed to subordinate functions, without access to strategic spheres of planning (Young, 1994). Colonialism here produces an effect of political subjectivation, the population is constituted as “administered”, rather than as a sovereign subject. Cooper thus describes a mode of government founded upon administration and differentiation, which exercises power without politically integrating colonized populations (Cooper, 2005).

Finally, the non-transfer of competencies and the blocking of technical training constitute a central lever of this organized powerlessness. Access to higher education in engineering, planning or infrastructure management is strictly limited, while expertise remains monopolized

by metropolitan actors. Technical systems are designed, maintained and reproduced without durable local appropriation. This configuration does not reflect a simple deficit of human resources, but a mechanism of institutionalized dependence. Within the normative framework proposed by Buchanan, persistent institutional incapacity compromises both political autonomy and the legitimacy of a state order, even when this incapacity results from a structural legacy (Buchanan, 2004).

Thus, colonialism transforms the absence of sovereignty into a durable condition of political, administrative and technical powerlessness. It is not a passive lack, but an active arrangement which renders sovereignty, particularly energy sovereignty, institutionally unthinkable. This organized sovereign incapacity illuminates persistent postcolonial vulnerabilities and prepares the normative analysis of the denial of sovereignty as a structural and intergenerational political wrong (1.3.3).

1.3.2 Sovereignty as a normative requirement for autonomy, capacity and control over ressources

Then, after demonstrating that the colonial order institutionally produces an organized sovereign powerlessness, it is now necessary to normatively establish what it means to be sovereign. The issue is no longer descriptive, but evaluative, it is a matter of determining the substantive conditions of sovereignty and examining whether, and how, they are systematically violated under the colonial regime of FWA. Against a strictly juridical conception of sovereignty, reduced to the formal recognition of a state status, this analysis maintains that sovereignty must be understood as a set of normative requirements; decisional autonomy, effective institutional capacities and control of strategic resources. In light of these criteria, energy sovereignty appears not as an abstract ideal, but as a legitimate condition of political self-determination.

First, sovereignty implies substantive decisional autonomy, understood as the capacity of a political community to define its collective priorities, to arbitrate between competing uses of resources and to undertake long term planning. Margaret Moore demonstrates that territorial sovereignty is not reducible to a right of exclusion or to formal control of borders, but rests upon the political capacity to decide on the use of resources located within a given territory

(Moore, 2015)[13]. This requirement is central in the energy domain, to be sovereign presupposes the ability to choose energy sources, infrastructures, priority uses and temporal horizons of energy policy. Yet, under FWA, these decisions are systematically taken outside the territory, by the metropole or by imperial authorities, rendering any autonomous energy planning impossible. Energy thus never becomes the object of a local collective deliberation, which constitutes a direct negation of the decisional autonomy constitutive of sovereignty.

Second, sovereignty requires effective institutional capacities. Allen Buchanan insists that political self-determination cannot be reduced to an abstract right, it presupposes the possession of capacities enabling the effective exercise of collective power. In his theory of political legitimacy, he argues that political authority is conditioned by "the ability to make, implement and enforce collective decisions" (Buchanan, 2004, p.156). Without functional institutions, technical expertise, regulatory mechanisms and mastery of juridical and budgetary instruments, sovereignty is devoid of normative substance. Applied to the energy sector, this requirement implies the existence of planning institutions, regulatory authorities, local technical competencies and a capacity to govern infrastructures. The colonial order of FWA is characterized precisely by the absence of these capacities, technical knowledge is not transferred, competent territorial institutions do not exist, and energy governance remains entirely dependent upon external actors. This incapacity therefore does not constitute a simple administrative deficit, but a structural violation of the normative conditions of sovereignty as conceived by Buchanan.

Third, sovereignty must be understood as a moral and political horizon inscribed in time. Lea Ypi offers here a decisive contribution by introducing the notion of prospective autonomy. In her critical analysis of colonialism, she demonstrates that colonial injustice does not consist solely in present domination, but in the denial of the right of colonized peoples to determine their political future, "Colonialism wrongfully denies colonized peoples the right to shape their own political future" (Ypi, 2013), and it is in this sense that it is condemnable. Sovereignty therefore implies the capacity of a political community to choose its model of development and not to be confined within trajectories imposed by inherited structures. In the energy domain, this dimension is crucial, dependence on colonial infrastructures, on imports and on imposed

[13] Margaret Moore (2005) does not use the concept of "decision-making autonomy" in a strictly sectoral or energy-related sense. In *A Political Theory of Territory*, she argues that territorial rights are justified when they guarantee a political community the material conditions for self-determination, which includes political control over resources located within the territory. The application of this framework to the energy sector is a normative extension.

technological choices durably restricts the field of possibilities, far beyond the colonial period. The absence of energy sovereignty is therefore not limited to a momentary deprivation of control, but constitutes a lasting infringement upon future self-determination.

These three dimensions, decisional autonomy, institutional capacities and prospective autonomy, make it possible to define precise normative criteria of energy sovereignty. To be energy sovereign presupposes political control of resources, long term planning capacity and the possibility of collectively deciding on uses and infrastructures. Evaluated in light of these criteria, the case of FWA reveals not an unfinished or delayed sovereignty, but a sovereignty rendered structurally impossible. The colonial violation of energy sovereignty therefore pertains neither to contingent circumstances nor to a simple "historical delay", but to a systematic negation of the very conditions of political autonomy.

1.3.3 Critical reading: denial of sovereignty as structural harm and systemic injustice (Bufacchi's & Young's view)

After establishing the normative conditions of sovereignty and demonstrating their negation within the colonial order, it is now necessary to qualify their moral and political scope. The issue is no longer to identify an absence of sovereignty, but to determine the nature of the wrong produced by its denial. This section argues that colonialism does not constitute merely a historical domination now past, but a structural, cumulative and intergenerational political wrong, whose effects extend beyond the colonial period. By mobilizing the theory of structural injustice developed by Vittorio Bufacchi and the conception of systemic injustice advanced by Iris Marion Young, the objective is to show that the denial of sovereignty, particularly energy sovereignty, pertains neither to a historical accident nor to a simple deficit of development, but to an unjust architecture durably producing political incapacities.

In *Social Injustice*, Bufacchi proposes to shift normative analysis from justice toward injustice itself. As he states, "The primary subject of justice is social injustice" (Bufacchi, 2012). According to him, injustice is not limited to intentional individual acts, but may be inscribed within social and institutional structures that generate persistent disadvantages. The significance of this approach lies in its capacity to conceptualize wrongs independent of the moral intention of agents, yet deeply embedded in durable institutional arrangements. Structural wrong is thus characterized by three dimensions, its inscription within structures, its capacity

to generate persistent disadvantages, and its cumulative transmission over time[14]. This perspective makes it possible to move beyond an event-based reading of colonialism, the denial of sovereignty is not an isolated act, but a durable institutional arrangement producing an incapacity to exercise political autonomy. The denial of sovereignty therefore appears as a structural injustice that does not disappear with the formal end of the colonial regime, but continues to produce effects in the form of institutional, technological and economic dependencies.

The theory of systemic injustice developed by Iris Marion Young deepens this interpretation by emphasizing the relational and reproductive dimension of injustice. In *Responsibility for Justice*, Young demonstrates that certain injustices do not result from isolated wrongful actions, but from ordinary social processes that position individuals and groups differently. She thus defines structural injustice as a situation in which "social processes put large groups of persons under systematic threat of domination or deprivation" (Young, 2011). Injustice must therefore not be understood as a simple punctual violation, but as a structural configuration that unequally distributes capacities and constrains possible trajectories. This analysis leads Young (2011) to propose a model of political responsibility not grounded in individual fault, but in what she calls a "social connection model of responsibility", according to which agents are responsible insofar as they participate in structures producing injustice, even without intention to harm. This approach makes it possible to conceptualize the continuity between colonialism and postcoloniality, structures change, yet the asymmetries they produce may persist and be reconfigured.

The combined study of Bufacchi and Young thus allows a more precise qualification of the colonial denial of sovereignty. In Bufacchi, the emphasis is placed upon the nature of the wrong, a structural injustice producing durable incapacities independently of individual intentions. In Young, the emphasis lies upon the dynamic of reproduction: injustice is generated by social processes that unequally distribute capacities and condition possibilities for action. Together, these perspectives make it possible to understand colonialism not merely as a past deprivation of sovereignty, but as a system producing an inherited incapacity to exercise it. The denial of

[14] Vittorio Bufacchi does not develop a formalized theory of "intergenerational cumulative structural injustice" as a systematic concept. In *Social Injustice*, he instead emphasizes the structural nature of certain injustices and their capacity to produce persistent disadvantages regardless of individual intentions. The use made of it here is based on a theoretical systematization inspired by his analysis, combined with approaches to structural injustice more explicitly developed by Iris Marion Young.

sovereignty therefore does not constitute a closed event, but a cumulative process that continues to organize postcolonial asymmetries.

In the energy domain, this critical reading leads to a requalification of postcolonial dependence. The persistence of constraints such as the externalization of strategic decisions, technological dependence or asymmetries in access to resources must not be interpreted as a simple deficit of governance, but as the contemporary expression of a structural injustice. Each cycle of constrained decision tends to reproduce inherited asymmetries, by limiting capacities for autonomous planning and by restricting the range of possible trajectories. Thus, energy dependence appears not as an anomaly, but as a systemic product of an unjust historical order.

In light of this analysis, the denial of energy sovereignty may be qualified as a structural, cumulative and intergenerational political wrong. This normative qualification makes it possible to move beyond a strictly historical reading of colonialism and to illuminate contemporary tensions surrounding asymmetries in the global energy transition. Without developing this dimension here, current debates on "green neocolonialism", pertaining to the third part of this research, may be interpreted in light of these structural continuities, where inequalities in access to energy capacities reflect historical legacies of domination rather than a simple differential of development.

This first chapter has established that the colonial order did not merely limit the autonomy of Senegal, it structurally organized its impossibility. Through economic extraversion, decisional centralization and technical dependence, the imperial system produced a durable sovereign powerlessness, of which the energy dimension constitutes a privileged material expression. Yet this domination was not solely institutional or economic. It was rooted in a deeper denial; the negation of the capacity of the colonized to be subjects of history, of speech and of decision. Before being prevented, sovereignty was rendered unthinkable. It is at this ontological level that the analysis now opens. By rehabilitating dignity, subjectivity and historicity of the Black subject, Négritude constitutes a founding counter operation; it renders once again conceivable a sovereignty to be reconquered.

CHAPTER II – Négritude as a political counter-ontology at the foundation of subjectivation and sovereign self-determination

This chapter now undertakes a decisive conceptual shift. The aim is to think sovereignty not primarily as a juridical status or an institutional competence, but as an ontological and symbolic capacity to be a subject. The diagnosis of Chapter I constitutes its point of departure, colonialism functions as a regime of ontological denial that disqualifies the colonized as subjects of history, of speech and of decision. To be deprived of sovereignty therefore means first to be rendered illegitimate to speak, to represent oneself and to project oneself as the collective author of one's becoming. Accordingly, the fundamental political question is no longer merely, how to reconquer institutions? But rather, how to become a subject again?

It is at this level that Négritude is here requalified as a political counter ontology; a situated operation of reversal of the categories through which the colonial order distributed the human, the rational and the politically legitimate. Far from a substantial ontology of "Black being", it reconstructs the conditions of subjectivation by rehumanizing what was reified, by rehistoricizing what was presented as without past, and by reauthorizing speech where symbolic heteronomy prevailed. The central thesis is therefore the following; sovereignty is ontologico-symbolic before being juridico-institutional, and Négritude constitutes a founding moment of this refoundation, without which self-determination can neither be formulated nor exercised.

This analysis unfolds in three stages. Section 2.1, as an operative concept, stabilizes the concept by retracing its genealogy, its transnational circulations and the collective dispositifs, journals, networks, congresses, through which a diasporic revolt is transformed into a collective symbolic sovereignty. Section 2.2 explicates the theoretical core, Négritude as rehumanization and reappropriation of speech, of the sensible and of the imaginary, while integrating its tensions as strategic stakes. Finally, Section 2.3 illuminates the politico institutional translation, from the passage to Pan-Africanism as a project of self-determination, to the requirement of institutional capacities making possible a material sovereignty, of which energy sovereignty will constitute a subsequent expression, addressed in the following chapters.

2.1 Intellectual genealogy and conceptual construction of Négritude

Négritude emerges within a context of colonial domination marked by the symbolic, historical and ontological negation of Black peoples. Often reduced to a literary movement or to a cultural reaction to European imperialism, it has sometimes been disqualified as an emotional, aesthetic or identitarian expression devoid of real political scope. Nevertheless, it in fact constitutes a deeper intellectual elaboration, an attempt to reconfigure the status of the

Black subject by contesting the very categories through which colonialism naturalized inferiority. This section therefore seeks to reconstruct the conceptual genealogy of Négritude in order to demonstrate how a movement of identity affirmation progressively constituted itself as a normative principle of dignity, autonomy and, potentially, sovereignty.

We will first show how Négritude operates a semantic reversal of the colonial stigma, transforming a category of inferiorization into a foundation of political dignity and subjective legitimacy (2.1.1). We will then examine its transnational formation within the diasporic space, by highlighting the role of intellectual circulations and of the Black and Harlem Renaissance in the emergence of a modern Black consciousness, where aesthetic reappropriation precedes institutional politicization (2.1.2). Finally, we will study how, from journals to congresses, Négritude structures itself into a transnational Black public sphere, constituting a collective symbolic sovereignty that prepares its subsequent political translation (2.1.3).

2.1.1 Defining Négritude: from semantic reversal to the claim for dignity

Defining Négritude first requires considering that colonial vocabulary is not neutral; it produces moral and ontological categories that distribute humanity, rationality and political capacity. The term “negro”, far from designating merely a skin colour, historically functions as a normative category of disqualification. Indeed, it naturalizes inferiority, inscribes alterity within a hierarchy and serves as an implicit argument for tutelage. In this sense, colonial domination is exercised not only through administration or economy, but also through a regime of naming that stabilizes the colonized as a “minor” being, not only dominated, but deemed incapable of being a subject of history and of decision. It is precisely against this assignation that the invention of the term “Négritude” must be understood, a lexical gesture that does not add an identitarian slogan to an already described oppression, but disputes with colonial power the monopoly over defining reality and legitimate subjects. Naming, here, is not describing, it is reconfiguring the conditions of recognition, and therefore of political dignity. This discursive and normative dimension of reversal has also been highlighted by linguistic and historical analysis, which shows that Négritude transforms a racialized term into a positive category and operates a genuine discursive reversal of the colonial stigma (Treffel, 2014).

The decisive point is that Négritude emerges as a semantic reversal of a stigma. Forged by Aimé Césaire, its conceptual founder, around 1936 in the intellectual space of *L'Étudiant noir*[15], the term retains the wound of the word "negro" while inverting its normative charge. It is less a matter of erasing the insult than of disarming it by resemanticizing it from the standpoint of the dominated. Césaire explicitly formulates this operation when he defines Négritude as "the simple recognition of the fact of being black, and the acceptance of this fact, of our destiny as Black, of our history and of our culture"[16] (Césaire, 1987). Recognition, yet active and insurgent recognition; indeed, it assumes the reality of disqualification in order to overturn it into a claim of value. Far from a withdrawal, Césaire insists on the inaugural scope of this reversal as a "point of departure for the advent of a universal humanism". Négritude is not the fixation of an essence, but the authorization of a subjectivity rendered illegitimate by the colonial order. In *Cahier d'un retour au pays natal*, this requalification first appears as a refusal of any reification, "My negritude is not a stone… My negritude is neither a tower nor a cathedral… it plunges into the red flesh of the soil" (Césaire, 1947, p. 46-47). The statement matters as much as its negative structure, to say what Négritude is not amounts to refusing the colonial capture of a fixed identity, and instead to affirm a condition of life, as an experience of a return to self and of an inner rebirth, of memory and creation. Négritude thus appears as a positive normative category in becoming, not an inventory of biological attributes, but a rehabilitation of the historicity, values and dignity of the "Black world", that is to say the possibility of being recognized as bearer of a common world.

This operation of semantic reversal nevertheless takes distinct forms according to the founding authors, which allows the conceptual content of Négritude to be clarified without reducing it. In Césaire, Négritude is first a rupture; rejection of assimilation, refusal of the colonial image of the Black as "peaceful" and "incapable of building a civilization", revolt against the Western monopoly over the universal. Césaire thus considers the movement of Négritude as a cultural struggle for emancipation, he writes in *L'Étudiant noir*, "This is why Black youth turns its back on the tribe of the Elders. The tribe of the Elders says, Assimilation. We respond, Resurrection". The issue is not a simple cultural difference, but the reconquest of the right to exist according to one's own norms. In Léopold Sédar Senghor, Négritude is elaborated more as a philosophical

[15] *L'Étudiant noir* (1935) was a short-lived magazine founded in Paris by Aimé Césaire, Léopold Sédar Senghor, and Léon-Gontran Damas, designed as a space for black and Caribbean students to express themselves freely. It played a key role in the genesis of Négritude by articulating, in opposition to assimilation, a demand for "black consciousness" and the reappropriation of categories imposed by the colonial order, before the movement was subsequently consolidated into more durable networks and institutions (notably *Présence Africaine*).

[16] All translations from French-language sources in this chapter are the author's own, unless otherwise indicated.

and cultural conceptualization, through a theorization of Négritude as a cultural and humanist system. It designates "the totality of the cultural values of the Black world" (Senghor, 1948) and asserts itself as "attitude" and "method", that is to say a relation to the world through a positive affirmation of African cultural values, reaffirmed and claimed in order to struggle against colonial alienation (Senghor, 1977). The Senghorian shift from lived experience to spirit, "negrity" rather than "negritude", indicates less a disagreement than a work of stabilization[17]. It aims to prevent the reappropriation of the stigma from becoming an identitarian naturalization, by orienting it toward a theory of culture, sensibility and the Universal. Césaire privileges critical deflagration; Senghor provides the concept with a structure capable of dialoguing with dominant philosophical frameworks, without dissolving into them. Finally, Léon Gontran Damas occupies a decisive role through a less doctrinal but conceptually central path, the exposure of alienation and colonial domination through incisive poetry and social critique, explicating Négritude as a lived experience, an open wound. The phrase "They taught me to hate my shadow" (Damas, 1937) reveals the moral core of the colonial stigma, inferiorization becomes internalized, and oppression shifts into the relation to self. In this sense, even without proposing a "definition" in the strict sense, Damas illuminates what Négritude combats, a production of subjects who experience themselves as strangers to themselves. Normative rehabilitation thus begins with the deactivation of this internalized hatred, the minimal condition for dignity to become affirmable. In addition, he writes in *Retour de Guyane* (1938), "It is a matter of relearning to be ourselves", thereby demonstrating his contribution and his intention to restore the integrity of the Black subject.

This internal plurality does not indicate incoherence, but the very structure of the concept. Négritude simultaneously articulates an identitarian dimension, to say "we" against dispersion, a cultural dimension, to rehabilitate denied values and historicities, and a normative dimension, to claim dignity and legitimacy. In order to formalize this point without anticipating the ontologico political analysis of Section 2.2, one may mobilize contemporary theories of recognition. Charles Taylor (1992) shows that the denial of recognition is not merely a symbolic offense, but a form of injustice that "wounds" subjects by rendering them socially illegitimate. Axel Honneth (1995), for his part, argues that social struggles are also struggles for forms of

[17] In *Ethiopiques No. 11* (1977), Senghor states: "It is an attitude and a method, once again, a spirit, which, significantly, is less a synthesis than a symbiosis of modernity and negritude. I say 'negritude' and not 'négritude' because it is about the Negro spirit rather than the Negro experience".

recognition indispensable to the moral integrity of individuals and groups. Without projecting their categories anachronistically onto Césaire, Senghor or Damas, these frameworks allow clarification of what the Negritudian gesture implicitly accomplishes, converting a category of humiliation into a principle of dignity, therefore into a condition of possibility for political claim. In other words, Négritude does not add "culture" to "politics", it requalifies the subject upstream, by contesting the colonial grammar that rendered its sovereignty unthinkable. In contemporary scholarship, this articulation between aesthetics, subjectivity and politics has been critically revisited. Bongie suggests that the "return of negritude" should not be understood as a naive rehabilitation, but as a renewed critical engagement with its historically situated attempt to reconfigure Black subjectivity within and against colonial modernity (Bongie, 2017).

It is here that the minimal link appears, to be posited without yet being developed, between rehabilitated dignity and conceivable sovereignty. Colonialism, as a system, does not merely deny rights; it denies the very quality of a subject capable of rights, of speech and of decision. Yet, if sovereignty is understood, within the general architecture of this research, as the collective capacity to speak, to project oneself and to self-govern, then the first condition of possibility of this sovereignty is the legitimacy of the subject who claims it. Négritude accomplishes precisely this work of legitimation. It reauthorizes a Black "we" as bearer of history, of values and of an intelligence of the world. This rehabilitation does not yet amount to a theory of subjectivation, which will be addressed in 2.2, nor to an institutional translation, reserved for 2.3, yet it renders possible a decisive proposition. If the "Black world" is no longer conceived as an object of tutelage but as a subject of history, then self-determination ceases to be an anomaly and becomes an intelligible and defensible claim. Négritude is thus understood as a semantic and normative operation. It removes from the stigma its function of disqualification and transforms it into the matrix of a political dignity. In this sense, it constitutes neither a simple slogan nor a cultural essence, it is an act of counter definition, through which the boundary between the human and the subhuman, between the political agent and the administered, is reconfigured, the minimal condition for sovereignty, subsequently, to be formulated as a requirement.

2.1.2 The transnational emergence of Négritude through the diaspora, intellectual exchanges and the Black Renaissance

Négritude does not emerge within a preconstituted African institutional space, but within a diasporic space of intellectual, artistic and political circulations. It takes shape in the

Paris of the 1930s, within a transnational Black sociability composed of students, writers and intellectuals originating from Africa, the Caribbean and the Afro American world. This diasporic configuration is decisive, it transforms a fragmented colonial experience into a shared consciousness, enabling the emergence of a common language of dignity and rehabilitation. Négritude thus appears as an intrinsically transnational phenomenon, produced by a circulation of ideas, aesthetic forms and narratives, rather than as the expression of a preexisting local tradition. As Césaire recalls, modern Black consciousness does not proceed first from a political institution, but from a global cultural awakening, inscribed within a diasporic dynamic linking Africa, the Caribbean and the Americas (Césaire, 1987).

Within this genealogy, the Harlem Renaissance constitutes the matrix moment. Emerging in New York during the 1920s and 1930s, it inaugurates an aesthetic reappropriation of Black dignity through literature, poetry, music and the arts. It marks the return of the Black voice into the Western public sphere, not as an object of observation, but as a creative subject. Césaire himself explicitly acknowledges this filiation when he evokes, in his *Discours sur la Négritude*, the existence of a "first Négritude" or "Black Renaissance" carried by Afro American writers, whom he cites as milestones of a transnational Black awakening (Césaire, 1987, p. 88). He sees in it not only a source of inspiration, but historical proof that Black peoples can produce an autonomous culture, think for themselves and reconquer their dignity in the face of racial hierarchies. Négritude therefore does not appear ex nihilo, it extends the Harlem Renaissance by inscribing it within a broadened diasporic horizon.

The writers of the Harlem Renaissance indeed inaugurate an aesthetic reconquest that prepares Négritude. Langston Hughes (1926) explicitly claims an autonomous Black aesthetic, refusing cultural assimilation, "We younger Negro artists… intend to express our individual dark skinned selves without fear or shame". Claude McKay inaugurates a combative tone, in *If We Must Die* (1919), he inscribes dignity in resistance against racial violence, transforming the experience of oppression into ethical affirmation, "If we must die, let it not be like hogs…". Countee Cullen (1925), for his part, interrogates the diasporic and identitarian tension between historical distance and African heritage, "What is Africa to me?", revealing the constitutive ambivalence of modern Black identity. Sterling Brown restores the Afro American popular voice within a poetics inspired by the blues, while Richard Wright (1937) calls for a socially responsible literature, rooted in contemporary Black experience. Together, these authors

produce a reconquest of voice, memory and image, which Césaire interprets as the first modern manifestation of a Black renaissance.

Thus, this "Black Renaissance", according to the Césairian reading, constitutes the internationalization of the Harlem Renaissance. It extends Afro American cultural affirmation to the entirety of the Black diaspora and prepares the emergence of Négritude as a conscious and transnational formulation of this taking of voice. Césaire describes this dynamic as a work of "restoration, rehabilitation and reintegration", a process through which Black peoples reconquer their dignity and reaffirm their historicity (Césaire, 1955). Négritude thus appears as the conceptual and philosophical translation of a broader aesthetic movement, where the Harlem Renaissance reaffirms the Black voice, Négritude formalizes its symbolic and political scope.

In this sense, this genealogy illuminates a central point, historically, the reconquest of sovereignty begins with aesthetics rather than with the institutional. This primacy of art and poetry is not contingent; it responds to the very nature of colonial domination, which first operates as confiscation of speech, image and imagination. Before being an administrative domination, colonialism imposes a symbolic hierarchy that dehumanizes, devalues and silences. Within this context, reconquest necessarily begins through symbolic reappropriation and art becomes the first terrain of contestation, because it enables the restoration of a presence, a memory and a capacity of expression. Thus, as Carrie Noland shows, Négritude is not only a literary production, but also a diasporic aesthetic practice through which emerges a lyrical form of Black subjectivity, shaped by voice, embodiment and mediated experience within modernist print culture (Noland, 2015).

It is nevertheless necessary to specify the analytical scope of this section. This is a genealogical analysis, demonstrating historically that Négritude arises within a diasporic space of intellectual and aesthetic circulations, and that symbolic reconquest precedes institutional politicization. This primacy of aesthetics must therefore not be interpreted as a theory, but as a historical fact, before being claimed as political sovereignty, Black dignity was first reaffirmed as aesthetic presence.

2.1.3 From Review to Congress: Négritude as the progressive construction of collective symbolic sovereignty

Then, Négritude becomes a durable collective movement only when it acquires an intellectual materiality. From a dispersed poetic revolt, it gradually transforms into a structured symbolic collectivity through the creation of journals, networks and transnational events. The issue is not yet political sovereignty, but the constitution of a Black public sphere, that is to say a space in which a collective voice can be produced, circulate and recognize itself.

The journal *L'Étudiant noir*, founded in Paris in 1935 by Aimé Césaire, Léopold Sédar Senghor and Léon Gontran Damas, constitutes the first moment of crystallization of this dynamic. It operates a decisive shift, from the poetic "I" to the collective "we". Within this still fragile space, the critique of assimilation progressively becomes politicized and Black consciousness ceases to be an individual experience in order to become a shared position. The journal does not yet produce a programme, but it creates a common scene of enunciation, the minimal condition of any symbolic collectivity. It thus gives form to what Benedict Anderson would later call an "imagined community", that is to say a collectivity that exists first through the sharing of signs, narratives and representations (Anderson, 1983). Négritude therefore begins as the production of a symbolic bond, not as a political organization.

This process finds its real deepening with the founding in 1947, in Paris, of the journal *Présence Africaine* by Alioune Diop. This cultural, literary and political journal enables Négritude to acquire for the first time a durable intellectual infrastructure, by establishing itself as a decisive platform of diffusion. Indeed, this journal contributes to the construction of a transnational space linking Africa, the Caribbean, the Afro American diaspora and engaged European intellectuals. It thus becomes a locus of legitimation of Black voice, where a common intellectual memory progressively forms by decolonizing knowledge and challenging hierarchies imposed by colonial Europe. Diop explicitly conceives this project as an enterprise of symbolic presence, "It is a matter of having Africa recognized as a subject of civilization" (Diop, 1955). Négritude is no longer merely an awakening of consciousness, but a work of visibility, circulation and recognition.

The role of Diop is here decisive, he emerges as an institutional architect, a unifier and a disseminator of a Black intellectual space. Through *Présence Africaine*, he transforms a sensibility into a network, a voice into a polyphony and a revolt into a durable movement. The journal rapidly becomes a major platform for the diffusion of anticolonial thought and welcomes both the writers of Négritude and allied thinkers such as Jean Paul Sartre or Claude Lévi Strauss. From the 1950s onward, it is complemented by a publishing house that releases

foundational texts such as *Discours sur le colonialisme* (Césaire, 1950) or *Les Damnés de la terre* (Fanon, 1961), thereby contributing to structuring a Black intellectual space on a global scale.

This dynamic reaches a moment of international visibility with the organization of the Congresses of Black Writers and Artists (Paris, 1956; Rome, 1959). These meetings do not yet produce an institutional programme, but they mark the emergence of a structured transnational Black consciousness, representing essential moments in the formulation of a Pan-African intellectual solidarity. Diop emphasizes during the first congress the necessity for Africa to reinscribe itself within global cultural universality, not through assimilation, but through its own contribution, indicating that Négritude aims first at symbolic recognition, not at state sovereignty. These congresses thus stabilize a transnational cultural sovereignty, understood as a collective capacity to speak, to represent oneself and to produce meaning.

This evolution may be interpreted as the progressive formation of a Black public sphere. Without directly projecting Habermasian theory, the comparison remains heuristic, like the bourgeois public sphere analyzed by Habermas, Négritude produces a space of discussion, circulation and formation of collective opinion (Habermas, 1962). Nevertheless, this space is constituted within a colonial and diasporic context, which profoundly distinguishes it. It does not rest upon political institutions, but upon intellectual and cultural networks. Achille Mbembe has shown that postcolonial formations often involve the production of alternative public spheres, where collective subjectivities are forged prior to any institutional translation (Mbembe, 2001)[18]. Négritude is inscribed within this logic, it produces a symbolic collectivity before any political sovereignty.

To this extent, it is important to underline the precise scope of this process. Négritude does not yet construct a structured political project; it institutes a community of meaning, establishing itself as an intellectual defense of the African subject within global humanism. Journals, networks and congresses constitute infrastructures of symbolic production, through which a collective Black voice becomes visible, audible and legitimate. This sovereignty remains discursive and cultural, it concerns the capacity to represent oneself as a collective subject, not the capacity to exercise institutional power. The distinction is essential. Whereas Section 2.3

[18] Achille Mbembe does not theorize the "public sphere" in the Habermasian sense. Rather, in *On the Postcolony* (2001) he analyzes forms of *public culture*, the production of the political beyond liberal-institutional frameworks, and the plurality of symbolic spaces through which postcolonial subjectivities and modes of collective expression are constituted.

will analyze the political and institutional translation of this subjectivation, the present section merely shows how an intellectual revolt becomes a durable symbolic collectivity.

Thus, genealogical analysis has shown how Negritude constitutes itself as a symbolic and normative matrix, transforming a diasporic revolt into collective symbolic sovereignty. But this conceptual reconstruction only takes on its full significance when we examine what it accomplishes at the deepest level: not just how Négritude is formed, but how it re-humanizes, reconfigures being, and makes political subjectivation possible once again.

2.2 Decolonising the human being to become a subject once again: Négritude as a political counter-ontology

After establishing the intellectual genealogy of Négritude as a concept of dignity and as the construction of a collective symbolic sovereignty, it is now necessary to shift its centre of gravity. No longer to explain how it forms historically, but what it accomplishes philosophically. Chapter I has shown that colonialism is reducible neither to exploitation nor to administration, it rests upon an ontological denial and violence, which classifies, morally disqualifies and renders the Black subject politically unthinkable, deemed without history, without legitimate speech and without capacity for decision. Within the framework of this analysis, the operation by which Négritude overturns these colonial criteria of the human and reconfigures the very conditions of subjectivity is called a political counter ontology, in order to render once again conceivable a future sovereignty, without yet addressing its institutional translation (2.3).

We will first demonstrate how Négritude operates a rehumanization, it dismantles reification and restores the colonized as a historical subject, capable of memory, projection and collective responsibility, the minimal condition of any political subjectivation (2.2.1). We will then examine the reappropriation of speech, of the sensible and of the imaginary as a technology of subjectivation, while rigorously integrating critiques of essentialism, culturalism and indeterminacy in order to preserve its normative scope, not an essence, but a situated strategy of reconquest of the political subject (2.2.2).

2.2.1 Rehumanising to subjectivise: Négritude as the ontological reconquest of the black subject

If the previous chapter highlighted the colonial denial of political being, it is now necessary to theorize Négritude as an operation of ontological rehumanization. The central analytical issue therefore consists in explaining how Négritude dismantles this ontological negation by restoring the Black subject as a historical subject, that is to say as a being capable of memory, projection and collective responsibility. This rehumanization is equivalent neither to an identitarian exaltation nor to an essentialist ontology, it constitutes a condition of possibility of political subjectivation, prior to any claim to sovereignty.

Indeed, as previously analyzed, colonialism does not merely exploit or administer; it produces a type of being. It generates a minorized subject, deprived of legitimate history, morally disqualified and deemed incapable of political action. Aimé Césaire describes this process as an enterprise of reification and dehumanization, a system that transforms the colonized into a thing, “My turn to state an equation: colonization = reification” (Césaire, 1955, p. 23). Colonial denial is therefore first ontological, it does not merely deprive of rights, it negates the very quality of a subject capable of memory, of speech and of decision. Frantz Fanon deepens this diagnosis by showing that colonial domination also operates through internalization, the colonized comes to perceive himself through the devaluing gaze of the colonizer, which produces a profound alienation of the relation to self (Fanon, 1952). Colonial violence is thus a violence upon being, which dehistoricizes, dehumanizes and politically disqualifies.

It is therefore against this ontological negation that Négritude unfolds. It does not primarily constitute a political programme nor a simple identitarian claim, but an operation of rehumanization. In Césaire (1955), this reconquest proceeds through a “rupture with alienation”, a reinvention of being through which the colonized subject reappropriates his history, his dignity and his capacity for meaning, what he describes as a necessary repossession of the self in the face of colonial dehumanization. Négritude is thus not a nostalgic return to an idealized African past, but an existential reconquest of the subject, an inner decolonization prior to any political decolonization. It dismantles the colonial fiction of a Black subject without history, without rationality and without political capacity, and restores the possibility of a historical subject.

This process of rehumanization takes distinct inflections according to the founders of the movement. In Césaire and Damas, Négritude assumes a dimension of rupture. It is revolt against colonial negation and unveiling of alienation. Damas (1956), in *Black-Label*, expresses this reconquest as a reversal of stigma by affirming a lucid Black consciousness in the face of

colonial alienation. Rehabilitation begins with the deactivation of internalized inferiorization. In Senghor, Négritude is oriented more toward a humanist rehabilitation. It affirms the universal value of African cultures and their contribution to what Senghor calls a "civilization of the universal", that is to say a universal composed through the encounter of cultures. In this sense, he develops the idea of a métissé humanism; for him, Négritude must lead to an egalitarian dialogue, not necessarily to an immediate political rupture with France (Senghor, *Liberté II*, 1971). Moreover, Senghor supports the definition of Négritude as openness to the universal and participation in the civilization of the universal (Senghor, *Liberté I*, 1964). This universalist perspective, sometimes criticized by Fanon (1952; 1961) for its risk of essentialization and premature harmonization, nonetheless constitutes a reaffirmation of the human against colonial hierarchy. In Senghor as in Césaire, Négritude does not aim to essentialize race, but to restore a human dignity denied by the colonial order.

The scope of this rehumanization is decisive. A people cannot claim to dispose of itself unless it can recognize itself, and be recognized, as a historical subject. Négritude operates precisely this displacement. It transforms a colonized population into a potential subject of its own history. It does not yet produce an effective political sovereignty, but it renders it conceivable. By affirming that Black peoples possess their own history, their own sensibility and their own vision of the world, it creates the intellectual and moral conditions from which self-determination becomes an intelligible claim. It is in this sense that Négritude contributes to the affirmation of the right of peoples to self-determination, not first on the juridical plane, but on that of ontological and symbolic recognition.

This reconstruction of the subject may also be illuminated by contemporary theories of recognition. Axel Honneth shows that the denial of recognition constitutes a moral injustice that hinders the integrity of the subject (Honneth, 1995), while Charles Taylor underlines that recognition is a condition of political legitimacy (Taylor, 1992)[19]. Without anachronistically projecting these frameworks onto Négritude, they make it possible to explicate what it implicitly accomplishes, transforming a disqualified existence into a morally and politically legitimate subject. Négritude is thus understood as a counter ontological operation, restoring the very possibility of a subject capable of acting in history.

[19] Taylor and Honneth's frameworks are used here as conceptual tools: the aim is not to assert that Négritude "applies" a theory of recognition, but to formalize philosophically what the Negritude movement implicitly produces (moral rehabilitation, political legitimization).

Finally, even though Négritude does not yet constitute a political or institutional project, it enables an ontological transformation. By rehabilitating the colonized subject and dismantling the fiction of his incapacity, it renders sovereignty conceivable without yet realizing it. This passage, rehumanization, subjectivation, possibility of sovereignty, thus constitutes the minimal conceptual threshold from which political claim becomes conceivable.

2.2.2 Symbolic reappropriation of speech, the senses and the imagination: political power and internal tensions within Négritude

Henceforth, the task is to demonstrate to what extent the poetics of Négritude is neither an aesthetic detour nor a cultural compensation for the absence of power, but a concrete ontologico political strategy aimed at dismantling colonial domination precisely where it was first exercised. Furthermore, this analysis also seeks to address rigorously the internal critiques directed at Négritude, essentialism, culturalism, political indeterminacy, not in order to disqualify them, but to show that they reveal the strategic, situated and transitional character of Négritude, not a fixed ontology, but a necessary stage in the reconquest of the political subject.

2.2.2.1 Symbolic reappropriation as a condition of political subjectivation

If the previous section established rehumanization as the minimal ontological threshold, it is now necessary to clarify its mechanism by demonstrating that poetics imposes itself as a technology of political subjectivation. Indeed, political subjectivation first proceeds through a symbolic reappropriation of speech. Colonialism does not merely exercise material domination; it institutes a discursive expropriation, by defining who may speak, with what legitimacy and within which categories. The colonized is thus "spoken" by the colonial order before being administered, assigned to an identity of object rather than subject (Fanon, 1952). In this context, Négritude first operates a linguistic reconquest, it reauthorizes Black speech as a legitimate speech about the world.

In Césaire, this reconquest proceeds through a subversion of the colonial language itself. Poetry becomes, in his formulation, a "miraculous weapon", not in the metaphorical sense of embellishment, but as an instrument of reappropriation of reality (Césaire, 1947). Damas, through syntactic rupture and repetition, destabilizes the imposed language by exposing internalized alienation, transforming language into a site of unveiling. Senghor, for his part, rearticulates language through rhythm and emotion, which he conceives as original modes of

access to the world, affirming that "emotion is Negro as reason is Hellenic" (Senghor, 1964, p. 24). Far from opposing irrationality and rationality, this formulation aims to contest the colonial monopoly of a supposedly universal rationality, by rehabilitating other forms of knowledge, sensitive, relational and embodied. Poetic speech thus becomes the locus of emergence of a subjectivity capable of speaking itself and recognizing itself, breaking with the position of object assigned by colonial discourse. The common point is not aesthetic but political, Black speech ceases to be the object of colonial discourse and becomes the subject of discourse.

This reappropriation is decisive for sovereignty. Without an autonomous capacity of nomination, to articulate needs, to formulate priorities, to define a collective horizon, no self-determination is possible. Ngũgĩ wa Thiong'o shows that colonial domination is exercised not only through material coercion, but also through the imposition of a language that restructures the mental, cultural and symbolic universe of the colonized (Ngũgĩ, 1986)[20].

Symbolic reappropriation does not concern speech alone; it also involves the sensible and the imaginary. Négritude does not reject reason, but contests the colonial monopoly of an instrumental, utilitarian and hierarchizing rationality. By rehabilitating rhythm, emotion and community, Senghor affirms that sensible experience constitutes a legitimate mode of apprehending the world, not an irrationality (Senghor, *Éthiopiques*, 1956; *Liberté I*, 1964). This rehabilitation does not refer to a biological essentialism, but to a critique of the colonial reduction of the human to efficiency and extraction. In Césaire (1947), poetry is an act of existential reappropriation, it restores a self-image destroyed by colonial domination. Thus, Négritude responds to this dispossession by reactivating memory, pride and a collective horizon. Yet the imaginary is not an aesthetic supplement, it conditions every capacity for projection. Without a collective imaginary, there is neither planning, nor common orientation, nor conceivable sovereignty. Symbolic reappropriation therefore constitutes a condition of possibility of any subsequent political autonomy.

2.2.2.2 Internal tensions and critiques, a strategy, not an essence

The ontologico political scope of Négritude does not exclude its internal tensions. Several critiques, essentialism, culturalism, political indeterminacy, have been formulated, notably by Fanon and certain Marxists. Fanon reproaches some formulations of Négritude for

[20] "The domination of a people's language by the languages of the colonising nations was crucial to the domination of the mental universe of the colonized" (Ngũgĩ, 1986, p. 16).

risking to fix “Black being” in a substantial identity, transforming a moment of revolt into a definitive ontology (Fanon, 1961). However, this critique does not disqualify Négritude; it reveals its strategic function. As several postcolonial analyses have shown, Négritude must not be understood as a cultural essence, but as a historical response to the colonial disqualification of the subject, aiming to reconstruct the conditions of enunciation and recognition (Mudimbe, 1988; Mbembe, 2001)[21]. It constitutes a stage in the reconstruction of the subject, not a closed ontology.

Moreover, a second critique concerns culturalism. Négritude has sometimes been interpreted as a primarily symbolic response to a material problem, insufficiently attentive to the economic and political structures of domination. An objection of this type appears, more generally, in Amílcar Cabral’s reflection on the limits of a cultural nationalism dissociated from the material transformation of relations of power. Cabral indeed underlines that, although culture constitutes an essential dimension of resistance, it cannot alone produce political and social emancipation (Cabral, 1973). It is correct that Négritude formulates neither a systematic economic programme nor an institutional doctrine of sovereignty. Nevertheless, this limitation must be analytically requalified. As contemporary theories of recognition indicate, political structures cannot stabilize without a prior reconstruction of the moral and symbolic subject (Taylor, 1992; Honneth, 1995). Négritude intervenes precisely at this prior level, it restores the capacity to recognize oneself as a historical subject and as a legitimate bearer of a common world. Institutional translation, State, panafricanism, effective sovereignty, belongs to another historical moment. It is therefore not an intrinsic weakness, but a differentiation of the temporalities of political formation. Such a reading remains compatible with the analyses of Achille Mbembe (2001), for whom, in postcolonial contexts, the political is often constituted through symbolic, historical and discursive processes that precede its institutional stabilization.

Finally, the political indeterminacy of Négritude and the tensions between Césaire, Senghor and Damas do not constitute an incoherence but a normative openness. Where Césaire privileges rupture, Senghor emphasizes dialogical humanism, and Damas the denunciation of alienation, Négritude does not produce a single doctrine but a space of requalification of the

[21] Mudimbe and Mbembe do not explicitly theorize Negritude as a “process of subjectivation.” Rather, Mudimbe analyses the colonial production of knowledge about Africa and the conditions under which an African subject can speak and be recognized (Mudimbe, *The Invention of Africa*, 1988), while Mbembe examines the historical production of subjectivities within colonial and postcolonial formations (Mbembe, *On the Postcolony*, 2001). Their work is mobilized here as a conceptual framework to interpret Negritude as a historically situated response to colonial epistemic and ontological disqualification, rather than as a fixed cultural ontology.

subject. It does not yet provide an exercised sovereignty, but renders its intelligibility possible, by reconfiguring the very criteria from which a subject may be recognized as capable of political autonomy (Young, 2011).

Understood in this way, the poetics of Négritude appears as an ontologico political strategy, indispensable to subjectivation, yet insufficient on its own. It does not found the institution, but it makes possible the subject capable of founding it. The political struggle comes afterward, yet it takes root in this symbolic reconquest of speech, memory and the imaginary.

Négritude thus appears as an ontological-symbolic condition of subjectivation, making sovereignty conceivable by rehabilitating the subject capable of expressing and projecting itself. However, a conceivable sovereignty is not yet a claimable or practicable sovereignty; the challenge then becomes to understand how this subjectivation translates into a political project of self-determination, then into a demand for institutional capacities, through the intervention of Pan-Africanism.

2.3 From ontological reappropriation to political capacity: Pan-Africanism as the institutional translation of Négritude

After having shown, in 2.2, how Négritude dismantles the ontological denial and refounds the conditions of possibility of a political subject, it is now necessary to explain what this subjectivation becomes when it seeks to extend itself into political history. This section performs a precise displacement, moving from a sovereignty rendered thinkable through symbolic reappropriation to a sovereignty rendered claimable, then progressively practicable, through the mediation of Pan-Africanism. Pan-Africanism is here understood, in its classical theoretical meaning, as a political and intellectual doctrine of unity, solidarity and self-determination of African peoples and of the diaspora, aiming to overcome colonial fragmentation in order to constitute a collective capacity to master historical destiny (Du Bois, 1947; Nkrumah, 1963). It therefore does not designate merely a cultural or diasporic consciousness, but a political project oriented toward the conquest, organization and exercise of collective power. The objective is thus a conceptual reconstruction of the chain of translation, subjectivation, self-determination, institutions, the possibility of a material sovereignty. It should nevertheless be specified that this is an analytical reconstruction of the conditions of possibility and of dominant translations, not of a necessary, linear or uniform historical sequence.

We shall first demonstrate how Pan-Africanism inherits from Négritude while simultaneously surpassing it, it converts a transnational consciousness and a rehabilitated dignity into a political project of unity and collective self-determination (2.3.1). Then, we shall establish that self-determination acquires substance only by equipping itself with institutional capacities, a condition of any effective sovereignty, and the logical threshold from which strategic resources such as energy become conceptually matters of material sovereignty (2.3.2).

2.3.1 From ontological awakening to political project: Pan-Africanism as heir to and successor of Négritude

The passage from Négritude to Pan-Africanism does not stem from a simple historical continuity nor from a mechanical succession, but from a normative and political translation. Whereas Négritude reconstructed the Black subject as a legitimate moral and historical subject, Pan-Africanism converts this subjectivation into a demand for collective self-determination. The rehabilitated dignity here becomes a political principle, if a people recognizes itself as a subject of history, it must be able to govern itself. In other words, Négritude renders sovereignty thinkable; Pan-Africanism renders it claimable. This translation unfolds in the shift from an ontological recognition to a demand for political organization, where the question is no longer merely “who are we?” but “how do we govern ourselves?”.

This normative continuity appears clearly in the Pan-Africanist formulation of self-determination. In Kwame Nkrumah, colonial emancipation cannot be complete without political unity and a collective capacity for self-government. In *Africa Must Unite*, he affirms that political independence is devoid of meaning without African unity (Nkrumah, 1963). The stake is therefore not only the end of colonial domination, but the construction of an autonomous political capacity at the continental scale. Likewise, in *Consciencism*, Nkrumah insists on the necessity for Africa to constitute a collective political and historical consciousness capable of orienting its own development (Nkrumah, 1964). Pan-Africanism thus appears as the explicit political translation of a Black subjectivity already rehabilitated at the ontological level, political unity becomes the condition for the collective mastery of historical destiny.

This transition also implies a change of scale. Négritude had produced a symbolic transnational “we”; Pan-Africanism seeks to transform this “we” into an organized political subject. It is not a mere geographical extension, but a reconfiguration of the political meaning of Black consciousness. As W.E.B. Du Bois and George Padmore have shown, Pan-Africanism does not

refer solely to a diasporic cultural solidarity, but to a political project of collective emancipation grounded in unity, solidarity and collective liberation (Du Bois, 1947[22]; Padmore, 1956). This scaling up does not yet produce effective institutions, yet it formulates the demand for their construction. In this sense, Pan-Africanism transforms a diasporic consciousness into a strategic horizon, it shifts subjectivity from the symbolic register to the political register.

In this sense, the analytical distinction between Négritude and Pan-Africanism is here essential. The former pertains to a political counter ontology, it rehabilitates the Black subject as a moral and historical subject. The latter constitutes a political doctrine of unity and self-determination, it aims at the conquest and organization of power. Pan-Africanism does not replace Négritude, it performs its political translation. Such a distinction may be compared, for heuristic purposes, with the analysis proposed by Partha Chatterjee, according to which, in several colonial contexts, the formation of an autonomous cultural subjectivity historically precedes the elaboration of a collective political project, without this succession being necessary, linear or universal (Chatterjee, 1993). What is offered here is therefore an analytical reconstruction of conditions of possibility, not the assertion of a uniform historical sequence. The contribution of Frantz Fanon helps to illuminate this moment of political conversion. In *Les Damnés de la terre*, he shows that ontological de-alienation constitutes only a stage, the reconquest of the subject must translate into organized political struggle, otherwise it remains incomplete (Fanon, 1961). Fanon thus emphasizes the necessity of a passage from consciousness to organization, from identity awakening to national liberation. This point does not contradict Négritude, but reveals its strategic incompleteness, symbolic rehabilitation prepares political struggle, without substituting for it.

In Senghor, this political translation takes a more ambivalent form. Négritude, conceived as universal humanism and dialogue of cultures, does not exclude political sovereignty, yet it modulates its temporality and its form. In his writings on African socialism and the nation, Senghor affirms that cultural affirmation must lead to an autonomous political organization, capable of inscribing Africa within world history as a subject and not as a periphery (Senghor, 1971). In Senegal, Négritude thus participates in the construction of the nation state and in the legitimation of an African presence on the international stage. It serves as a symbolic resource

[22] Du Bois does not formulate a fully systematic doctrine of political Pan-Africanism in *The World and Africa* (1947). His analysis primarily reconstructs the historical unity and global significance of Africa and the Black world, while supporting anti-colonial emancipation and international Black solidarity. The interpretation adopted here reads his later work as contributing to a broader political understanding of Pan-Africanism, in conjunction with more explicitly programmatic formulations developed by figures such as George Padmore.

to refound collective esteem and to sustain political construction. Nevertheless, the Senghorian perspective differs from the Pan-Africanist radicalism of Nkrumah, indeed, where the latter privileges continental political unity, Senghor emphasizes a dialogical humanism and the coexistence between national sovereignty and cultural universality. This tension is not contradictory but structuring, it shows that the political translation of Négritude is neither homogeneous nor univocal.

One may therefore understand the relation between Négritude and Pan-Africanism as a strategic complementarity. Négritude operates at the level of being; Pan-Africanism operates at the level of power. This articulation makes it possible to transcend the opposition between culture and politics. Symbolic rehabilitation is not a substitute for political action, but its condition of possibility. As suggested by contemporary historical analyses of Pan-Africanism, emancipation involved both cultural reconstruction and political organization, although these dimensions were historically intertwined rather than theoretically systematised (Adi, 2018). Finally, Marzagora argues that African intellectual traditions cannot be reduced to postcolonial or poststructuralist categories, but rather articulate what she calls a "humanism of reconstruction," oriented toward rebuilding political agency and historical futurity (Marzagora, 2016).

2.3.2 From political self-determination to institutional sovereignty: conditions for the possibility of material sovereignty

Political self-determination, as articulated in the Pan-African project, does not in itself constitute an effective sovereignty. It acquires real substance only when it is translated into institutional forms capable of exercising a durable authority over territory, administration and collective resources. In other words, juridical independence is not sufficient; without organizational structures, self-determination remains nominal. Sovereignty truly begins when the political claim is endowed with institutional means enabling it to decide, to plan and to control over time. An institutionalized self-determination does not yet guarantee a full sovereignty, yet it renders possible a potentially effective sovereignty, that is, the real, although conditioned, capacity to orient collectively political and material becoming.

This distinction refers to a non-essentialist conception of sovereignty. As Stephen Krasner shows, sovereignty does not constitute a homogeneous state but a differentiated set of forms of authority and control, often unevenly realized (Krasner, 1999). Likewise, Allen Buchanan emphasizes that political legitimacy becomes operative only through institutions capable of

sustaining the durable exercise of collective authority (Buchanan, 2004). Thus, sovereignty cannot be reduced to a formal right to decide, but presupposes the institutional capacity to make decision effective.

The central conceptual passage may therefore be formulated as follows; subjectivation, self-determination, institutional capacity, material sovereignty. Whereas Négritude reconstructs the subject, and Pan-Africanism formulates a political demand for autonomy, sovereignty becomes operative when this demand is embodied in administrative, juridical and organizational capacities. Sovereignty is therefore not merely a principle, but a practice. Indeed, it is measured by the capacity to produce durable effects upon reality. As Michael Mann indicates, modern political power does not rest solely upon episodic authority, but above all upon "infrastructural power," that is, the capacity of the state to penetrate society and to implement continuously its political decisions (Mann, 1984). From this perspective, effective sovereignty depends closely upon the solidity of administrative and organizational capacities that enable political authority to generate durable effects upon reality.

Material sovereignty, in this perspective, does not primarily refer to the possession of resources, but to the institutional mastery of their use. Margaret Moore shows that territorial sovereignty implies not only a juridical right, but an effective political capacity to exercise authority over territory and over the resources located within it (Moore, 2015). Likewise, Susan Strange underlines that contemporary political power largely resides in the capacity to structure markets, to orient production and to control strategic resources, rather than in formal juridical authority alone (Strange, 1988)[23]. From this standpoint, material sovereignty may be understood as dependent upon institutional capacities of planning, regulation and economic organization. Energy, mobilized here as a paradigmatic example, illustrates this requirement. Its control requires durable infrastructures, long term planning and a regulatory capacity that only stable institutions can sustain. Material sovereignty thus appears as a conscious institutional construction, and not as a spontaneous effect of independence or of the market.

Nevertheless, sovereign potentiality remains conditioned. The institutionalization of self-determination does not mechanically produce an effective sovereignty. Structural, economic,

[23] Moore does not develop a theory of "material sovereignty" as such. Her argument concerns territorial authority, understood as both a normative right and an effective political capacity to exercise jurisdiction over land and the resources located within it (Moore, *A Political Theory of Territory*, 2015). The interpretation adopted here extends this insight analytically to the question of material sovereignty. Likewise, Susan Strange does not theorise sovereignty directly, but structural power, the capacity to shape markets, production and control key resources (*States and Markets*, 1988). Her framework is mobilised here to illuminate the institutional and structural conditions under which material sovereignty becomes possible.

technological and geopolitical constraints may limit the real capacity for action, even in the presence of formal institutions. As Samir Amin and Claude Ake have emphasized, postcolonial political autonomy depends not only on state construction, but on the capacity to orient development, to master strategic sectors and to reduce structural dependencies (Amin, 1990; Ake, 1996). Potentially effective sovereignty therefore designates a conditional horizon, it presupposes institutions, but also a material and economic environment enabling their operativity. Finally, Tembo argues that African postcolonial thought requires an epistemic decolonial turn grounded not only in critique but also in the reconstruction of political agency and material capacity. While not formulating a theory of sovereignty as such, his argument reinforces the present claim that political autonomy must be understood in terms of effective capacity rather than formal status (Tembo, 2022).

This reading converges with the idea according to which postcolonial sovereignty constitutes a process of political construction rather than an automatic acquisition of independence. This perspective resonates with analyses of postcolonial political formation that treat sovereignty not as an automatic consequence of independence but as a historically constructed process. Chatterjee emphasizes that postcolonial projects seek to produce a specific political autonomy through the gradual reconstruction of collective capacities, whereas Mbembe highlights that exiting the colonial condition requires rebuilding forms of political organization capable of sustaining collective action over time (Chatterjee, 1993; Mbembe, 2010).

This section intends neither to evaluate the historical trajectories of postcolonial states, nor to analyze concrete sectoral policies. It establishes only a conceptual threshold: without durable institutional capacities, sovereignty remains abstract. Self-determination acquires practical significance only when it transforms into organized power. It is upon this foundation, institutionalization of decision, planning, control, that the first national policies may unfold after independence, particularly within strategic sectors such as energy. Material sovereignty therefore does not constitute a simple extension of political independence, but the effect of a conscious institutional construction, a condition of possibility for any durable mastery of collective resources.

This second chapter has shown that sovereignty does not arise primarily from institutions, but rather from the reconstruction of the political subject. Through Negritude and

then Pan-Africanism, historical awareness and the demand for self-determination gradually formulated the normative conditions for effective sovereignty, understood as decision-making autonomy, institutional capacities, and control over resources. However, sovereignty remains abstract until it is embodied in concrete mechanisms of government. The challenge then becomes that of its practical translation. It is precisely this articulation that the following chapter focuses on: transposing this conceptual framework to the analysis of a strategic sector, energy, in order to examine how, in Senegal, sovereignty has historically been constructed as a capacity for public action, institutionalized, planned, and exercised in an environment of regional and international interdependencies.

CHAPTER III – The development of energy policy in Senegal and the rise of energy sovereignty within a framework of regional interdependence and multi-level governance (1960-2030+)

The energy question now imposes itself as a central issue of public action, at the intersection of security of supply, economic development and sustainability requirements. In a context of increasing interdependence, of regionalization of infrastructures and of framing by international norms and financing, energy asserts itself as a genuine field of government. This chapter therefore proposes to analyse the construction of energy policy in Senegal as a process of progressive institutionalization of energy sovereignty, understood not as immediate material autonomy, but as a capacity of public action: to organize, to plan, to regulate and to orient the sector within an environment of structured interdependences.

The thesis advanced is that Senegalese energy sovereignty results from a cumulative institutional process through which the state has progressively constituted energy as a governable domain. This capacity was first built through the administrative and organizational appropriation of the sector, then unfolded within regional frameworks of functional cooperation, before consolidating itself in a more operational form through the structuring of the mix, the mobilization of national resources and the strategic formalization of public priorities. It is nonetheless exercised within a multi-level governance, where national frameworks of public action coexist with regional norms of harmonization, interconnected infrastructures and international regimes of financing and sustainability.

Within this perspective, we shall retrace the progressive construction of energy sovereignty between 1960 and 2029, by analysing successively its post-independence institutional anchoring, its regional projection and its contemporary operational consolidation (3.1). Then, we shall examine the juridical and instrumental foundations of this capacity, by showing how the articulation between law, planning and regulatory mechanisms structures the governance of the sector and confers upon the state a capacity of ordering and steering energy public action (3.2).

3.1 The gradual development of energy sovereignty in Senegal (1960–2029)

The study of Senegalese energy policy over the long term makes it possible to apprehend energy as a structuring field of public action and an indicator of the state's capacity to organize and orient development. In a post-independence context marked by strong material constraints, energy sovereignty did not emerge as an immediate autonomy of production, but rather as a gradual process of institutional, infrastructural and strategic consolidation. It therefore refers primarily to the capacity of the state to organize and steer the energy sector, rather than to a complete material independence.

Accordingly, this analysis of the period 1960–2029 highlights a cumulative trajectory in the formation of this capacity. It first examines the emergence of an institutional sovereignty grounded in the nationalization of energy decision making and the structuring of a public apparatus (3.1.1), then its functional regionalization through the Organisation for the Development of the Senegal River (OMVS) and the Manantali complex, based on the pooling of infrastructures and intergovernmental governance (3.1.2). Finally, it analyses the consolidation of a more operational sovereignty since the 2010s, marked by the diversification of the mix, the integration of national resources and the strategic formalization of energy orientations (3.1.3). This section remains deliberately synthetic. Its purpose is to identify the structuring lines of the historical formation of energy sovereignty without anticipating the in depth analysis of the energy transition in Senegal, which will be developed in greater detail in Part II.

3.1.1 The emergence of a national energy policy and the first forms of institutional sovereignty (1960–1980)

Between 1960 and 1980, Senegalese energy sovereignty did not manifest itself primarily as material autonomy, but rather as a nationalization of decision making and the gradual institutionalization of a field of public action, marking the end of French tutelage. Independence, in 1960, transferred to the state the authority to define investment priorities, to organize the public service and to legally regulate the production and distribution of energy, even within a context of limited technical resources. Energy sovereignty thus initially appeared as a juridical and administrative sovereignty, that is to say the capacity to produce rules, to stabilize an operational framework and to structure a sector henceforth governed by national authorities (SENELEC, n.d).

This sovereignty in principle subsequently materialized through the construction of a public energy apparatus and through the incorporation of electricity into development policies. Within the logic of the post-independence developmental state, energy was conceived as a strategic infrastructure of economic modernization and territorial integration. As analysed by Samir Amin, postcolonial states sought to control strategic sectors in order to orient the conditions of national accumulation and to reduce their structural dependence (Amin, 1973). Administrative centralization, the structuring of public operators and planning thus reflected a will of political appropriation of the sector. This dynamic converges with Jean François Bayart's analysis according to which state formation in Africa rests upon the gradual consolidation of administrative apparatuses and the production of governmental instruments capable of organizing strategic sectors (Bayart, 1989). Energy thereby became a technology of the state, to govern meant to equip, to hierarchize investments and to secure the supply of economic centres, by articulating electricity, industrialization and territorial planning (République du Sénégal, 1961; 1971).

However, this sovereignty remained predominantly organizational. Dependence on imported fuels and equipment, the urban concentration of electrification and budgetary constraints limited effective autonomy. Decision making capacity existed, yet its material translation remained conditioned by structural dependencies, a situation characteristic of postcolonial economies as analysed by the political economy of development (Amin, 1973). The period 1960–1980 thus witnessed the emergence of an implicit energy policy, still only weakly formalized strategically, yet already identifiable, enabling the supply of productive centres, supporting industrialization and affirming state competence over a key sector of development.

Energy sovereignty consequently appeared as a capacity of organization and government, preceding any later material consolidation.

3.1.2 Securing supplies and functional regionalisation – OMVS (1980–2000)

At the turn of the 1980s, Senegalese energy policy entered a new phase, marked by an awareness of the structural limits of the national thermal model. The growth of electricity demand, dependence on imported fuel oil and vulnerability to oil shocks revealed the unsustainability of a system heavily reliant on imported fuels, a situation characteristic of many African electricity systems dominated by thermal generation and exposed to international price shocks (IEA, 2019). In this context, energy regionalization emerged as a functional response to material constraints. The creation of the Organisation for the Development of the Senegal River (OMVS) thus instituted an unprecedented form of intergovernmental governance, based on the coordinated management of a shared resource and on the collective planning of structuring infrastructures (OMVS, n.d.).

Within this perspective, the Manantali hydroelectric complex constituted a major institutional turning point. Conceived as the first regional large scale electricity generation system, it was accompanied by the creation of the Manantali Energy Management Company (SOGEM), the interconnection of Malian, Mauritanian and Senegalese networks, and a contractual framework for the allocation of electricity among member states (SOGEM, s.d.). The infrastructure thereby became a material support of regional energy sovereignty, it enabled Senegal to stabilize part of its supply, to partially reduce its dependence on imported fuel oil and to integrate hydropower into its long-term national planning (AfDB, n.d.). This dynamic illustrates a transformation in the mode of exercising sovereignty. Rather than being diluted, it was reconfigured as a collective capacity to organize, finance and govern critical infrastructures beyond the national scale. As indicated by analyses of African energy systems, regional power pools allow countries with limited national capacities to improve security of supply through the pooling of generation and transmission infrastructures (IEA, 2019).

The OMVS experience thus inaugurated a durable functional regionalization, based on the pooling of water resources, the sharing of investment costs and the predictability of hydroelectric production within national energy planning. It foreshadowed subsequent dynamics of West African electricity integration, notably the interconnection logic promoted by the West African Power Pool (WAPP) and the gradual incorporation of energy into the

regional architecture of Economic Community of the West African States (ECOWAS). The period 1980–2000 therefore marked the transition from a strictly national energy sovereignty to a regional functional sovereignty, in which the securing of supply rested upon intergovernmental arrangements and upon shared governance of strategic infrastructures.

3.1.3 Diversification of the mix and structuring of the operational sovereignty (2010–2029)

From the 2010s onward, Senegalese energy policy entered a phase of operational consolidation characterized by the explicit reconfiguration of the energy mix as an object of public planning. Confronted with the rapid growth of demand linked to urbanization, industrialization and the expansion of access, as well as with the persistent limits of a thermal model dependent on imports, the state adopted a diversification strategy integrating hydropower, solar, wind and, more recently, domestic gas resources (IEA, 2023). Energy sovereignty thus manifested itself as the capacity to orient the composition of the energy system rather than merely to administer it. This orientation materialized notably through the deployment of large-scale renewable infrastructures, such as the solar plants of Bokhol, Kahone and Kael, as well as the Taïba Ndiaye wind farm, integrated into the national grid and implemented through international tenders and public private partnerships (AfDB, n.d.; Scaling Solar, n.d.). These infrastructures reconfigured the geography of production and reflected an increasing capacity of the state to steer the electricity system.

In parallel, the emergence of offshore hydrocarbons introduced a new material dimension into energy sovereignty. The Sangomar, Greater Tortue Ahmeyim (GTA) and Yakaar-Téranga projects made it possible to incorporate domestic gas into the national strategy as a lever for substituting imports and securing electricity generation, thereby strengthening the capacity of the state to mobilize national resources in order to orient the energy supply (IEA, 2023). This evolution did not merely concern the availability of resources, but formed part of an explicit strategic formalization of energy policy[24].

[24] The strategic formalization of this orientation is explicitly enshrined in the *'Lettre de Politique de Développement du Secteur de l'Énergie et des Mines 2025-2029' - Development Policy Letter for the Energy and Mining Sector 2025-2029* (LPDSEM), which sets quantified targets for universal access to electricity, diversification of the energy mix, development of renewable energies, and integration of domestic gas as a lever for electricity production. This programmatic framework reflects the transition from primarily institutional sovereignty to planned, measurable, and controllable energy sovereignty. These instruments and their operational implications will be analyzed in more detail in Part II.

Beyond technological choices, this period revealed an increasing governance capacity, grounded in the articulation between ministerial orientation, sectoral regulation, the public operator and technical partners, as well as in the use of public policy instruments such as tenders, production contracts and multi-year planning. Energy sovereignty thus appeared as an operational capacity to organize and coordinate the energy system, in which the control of infrastructure choices, the mobilization of national resources and the strategic formalization of public priorities constituted the principal levers of action.

The historical trajectory outlined above highlights the gradual development of the state's capacity to organize the energy sector. However, this capacity is not based solely on institutions and infrastructure; it is also embodied in the legal and instrumental frameworks that structure public action. It is therefore now necessary to examine the regulatory and programmatic mechanisms through which the state organizes, formalizes, and implements energy sovereignty.

3.2 Governance of energy policy through law and instruments

After having retraced, in 3.1, the historical trajectory through which Senegal progressively constituted energy as a field of public action, it is now necessary to examine its legal and instrumental foundations. Energy sovereignty is not determined solely by resources or infrastructures, it is also exercised through the capacity of the state to produce norms, to organize competences, and to translate political priorities into operational arrangements. Yet, Senegalese energy policy is not contained within a single text, it results from an assemblage of laws, decrees, regulations, but also from sectoral policy letters, compacts and programming documents. Within this perspective, this analysis proceeds in two complementary stages, it first reconstructs the normative hierarchy and the function of the principal instruments of the legal framework (3.2.1), then it examines the manner in which their articulation, notably through programming tools, produces overall coherence and confers upon the state a capacity to steer the sector (3.2.2). The objective is therefore to objectify energy sovereignty as a capacity of legal and programmatic ordering of public action.

3.2.1 Normative hierarchy and functions of instruments: from law to strategy

The organization of Senegalese energy policy rests upon a hierarchical normative architecture that articulates binding legal norms and instruments of strategic programming. In a context of technical and financial interdependences, the adoption of a "strong and comprehensive" legal framework appears as a condition of possibility of energy sovereignty, understood here as the capacity to order public action (République du Sénégal, 2021a). At the summit of this structure, the Electricity Code (law n°2021-31 of 9 July 2021) constitutes the framework norm. It is conceived as a "single reference framework" intended to structure public action coherently by "conditioning" each level of electricity policy, by establishing principles, competences and regimes of intervention (République du Sénégal, 2021a). The Code covers all sector activities, production and self-production, transmission, distribution, storage, sale, imports and exports, and emphasizes the guarantee of supply "for all inhabitants, at the lowest cost", within a logic of rational development and optimal use of national resources, including the integration of domestic gas into the mix (République du Sénégal, 2021a). Implementing texts (decrees and orders) subsequently specify the concrete modalities of implementation, translating the general norm into procedures, authorizations and specifications (FAOLEX, n.d.).

The legal architecture also institutes the authorities and regulatory mechanisms. The creation of the Energy Sector Regulation Commission (CRSE) by law n°2021-32 confers upon this independent administrative authority regulatory missions over activities governed by the Code, with an explicit framework of functioning and competences (République du Sénégal, 2021b). Within this chain, the minister in charge of Energy implements the policy defined at the executive level, notably through sectoral policy letters, which function as an interface between political orientations and programming. Regarding legal regimes, the production and sale of electricity are subject to licensing issued by the ministry following a binding opinion of the regulatory body, whereas transmission and distribution fall under concession or lease arrangements accompanied by specifications, thereby structuring a genuine contractual framework (République du Sénégal, 2021a; FAOLEX, n.d.). Finally, the action of the Code is explicitly embedded within a regional environment, it must comply with the procedures of the ECOWAS regional electricity market, notably as framed by directive C/DIR/1/06/13 of 21 June 2013, which demonstrates that legal sovereignty is exercised from the outset within a multi-level framework (ECOWAS, 2013).

3.2.2 Regulatory architecture and capacity to manage public policy

Beyond the inventory of instruments, the coherence of the legal and strategic architecture is measured by its capacity to produce steering, the ability of the state to transform political priorities into coordinated legal, programmatic and operational mechanisms. This coherence is first observed vertically, in the chain of articulation linking legal norm, strategic programming and implementation arrangements. The Electricity Code establishes the principles, competences and regimes, licenses, concessions, public service obligations, whereas the implementing texts specify the procedures and conditions of operationalization (République du Sénégal, 2021a; FAOLEX, n.d.). Programmatic instruments, namely the Development Policy Letters for the Energy Sector (LPDSE 2019-2023) and for Energy and Mines (LPDSEM 2025-2029), constitute the principal instruments of governmental programming, defining multi -year orientations, investment priorities and measurable sectoral objectives (République du Sénégal, 2019; 2025). They translate political orientations into sectoral trajectories, mobilizing institutions and defining performance indicators. In addition, the National Energy Pact complements this arrangement by constituting an instrument of commitment and coordination oriented toward universal access, financing and the development of renewables, notably within the framework of international sustainable development objectives (World Bank, 2025).

Coherence is also visible horizontally, through the intersectoral articulation of instruments. Within the framework of the Emerging Senegal Plan (PSE, 2025), the governance of energy is affirmed as an activity of public utility and energy is positioned as a strategic lever of structural transformation, this orientation is extended by sectoral tools, roadmap horizon 2035, and by techno economic planning instruments, notably the Integrated Least Cost Plan (ILCP) placed under ministerial responsibility. Policy letters thus connect electricity, hydrocarbons, energy efficiency, rural electrification and network infrastructures, thereby enabling steering through coordination of subsectors rather than through the mere accumulation of instruments (IEA, 2023; République du Sénégal, 2025).

Finally, the recent period consolidates this architecture through integration into national planning. The LPDSEM 2025–2029 is elaborated in coherence with the National Development Strategy 2025–2029, the operational instrument of the Senegal Vision 2050, and is embedded within the national planning system as framed by orientation law n°2022-10 of 22 April 2022, detailing programs, actions, indicators and implementation mechanisms (République du Sénégal, 2025). It also makes explicit the anchoring of sectoral planning within international commitments, notably SDG 7, energy, and SDG 9, industrialization, and situates the ambition

of a “sovereign, just and prosperous Senegal” within a logic of endogenous development. The whole highlights an energy sovereignty conceived as a capacity of legal and programmatic ordering, to produce rules, to translate priorities into instruments, and to organize multi actor coordination over the long term.

From the historical and conceptual framework of French West Africa to the gradual affirmation of an energy sovereignty, the first part has highlighted a structuring question, that of the real capacity of African societies to transform a legacy of dependence into a power to orient their own material trajectory. Sovereignty, thus reconstructed in its symbolic, political and institutional dimensions, nevertheless remains only a theoretical horizon so long as it is not confronted with the concrete constraints of the contemporary energy economy. It is precisely at this point that the second part begins. By moving from the genealogy of dependencies to empirical analysis, the study shifts toward the case study of the Senegalese energy transition, in order to observe how energy sovereignty is translated in practice, between gas exploitation, the rise of renewables, the search for energy security and climatic constraints. It is no longer simply a matter of thinking sovereignty, but of examining its materialization, its tensions and its limits in a context of a constrained energy transition.

PART II – Analysis of the energy transition in Senegal

This second part seeks to analyse the energy transition in Senegal in its concrete materiality, by showing how it unfolds at the intersection of energy, climatic, economic and social stakes. In climate science as in international policy, the link between energy and climate change is central, the energy sector constitutes the primary source of greenhouse gas emissions, while simultaneously representing the principal lever for decarbonisation and adaptation. Studying the energy transition therefore amounts to observing, through an empirical case, the manner in which a State arbitrates between development, energy security and climatic commitment. Senegal constitutes in this regard a particularly revealing case in West Africa, the country combines the recent exploitation of gas resources, mobilised as a transition energy, with a progressive rise of renewable energies, in a context marked by the necessity to reduce energy poverty, to support economic growth and to respect its international climatic

commitments. This hybrid configuration makes the Senegalese transition a laboratory of articulation between energy transition and ecological transition.

In this perspective, Chapter I examines the recomposition of the Senegalese energy system, by highlighting the role of energy potential, strategic choices and energy security. Then, Chapter II analyses the concrete instruments of the transition, through the articulation between gas, renewables and international cooperation. Finally, Chapter III interrogates the social, political and normative dimensions of the transition, by evaluating its implications in terms of energy justice, access to energy and the positioning of Senegal within global climate governance. Taken together, the analysis aims to understand how the energy transition is effectively translated in Senegal, between development imperatives, climatic constraints and the search for a sustainable energy model.

CHAPTER I – Senegal facing a restructuring of its energy system between potential, strategy and security

Long situated at the margins of the major global energy spaces, Senegal is today engaged in a profound recomposition of its energy system, driven both by the emergence of offshore hydrocarbons and by the growing rise of renewable energies. This dual dynamic places the country within an unprecedented trajectory, that of a State historically dependent on energy imports, now confronted with a transformation of its material, economic and geopolitical foundations. Energy thus becomes a strategic sector, not only as an engine of growth, but also as a vector of sovereignty, regional positioning and economic security.

This recomposition, however, is not limited to an increase in available resources. It raises central analytical issues, related to the gap between potential and effective capacities, to the prioritisation of public objectives and to the trade-offs between sometimes competing goals. The transformation of the energy system cannot therefore be understood without an analysis of the strategic choices undertaken by the State. Energy policy appears as a central instrument of governing this recomposition, structuring trajectories and organising the articulation between gas, renewables and climatic commitments.

Finally, this transformation must be apprehended from the perspective of energy security. In a country historically exposed to price shocks, to dependence on imports and to challenges of

access to electricity, the energy transition is also framed as a project of system stabilisation. The diversification of the energy mix, the integration of domestic gas and the development of renewables therefore aim to strengthen the availability, accessibility and affordability of energy, embedding the transition within a logic of resilience and stabilisation over the medium and long term.

This chapter thus analyses the recomposition of the Senegalese energy system through three closely interrelated dimensions, energy potential (1.1), the public strategy of articulation between transition, development and sovereignty (1.2), and their inscription within a broader project of energy security. The objective is to show that Senegal's energy trajectory results neither from an automatic natural endowment, nor from a simple transposition of international transition norms, but from a political and strategic process in which energy becomes a central field of governance, arbitration and national projection.

1.1 The restructuring of Senegal's energy potential towards the status of an emerging energy player

Long characterised by a strong dependence on energy imports, Senegal has, since the late 2010s, undergone a profound transformation of its energy landscape. This recomposition rests on the articulation of two major dynamics. On the one hand, the recent discovery of offshore oil and gas resources, which alters the material foundations of its energy economy, on the other hand, the identification and progressive valorisation of a significant renewable energy potential, notably solar, wind and hydroelectric. Far from constituting two contradictory trajectories, these developments place Senegal within a hybrid configuration, at once an emerging producer of hydrocarbons and an actor committed to renewable diversification in West Africa. This dual dynamic invites an analysis of how the national energy potential is being reshaped and contributes to the redefinition of the country's positioning within regional and international energy spaces. To this end, we will first highlight the fact that the discovery of hydrocarbons constitutes a geo-energy turning point (1.1.1), then, in a second stage, that the renewable potential, as a strategic instrument, makes it possible to move toward a sustainable diversification of the energy mix (1.1.2).

1.1.1 The discovery of offshore hydrocarbons: a geo-energy turning point

The discovery, from 2014 onward, of offshore oil and gas resources constitutes a major turning point in Senegal's energy trajectory (IEA, 2023). Accordingly, this section aims to characterise the geo-energy "turning point" induced by the recent discoveries of offshore hydrocarbons in Senegal. It first seeks to establish the structuring facts, namely the principal oil and gas projects, that mark the country's entry into the field of hydrocarbon producers. Then, it situates Senegal within regional and international energy representations, by analysing how these discoveries modify its perceived status on the global energy stage. Finally, it evaluates, in analytical terms, the opportunities for development and sovereignty enabled by this new configuration and the structural risks associated with the "resource curse".

Long characterised by a strong dependence on hydrocarbon imports, Senegal has progressively entered a new configuration, marked by the emergence of extractive projects of international scale. This shift cannot be interpreted merely as a simple sectoral evolution. Nevertheless, this "turning point" must be understood as a process, rather than as a stabilised state, insofar as it is analytically necessary to distinguish between "potential" and "effective capacity".[25]

The three pillars of the new energy landscape: Sangomar, Grand Tortue Ahmeyim (GTA) and Yakaar-Teranga

Three structuring projects constitute the pillars of the new Senegalese energy landscape. First, the Sangomar oil project, then the cross-border gas project Grand Tortue Ahmeyim (GTA), and finally the Yakaar–Teranga gas project. Together, they materially and symbolically underpin Senegal's entry into the circle of offshore hydrocarbon-producing countries.

The Sangomar project, operated by Woodside Energy[26], constitutes Senegal's first offshore oil development and marks a foundational stage in the country's energy history (Woodside, 2024; Reuters, 2024). Located south of Dakar, it shifts Senegal from the status of an exclusively importing country to that of a producer possessing exportable capacities. Beyond its symbolic scope, Sangomar is primarily embedded in an extractive model oriented toward export. Indeed, the vast majority of the oil is exported in crude form to international markets, Europe, the United States, Asia, with the principal objective of generating foreign exchange revenues, improving

[25] This distinction refers to the classic differentiation between resources and reserves in natural resource economics, institutionalized in particular in the Petroleum Resources Management System (PRMS) of the Society of Petroleum Engineers, which distinguishes between geologically present volumes and economically and technically recoverable volumes, taking into account technologies, prices, infrastructure, and regulatory frameworks. More broadly, it is part of the political economy of resources literature, which contrasts natural endowments with actual development capabilities.

[26] Woodside Energy is an Australian energy company specializing in offshore oil and gas exploration and production.

the balance of payments and contributing to the financing of the state budget. Local refining through the Société Africaine de Raffinage (SAR), an African Refining Compagny, remains a secondary use and is limited by technical constraints related to the nature of the crude, while Sangomar oil is not intended for electricity generation, the national energy strategy prioritising natural gas. Thus, Sangomar primarily serves to integrate Senegal into the global oil market and to generate budgetary revenues, far more than to directly transform the productive economy or to strengthen the country's energy security.

The Grand Tortue Ahmeyim (GTA) project, jointly developed by British Petroleum (bp) [27]and Kosmos Energy[28], constitutes a second structuring pillar, by virtue of its cross-border nature and its direct integration into global liquefied natural gas (LNG) markets (bp, 2025; Kosmos Energy, 2024). Located astride the maritime boundary between Senegal and Mauritania, GTA is conceived as an LNG export project, recognised as a "project of national strategic importance", based on offshore infrastructure and a floating liquefaction unit (IEA, 2023). This configuration confers upon the project a particular geo-energy dimension, it combines energy diplomacy, bilateral cooperation and direct integration into global gas value chains. GTA thus positions Senegal as a new entrant in the international LNG market, not as a major producer in terms of volume, but as an emerging actor contributing to the geographical diversification of global gas supply.

Finally, the Yakaar–Teranga project occupies a specific strategic place in Senegal's energy recomposition. Led by Kosmos Energy, this gas project is frequently presented as a key asset for the domestic valorisation of gas, while retaining an ambiguity regarding its final orientation between internal consumption and export (NRGI, 2024). This ambivalence reflects the structural trade-offs faced by the Senegalese state, whether to use gas as a lever for transforming the national energy system, electricity, industry, substitution for imports, or to prioritise an export logic generating foreign exchange revenues. Yakaar–Teranga thus appears as a pivotal project, at the intersection of internal development logics and integration into international markets.

[27] BP (British Petroleum) is a British multinational energy company active in the exploration, production, refining, and marketing of oil and gas worldwide.
[28] Kosmos Energy is an American energy company specializing in offshore oil and gas exploration and production, particularly in West Africa.

A symbolic requalification of Senegal within regional and international energy representations

Beyond their material effects, offshore discoveries have contributed to reconfiguring Senegal's position within regional and international energy representations. The country tends to move, in the discourse of institutional, industrial and financial actors, from the status of an energy periphery to that of an emerging energy actor in West Africa (IEA, 2023; African Energy Chamber, 2025).

Within the regional space, Senegal is beginning to be perceived as a new entrant alongside more established producers such as Nigeria or Ghana, as well as Mauritania in the specific framework of the GTA project. This evolution rests less on a massive change in production hierarchies than on the emergence of new "energy frontiers", characterised by the opening of offshore basins that remain relatively underexploited (Bradshaw, 2019). In this context, Senegal is integrated into narratives of geographical diversification of African hydrocarbon production.

At the international level, the Sangomar and GTA projects are regularly cited in analyses concerning the diversification of global gas supply, in reports on new African energy hubs and in prospective documents devoted to LNG markets. Senegal thus progressively appears on global maps of offshore gas and oil, not because of its absolute quantitative weight, but because of the novelty of its status and its strategic position. Specialised reports, notably those dedicated to future African LNG exporters, now include Senegal as a potential actor in this recomposition (NewClimate Institute, 2023).

This increased visibility primarily reflects a dynamic of representation and international positioning. It is therefore necessary to avoid any overestimation of Senegal's "global rank". In terms of volumes, the country remains a modest producer compared with major oil and gas actors (IEA, 2023). The observed transformation pertains more to a symbolic requalification than to accession to a position of energy power. Senegal becomes an emerging actor, recognised as such in discourse and energy cartographies, without, however, constituting a dominant actor (Goldthau and Sitter, 2015). This analytical distinction is essential in order to avoid any confusion between international visibility and consolidated energy capacity. Thus, this symbolic recognition is not neutral. It influences the perceptions of investors, donors and international partners, and contributes to integrating Senegal into networks of energy diplomacy, financing and technical cooperation. It thereby participates in the construction of a

new international role, which goes beyond produced volumes alone and rests on the country's integration into contemporary offshore and LNG dynamics.

Economic opportunities, sovereignty and sectoral spillover effects

The emergence of offshore activity opens a set of economic and political opportunities for Senegal, while at the same time exposing it to structural risks well documented in the literature on the political economy of natural resources. On the side of opportunities, offshore discoveries can generate new public revenues through taxation, royalties and state participation, often presented as a lever for financing development in a context of high needs in infrastructure and public services. Domestic hydrocarbon production may also improve the trade balance, through substitution for imports and, in the case of exports, through foreign exchange inflows.

Offshore development is also likely to produce sectoral spillover effects, notably in oil services, logistics, port infrastructure, technical training and engineering. Under certain conditions, these dynamics can foster the emergence of local capabilities and strengthen the integration of the extractive sector into the national economy, particularly when policies of 'local content', supplier development and investment in human capital are implemented (McKinsey Global Institute, 2013).

On the political level, access to national energy resources potentially strengthens the margins of sovereignty of the state. The possession of a strategic asset previously absent confers upon the state an increased capacity for negotiation, planning and projection, both in the energy field and in international relations (Goldthau and Sitter, 2015). This symbolic dimension of energy sovereignty, often emphasised in official discourse, contributes to the construction of greater material autonomy, even if it remains largely conditioned by the structure of contracts and by technological dependence vis-à-vis international companies.

The structural risks of rent: "resource curse and institutional vulnerabilities"

These opportunities must, however, be considered in light of the structural risks associated with any extractive economy, classically analysed under the concept of the "resource curse". Foundational literature emphasises that the abundance of natural resources is, in many cases, correlated with weaker economic performance and greater macroeconomic instability (Auty, 1993; Sachs & Warner, 2001). Sachs and Warner notably show that countries rich in natural resources tend, on average, to experience lower growth rates, due to mechanisms such as real

exchange rate appreciation, relative deindustrialisation and revenue volatility (Sachs & Warner, 2001).

Beyond macroeconomic effects, extractive rent may generate institutional imbalances. Ross (2012) emphasises that oil revenues are likely to weaken accountability mechanisms, reinforce clientelist logics and favour the capture of rent by political and economic elites. In contexts characterised by information asymmetries and by the complexity of extractive contracts, multinational corporations often possess a technical and legal advantage, liable to limit the effective capacity of the state to maximise national returns. The distinction between formal ownership of resources and effective control over the value chain is central here.

Finally, social and territorial risks remain significant. Offshore extraction tends to spatially concentrate infrastructures and benefits, potentially fuelling a disconnection between extractive production and local development, as well as perceptions of distributive injustice. In this perspective, the exploitation of offshore hydrocarbons in Senegal cannot be understood either as an automatic guarantee of development, or as an institutional fatality. As Auty (1993) and Ross (2012) emphasise, the economic and political effects of rent depend closely on institutional quality, transparency and governance mechanisms.

Thus, the Senegalese geo-energy turning point opens a field of economic and sovereignty opportunities, while simultaneously exposing the country to structural vulnerabilities. This tension constitutes a structuring analytical dilemma. Indeed, it prepares the subsequent analysis of strategic choices, public policy instruments and governance mechanisms through which offshore potential will, or will not, be converted into effective capacities for development and energy security.

1.1.2 Strategic renewable potential: towards sustainable diversification

Parallel to the emergence of offshore hydrocarbons, Senegal possesses a significant renewable potential which constitutes a strategic endowment in the recomposition of its energy system. This section aims to establish this potential. It does not yet seek to analyse implementation instruments nor governance choices, but rather to characterise the structure of available renewable resources, solar, wind, hydroelectric, and then to show how this endowment enables a durable diversification of the energy system.

To begin with, Senegal's renewable potential does not arise from a conjunctural dynamic, but is rooted in structural characteristics of the territory, founded primarily on the abundance of solar radiation, complemented by a localised wind potential and by a hydroelectric capacity integrated within a regional architecture. In 2022, renewable energies represented 23% of total electricity production, and 30 % of the country's installed capacity, hydropower included (IEA, 2023).

From the perspective of energy transition analyses, the latter may be understood as a gradual transformation of systems of energy production and consumption toward low-carbon sources, integrating constraints of technical, economic and institutional feasibility (Smil, 2017)[29]. In this regard, Senegal's renewable endowment does not merely constitute an alternative to hydrocarbons, but a potential foundation for structural transformation of the energy system, provided that the natural resource can be translated into effective productive capacities, in accordance with the analytical distinction drawn by the IEA between potential, installed capacity and effective production (IEA, 2023).

1.1.2.1 Solar: a pillar of durable sovereignty

Solar constitutes the dominant renewable resource within Senegal's potential, both by its physical abundance and by its spatial diffusion across the entire territory. Indeed, Senegal possesses one of the most significant solar radiation potentials in the world, whose theoretical daily average reaches 5 798 kWh/m2 (IEA, 2023). This natural endowment confers upon solar a particular status, it is not a localised resource, but a diffuse potential, mobilisable at different territorial scales (World Bank Group & Solargis, n.d.). In Senegal, the first solar installations were commissioned in 2017. Since then, solar capacity has increased substantially, reaching 245 MW in 2022 (IEA, 2023).

This physical abundance is reinforced by a decisive economic factor, the structural decline in photovoltaic costs observed globally for more than a decade. Indeed, as the IEA (2023) notes "the costs of solar panels have fallen dramatically in recent years, renewables now represent the cheapest source of new electricity generation". In this sense, the growing competitiveness of solar photovoltaics has profoundly transformed the economics of electricity systems, by

[29] Smil emphasizes that energy transitions are gradual transformations of complex socio-technical systems involving infrastructure, fixed capital, and institutions, and that they are historically characterized by their slow pace and significant material, economic, and political constraints, which limit the possibility of rapid change.

rendering this technology credible not merely as a marginal solution, but as a central pillar of energy diversification. In the Senegalese case, this evolution confers a comparative advantage upon solar, it becomes possible to envisage a scaling up of solar production without it being structurally penalised by prohibitive costs relative to conventional sources (IRENA, 2025; SEforALL, 2022).

Solar is also distinguished by its territorial plasticity. Specifically, its development has been driven by tenders conducted under the auspices of the World Bank's Scaling Solar[30] programme, which targets a capacity of 60 MW of solar power (World Bank, 2023). Indeed, solar can supply large centralised infrastructures, as illustrated by utility-scale photovoltaic plants and by the Bokhol plant in Senegal (World Bank, 2022). Yet it also presents a significant potential for decentralised deployment, compatible with differentiated local configurations, particularly in rural or peripheral areas. This spatial adaptability strengthens the structuring character of solar in a country marked by territorial disparities in electricity access and by grid constraints. Thus, in 2023, solar photovoltaics represented 60.4 % of renewable electricity production in Senegal, establishing itself as the dominant non-combustible source within the national renewable mix, thereby confirming its central role in structuring energy diversification (IEA, 2024).

Beyond the mere diversification of the energy mix, solar may be analysed as a vector of durable energy sovereignty. It relies on an endogenous, inexhaustible and non-imported resource, which structurally reduces the country's external dependence for electricity generation. Unlike hydrocarbons, whose exploitation is by nature time-bound and exposed to volatility in international markets, solar offers a long-term perspective of material autonomy, founded not on extractive rent, but on the progressive mastery of a renewable energy source. Moreover, the possibility of production at different scales, national, regional and local, opens the way toward a territorialised sovereignty, in which communities and territories may, in principle, become partial actors in energy production.

1.1.2.2 Diversification through complementarity: wind and hydropower

[30] Scaling Solar is a World Bank Group initiative aimed at accelerating the deployment of competitive solar photovoltaic projects in developing countries by combining institutional support, financial structuring, and standardized bidding procedures to reduce costs and risks for investors (World Bank Group & International Finance Corporation (IFC), 2020).

While solar occupies a dominant position within the structure of renewable potential, wind and hydropower play an essential complementary role in the diversification of Senegal's energy system. These two resources nonetheless follow distinct logics, both geographically and functionally.

Wind follows a logic of territorial specialisation. Introduced in Senegal in 2019, wind deployment reached a capacity of 159 MW in 2022 (IEA, 2023). This potential is mainly concentrated in coastal areas, particularly around Dakar, Saint-Louis and certain littoral regions, where wind regimes are relatively strong and regular (IRENA, 2017). This localisation translates into high productivity, yet spatially constrained. The Taïba Ndiaye wind farm emblematises this dynamic. Presented as the largest wind farm in West Africa, it represents approximately 15 % of Senegal's installed electricity capacity, making it a strategic asset in mix diversification, even if its effective contribution to production remains variable[31]. This relative importance confers upon wind a targeted yet strategic role in diversification, as a localised high-yield resource. In 2023, wind thus represented 39.6 % of renewable electricity production in Senegal.

Hydropower follows a different logic still. It is structurally constrained by geography and hydrology, and its development is closely linked to major regional river basins. In Senegal's case, hydropower is integrated into a regional architecture through the OMVS, which coordinates the management and operation of several dams shared among states and whose installed hydroelectric capacity reached 121 MW in 2022 (IEA, 2023; World Bank, 2020). This configuration confers upon hydropower a role more complementary and stabilising than quantitatively dominant. It contributes to mix diversification, yet does not constitute a pillar extensible at the national scale in the same manner as solar.

The structuring of Senegal's renewable potential thus rests on functional complementarity, solar as a diffuse and extensible resource, wind as a localised high-yield resource, and hydropower as a regional balancing resource. This configuration shows that renewable potential does not correspond to a mere juxtaposition of sources, but to an internal hierarchy, serving a more resilient energy diversification. This diversification through complementarity is consistent with analyses of energy security and sustainability, which emphasise the importance

[31] According to Africa Energy Portal, "Senegal: in Thiès, Infinity Power will store wind energy from Taïba N'Diaye from 2025," November 17, 2023.

of plurality of sources in reducing the vulnerability of electricity systems to shocks and to constraints specific to each technology (Stirling, 2010; Cherp and Jewell, 2014; IEA, 2023).

Senegal's energy restructuring is taking on a hybrid configuration. On the one hand, there are offshore hydrocarbons, and on the other, the rise of renewables. But this new configuration does not, in itself, produce a trajectory: it creates a dilemma of arbitration. The challenge is therefore no longer just to identify potential, but to understand how the state governs it by articulating transition, development, and sovereignty.

1.2 Senegal's energy strategy in the articulation of the imperatives of transition, development and sovereignty

In a context marked by economic, climatic and geopolitical constraints, Senegal's energy potential is framed by a public strategy aimed at orienting the country's energy choices. Confronted with the necessity to sustain its development, to reduce its vulnerability to imports and to align with international decarbonisation trajectories, Senegal formulates an energy strategy that seeks to reconcile sometimes contradictory imperatives. The energy transition thus appears not as an isolated objective, but as a component of a broader project articulating economic development, security of supply and the affirmation of energy sovereignty. The analysis of this strategy makes it possible to understand how the Senegalese state hierarchises its priorities, defines its trajectories and organises public action in a sector that has become central to its national and regional positioning. In this respect, the objective here is to analyse Senegal's energy strategy as a framework of arbitration between transition, development and sovereignty. It seeks to show how public authorities endeavour to reconcile the requirement of decarbonisation with the imperatives of economic growth and the securing of supply. To this end, we will highlight the internal coherence of the national strategy (1.2.1), while preparing the analysis of its concrete instruments and of its implications in terms of energy security (1.2.2).

1.2.1 National energy policy through its frameworks, objectives and instruments

The recomposition of Senegal's energy potential does not automatically translate into effective trajectories. It is framed and guided by a national energy policy that seeks to structure the priorities, objectives and instruments of public action. This section therefore aims to analyse

Senegal's national energy policy as the structuring framework of the energy transition. It seeks to demonstrate how the Senegalese state organises the recomposition of its energy sector through planning documents, quantified targets and public policy instruments.

In this perspective, energy policy may be defined as the set of normative frameworks, quantified objectives and instruments through which the state directs the production, distribution and consumption of energy, in articulation with economic, social and environmental purposes. In Senegal, this policy is embedded in a strategic architecture combining the Lettre de Politique de Développement du Secteur de l'Énergie (Energy Sector Development Policy Letter, LPDSE) 2025–2029, the Plan Sénégal Émergent (Emerging Senegal Plan, PSE)[32] and international climate commitments, notably the Nationally Determined Contribution (NDC)[33]. The LPDSE explicitly affirms that it is situated "within a logic of just energy transition, local valorisation of extractive resources and reinforcement of the country's energy sovereignty" (LPDSE 2025–2029, p. 7)[34], thereby placing energy policy at the intersection of transition, development and sovereignty imperatives.

The analysis of these frameworks makes it possible to highlight a strategy founded upon three closely interconnected pillars, the diversification of the energy mix, the reduction of dependence on imported fossil fuels and the integration of natural gas as a "transition fuel". This articulation reflects a gradual approach to the energy transition, in which renewables, gas and decarbonisation objectives are combined within a trajectory presented as compatible with the imperatives of economic development and energy sovereignty.

The strategic frameworks of energy policy, the LPDSE 2025–2029 and its insertion within national planning

The LPDSE 2025–2029 constitutes the central sectoral programming document in the field of energy. It operates as an operational translation of the priorities of the Senegalese state for the sector, by defining strategic orientations and axes of intervention. In this respect, the LPDSE does not remain confined to a declaratory framework, it structures public action in matters of

[32] The development of the power sector is a priority of the government's Plan for an Emerging Senegal (PSE), proposed in 2012 and adopted in 2014.
[33] Republic of Senegal, Nationally Determined Contribution (NDC) approved and adopted in 2020, and submitted to the United Nations Framework Convention on Climate Change (UNFCCC). This Nationally Determined Contribution aims to contribute to the fight against climate change and to the fulfillment of the commitments of the Paris Agreement.
[34] Author's translation from the original French official version of the Lettre de Politique de Développement du Secteur de l'Énergie

investment, regulation and energy planning. Among its structuring objectives appears notably "to ensure universal access to quality, sustainable and low-cost energy" (LPDSE 2025–2029, p. 54), thereby explicitly situating energy policy within a logic of economic and social development.

This policy letter is embedded within a broader architecture of public policies, foremost among which stands the PSE. The PSE constitutes the reference macroeconomic framework, oriented towards the structural transformation of the economy, industrialisation and the improvement of competitiveness. Energy policy is explicitly mobilised therein as a lever of development, insofar as access to reliable, affordable and sustainable energy is considered a condition for growth, industrialisation and economic attractiveness. The articulation between the LPDSE and the PSE thus reflects the integration of energy policy within a broader development strategy. Energy is not conceived as an isolated sector, but as a strategic infrastructure serving economic transformation. This integration is manifested notably through the priority accorded to universal access to electricity, reliability of supply and competitiveness of energy costs, presented as decisive factors for the productive fabric and for the improvement of living conditions.

Furthermore, international frameworks play a structuring role in the definition of national policy. Senegal's Nationally Determined Contribution (NDC), submitted under the United Nations Framework Convention on Climate Change (UNFCCC), establishes targets for emissions reduction and renewable energy development. The LPDSE explicitly integrates these climate commitments, translating them into sectoral orientations. This embedding within international climate frameworks confers upon energy policy an additional normative dimension, by aligning it with global decarbonisation trajectories.

It is nevertheless necessary to distinguish analytically the different levels of normativity. General strategic frameworks (LPDSE, PSE, NDC) define broad orientations, sectoral objectives specify quantified targets and priorities, finally, implementation instruments (regulatory reforms, incentive mechanisms, investment projects) translate these orientations into concrete actions. The present section deliberately situates itself at the level of frameworks and objectives, without yet analysing operational instruments, which will be examined in subsequent developments.

The reduction of dependence on imported fossil fuels as a political priority

The reduction of dependence on imported fossil fuels constitutes a central starting diagnosis of Senegalese energy policy. Historically, and as previously discussed, Senegal has been strongly dependent on imports of petroleum products, fuel oil and coal for electricity generation and energy uses. This dependence is identified as a structural vulnerability, exposing the country to international price shocks, market volatility and trade balance imbalances.

Within this framework, the reduction of energy imports is conceived as a transversal objective of public policy. It seeks to limit exposure to price shocks, to improve the trade balance and to control electricity production costs, which have direct repercussions on public finances, on firms and on households. This orientation also fits within a logic of energy sovereignty, understood as the capacity of the state to reduce its structural dependence on imported resources and to strengthen its strategic autonomy. This logic is explicitly formulated in the LPDSE through the objective "to ensure the country's autonomy in hydrocarbons through the valorisation of local production" (LPDSE 2025–2029, p. 54).

The diversification of the energy mix thus appears as a central instrument of this strategy. The expansion of renewable energies and the valorisation of domestic gas are presented as means of progressive substitution for imported fuels. This substitution does not derive solely from an environmental logic, but from an economic and strategic rationale, aimed at internalising part of energy production and reducing foreign exchange outflows.

Natural gas as a "transition fuel" within the national energy mix

Natural gas occupies a central place in Senegal's energy strategy as a "transition fuel". This centrality is more broadly embedded within a conception of energy policy as a structuring lever of economic development and of the country's structural transformation. As the IEA emphasises in its 2023 report, "Senegal has placed the development of its energy sector at the heart of its sustainable and economic development strategy and of its objective to become an emerging economy by 2035 in accordance with its Plan Sénégal Émergent (PSE)", which confirms the close articulation between energy policy and the national development project.

Within this perspective, the national strategy explicitly articulates gas development with quantified transition objectives. As specified in the LPDSE, the objective is "to reach 40 % renewable energy in the electricity mix by 2030" (LPDSE 2025–2029, p. 55), an objective that Senegal is on course to exceed according to international projections. Indeed, the IEA (2023)

indicates that “Senegal plans to exceed the renewable energy targets set under its NDC, which it expects to reach 40.7 % of the electricity mix by 2035 in the PSE scenario”, compared with 32.5 % in the baseline ‘business as usual’ scenario (see Appendix A, Figure 1). The fact that “Senegal had already achieved in 2023 the unconditional renewable energy targets set under its NDC” reinforces the credibility of the official discourse on the energy transition.

Within this framework, the ‘gas-to-power’ strategy is not presented as antagonistic to renewables, but as a complement intended to ensure the stability of the electricity system and to accompany the decarbonisation trajectory. This complementarity is explicitly asserted in the LPDSE, which affirms that “the use of local gas for electricity generation lies at the heart of the energy sovereignty strategy” (LPDSE 2025–2029, p. 59). Taken together, these elements contribute to the construction of a narrative of transition “compatible with development”, in which natural gas is mobilised as an instrument of compromise between climate imperatives, growth constraints and energy sovereignty objectives.

1.2.2 Energy transition as an energy security project

The Senegalese energy transition cannot be understood solely as an environmental project or as a technological modernisation of the energy sector. It is also conceived, within national strategic frameworks, as a structural response to the historical vulnerabilities of the energy system and as a project of energy security in the broad sense, this is what the present section seeks to analyse. Here, the aim is to demonstrate that the diversification of the mix, the exploitation of natural gas and the development of renewable energies are conceived by Senegalese authorities as instruments intended to reinforce the availability, accessibility, affordability and acceptability of energy. In this sense, the transition appears as a means of durably securing the energy system, within a context marked by dependence on imports, constraints of access to electricity and exposure to international price shocks.

In contemporary literature, energy security is no longer reduced to the mere availability of resources. Following the works of Sovacool, it is frequently analysed through a multidimensional framework based on four criteria, ‘availability’, ‘accessibility’, ‘affordability’ and ‘acceptability’ (Sovacool, 2011). This approach makes it possible to move beyond narrow definitions focused exclusively on physical supply, in order to integrate economic, social and environmental dimensions. Furthermore, Cherp and Jewell (2014) argue that energy security should be defined as the “low vulnerability of vital energy systems” (Vital

Energy Systems, VES), going beyond the traditional framework of the "four A". They consider that the 4A constitute only components, and not a complete analytical framework. They propose instead to focus on what is secured 'the reference objects' and against which threats. In a convergent manner, the IEA defines energy security as "the uninterrupted availability of energy sources at an affordable price"[35], while progressively extending its analyses to environmental and social acceptability issues.

Applied to the Senegalese case, this framework makes it possible to highlight that the energy transition is formulated by public authorities as a transversal response to the four dimensions of energy security. In a country historically dependent on imports of fossil fuels and confronted with persistent challenges of territorial electrification, the diversification of the mix and the valorisation of national resources are presented not only as instruments of decarbonisation, but as levers for securing the energy system as a whole.

The "4A" of energy security applied to Senegal

The first dimension, that of 'availability', refers to the capacity of the energy system to ensure the continuity of energy supply. In the Senegalese context, this issue is historically marked by dependence on imports exposing the country to fluctuations in international markets and to potential supply disruptions. The diversification of the mix, the integration of domestic gas and the development of renewable energies are explicitly conceived as means of strengthening energy availability by reducing dependence on imported sources and by broadening the base of mobilisable resources. The energy transition thus appears as an instrument of material securitisation of supply, by multiplying sources and internalising part of production. In the Senegalese case, and according to IEA estimates, Senegal's electricity system possessed in 2022 a total installed capacity of approximately 1.8 GW, for an annual production of around 5.9 TWh (IEA, 2023). These orders of magnitude testify to a progressive expansion of production capacities, capable of contributing to the continuity of electricity supply. This evolution has been accompanied by a partial diversification of the production mix, marked by the rise of domestic renewable capacities. Renewable energies and hydropower represented in 2022 nearly 30 % of installed capacity, approximately 520 to 530 MW, against a still predominant thermal base (IEA, 2023; IRENA, 2023). This diversification relies notably on the gradual installation of solar capacities, estimated at around 245 MW, as well as on the

[35] This definition is taken from the official Glossary page of the International Energy Agency (IEA), which lists the reference definitions used by the institution in its publications.

commissioning of the Taiba Ndiaye wind farm (159 MW in 2020), which constitute local and relatively stable sources of production from the standpoint of primary resource availability.

The second dimension, that of 'accessibility', concerns physical and institutional access to energy, notably through production, transmission and distribution infrastructures. In a country where access to electricity has long been unevenly distributed, with persistent disparities between urban and rural areas, energy security cannot be reduced to a simple question of produced volumes. It also implies the capacity to connect populations, to extend networks and to develop solutions adapted to territorial configurations. Within this framework, the development of renewable energies, particularly solar, is often presented as a lever of accessibility, insofar as it allows decentralised configurations and production at multiple scales, capable of complementing the extension of centralised networks. In the Senegalese case, the overall electricity access rate increased from approximately 56.5 % in 2010 to 74.2 % in 2023, with near universal access in urban areas (96.1 %) but still significantly lower levels in rural areas, around 56.5 % (World Bank, 2023). More specifically, the evolution of this electricity access rate may be correlated with the progressive deployment of renewable energies, particularly solar through the gradual grid connection of solar plants and the parallel deployment of off grid and mini grid solutions in rural areas (IEA, 2023).

The third dimension of energy security, that of 'affordability', refers to the sustainability of energy prices for households, firms and public finances. In the Senegalese case, this dimension is closely linked to the historical dependence on imported fossil fuels, which exposes electricity production costs to the volatility of international prices. Institutional data highlight this sensitivity. According to the annual activity report of the ministry in charge of energy, the average variable cost of production (SENELEC[36] and purchases) declined from approximately 82.86 F CFA/kWh in 2022 to 73.89 F CFA/kWh in 2023, an evolution largely attributed to the easing of fuel prices on international markets (Ministry of Energy, 2023). SENELEC reports confirm this recent trend, indicating an average national variable cost of 73.97 F CFA/kWh in 2023 then 69.86 F CFA/kWh in 2024 (SENELEC, 2024). This volatility of production costs affects public arbitrations regarding tariffs and subsidies. According to the International Monetary Fund (IMF), energy subsidies (electricity and fuels) reached approximately 4 % of GDP in 2022, illustrating the magnitude of the budgetary effort required to contain the impact

[36] SENELEC (National Electricity Compagny of Senegal) is the public operator responsible for electricity generation, transmission, and distribution, playing a central role in implementing national energy policy and securing electricity supply.

of rising international prices on consumers (IMF, 2023). Despite tariff adjustments undertaken in 2023, the IMF estimates that effective energy subsidy payments still represented approximately 596 billion CFA francs, around 3.15 % of GDP, highlighting the difficulty of reconciling price stabilisation and budgetary sustainability within a context of strong import dependence (IMF, 2023). Thus, in national strategic documents, the diversification of the energy mix and the progressive substitution of imported fuels by national resources are presented as levers capable of improving, in the medium term, cost control and the relative predictability of the tariff trajectory. Without prejudging the effective outcomes of these transformations, the energy transition appears, from the standpoint of affordability, as an attempt to reduce the structural exposure of Senegal's electricity system to international price shocks, and therefore to limit recurrent tensions between final prices, public subsidies and macro budgetary balances (IMF, 2023; SENELEC, 2024).

Finally, the fourth dimension, that of 'acceptability', integrates the environmental, social and political issues associated with energy choices. Within the framework of Senegal's international climate commitments, the energy transition is explicitly associated with emissions reduction and the development of renewable energies, which confers upon energy policy a normative dimension linked to the fight against climate change. Acceptability also refers to social perceptions of energy choices, local environmental impacts and the political legitimacy of adopted trajectories (Sovacool, 2013). In this respect, the development of renewables is presented as a central element in the construction of a socially and environmentally sustainable long term energy security. In the Senegalese case, this dimension is closely linked to international climate commitments and to the declared intention to embed the energy transition within a trajectory compatible with the fight against climate change. More specifically, the NDC, which on the quantitative level sets the objective of integrating 40 % renewable energy into the energy mix by 2030, as previously mentioned.

The application of the 4A framework to the Senegalese case thus makes it possible to demonstrate that the energy transition is conceived as a multidimensional response to the vulnerabilities of the energy system. It is nevertheless necessary to distinguish analytically between energy security and energy independence (Cherp & Jewell, 2014). The national strategy does not seek energy autarky, but the capacity to guarantee a stable, sustainable and resilient supply, by combining national resources, regional integration and insertion into international markets.

The restructuring of Senegal's energy sector highlighted in the first chapter reveals a hybrid configuration, at the crossroads between hydrocarbon exploitation and the rise of renewable energies. However, this configuration does not automatically translate into a transition trajectory: it opens up a space for arbitration, in which the identified potentials must be transformed into effective choices. The challenge is therefore no longer simply to describe the material and geo-energy foundations of the transition, but to analyze the instruments, public policies, and implementation mechanisms through which the state seeks to articulate energy security, development, and decarbonization.

CHAPTER II – Transition instruments and their articulation between gas, renewables and cooperation

The Senegalese energy transition rests upon a combination of heterogeneous instruments, mobilised to respond simultaneously to the imperatives of economic development, energy security and progressive decarbonisation. Far from following a linear trajectory of exit from fossil fuels, this transition is characterised by a complex articulation between so called “transition” fossil resources, the rise of renewable energies and a structuring recourse to international cooperation. These instruments do not constitute independent levers, but are embedded within a logic of complementarity and compromise, revealing the material, financial and institutional constraints specific to a developing country engaged in a constrained low carbon trajectory.

Within this framework, natural gas occupies a central and ambivalent position. Presented as a transition energy, it is mobilised both as a substitute for the most carbon intensive fuels and as a dispatchable capacity intended to accompany the integration of renewables. However, this intermediate position raises major questions regarding its long-term compatibility with a low carbon trajectory, the risks of carbon lock in and the forms of dependence it may generate (2.1). In parallel, the development of renewable energies constitutes the structural pillar of the transition, embedded in a commitment to a durable recomposition of the electricity mix. Their expansion relies on organised public action, yet remains conditioned by technical, economic and institutional constraints that limit the pace and scope of effective decarbonisation (2.2). Finally, international cooperation appears as a determining factor in the implementation and scaling up of the transition. Through financing, expertise and integrated programmatic

frameworks such as the Just Energy Transition Partnership, it contributes to transforming national strategic orientations into concrete infrastructures, while simultaneously structuring the very modalities of the transition trajectory (2.3).

2.1 Natural gas as a 'transition energy': a strategic compromise

The integration of natural gas into the Senegalese energy strategy is embedded within a discursive and programmatic framing that presents it as a "transition energy", intended to simultaneously support the objectives of economic development, energy security and the progressive decarbonisation of the electricity sector. This qualification, widely mobilised in national and international institutional frameworks, rests upon the idea of a strategic compromise, gas would be both less carbon intensive than historically dominant fuels, particularly Heavy Fuel Oil (HFO), and sufficiently dispatchable to support the expansion of intermittent renewable energies. However, this intermediate position confers upon gas an intrinsically ambivalent status, which calls for a critical analysis of its effective compatibility with a long-term low carbon trajectory.

This analysis therefore seeks to examine the role of natural gas not as a technical inevitability, but as a political and strategic choice, structured by trade-offs between sometimes contradictory imperatives. To do so, we will first examine the coherence of the integration of gas within the Senegalese low carbon trajectory (2.1.1). Then, we will analyse the risks of carbon lock in associated with gas investments, highlighting the technological, economic and institutional mechanisms likely to durably rigidify the energy trajectory (2.1.2). Finally, section 2.1.3 interrogates gas as an ambivalent instrument of energy sovereignty, by assessing the extent to which it constitutes a lever of strategic autonomy or, conversely, a reconfigured dependence on markets, international actors and extractive rents.

2.1.1 Gas in Senegal's low-carbon trajectory

Within the Senegalese energy strategy, natural gas is explicitly positioned not as an energy end state, but as a transitional instrument intended to accompany a trajectory officially oriented toward the decarbonisation of the electricity sector. It is presented as a substitute for the most carbon intensive fuels, in particular Heavy Fuel Oil (HFO) and, where applicable, coal; then, as a stabilising lever for the electricity system in a context marked by the expansion of renewable energies (IEA, 2023). The analysis in this section therefore focuses on the

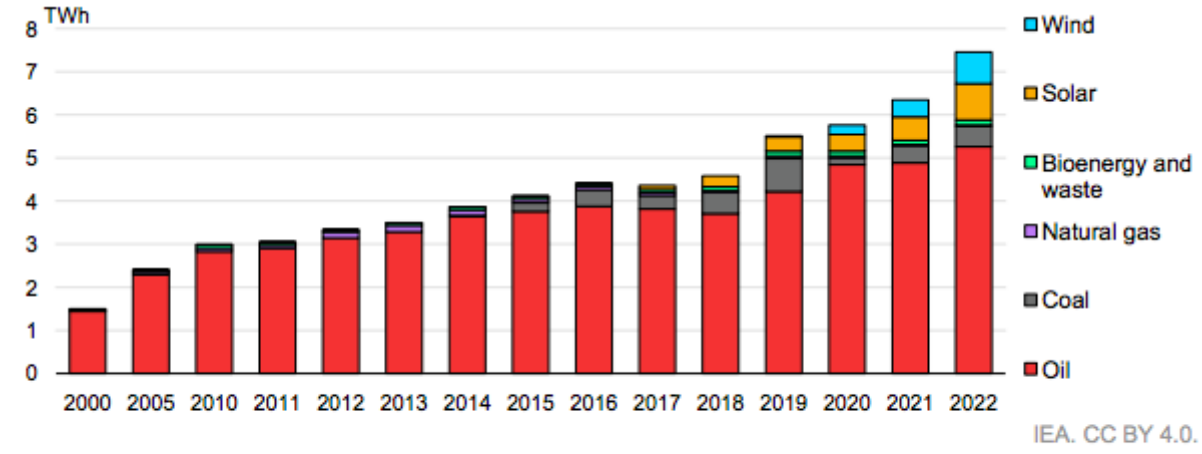
programmatic coherence between the integration of gas into the energy mix, national climate objectives and sectoral frameworks, in order to assess the extent to which gas is conceived as a vector of relative decarbonisation of the electricity sector, compatible with the officially proclaimed low carbon trajectory.

This approach is embedded in a logic of gradual transition, in which the reduction of the carbon intensity of the electricity sector constitutes an intermediate objective, combined with the maintenance, or even the expansion, of electricity supply in order to sustain economic growth and energy access. Gas is thus mobilised as a "necessary step" within strategic discourse, enabling, in the short and medium term, the reconciliation of the imperatives of supply security, economic competitiveness and climate alignment (IEA, 2023; NDC).

Point of departure low carbon: an electricity mix historically dominated by HFO

The climatic and economic rationale of the shift toward gas can only be understood in light of the initial structure of the Senegalese electricity mix. Institutional diagnostics converge in highlighting the historically high weight of HFO in electricity generation. According to the IEA, in 2022, a majority share of electricity production still relied on thermal power plants fuelled by HFO, complemented by more limited volumes of coal and diesel, despite the recent expansion of renewable energies (IEA, 2023)[37].

Figure 2: Electricity generation by source in Senegal, 2000-2022



Note: Data on hydroelectricity (imported from Mali within the framework of the Senegal River Basin Development Authority) are not included.
Source: IEA (2023), World Energy Balances.

[37] "The power sector is the key enabler for Senegal's sustainable development. The country's electricity mix is dominated by heavy fuel oil (HFO), which accounted for 70% of total electricity generation in 2022." (IEA, 2023, Executive Summary)

This figure above entitled *Electricity generation by source in Senegal, 2000–2022* (source: IEA, 2023) demonstrates concretely the dependence on HFO as the principal source of electricity production. Indeed, this graphical representation highlights a sustained growth in electricity generation in Senegal, which more than doubled between 2012 and 2022 (+117 %). Nevertheless, this quantitative expansion was not accompanied by an equivalent structural transformation of the electricity mix, which remains largely dominated by HFO, representing approximately 70 % of total generation in 2022. In parallel, the figure reveals a gradual diversification of the mix, driven by the expansion of renewable energies, in particular solar photovoltaic (11 %) and wind (9.8 %), whose contribution increased significantly in 2022.

This dependence on HFO constitutes a double challenge from the perspective of the low carbon trajectory. On the one hand, heavy fuel oil presents a high carbon intensity per unit of electricity produced, thereby increasing the emissions profile of the electricity sector[38]. On the other hand, it is an imported fuel, exposing the country to international price volatility and to elevated production costs, with repercussions for public finances, tariffs and economic competitiveness (IEA, 2023). This initial configuration underpins the argument of "relative decarbonisation" mobilised within the gas to power strategy. Indeed, this strategy, widely integrated into the Integrated Low-Cost Plan (ILCP)[39] aims to fully replace HFO with natural gas in electricity generation. Thus, "the retirement of old HFO plants would significantly reduce the cost of electricity and the country's energy related emissions" and "also reduce the import bill and increase energy security" (IEA, 2023). The transition from HFO to gas is presented as enabling a significant reduction in the carbon intensity of the kWh, while maintaining dispatchable thermal capacity indispensable to the functioning of the electricity system. Consequently, this reference comparison HFO versus gas constitutes the technical and discursive foundation of the integration of gas into the low carbon trajectory, without however constituting a full exit from fossil fuels in the strict sense. In this regard, the IEA in its Executive summary (2023) emphasises the importance of a "comprehensive clean power strategy is needed to synchronise

[38] The IEA consistently emphasizes that electricity generation from petroleum products, including heavy fuel oil (HFO), has a significantly higher carbon intensity per kWh than generation from natural gas. See in particular: IEA, CO_2 *Emissions from Fuel Combustion*; IEA, *World Energy Outlook* (recent editions), as well as the standard emission factors used by the IEA and the Intergovernmental Panel on Climate Change (IPCC). Although the IEA does not systematically publish country-specific emission factors for each fuel, this relative hierarchy of carbon intensities (HFO > natural gas) is a robust finding that is widely established in the international energy literature.

[39] Senegal's Low-Cost Integrated Plan - Integrated Low Cost Plan (ILCP) is a ten-year strategy for planning the electricity sector, a pillar of the Emerging Senegal Plan (PSE), which aims to guarantee universal access to electricity by 2025-2026 at affordable rates by defining clear priorities for electricity generation, transmission, and distribution projects.

the closure of the oldest HFO plants with the construction of gas fired power plants to support power system flexibility, while adding renewable energy to the system."

Gas to power coherence and renewables: a logic of system flexibility

Beyond direct substitution for HFO, gas is also presented as a dispatchable capacity essential to the coherence of an increasingly renewable electricity mix and is considered, in the terms of the IEA (2023), as a "key priority of Senegal's electricity sector roadmap". In the analyses of the World Bank and the IEA, gas is described as a flexibility instrument enabling the stabilisation of supply within a system characterised by the expansion of intermittent sources, such as solar and wind (World Bank, 2025; IEA, 2023). Within this framework, gas does not merely perform a carbon substitution function, but a systemic function. Indeed, it ensures the continuity of supply when renewable generation is insufficient, and absorbs fluctuations in demand. This dispatchable capacity is presented as a condition of credibility for the transition trajectory, insofar as it enables an increase in the share of renewables without compromising the reliability of the electricity system[40]. This functional complementarity between gas and renewables lies at the core of the strategic compromise analysed in this chapter. Gas is conceived as an instrument facilitating the gradual integration of intermittent renewable energies, by providing "system assurance" in the short and medium term. This articulation is consistent with international analytical frameworks of gradual energy transition, in which less carbon intensive fossil resources play a transitional role in supporting the integration of renewables (IEA, 2023).

Trajectory, calibration and volumes: between climate orientation and capacity planning

The credibility of the low carbon trajectory associated with gas also depends upon the calibration of planned capacities and the volumes envisaged in sectoral plans and reference analyses. Several documents, notably those of the Natural Resource Governance Institute (NRGI), emphasise that Senegal's gas to power ambitions imply the development of significant

[40] Leading international energy organizations unanimously emphasize that the growing integration of variable renewable energies (solar, wind) requires the maintenance of controllable capacities and flexibility resources in order to guarantee continuity of supply and the reliability of electricity systems. The IEA regularly highlights the role of gas-fired power plants as sources of flexibility and dispatchable capacity to balance systems as the share of renewables increases (IEA, *World Energy Outlook*; IEA, *Power Systems in Transition*; IEA, 2023, *Senegal Energy Policy Review*). The World Bank and IRENA take a similar approach, emphasizing the need for dispatchable capacity to support the rise of renewables and maintain grid stability (World Bank, Country Climate and Development Report (CCDR) and recent energy documents; IRENA, 2022, Renewable Energy and Energy Security).

gas fired electricity generation capacities, as well as associated infrastructure (NRGI, 2024). These analyses show that gas is conceived as a "step" within the trajectory, but a step potentially endowed with substantial volumes, which invites a clear distinction between strategic intention, project pipeline and effective outcomes in a context all the more pressing, where electricity demand has continuously increased in Senegal since 2005, and had more than quadrupled by 2021, with an average growth rate of 10 % (IEA, 2023). This methodological distinction is central to the analysis, it is necessary not to conflate the discursive framing of gas as a transition energy with the effective scale of investments and associated infrastructure. In this subsection, the emphasis is placed on the coherence of the invoked climatic logic, substitution for HFO, reduction of carbon intensity, stabilisation of the system, without anticipating the critical evaluation of the risks of carbon lock in and infrastructural inertia, which will be addressed in the following section (2.1.2).

Condition of low carbon credibility: fugitive methane emissions

An element often underemphasised in strategic discourse, yet central to the evaluation of the low carbon compatibility of gas, concerns fugitive methane emissions. Although gas presents a relative advantage in terms of CO_2 at combustion, its overall climatic balance depends strongly on the level of methane leakage throughout the value chain, production, processing, transport and utilisation.

Analyses by the IEA and the NRGI emphasise that high levels of leakage may significantly degrade, or even cancel, the climatic advantage of gas relative to more carbon intensive fuels (IEA Methane Tracker; NRGI, 2024). In this context, the credibility of the "low carbon transition gas" argument rests upon the capacity to control fugitive emissions, to limit flaring and to establish transparent mechanisms of measurement, reporting and verification.

Within the officially proclaimed trajectory, this dimension appears as an implicit condition of low carbon compatibility. Without yet entering into debates of governance and regulation, reserved for subsequent chapters, it is analytically necessary to underline that gas can only be considered compatible with a low carbon trajectory subject to strict control of methane emissions. This condition constitutes a necessary passage between programmatic logic and the effective climatic credibility of the gas to power strategy.

2.1.2 The risk of fossil fuel lock-in

If natural gas is presented within the Senegalese energy strategy as a transition energy compatible with a gradual low carbon trajectory, the literature on energy transitions warns against the risks of carbon lock in associated with investment in long term fossil infrastructure. The objective is therefore to examine the extent to which gas investments, long term infrastructure and contractual frameworks may durably orient the energy trajectory toward prolonged dependence on fossil fuels, despite the declared objectives of decarbonisation. The analysis seeks to identify the economic, technological and institutional mechanisms through which an energy presented as "transitional" may generate inertia effects, constraining future choices of the energy mix. The concept of carbon lock in, notably formalised by Unruh (2000), refers to the set of mechanisms through which technological, economic and institutional choices made at a given moment tend to rigidify energy trajectories over time, by rendering technically, financially and politically costly any reorientation toward more decarbonised options. From this perspective, the integration of gas into the Senegalese mix cannot be analysed solely as a transitional stage, it must also be examined as a potential factor of structural inertia capable of constraining the future evolution of the energy system[41].The literature commonly distinguishes several forms of lock in, which mutually reinforce one another, notably technological, economic and market based, institutional and political (Unruh, 2000; Seto and al., 2016)[42]. Applied to the Senegalese case, this framework enables the identification of the mechanisms through which an energy presented as "transitional" may, in practice, generate 'path dependency' effects and compromise the reversibility of the low carbon trajectory.

Lock in through infrastructure: long term investments and technological inertia

The first mechanism of lock in lies in the very nature of gas infrastructure. Gas fired power plants, transport networks, LNG terminals, storage facilities and connection equipment represent highly capital-intensive investments, characterised by long lifetimes, generally ranging between twenty and forty years. These assets are designed to operate over temporal horizons that largely exceed the political timelines of the energy transition. This characteristic produces an effect of technological inertia (Unruh, 2000; Aghion and al., 2016). Once

[41] More specifically, the concept of carbon lock-in, formalized by Unruh (2000), refers to the mechanisms by which fossil fuel-based energy systems tend to become self-reinforcing due to the co-evolution of technologies, markets, and institutions. These dynamics, known as "path dependence," produce forms of inertia, which he explains.

[42] Seto and al. (2016) distinguish between several forms of carbon lock-in, including: "technological lock-in," "institutional lock-in," "behavioral and organizational lock-in," "political lock-in," and "economic and market lock-in." This typology highlights the multidimensional and cumulative nature of lock-in, resulting from the co-evolution of technologies, market structures, institutions, behaviors, and coalitions of actors, which contributes to reinforcing path dependency and increasing the costs of reorienting energy trajectories.

infrastructure is constructed, the electricity system becomes technically optimised for its utilisation; network design choices, operational parameters and technical capabilities developed within operators tend to favour the continued use of gas. In this context, low carbon alternatives, notably renewables coupled with storage, smart grids and non-fossil flexibility solutions, may appear relatively less competitive in the short term, not due to their intrinsic costs, but because of the existence of fossil assets already amortised or in the process of amortisation[43]. This mechanism corresponds to what Seto and al. (2016) describe as technological lock in, whereby physical infrastructure creates increasing returns to the adoption of a given technology, rendering alternative trajectories more costly in the short and medium term. In the Senegalese case, the planned expansion of gas within electricity generation, as analysed by the IEA (2023), necessarily entails investment decisions that commit the energy system over several decades. Consequently, even if gas is presented as temporary in strategic discourse, infrastructure choices tend to generate a long temporal horizon, capable of transforming a transitional solution into a structural pillar of the system.

Economic and financial lock in: stranded assets, budgetary trade-offs and capital allocation

Beyond technological inertia, gas may also generate economic and financial lock in. The literature on stranded assets emphasises that, in a context of progressively tightening climate policies and declining renewable technology costs, fossil infrastructure risks losing profitability before the end of its economic lifetime (Seto and al., 2016). Under this scenario, gas investments may become trapped in a tension between, on the one hand, the necessity to comply with increasingly stringent climate trajectories and, on the other hand, the economic and political obligation to recover costly assets already committed. Applied to Senegal, this risk is explicitly analysed by the NewClimate Institute (2024), which emphasises that the expansion of gas projects and LNG exports exposes the country to heightened risks of stranded assets within the context of the global energy transition. The evolution of international gas markets, price volatility and uncertainty regarding long term demand constitute factors likely to affect the profitability of investments, particularly if climate policies in major importing countries intensify. Furthermore, investment choices in gas may generate financial crowding out effects. Public, private and multilateral capital mobilised to finance gas infrastructure mechanically

[43] Long-term energy investments generate sunk costs and increasing returns that encourage the continued use of existing technologies, a central mechanism of carbon lock-in (Unruh, 2000) and path dependency (Aghion and al., 2016).

reduces the fiscal and financial space available for other investments necessary to the low carbon transition, notably storage, smart grids, non-fossil flexibility solutions and decentralised renewables. This mechanism is frequently identified in the literature on energy transitions as a factor of lock in, insofar as it reinforces priority for existing technologies and limits the pace of expansion of low carbon alternatives (Seto and al., 2016; NewClimate Institute, 2024; NRGI, 2024). Moreover, as specified by the IEA (2023), although public financing will continue to play an important role, Senegal's energy sector must also be capable of mobilising greater private investment. The country has access to financing solutions for renewable energy projects, primarily from international banks and development finance institutions. By contrast, gas related projects are currently more difficult to finance. Indeed, most Development Finance Institutions no longer support such projects, and commercial investors may not find risk adjusted returns sufficiently attractive for regulated assets, such as gas transport and distribution networks.

From this perspective, economic lock in does not derive solely from the risk of stranded assets, but also from the formation of budgetary dependencies. Expected revenues from gas, whether linked to domestic production or export, may durably orient public policy priorities, by incentivising the state to privilege the profitability of the gas sector rather than accelerating investments in low carbon technologies whose financial returns are more diffuse or slower to materialise (NRGI, 2024).

Institutional and contractual lock in: legal frameworks, vested interests and political irreversibilities

A third dimension of lock in concerns institutional and contractual dynamics. Gas projects typically rely upon long term agreements: supply contracts, Power Purchase Agreements (PPA), public private partnerships, production sharing agreements and export contracts. These legal commitments generate structural rigidities, insofar as they bind parties over multi decade horizons and render politically and financially costly any premature revision. The literature on institutional lock in emphasises the central role of legal frameworks and contractual arrangements in rigidifying energy trajectories (Unruh, 2000; Seto and al., 2016). In the Senegalese case, the integration of gas into sectoral planning frameworks and investment strategies tends to be accompanied by the formation of actor coalitions, energy companies, sectoral administrations, financial partners, service providers, whose economic and professional interests are directly linked to the stability and expansion of the gas sector. These

“vested interests” may, over time, influence the orientation of energy policy, by increasing the political costs of a rapid shift toward more decarbonised options. This mechanism corresponds to what the literature describes as institutional inertia, the more a sector becomes embedded within regulatory, financial and planning arrangements, the more politically costly disengagement becomes, even when technically and economically viable alternatives exist. In this perspective, institutional lock in does not result from an explicit intention to slow the transition, but from the cumulative logic of contractual and organisational arrangements accompanying the development of a given energy sector. Gas, initially conceived as a transitional resource, may thus acquire institutional weight exceeding its declared role within the low carbon trajectory.

Carbon lock in and development decarbonisation trade offs

Finally, the risk of carbon lock in must be situated within a broader tension between development objectives and decarbonisation trajectories. For a developing country, gas is presented as a lever of growth, supply security and reduction of electricity production costs. This economic and developmental rationale may enter into tension with the long-term requirements of the low carbon transition, particularly if gas investments delay or limit the scale of investments in renewables, storage and flexibility infrastructure. In this perspective, lock in should not be understood as a simple failure of the transition, but as the outcome of structural compromises between partially contradictory imperatives. The literature on carbon lock in emphasises precisely that energy transitions are not solely technological processes, but political and economic processes, in which present choices shape the options available in the future (Seto and al., 2016; Aghion and al., 2016).

Thus, the integration of gas into the Senegalese energy transition, while responding to immediate objectives of energy security and development, entails a structural risk of carbon lock in. Over long horizons, gas could hinder the establishment of a long-term renewable energy strategy, could confine the country within a dominant gas trajectory, thereby limiting the catalytic effect sought through the Just Energy Transition Partnership (JETP), to which we will return later; and could prevent the government from fully harnessing the country’s solar and wind potential. Nevertheless, this analysis does not prejudge the desirability or undesirability of gas within the Senegalese trajectory, but rather highlights the structural constraints capable of affecting the reversibility of the transition and of transforming a so called “transition” energy into a durable pillar of the system.

2.1.3 Gas: a lever for sovereignty or reconfigured dependence?

Even though the integration of natural gas into the Senegalese energy strategy is presented by public authorities as a central lever for strengthening energy sovereignty, it is also necessary to analyse gas as an ambivalent instrument of energy sovereignty for Senegal. The aim is to move beyond a strictly economic or technical reading of gas exploitation in order to examine its implications in terms of strategic autonomy, resource control and structural vulnerability. Thus, gas exploitation undeniably opens new margins of manoeuvre in reducing imports, securing supply and generating national revenues. At the same time, it exposes the country to reconfigured forms of dependence, linked to the centrality of international markets, the structuring role of multinational corporations and the risks of fossil lock in analysed previously. Gas sovereignty therefore appears deeply conditional, closely dependent on the governance of contracts, revenue flows and resource utilisation.

Indeed, beyond its major role in the reconfiguration of electricity production through the gas to power strategy as analysed earlier, gas exploitation also opens the prospect of public revenues derived from exports of LNG. Available macroeconomic projections suggest that these revenues could represent a significant, though limited, contribution to public finances. According to estimates cited by the International Institute for Sustainable Development (IISD) based on projections from the International Monetary Fund (IMF), revenues from hydrocarbon exports could average approximately 1.5 % of GDP between 2022 and 2043, with a potential peak around 3 % of GDP, and up to 6 % of public revenues on average, with a peak potentially reaching 16 % around 2030 (IISD, 2024; IMF, 2019). These revenues therefore constitute a potential lever of budgetary sovereignty, insofar as they strengthen, in a limited and contingent manner, the capacity of the state to finance its public policies autonomously.

A reconfigured dependence: multinationals, markets and fossil lock in

However, this sovereignty cannot be understood as energy independence in the strict sense. Gas exploitation relies centrally on international private actors possessing the technical, financial and commercial capacities required for exploration, production and marketing of gas. The principal Senegalese gas projects are operated in partnership with major multinational

corporations, which creates structural asymmetries in technological control, expertise and bargaining capacity[44].

Within this framework, dependence is displaced rather than eliminated. It no longer takes the form of dependence on imports of finished fuels, but rather that of insertion into globalised value chains, characterised by complex contracts, strong exposure to international markets and heightened sensitivity to gas price cycles. Analyses by the NewClimate Institute emphasise that the economic viability of Senegalese LNG exports depends closely on the evolution of global demand and relative competitiveness vis à vis established producers (NewClimate Institute, 2023). In scenarios aligned with the Paris Agreement[45], global demand for gas and LNG is expected to decline, increasing the risk that Senegalese projects may face reduced margins, or even stranded asset situations.

This exposure to international markets generates a specific vulnerability: gas price volatility may translate into strong uncertainty regarding revenues, complicating budgetary planning and the sustainability of investments. Analyses by the IEA show that the global energy crisis following the invasion of Ukraine produced unprecedented volatility in gas and LNG markets, affecting both importing and exporting countries (IEA, 2022; IEA, 2023). In this context, research by the NRGI emphasises that emerging producing countries, such as Senegal, are particularly exposed to price cycles and revenue uncertainty, which may weaken budgetary predictability and the macroeconomic sustainability of gas-based strategies (NRGI, 2024).

From this perspective, the energy sovereignty associated with gas appears profoundly ambivalent. It is accompanied by structural dependence on global market dynamics, on the rules of international LNG trade and on the strategies of major energy companies. As demonstrated by Ross (2012) and Karl (1997) in their analyses of extractive economies, possession of natural resources does not in itself guarantee enhanced strategic autonomy; it may instead generate new

[44] Senegal's main gas projects (notably Greater Tortue Ahmeyim) are operated by international majors, with BP holding a majority stake and playing a central role in LNG marketing. National companies, including Petrosen, hold minority stakes, which limits the state's direct control over technological and commercial decisions (IEA, 2023; Reuters, 2024). This configuration corresponds to the classic patterns of asymmetry analyzed in the literature on extractive economies (Auty, 1993; Karl, 1997; Ross, 2012).

[45] The Paris Agreement, adopted in 2015 under the auspices of the United Nations Framework Convention on Climate Change, is a legally binding international treaty that aims to limit global warming to well below 2°C above pre-industrial levels, while pursuing efforts to limit it to 1.5°C, notably through nationally determined contributions (NDCs) and long-term decarbonization pathways.

forms of vulnerability, linked to revenue volatility, sectoral concentration and dependence on dominant actors within value chains.

A sovereignty conditioned by the governance of contracts and revenues

Gas sovereignty must therefore be analysed as an institutional construction, deeply conditioned by the capacity of the state to govern contracts, financial flows and resource utilisation. The distinction between ownership of reserves and effective control over economic and strategic decisions is central here. As emphasised by Auty (1993) and Karl (1997), the capacity to transform extractive rents into a lever of development and autonomy depends largely on the quality of institutions, fiscal frameworks and redistribution mechanisms.

Exploitation contracts constitute a nodal point of this governance. Production sharing arrangements, levels of state participation, fiscal clauses and stabilisation mechanisms directly influence the share of rent effectively captured by the public sector. In a context characterised by strong asymmetry of information and bargaining capacity between emerging producing states and multinational corporations, energy sovereignty relies to a significant extent on the ability of the administration to negotiate, monitor and, where necessary, renegotiate these agreements.

Management of gas revenues constitutes a second key determinant. Revenues derived from gas may strengthen the fiscal autonomy of the state, yet they may also generate dynamics of rent dependence, budgetary volatility and macroeconomic vulnerability. As shown in the literature on extractive economies and the "resource curse" mobilised in Part 1.1.1, without robust mechanisms of management, transparency and allocation of revenues, extractive rents tend to weaken institutions and limit positive long term development effects (Auty, 1993; Ross, 2012).

In this perspective, the energy sovereignty associated with gas appears fundamentally conditional. It does not arise mechanically from the presence of national resources, but depends on the capacity of the state to embed gas exploitation within a coherent strategy of development, economic diversification and energy transition. Mastery of legal, fiscal and contractual frameworks, as well as the strategic allocation of revenues, constitutes necessary conditions for gas to effectively reinforce strategic autonomy, rather than generating a new form of structural dependence.

The integration of gas as a “transition energy” represents a strategic compromise, enabling the relative decarbonization of the electricity system without an immediate break with fossil fuels. However, this compromise does not in itself constitute a sustainable long-term trajectory: it shifts the focus to the government's ability to make renewable energies the structural foundation of the transition, beyond their role as a supplement to gas.

2.2 The development of renewable energies: towards a carbon-free energy model

While gas is presented as a transitional solution enabling relative decarbonisation of the electricity system in the short to medium term, the development of renewable energies constitutes the second, more structural pillar of the Senegalese energy trajectory. Drawing upon a high solar and wind potential, complemented by regional hydroelectric contributions, the state seeks to make renewables not only an instrument of diversification of the energy mix, but the foundation of a progressively decarbonised energy model, compatible with its climate commitments and its national objectives.

However, the rise of renewable energies does not result from a simple technical process of substitution. It relies on organised public action, mobilising strategic frameworks, market-based instruments and financial mechanisms aimed at transforming renewable potential into capacities effectively integrated into the electricity system (2.2.1). At the same time, this trajectory encounters structural constraints related to the intermittency of resources, network configurations, financing conditions and institutional capacities for planning and regulation, which condition the pace and sustainability of the transition toward a decarbonised energy model (2.2.2).

2.2.1 The policy for promoting renewable energy

The development of renewable energies constitutes one of the structuring pillars of the Senegalese energy transition trajectory. Beyond the recognition of a high natural potential, the rise of solar, wind and, to a lesser extent, hydropower rests upon a public policy explicitly organised around strategic frameworks, market-based instruments and financing mechanisms aimed at transforming a resource endowment into low carbon capacities effectively integrated into the electricity mix. Thus, the analysis focuses on the logic of public action, quantified targets, contractual tools, partnerships and financing mechanisms, in order to assess how the state converts renewable potential into installed capacities.

The policy of promoting renewables may therefore be analysed as a coherent architecture of instruments aimed at reducing risks, attracting private investment and embedding renewable energies as structural components of the electricity system, in articulation with the objectives of energy transition and decarbonation.

Strategic frameworks: from transition objectives to the prioritisation of renewables

The promotion of renewables is first embedded, as previously mentioned, within a strategic architecture articulating the LPDSE 2025–2029, the PSE and the NDC. These documents define a normative framework in which renewable energies are explicitly identified as a central lever for diversification of the mix, reduction of the carbon intensity of the electricity sector and support for universal access to electricity.

The LPDSE 2025–2029 establishes energy transition as a structuring objective of sectoral policy and affirms the integration of renewable energies as a priority axis of the recomposition of the mix. It notably underlines Senegal's commitment to significantly increasing the share of renewable energies in electricity generation, in coherence with international climate commitments and sectoral sustainability objectives (Government of Senegal, LPDSE 2025–2029)[46].

Available data confirm a recent yet still partial progression of this trajectory. According to the Ministère de l'Énergie, du Pétrole et des Mines (Senegal's Ministry of Energy, Petroleum and Mines, 2025), renewable energies represented 27.35 % of total installed capacity and 19.48 % of gross electricity generation. In parallel, World Bank (2025) data demonstrate that the share of electricity generated from renewable sources in total electricity production in Senegal experienced very strong growth between 2010 and 2020, increasing from 1.39 % to 9.23 %. In addition, IRENA statistical profiles also indicate a rapid expansion of installed renewable capacities since the second half of the 2010s, while emphasising that fossil fuels remain dominant in electricity generation (IRENA, Statistical Profile: Senegal). These elements confirm that the policy of promoting renewables follows an upward trajectory, yet from an initial structure that remains strongly carbon intensive.

Market instruments: competitive tenders, PPA and competition

[46] See also section 1.2.1 above. The LPDSE 2025–2029 reaffirms Senegal's commitment to achieving 40% renewable energy in the electricity mix by 2030 (LPDSE 2025–2029, p. 55).

At the core of the renewable promotion policy lies the use of market instruments, particularly competitive tenders and Power Purchase Agreements, PPA. These mechanisms aim to introduce a competitive logic in order to reduce costs, while ensuring project bankability and attractiveness for investors.

The Scaling Solar programme, supported by the World Bank and the International Finance Corporation, IFC, constitutes an emblematic example of this approach. It relies on standardised tenders for photovoltaic projects, combining long term PPA, multilateral guarantees and pre negotiated contractual structures. This architecture aims to reduce regulatory and contractual risks, accelerate financial closure and lower proposed tariffs. International experiences analysed by the World Bank show that such mechanisms contribute to a significant reduction in solar costs, transferring efficiency gains from competition to final consumers (World Bank, 2020).

In Senegal, this logic has resulted in the commissioning of several utility scale solar plants, such as Bokhol, Malicounda, Kahone, Sakal or Diass, with unit capacities generally ranging between 20 and 30 MW, developed within the framework of public private partnerships and with the support of multilateral donors. As an illustration, the Diass solar plant, 23 MW, commissioned in 2022, was financed with the support of Kreditanstalt für Wiederaufbau (KfW)[47], and integrated into the national grid through the SENELEC. These projects illustrate the central role of competitive tenders and PPA in transforming solar potential into effectively operational capacities, in accordance with mechanisms promoted by the World Bank and the IEA (IEA, 2023; World Bank, Scaling Solar).

PPA play a central role within this architecture. By guaranteeing an electricity purchase price over long horizons, often 20 to 25 years, they secure revenue streams and reduce investor risk, thereby contributing to lowering the cost of capital. In IEA analyses, this form of contractualisation is identified as a key factor in the growing competitiveness of renewables in developing countries, particularly where country and sectoral risks remain high (IEA, 2023). The shift from a logic of direct subsidy to one of competitiveness through auctions thus marks an important transformation of public policy, embedding renewables within a regulated market dynamic.

[47] Kreditanstalt für Wiederaufbau (KfW), meaning “Credit Institute for Reconstruction,” is Germany's public development bank.

Incentive and financing mechanisms: donors, PPPs and risk reduction

The renewable promotion policy also relies on a set of financial and institutional mechanisms aimed at reducing risk and mobilising capital at scale. Concessional loans, guarantees, co-financing and Public-Private Partnerships (PPPs), play a decisive role in structuring projects.

Major multilateral donors, notably the World Bank, the IFC and the African Development Bank (AfDB), as well as several bilateral partners, play a central role in structuring and financing renewable projects in Senegal. Their intervention aims to reduce financing costs, share risks and strengthen project bankability through concessional loans, guarantees and co-financing mechanisms. IEA analyses underline that the high cost of capital constitutes a major structural barrier to the rapid deployment of renewable infrastructure in emerging economies, which justifies the use of these multilateral instruments to enhance the attractiveness of low carbon investments (IEA, 2023). This financial architecture thus partially compensates for macro financial constraints specific to the Senegalese context and supports the expansion of renewable capacities.

Within this framework, the state retains a central role of orientation and regulation, while the private sector ensures investment and operation of infrastructure. SENELEC, as public operator, plays a key role in integrating renewable capacities into the national grid, signing PPA and coordinating with developers. This structuring contributes to the emergence of a genuine renewable "market", characterised by a plurality of private actors operating within a contractual and regulatory framework defined by the state (SENELEC, 2024).

2.2.2 Technical, economic and institutional challenges

Despite the existence of a high renewable potential and the implementation of promotion instruments, the effective expansion of renewable energies in Senegal remains conditioned by a set of structural constraints. These relate simultaneously to the technical configuration of the electricity system, the economic and financial conditions of investment, as well as the institutional capacities for planning, regulation and coordination. The analysis of these constraints makes it possible to move beyond a purely declarative reading of transition objectives and to highlight the systemic conditions that determine the pace and sustainability of the deployment of low carbon capacities.

Technical constraints: intermittency, networks and system integration

The first category of constraints relates to the very nature of the main renewable resources mobilised, particularly solar and wind, which are characterised by variable production dependent on meteorological conditions. This intermittency poses specific challenges for balancing the electricity system, insofar as production does not necessarily coincide with demand profiles. As emphasised by the IEA (2023) and the World Bank (2014), large scale integration of variable renewable energies requires increased system flexibility capacities, in order to maintain frequency stability, avoid imbalances between supply and demand and guarantee continuity of service[48]. In the Senegalese context, these challenges are reinforced by the characteristics of the transmission and distribution network. Existing infrastructures were historically designed for a system dominated by centralised thermal power plants operating in a dispatchable manner. The growing integration of renewable capacities, often located in specific areas, zones with high solar irradiation or wind corridors, increases network constraints, particularly in terms of absorption capacity, congestion management and technical losses. Indicators of transmission and distribution losses, regularly documented by the World Bank, reflect structural limitations of the grid, which may reduce the overall efficiency of integrating new capacities and require substantial investment in the modernisation and reinforcement of infrastructure. Beyond the grid, the expansion of renewables implies a growing need for flexibility solutions. These include both dispatchable capacities, gas and hydropower, storage solutions, batteries, as well as smart demand management mechanisms. Analyses by the IEA (2022) and the World Bank (2014) underline that the principal challenge lies not so much in renewable generation capacity itself, but in its ability to be reliably integrated into an existing electricity system without compromising security of supply. Within this framework, the renewable transition appears as a systemic process, requiring complementary investments in networks, flexibility and operational management tools, beyond generation capacities alone.

Economic and financial constraints: costs, access to capital and tariff sustainability

[48] Although the International Energy Agency's (IEA, 2023) *Senegal Energy Policy Review* does not systematically formulate the link between variable renewable energies and system flexibility requirements in generic terms, this relationship constitutes a standard analytical framework in the work of the IEA and the World Bank. The IEA repeatedly emphasizes that the integration of increasing shares of solar and wind power requires dispatchable generation capacity, grid reinforcement, and operational improvements to ensure the reliability and balancing of the electricity system. This approach is also explicitly developed by the World Bank, which identifies system flexibility, dispatchable capacity, and grid reinforcement as necessary conditions for the large-scale integration of variable renewable energy. In the case of Senegal, the IEA (2023) emphasizes the reliability of supply, electricity system planning, and the role of controllable capacity (particularly through the gas-to-power strategy), which implicitly places the rise of renewables within this analytical framework of system flexibility.

The second category of constraints concerns the economic and financial conditions of renewable deployment. Although technological costs of solar and wind have significantly declined over the past decade, renewable projects remain characterised by strong capital intensity. The majority of costs are concentrated in the initial investment phase, rendering project viability particularly sensitive to financing conditions and the cost of capital. In emerging economies, and particularly in Sub Saharan Africa, the cost of capital is structurally higher than in advanced economies, due to factors such as country risk, perceived macroeconomic instability, limited depth of domestic financial markets and the variable financial solidity of public operators. The IEA (2023) underlines that these conditions constitute a major barrier to the rapid deployment of low carbon energy infrastructure, thereby justifying the use of specific financial instruments such as concessional loans, guarantees and multilateral co financing mechanisms. In the Senegalese case, dependence on external financing thus appears as a structural constraint. Major renewable projects have been made possible through the intervention of multilateral donors and bilateral partners, who contribute to reducing financing costs and sharing risks. While this financial architecture improves project bankability, it also highlights the vulnerability of deployment pace to conditions of access to international financing, donor priorities and the evolution of global climate finance frameworks. To these constraints is added the issue of tariff sustainability. The expansion of renewables, combined with necessary investments in networks, storage and flexibility, places pressure on overall electricity system costs. However, Senegalese energy policy simultaneously pursues the objective of affordable electricity for households and firms (LPDSE, 2025–2029), within a context of strong social and political sensitivity to tariffs. This structural tension limits the capacity to fully pass investment costs onto consumers and reinforces dependence on subsidy mechanisms, compensation or concessional financing.

Institutional and sectoral governance constraints

The third category of constraints concerns institutional and governance dimensions of the energy sector. The policy promoting renewables relies on a relatively complex architecture of actors, involving the supervising ministry, the regulatory authority, the public operator SENELEC, independent power producers, as well as multiple donors and technical partners. This multiplicity of actors may generate coordination challenges in capacity planning, project allocation, grid integration and contract monitoring. Administrative and regulatory capacities also constitute a determining factor. Procedures for competitive tenders, PPA negotiation and

financial structuring of projects are technically and legally complex, increasing dependence on external expertise and potentially extending implementation timelines. The IEA (2023) emphasises that strengthening institutional capacities is an essential lever to improve planning effectiveness, regulatory credibility and the state's ability to steer a sustainable expansion of renewables. Regulatory stability constitutes another key element. The credibility of the promotion policy depends on the predictability of the rules of the game, particularly regarding tariffs, contractual conditions and sectoral priorities. Any change perceived as unilateral or unpredictable may affect investor confidence and increase the cost of capital. In this context, sectoral governance appears as a structural condition of the transition, on the same level as physical infrastructure and financing. It should be underlined that these institutional constraints do not arise solely from specific deficiencies, but reflect structural challenges inherent to energy transitions in developing countries, where the rapid expansion of low carbon capacities often occurs within administrative and regulatory environments still in consolidation (IRENA, 2022).

The gap between political ambition and implementation capacities

The entirety of these constraints highlights a structural gap between declared political ambition and effective implementation capacities. High renewable potential and established promotion instruments do not automatically translate into immediately operational capacities. The pace of transition is conditioned by the time required for development of network infrastructure, mobilisation of financing and the gradual adaptation of institutional and regulatory frameworks. This structural gap between political ambition and effective implementation capacities is widely documented in the literature on energy transitions, which emphasises that decarbonisation trajectories depend on systemic transformations of infrastructure, markets and institutions, beyond political objectives alone (Grubb and al., 2014; Geels, 2002)[49]. Within this perspective, the renewable transition must be analysed as a socio technical process dependent on the capacity of the system to absorb and sustainably support new technologies, which explains why ambitious quantified targets do not automatically translate into operational capacities. This analysis does not challenge the strategic relevance of renewable energies within the Senegalese energy trajectory. It demonstrates, however, that their effective deployment rests upon structural conditions that extend beyond promotion instruments alone. The renewable transition

[49] The work of Grubb, Hourcade, and Neuhoff (2014) shows that decarbonization trajectories are constrained by "existing systems": infrastructure, institutions, markets, and financing, which condition the effective implementation of climate objectives by creating "structural frictions." Complementarily, Geels' (2002) multi-level perspective conceptualizes energy transitions as 'socio-technical reconfigurations' dependent on existing regimes, which helps explain the structural gaps between political ambition and the actual capacity to deploy low-carbon technologies.

is thus inseparable from a broader transformation of the electricity system, its infrastructure, its financing mechanisms and its institutional capacities, thereby preparing the analysis, in the following section, of the role of international cooperation as a lever for partial mitigation of these constraints.

The development of renewable energies thus appears less as a simple technological choice than as a process conditioned by technical, financial, and institutional constraints. Consequently, the central question is no longer just one of potential or national instruments, but rather how international cooperation can or cannot remove these constraints and concretely structure the transition path.

2.3 International cooperation as a driver of transition

The trajectory of Senegal's energy transition cannot be fully understood without taking into account the structuring role of international cooperation. In a context marked by the strong capital intensity of energy infrastructure, high technological requirements and institutional capacities still in the process of consolidation, the intervention of external partners appears as a central element in the effective implementation of national strategic orientations. Far from being limited to occasional financial support, this cooperation contributes to the very structuring of the energy sector, by conditioning the pace, the scale and the form of the investments undertaken.

Through the mobilisation of concessional financing, guarantees and blended finance arrangements, but also through the provision of technology, project engineering and institutional expertise, multilateral, bilateral and private partners contribute to alleviating part of the economic, technical and organisational constraints identified in the previous section. This partnership architecture thus plays a decisive role in transforming transition objectives into concrete and operational infrastructure (2.3.1). At the same time, the emergence of more integrated cooperation frameworks, such as the Just Energy Transition Partnership (JETP), marks a qualitative evolution of this dynamic. By articulating multi actor coordination, financial engineering and sectoral prioritisation, the JETP establishes itself as a structuring instrument of Senegal's energy transition trajectory, offering a privileged analytical lens on the contemporary modalities of international cooperation in the energy sector (2.3.2).

2.3.1 The role of external partners

As previously explained, the concrete implementation of Senegal's energy transition takes place in a context marked by strong capital intensity, high technological requirements and institutional capacities still in the process of consolidation. Within this framework, the intervention of external partners appears as a decisive lever in transforming national strategic orientations into effectively deployed infrastructure. The purpose is therefore to examine how multilateral donors, partner states and international companies intervene as providers of financing, technologies and expertise, thereby helping to overcome certain technical and economic constraints identified earlier. The analysis does not address the normative or political dimensions of this cooperation, but rather its instrumental function, namely the structuring of projects, reduction of financial risk, transfer of technical capacities and acceleration of the deployment of energy infrastructure.

International cooperation is not limited to peripheral financial support, but constitutes a set of operational instruments that structure project bankability, reduce the cost of capital, provide technology and engineering, and strengthen planning and regulatory capacities. The analysis of the role of external partners thus shows that the pace, the scale and, to a certain extent, the form of Senegal's energy transition are closely conditioned by this partnership architecture.

Financial partners: capital mobilisation and risk reduction

International financial institutions (IFIs)[50] and bilateral donors occupy a central position in the financial structuring of energy projects in Senegal. The World Bank, the IFC, the AfDB, the 'Agence française de Développement' (French Development Agency, AFD) and the European Investment Bank (EIB) intervene through a combination of concessional loans, guarantees, cofinancing and risk mitigation mechanisms. Their role goes beyond the mere provision of liquidity. Indeed, they contribute to reducing the cost of capital in a context where the perception of country risk, the financial solidity of the public operator (SENELEC) and macroeconomic volatility can significantly increase financing conditions (World Bank, 2020; IEA, 2023).These financial partners play a key role in structuring blended finance

[50] International financial institutions (IFIs) refer to multilateral organizations such as the World Bank, the IFC, AfDB, the EIB, and the AFD, which provide financing, guarantees, and technical assistance to support investment in developing countries. In the energy sector, they play a central role in reducing the cost of capital, sharing risk, and structuring projects, acting as catalysts for private investment (OECD, 2018).

arrangements[51], combining concessional capital and private investment. This architecture aims to improve project bankability, by reducing the risks perceived by commercial investors and facilitating the entry of Independent Power Producers (IPP). The example of the solar projects stemming from the Scaling Solar programme explained above provides an illustration (World Bank, Scaling Solar; IFC, 2019). The catalytic effect of multilateral donors is particularly visible in the implementation of large-scale projects, which would have been difficult to finance solely on the basis of national capacities. IFIs therefore act as catalysts for private investment, by playing a role of credibility signalling and risk stabilisation. This function is central in a sector where high upfront costs and long investment horizons constitute structural barriers to entry (IEA, 2023). From an analytical perspective, financial cooperation thus appears as an instrument for reducing the economic constraints identified previously, by enabling the acceleration of the conversion of transition objectives into installed capacities.

Technological and industrial partners: project engineering and transfer of know how

Beyond financing, external partners intervene as providers of technology, engineering and implementation capacity. International companies play a central role in the design, construction and sometimes operation of energy infrastructure, through contractual models such as EPC (Engineering, Procurement and Construction), BOO (Build, Own, Operate) or BOT (Build, Operate, Transfer). This presence is particularly pronounced in solar and wind projects, where international consortia ensure the supply of equipment, project engineering and maintenance (World Bank, Scaling Solar).

In the case of solar photovoltaics, the plants commissioned in Senegal over the past decade have largely relied on international actors for the supply of panels, inverters and control systems, as well as for engineering and grid integration. Projects stemming from Scaling Solar illustrate this dynamic. Companies such as ENGIE, associated with infrastructure investors such as Meridiam and with local partners, notably FONSIS[52], have carried out solar plants under long

[51] Blended finance refers to financial arrangements that combine concessional public or multilateral resources (grants, preferential loans, guarantees) with private capital in order to reduce the risk profile of projects and mobilize commercial investments that would not otherwise be made. These mechanisms aim to improve the bankability of projects, reduce the cost of capital, and catalyze private investment, particularly in capital-intensive sectors such as energy infrastructure in developing countries (OECD, 2018; IFC, 2026).

[52] FONSIS (Fonds Souverain d'Investissements Stratégiques) is Senegal's sovereign wealth fund, established in 2012 to support long-term strategic investments in key sectors, including energy, infrastructure, and natural resources, with the aim of fostering economic development and enhancing national economic sovereignty.

term PPA with SENELEC, backed by multilateral guarantees (IFC, 2021; Meridiam, project sheets).

This configuration gives industrial partners a structuring role in the materialisation of the transition. They do not merely respond to public demand, but contribute to defining technical standards, project management practices and operational modalities. Through this channel, international cooperation also contributes to the diffusion of skills, through the training of local professionals, the transfer of management methods and the harmonisation of procedures with international standards. This gradual professionalisation of the sector constitutes an indirect yet significant effect of the intervention of external partners (IEA, 2023).

In the gas sector, international majors occupy an even more central position. The Grand Tortue Ahmeyim (GTA) project, operated notably by bp in partnership with Kosmos Energy, constitutes an emblematic example of how international private partners provide capital, offshore engineering and the capacity to manage complex projects. These actors integrate Senegal into global gas and LNG value chains, contributing to structuring the "gas-to-power" sector and conditioning the sequencing of associated infrastructure development (bp, 2025; NRGI, 2024). From an instrumental perspective, this industrial cooperation makes operational projects that would otherwise remain technically beyond the reach of national capacities alone.

Institutional partnerships: planning, expertise and support for reforms

A third sphere of intervention by external partners concerns institutional support and sectoral planning. International agencies such as the IEA and IRENA, as well as multilateral institutions and regional frameworks, notably ECOWAS and the West African Power Pool, provide analytical tools, modelling and strategic advice. These mechanisms contribute to the elaboration of energy planning frameworks, to the definition of mix trajectories, and to the structuring of tendering and contractual arrangements. The technical assistance provided by external partners plays a central role in strengthening administrative and regulatory capacities. It notably concerns the structuring of PPA, the design of competitive tenders, project evaluation and the alignment of procedures with international standards. In a sector characterised by high legal and financial complexity, this expertise contributes to reducing information asymmetries and improving the capacity of the state and its agencies to steer the transition (IEA, 2023).

International cooperation as a factor of acceleration and scale

Taken together, these different dimensions, financing, technology, institutional support, allow international cooperation to be characterised as a factor of acceleration and scaling up of the energy transition. External partners make possible projects of a magnitude and within timeframes that would be difficult to achieve through national capacities alone. They thus contribute to transforming a national transition strategy into a concrete portfolio of projects, by reducing economic constraints, providing implementation capacity and strengthening planning mechanisms. From an analytical standpoint, this cooperation does not substitute for the national strategy defined by the LPDSE, the PSE and the NDC. Rather, it operates as a set of operational instruments anchored in national frameworks, which condition their effective implementation. The priorities of partners generally reflect a convergence between national objectives, access, reliability, cost reduction, and international priorities, climate, decarbonation, which explains the observed alignment between renewable promotion, structuring of gas-to-power and mobilisation of concessional finance (IEA, 2023).

The instrumental analysis thus makes it possible to move beyond a purely declarative reading of cooperation, highlighting its structuring function in the materialisation of the transition. Senegal's energy transition appears, from this perspective, as the product of an operational coalition including multilateral donors, partner states, industrial firms and infrastructure investors, articulated around contractual mechanisms, PPA, financial instruments, guarantees, blended finance, and institutional arrangements, technical assistance, planning. This architecture directly conditions the pace, the scale and the nature of the infrastructure effectively deployed. This characterisation prepares the analysis of the following section, devoted to the JETP, which constitutes an emblematic example of framework cooperation, combining multi actor coordination, financial engineering and sectoral prioritisation, and allowing a more refined observation of how international cooperation concretely structures the transition trajectory.

2.3.2 Just Energy Transition Partnership (JETP) as a framework for the transition

The Just Energy Transition Partnership (JETP) signed in 2023 between Senegal and the International Partners Group (IPG) composed of France, Germany, the European Union, the United Kingdom and Canada constitutes a turning point in the structuring of Senegal's energy trajectory. Accordingly, the JETP must be analysed as a structuring framework of Senegal's energy transition, understood as a programmatic architecture linking international financing, sectoral priorities and implementation instruments. The aim is to examine the JETP not as a

mere diplomatic agreement, but as a financial, institutional and technical engineering mechanism intended to orient the national energy trajectory through the reduction of the most carbon intensive fossil fuels, the scaling up of renewables and the modernisation of networks[53].From this perspective, several analyses emphasise that the JETP offers a singular opportunity for Senegal to structure a clearer and more coherent public policy of energy transition, by strengthening the articulation between national priorities, financing instruments and implementation capacities (NRGI, 2025).

The JETP as a programmatic architecture: objectives, scope and sectoral priorities

The JETP first presents itself as a strategic orientation framework aimed at supporting an energy transition aligned with Senegal's international climate commitments, notably within the framework of its NDC and its obligations under the Paris Agreement. Its stated purpose rests on a triple articulation: (i) the gradual reduction of dependence on the most emitting fuels, particularly coal and fuel oil; (ii) the acceleration of renewable energy deployment; and (iii) the modernisation of electricity networks and sectoral planning capacities (IEA, 2023; European Commission, 2023; EIB, 2023)[54].

Within this perspective, the JETP does not replace existing national energy policies, but rather aims to equip and strengthen them. Its scope of intervention primarily covers the electricity sector production, transmission and distribution, as well as related domains such as energy efficiency and institutional strengthening. This sectoral delimitation reflects a conception of transition as a progressive transformation of infrastructure and governance capacities, rather than as simple technological substitution. The partnership therefore operates as a coordination framework for existing and forthcoming projects. It seeks to bring coherence to initiatives that were previously fragmented, to prioritise investments according to their contribution to the low carbon trajectory, and to articulate sectoral reforms with international financing. In this sense, the JETP functions as a mechanism for ordering priorities, orienting investment choices towards domains considered "structuring" such as the development of renewable capacity,

[53] The founding policy statement of the partnership explicitly highlights Senegal's leadership in climate action and its political commitment to the rapid development of renewable energies: "Recognizing Senegal's leadership in climate actions, with a strong political commitment to the rapid development of renewable energies following the publication of its nationally determined contribution (NDC) in 2020" (European Commission, 2023). This recognition helps to place the JETP within a framework of support for a trajectory already underway at the national level.

[54] The EIB (2023) once again highlights the national strategy's projections for the deployment of renewable energies, which aim to achieve a 40% share of installed capacity in the electricity mix by 2030, explaining that the JETP explicitly aims to accelerate this deployment: "This commitment will enable the acceleration of the deployment of renewable energies to increase the share of renewable energies in installed capacity to 40% of its electricity mix by 2030."

strengthening of the grid, and the improvement of planning and regulatory capacities (IEA, 2023). In this respect, the JETP should not be understood solely as a financing instrument, but as a potential lever of structural transformation of the energy sector, aligned with national priorities, attentive to community concerns and consistent with the requirements of climate justice (NRGI, 2025).

Financing mechanisms: financial engineering and catalytic effect

One of the central features of the JETP lies in its financial architecture, designed to transform political commitments into operational and bankable projects. The partnership relies on a combination of financial instruments such as concessional loans, grants, guarantees and multilateral and bilateral cofinancing mobilised within a blended finance logic. Indeed, the European Commission (2023) specifies the diversity of financial tools mobilised, confirming this blended finance approach: "IPG members will mobilize a variety of support tools, including grants and subsidies, concessional loans, guarantees, export credits and technical assistance […] including training and research, technology transfer, expansion and modernization of the electricity grid, as well as the development of storage capacity". In the Senegalese case, announcements associated with the JETP refer to substantial financial mobilisation. As explicitly underlined by the IEA (2023), "the JETP agrees to mobilise up to EUR 2.5 billion over a three to five year-period to support Senegal in achieving its ambitions". This financial engineering gives the JETP a catalytic function, it is not only about financing specific projects, but about creating a leverage effect on the entire set of infrastructure investments, by signalling a credible transition trajectory and reducing the risks perceived by investors.The partnership thus aims to transform strategic orientations, namely diversification of the mix, progressive decarbonation, improvement of electricity access, into pipelines of structured projects capable of being financed by development banks, international financial institutions and, ultimately, private actors.

Articulation with national frameworks: strategic alignment and planning

The JETP is embedded within the broader set of national planning and energy strategy frameworks, notably the LPDSE 2025–2029, the PSE and Senegal's NDC. This integration aims to ensure coherence between national priorities and international decarbonation objectives (IEA, 2023). The partnership therefore acts as a multi-year programming instrument, contributing to ordering investments and strengthening the visibility of infrastructure

trajectories. This articulation between national strategy, international support and climate objectives is explicitly formulated in documents associated with the partnership. According to the European Investment Bank, Senegal commits, with the financial and technical support of its partners, to develop and implement an energy strategy aimed at reducing sectoral emissions while supporting fair and resilient development: “In a joint declaration, Senegal commits, with the financial and technical support of international partners, to develop and implement an energy strategy for the deployment of renewable energies with a view to reducing emissions from the sector, while enabling fair and resilient development” (EIB, 2023). At the institutional level, the JETP is integrated into the existing national architecture, sectoral ministries, public operators, regulatory authorities, as an instrument of implementation and coordination. It does not create new autonomous institutions, but relies on existing structures to ensure project implementation, thereby strengthening the state’s capacity to steer the transition (World Bank, 2023). This institutional integration gives the partnership a function of support to sectoral governance, by reinforcing planning, prioritisation and investment monitoring capacities.

The JETP as a multi actor coordination mechanism

The JETP also operates as a multi actor coordination platform, bringing together partner states, development banks (AFD, KfW, EIB, AfDB, World Bank, etc), technical agencies, national public operators and private investors. The governance of the partnership relies on steering, monitoring and project prioritisation mechanisms designed to ensure coherence of interventions and reduce fragmentation of initiatives. The JETP therefore functions as an instrument for aligning financial and technical tools, by coordinating donor priorities and facilitating the articulation between bilateral and multilateral financing. From this perspective, several analyses stress that, in order to meet its ambitions and the local context, the JETP must rely on a governance architecture that is robust, inclusive and transparent, in order to ensure durable impact and strengthen the credibility of the mechanism (NRGI, 2025). This coordination function constitutes a major added value of the mechanism. By reducing project dispersion and fostering alignment of financing around shared priorities, the JETP aims to accelerate transition implementation and strengthen Senegal’s capacity to mobilise resources at scale. It thus contributes to transforming a constellation of isolated initiatives into a coherent sectoral programme covering networks, renewable energy and energy efficiency.

The structuring function of the JETP in the transition trajectory

Taken as a whole, the JETP exercises a structuring function over Senegal's energy transition trajectory, by influencing the temporality, the scale and the nature of transformations of the energy system. On the temporal dimension, it contributes to accelerating low carbon investments and anticipating infrastructure modernisation, by reducing financial and institutional constraints associated with large scale projects (IEA, 2023). On the scale dimension, the partnership favours the shift from isolated projects to sectoral programmes, notably in the areas of networks, renewable energy and energy efficiency.

Finally, the JETP contributes to defining the very nature of the transition, by promoting a hybrid trajectory combining, in the short term, the use of gas as a substitute for coal and fuel oil, and, in the longer term, the expansion of renewable energy. As noted by the IEA (2023), "the JETP also recognised the importance of Senegal's gas production opportunities and the role of gas in the country's economic development and energy transition". This articulation is presented as compatible with climate commitments, while taking into account development and energy security constraints. Moreover, this hybrid trajectory is explicitly recognised in the "Political Declaration for a JETP with Senegal" which states that Senegal intends to mobilise its gas resources as a transitional energy within a low carbon development perspective: "Acknowledging that as part of its strategy, Senegal intends to use its natural gas resources as a transitional energy in the perspective of a low carbon and climate change resilient socioeconomic development […] through a gradual phase out of heavy fuel oils" (European Commission, 2023). This formulation institutionalises the role of gas as a transitional component of the trajectory supported by the JETP.

However, the recent international context may weaken the financial architecture intended to support these trajectories. The withdrawal of the United States from the Paris Agreement and from the JETP, as well as persistent uncertainties regarding the involvement of multilateral development banks, introduce risks concerning the availability and predictability of financing. In this context, several analyses emphasise the need for particularly rigorous and strategic management of JETP resources, especially since the partnership relies largely on debt instruments (NRGI, 2025).

For Senegal, these uncertainties call for reflection on the sustainability of current partnerships and on strengthening the resilience of national energy governance, notably through diversification of financing sources and reinforcement of transparency, integrity and accountability mechanisms (NRGI, 2025).

Analysis of energy transition instruments shows that Senegal's trajectory is based on technical, financial, and institutional compromises, structured by internal constraints and international partnerships. But these instruments are not neutral: they produce distributive effects, redefine power relations, and engage the social and political legitimacy of the transition. The central question therefore becomes that of the conditions of justice and governance in which these choices are made, inviting us to view the transition not only as an energy project, but as a socially and politically situated process.

CHAPTER III – A transition constrained by justice and energy governance

Senegal's energy transition cannot be apprehended solely through its technical instruments, its mix trajectories or its climate performance. It is embedded within a space deeply structured by social and political constraints, where energy choices generate distributive effects, reconfigure power relations and engage the very legitimacy of public action. Consequently, evaluating the transition requires an analytical shift, from mere technological efficiency towards the conditions of social justice and governance that frame its implementation.

In a context marked by persistent inequalities in access to energy, tariff tensions and constrained budgetary trade-offs, the transition constitutes a potentially ambivalent process: it may simultaneously reduce certain structural vulnerabilities or, conversely, produce new ones. The first part of the chapter therefore questions the social sustainability of the energy transition, by examining its capacity to expand effective access to modern, reliable and affordable energy, while limiting territorial and socio-economic fractures. Beyond electrification, the issue is to analyse the transition as a redistributive process, affecting the distribution of costs, benefits and economic opportunities, and to determine to what extent it is embedded within a logic of just transition and social equity (3.1). However, the energy transition does not unfold exclusively within the domestic sphere. It is also shaped by a global climate governance that defines norms, temporalities and criteria of legitimacy influencing national choices. The second part of the chapter therefore analyses Senegal's insertion into international climate regimes, where vulnerability becomes a diplomatic resource, and where energy trajectories are co-produced through financing, standards and techno expert arrangements. This global governance, while opening opportunities for support and recognition, reconfigures the margins of manoeuvre of the state and situates the transition within an autonomy under structural constraint (3.2).

3.1 A socially sustainable energy transition?

If the energy transition is frequently assessed through technical indicators such as installed capacity, diversification of the mix or emission reductions, it equally raises a question of social sustainability. In the Senegalese case, the transformation of the energy system unfolds in a context where energy remains a profoundly unequally distributed good, both geographically and across social groups, and where tariff, budgetary and infrastructural trade-offs may generate significant distributive effects. Consequently, the transition cannot be understood solely as a technological substitution, but as a process liable to reconfigure relations of inclusion and exclusion, by determining who effectively benefits from the gains associated with energy modernisation, and who bears the costs of adjustment.

This interrogation first relates to the capacity of the transition to expand effective access to modern, reliable and affordable energy, by reducing the territorial and socio-economic divides that still structure electrification and service quality (3.1.1). It subsequently requires moving beyond the sole issue of connection in order to examine the broader distribution of costs, benefits and opportunities linked to decarbonisation through the concept of just transition (3.1.2). Through these two dimensions, the objective is to assess to what extent the energy transition may constitute a vector of equity and social cohesion, rather than a factor of reproduction or reconfiguration of existing inequalities.

3.1.1 Universal access and the energy divide

Universal access to modern, reliable and affordable energy constitutes one of the central dimensions of the Senegalese energy transition. Beyond a technical objective of electrification, access to energy must be understood as an issue of social, territorial and political justice, conditioning equality of capabilities, territorial cohesion and the very legitimacy of transition policies. In this perspective, the energy transition cannot be assessed solely through the lens of decarbonisation or infrastructure modernisation, but must be examined according to its capacity to expand effective access to energy for the entire population, by reducing persistent inequalities between territories, social groups and uses; fundamentally engaging the question of energy inclusion as a condition of sovereignty, social cohesion and development.

Access to energy as a right to development and an indicator of social justice

Electricity constitutes a fundamental good for human and economic development. It conditions access to essential services, as well as economic productivity, industrialisation and territorial integration. This centrality is explicitly recognised in Sustainable Development Goal 7 (SDG 7), which aims to ensure universal access to affordable, reliable, sustainable and modern energy services. In this perspective, access to energy cannot be reduced to a simple productive input, but may be analysed as an enabling condition of capabilities, in the sense of the framework developed by Amartya Sen[55], that is to say as a determining factor of the real freedoms individuals possess to lead the lives they have reason to value (Sen, 1999; Sovacool and al., 2016).

This normative approach makes it possible to shift the analysis of energy access towards a reading in terms of social justice. Unequal availability of electricity translates into inequalities of opportunity in education, health, employment and economic participation, thereby reinforcing cumulative dynamics of marginalisation. In contexts of lower middle-income countries such as Senegal, access to energy therefore constitutes a central lever for reducing structural inequalities, but also a revealer of implicit trade-offs between economic profitability, territorial equity and sectoral priorities (ESMAP, 2025; IEA, 2023; Sovacool and al., 2016).

In this perspective, a socially sustainable energy transition is one that extends effective access[56] to the entire population, and not solely to urban poles, solvent sectors or the most profitable uses. Universal access thus becomes a central normative criterion for evaluating the transition, as an indicator of energy justice and social sovereignty, that is to say of the State's capacity to guarantee minimal material conditions of equality of capabilities across the entire territory.

The energy divide in Senegal: territorial, social and economic dimensions

[55] Amartya Sen does not directly address electricity or energy as such in his theoretical framework. The use of his approach in this analysis is an application of the capabilities framework to energy issues, as developed in contemporary literature on energy justice and energy poverty. In *Development as Freedom*, Sen defines development as a process of expanding the "real freedoms" available to individuals, these freedoms being a function of "capabilities," i.e., the set of effective opportunities that enable people to achieve the lifestyles they reasonably value (Sen, 1999). Access to energy is thus analyzed here not as a capability in itself, but as an enabling condition for the exercise of these capabilities.

[56] The literature on energy poverty and energy justice shows that statistical access to electricity, measured by connection to the grid, does not guarantee effective access to adequate energy services. Numerous studies emphasize that affordability, reliability of supply, quality of service (outages, voltage fluctuations), and income constraints determine actual energy use by households, particularly for vulnerable groups (Bouzarovski and Petrova, 2015; Sovacool et al., 2016). Institutional reports on the monitoring of SDG 7 also highlight that access indicators often mask deficits in quality, continuity, and affordability, particularly in sub-Saharan Africa, where grid reliability remains a major obstacle to effective access (ESMAP, 2025; IEA, 2023). This analytical distinction thus makes it possible to differentiate between formal access to electricity and households' actual ability to benefit from adequate energy services.

Despite significant progress, access to electricity in Senegal remains marked by a persistent energy divide[57]. According to the most recent data from the World Bank and the Energy Sector Management Assistance Program (ESMAP), the national electricity access rate reached approximately 74.2 % of the population in 2023 (World Bank, 2024)[58]. This national average nevertheless conceals strong territorial disparities. Urban access is close to universality, with more than 96.1 % of the urban population connected, whereas rural access remains significantly lower, around 56.5 % in 2023 (World Bank, 2024).

This territorial dimension of the energy divide reflects historical choices in infrastructure and investment prioritisation, concentrated on major urban centres and economically profitable zones. High costs of network extension, low population density in certain rural areas and budgetary constraints contribute to a greater reliance on decentralised solutions in peripheral zones. The energy divide thus appears not as a simple technical lag, but as a structural configuration resulting from logics of profitability, territorial hierarchisation and differentiated financing capacities (IEA, 2023).

The energy divide also contains a socio-economic dimension related to the cost and quality of energy. Formal connection to the grid does not guarantee effective access to affordable and reliable energy. Low-income households are particularly exposed to constrained trade-offs between energy expenditures and other essential needs, placing them in situations of energy vulnerability. The literature on energy poverty emphasises that inequality of access is not measured solely in terms of connection, but also in terms of the capacity to use energy in a sufficient, stable and financially sustainable manner (Bouzarovski and Petrova, 2015).

The energy transition facing the divide: reduction or reconfiguration of inequalities?

The energy transition theoretically offers instruments capable of reducing the energy divide, notably through the deployment of decentralised renewable solutions. Solar mini grids and off grid solutions present significant inclusive potential, by enabling the reach of zones not connected or difficult to connect to the national grid. These technologies are often presented as

[57] The concept of energy divide refers to inequalities in access, cost, quality, and use of energy, and is part of the literature on energy poverty and energy justice. It is used to analyze the territorial and social dimensions of energy systems, as well as how infrastructure and governance choices produce differentiated inequalities in access and services (Bouzarovski and Petrova, 2015; Sovacool and al., 2016).

[58] Estimates vary according to national and international sources. Some government sources and recent press releases cite higher access rates (around 80–85%), but harmonized data from the World Bank and ESMAP allow for consistent international comparison and highlight the persistence of a marked rural divide (World Bank, 2024; ESMAP, 2025).

levers of territorial justice, capable of circumventing infrastructure constraints and providing rapid access to electricity in rural or peripheral areas (IRENA, 2023; World Bank, 2014; Moner Girona and al., 2016).

However, this inclusive potential is accompanied by risks of segmentation of the energy system. The coexistence of modern, stable and relatively affordable networks in urban centres, and decentralised solutions that are sometimes more costly, less powerful or less reliable in rural areas, may produce a "two speed" energy system. In this scenario, the energy transition does not necessarily eliminate the divide, but may reconfigure it, by generating distributive inequalities in terms of quality, cost and reliability of energy services, in line with analyses of energy justice developed by Sovacool and al. (2016).

The central issue then becomes the distribution of the benefits of the transition. Do investments in low carbon capacities primarily benefit universal electrification, or do they first reinforce growth poles, industrial uses and urban centres? This question refers to implicit trade-offs between objectives of competitiveness, economic attractiveness and territorial equity. A transition oriented mainly towards solvent zones risks reinforcing existing inequalities, whereas an explicitly inclusive transition requires mechanisms of cross subsidy and prioritisation of marginalised areas (Sovacool and al., 2016; World Bank, 2024).

Universal access, governance and public responsibility

Universal access to energy does not mechanically result from market functioning. It requires active public intervention, through policies of territorial energy planning, targeted subsidies and explicit trade-offs in favour of territorial equity, insofar as rural, low density or low solvency areas remain structurally less attractive for private investment (Estache, 2010; World Bank/ESMAP, 2024). The role of the State is therefore central in correcting inequalities of access, by arbitrating between objectives of economic profitability and objectives of social justice, in line with classical analyses of the political economy of infrastructure and development (Rodrik, 2007; IEA, 2023).

Governance of access to energy moreover implies complex coordination between the central State, the public operator, local authorities and international partners. This multilevel governance conditions the capacity to align universal electrification objectives with budgetary constraints, sectoral priorities and financing instruments, in a context marked by a plurality of

actors and funding sources (Goldthau, 2014; World Bank/ESMAP, 2024). In this framework, universal access becomes a central test of the legitimacy of the energy transition: the capacity of the State to extend effective access constitutes a key indicator of the social acceptability of transition policies and of their conformity with principles of energy justice (Sovacool and al., 2016 ; Jenkins and al., 2016).

In this sense, access to energy represents the first dimension of energy justice. It conditions the capacity of the transition to produce tangible social benefits and to reduce existing inequalities. However, universal access alone cannot guarantee a just transition. The distribution of costs, jobs, training opportunities and social impacts constitutes a second dimension, which is the subject of section 3.1.2.

3.1.2 Just transition and social equity

The energy transition does not constitute solely a process of technological substitution aimed at reducing greenhouse gas emissions; it also operates as a mechanism for redistributing costs, benefits and economic opportunities. In this perspective, the principle of a just transition has progressively emerged as a central normative framework for evaluating the social dimension of decarbonisation. Originally rooted in trade union movements and debates on the reconversion of workers from fossil sectors, the concept seeks to ensure that the low carbon transition does not result in social exclusion, but rather contributes to strengthening inclusion, protecting vulnerable groups and promoting equity in the distribution of gains and burdens (Heffron and McCauley, 2018)[59]. It involves examining how energy choices, investments and public policies differently affect social groups, territories and economic sectors, and questioning the capacity of the transition to reduce, or conversely to reproduce, structural inequalities. The analysis therefore aims to move beyond a strictly technological reading of the transition, framing it instead as an issue of social justice, articulating distributive equity, protection of vulnerable populations and recognition of socio-economic rights.

In contemporary literature, the just transition is generally articulated along three complementary dimensions: (i) distributive equity, referring to the allocation of the costs and benefits of the

[59] In their academic article "What is the 'Just Transition'?" Heffron and McCauley (2018) trace the emergence of the concept of just transition from North American trade union movements, particularly in the context of protecting workers in high-emission sectors, before showing its gradual expansion into an interdisciplinary framework integrating climate justice, energy justice, and environmental justice. They thus conceptualize just transition as a normative principle aimed at ensuring that the low-carbon transition is socially equitable, articulating worker protection, inclusion of affected communities, and equitable redistribution of costs and benefits.

transition; (ii) procedural equity, concerning the participation of social actors in decision making processes; and (iii) recognition justice, aiming to take into account the needs, vulnerabilities and specific situations of historically marginalised groups (Sovacool and al., 2016)[60]. This framework allows the transition to be evaluated not solely in environmental terms, but as a criterion for analysing the social sustainability of energy policies. Applied to the Senegalese context, this approach leads to examining the energy transition not only as a lever of decarbonisation, but as a process capable of redefining social, territorial and sectoral hierarchies. The success of the transition cannot therefore be measured solely in tonnes of CO_2 avoided or renewable capacities installed, but also in terms of reducing vulnerabilities, expanding economic opportunities and protecting populations most exposed to tariff shocks and sectoral restructuring. From a theoretical standpoint, this reading is situated at the intersection of frameworks of social justice and development economics. In a Rawlsian perspective, distributive equity implies that public policies should be assessed according to their capacity to improve the situation of the least advantaged, particularly when reforms affect access to essential goods such as energy (Rawls, 1971)[61].

Distribution of costs: energy prices, taxation and household vulnerability

One of the central challenges of a just transition lies in the distribution of the costs associated with transforming the energy system. Tariff reforms, infrastructure investments, as well as fiscal mechanisms related to energy and fuels ultimately determine who financially bears the transition. In many developing country contexts, tariff adjustments required for the financial viability of the electricity sector may translate into higher energy costs for households, exposing low-income groups in particular to increased risks of energy poverty (IEA, 2023; World Bank, 2024).

In the Senegalese case, these issues are all the more salient as the transition unfolds in a context of energy dependence and budgetary constraints. Production costs, energy imports and volatility of international prices exert pressure on public finances and tariffs, rendering reforms aimed at improving the sector's economic efficiency politically and socially sensitive. In this configuration, a just transition cannot be conceived independently of social and fiscal policies,

[60] The distributive-procedural-recognition triptych mobilized by Sovacool et al. (2016) is part of a broader tradition of environmental and social justice, notably the work of Schlosberg (2007, 2009) on environmental justice, Fraser (1995) on recognition, and Young (1990) on structural oppression. Sovacool et al. do not invent these categories, but systematize and operationalize them in the specific field of energy.

[61] Rawls (1971) reasons in terms of primary goods rather than in terms of energy; applying his framework to energy access is a common analytical extension in the energy justice literature.

which condition the capacity of households to absorb the costs of the transition without deterioration of their well-being.

Distribution of benefits: employment, local development and economic opportunities

Beyond costs, the energy transition also redistributes economic benefits, notably in terms of employment, value chains and local development. The expansion of renewable energy, networks and energy efficiency is often associated with the creation of new jobs and the emergence of promising sectors capable of supporting a more inclusive growth trajectory. Nevertheless, these benefits are neither automatic nor equitably distributed.

The literature emphasises that energy transitions may generate sectoral winners and losers. Renewable industries and modern energy services may create employment opportunities, whereas certain activities linked to fossil energy, fuel imports or traditional segments of the energy chain may be affected by restructuring. A just transition therefore requires active policies of training, reconversion and worker protection, in order to prevent adjustment costs from being disproportionately borne by specific professional groups (Heffron and McCauley, 2018; ILO, 2015).

From a territorial perspective, the distribution of benefits also raises equity concerns. Energy investments tend to concentrate in urban and industrial poles, where demand is higher and profitability more assured. In the absence of corrective policies, this concentration may reinforce territorial inequalities, limiting the diffusion of economic spillovers towards rural and peripheral areas. In this perspective, a just transition is not limited to aggregate job creation, but implies particular attention to the spatial distribution of economic opportunities and to the capacity of the transition to support local development, notably through productive electrification, SMEs, agriculture and public services.

Procedural equity and recognition: participation, transparency and social legitimacy

The distributive dimension of a just transition cannot be dissociated from procedural and recognition issues. The literature on energy justice emphasises that the social legitimacy of transition policies depends closely on the capacity of institutions to include affected actors in decision making processes, and to recognise the specific needs of vulnerable groups (Sovacool and al., 2016; Jenkins and al., 2016). The participation of local authorities, affected communities and civil society in energy planning processes constitutes a central element of

procedural equity. It not only improves the adequacy of projects to local realities, but also strengthens the social acceptability of reforms, by reducing risks of conflict, contestation and capture of benefits by dominant actors. Transparency and accountability also play a key role in procedural justice. Access to information on projects, contracts, financing and social impacts conditions the capacity of local actors and civil society to exercise oversight over public policies, and to ensure that the benefits of the transition are not asymmetrically captured. In contexts where governance of public resources is subject to recurrent criticism, these procedural dimensions become inseparable from the credibility of a just transition.

Just transition, development and the balance between gas and the low carbon trajectory

In the Senegalese context, analysing a just transition requires integrating the tension between the exploitation of gas resources and the commitment towards a low carbon trajectory. The political economy literature on natural resources emphasises that the distributive effects of hydrocarbons depend less on exploitation itself than on the institutional frameworks and governance mechanisms that structure the allocation and use of rents (Ross, 2012). In this perspective, revenues derived from gas may constitute a potential source of financing for social investments, infrastructure and transition policies, yet they may also reinforce dynamics of benefit concentration if their governance is not embedded within a redistributive logic (NRGI, 2021). Specifically, within this framework, and in order to ensure distribution of revenues generated from the exploitation of its resources, Senegal has established a Stabilisation Fund and an Intergenerational Fund and has entrusted their management to its Sovereign Strategic Investment Fund (FONSIS). These funds will enable the country to leverage hydrocarbon revenues to finance sustainable economic growth and to build a resilient and low carbon energy system (IEA, 2023).

From the perspective of a just transition, the central issue does not lie solely in the technological choice, but in the social and political use of the resources generated. The literature on energy justice and the just transition highlights that equity in the transition depends on the capacity of the State to mobilise public revenues in order to support policies of access, social protection, training and territorial development, while ensuring an equitable distribution of the costs and benefits of the transition (Sovacool and al., 2016; Heffron and McCauley, 2018; Jenkins and al., 2016). Conversely, a trajectory characterised by sectoral or territorial concentration of economic benefits is likely to reinforce existing inequalities and to weaken the social and political legitimacy of the energy transition (IEA, 2023).

Senegal's energy transition reveals, on the one hand, the requirement of social sustainability, grounded in access, equity, and redistribution; on the other, a system of global climate governance that frames national choices through norms, financing, and temporalities. From this point on, the issue is no longer merely to assess the internal effects of the transition, but to understand how these are co-produced within a global space of power.

3.2 Energy transition and global climate governance

The Senegalese energy transition does not unfold within a strictly domestic space, it is embedded in a global climate governance structured by norms, financing mechanisms and power relations that influence the very definition of trajectories considered legitimate, credible and financeable. In this perspective, climate commitments, "Paris compatibility" standards and multilateral mechanisms do not merely constitute an external framework of cooperation, but rather a normative environment within which Senegal seeks to construct a strategic position. Far from being a simple recipient of rules, the country mobilises its low historical responsibility in terms of emissions and its high vulnerability as diplomatic resources, in order to secure support, expand its room for manoeuvre and render its energy priorities politically and financially defensible in international arenas. This insertion into climate regimes thus appears as a process of positioning within a hierarchised global space, where normative compliance can be converted into strategic capital (3.2.1). Yet, this dynamic also reveals a structuring tension, although the State retains a real capacity for agency, it operates within a field already framed by decarbonisation timelines, criteria for access to financing, and techno expert arrangements capable of producing effects of dependence and lock in. Energy governance is therefore understood as autonomy under constraint, where national trade-offs become reconfigured by global standards and power asymmetries that redefine the space of possibilities (3.2.2).

3.2.1 Senegal in international climate regimes

Senegal's incorporation into international climate regimes cannot be understood as a mere formal participation in multilateral frameworks such as the UNFCCC or the Paris Agreement. Rather, it must be analysed as a form of strategic positioning within a space of global governance structured by norms, hierarchies and power asymmetries. In this perspective, Senegal is not only a recipient of rules, instruments or financing, it is also an actor that actively mobilises its status as a low emitting yet highly vulnerable country as a diplomatic resource, in order to strengthen its credibility, expand its room for manoeuvre and secure recognition of its

energy development priorities. The energy transition therefore appears not only as a domestic project, but as an object of climate diplomacy, in which vulnerability becomes a political argument, and normative compliance a form of strategic capital. Accordingly, within the framework of this section, the aim is to shift the analysis from a purely so-called policy analysis towards a more political analysis seeking to demonstrate the analytical perspectives of regime positioning and power asymmetries.

Climate regimes and the normative hierarchisation of trajectories

International climate regimes, understood as a set of institutions, norms and procedures (UNFCCC, COP, Paris Agreement), do not merely coordinate collective action in response to climate change. They also produce a normative framework through which national trajectories become comparable and assessable. As Keohane and Victor (2011) have shown, contemporary climate governance functions as a "regime complex", characterised by a plurality of arenas and instruments that, taken together, structure legitimate expectations placed upon states. In this context, the Paris Agreement does not simply organise voluntary cooperation. Through the 1.5 °C objective, transparency mechanisms and the revision cycle, it contributes to establishing evaluative standards that help define what is politically credible, morally legitimate and financially sustainable (Biermann and al., 2012; Bulkeley and al., 2014). For a country such as Senegal, this normative architecture constitutes both a constraint and an opportunity. As a low per capita emitter yet highly exposed to climate impacts such as drought, coastal erosion and food insecurity, Senegal can legitimately situate itself within the principle of common but differentiated responsibilities, a principle that will be further developed later, which recognises the historical asymmetry of contributions to climate change (UNFCCC, 2015). Yet this recognition is not merely an objective observation, it is strategically mobilised within multilateral arenas, where vulnerability becomes a lever of legitimation for claiming financial support, normative flexibility and recognition of the right to energy development (Roberts and Parks, 2007)[62].

Vulnerability as climate diplomatic capital

[62] Roberts and Parks (2007) analyse vulnerability and low historical responsibility of countries of the Global South as normative and political foundations for claims regarding climate justice, financing and adaptation in international negotiations; the interpretation in terms of "diplomatic resource" or "climate capital" constitutes an analytical extension of this perspective.

Within this configuration, Senegal's climate vulnerability does not solely constitute an indicator of environmental risk, it also functions as climate diplomatic capital. It enables the country to position itself as a legitimate actor in debates on adaptation, financing and just transition, while simultaneously asserting an energy trajectory compatible with development imperatives. This positioning strategy forms part of a broader pattern observed across many countries of the Global South, where exposure to climate impacts is mobilised as a political resource to strengthen bargaining capacity within a regime marked by strong power asymmetries (Biermann and al., 2012).This diplomatic capital rests upon a dual narrative, on the one hand, Senegal's low historical responsibility for global emissions, and on the other hand, its high exposure to the consequences of climate change. This combination allows the construction of a posture as a "responsible and vulnerable" actor, capable of reinforcing the country's international credibility while justifying its demands for support. The energy transition thereby becomes an object of international recognition as much as a national public policy project.

The NDC as performative device and instrument of political translation

Within this framework, the NDC cannot be reduced to a mere technical document of climate planning. It must be understood as a performative device, translating national priorities into a language compatible with the expectations of global climate regimes. The NDC thus operates as a performative instrument that translates domestic priorities into categories aligned with global climate governance. This interpretation draws on scholarship on transnational governance and the performativity of climate policy (Bulkeley and al., 2014), as well as more recent analyses of the post Paris architecture (Falkner, 2016). In this sense, the NDC does not merely describe a trajectory, it participates in constructing the trajectory as a politically legible and financeable object. It stages a specific articulation between decarbonisation, energy access and development, in order to produce an image of a "Paris compatible" pathway. This performativity is reinforced by the distinction between unconditional and conditional commitments, which materialises the co-production of the transition between national priorities and international support (NDC, 2020). The NDC thereby becomes an instrument of political translation, reformulating domestic energy choices into the evaluative and legitimising categories of global climate governance[63].

[63] The literature on the performativity of climate policy emphasises that NDCs function as instruments of narrative construction and international credibility, beyond their strictly technical content (Bulkeley and al., 2014; Biermann and al., 2012).

“Paris compatibility” or “Paris alignment” and normative power

Beyond formal instruments, climate governance relies upon normative categories that exert a subtle yet structuring influence on national choices. The notion of a “Paris compatible” trajectory belongs to this register. Legally grounded in Article 2.1(c)[64] of the Paris Agreement (2015), which seeks to align financial flows with a low carbon and climate resilient pathway, it functions as both a political and financial norm rather than a purely scientific evaluation (UNFCCC, 2015). This category contributes to hierarchising priorities, structuring the international visibility of public policies and conditioning access to financial resources. As scholarship on Paris aligned finance has shown, “Paris compatibility” operates as a legitimacy standard, defining what is considered priority, credible and financeable, particularly in favour of renewable energy, energy efficiency and progressive decarbonisation (Bernstein, 2017; Falkner, 2016). Climate finance, therefore, far from constituting a simple transfer of resources, functions as a framing mechanism that co determines the space of national energy choices, rendering certain investments politically more defensible and others more difficult to justify in the international arena.

Climate finance and implicit conditionality

Access to climate finance mechanisms, the ‘Green Climate Fund (GCF)[65], the ‘Global Environment Facility (GEF)[66] and multilateral development banks, constitutes a central lever of Senegal’s integration into international climate regimes. Yet these mechanisms are not neutral, they are accompanied by requirements of transparency, climate compatibility and often implicit sectoral reforms. Financing thereby becomes a vector of normalisation, contributing to aligning national policies with global standards while reinforcing dependence upon frameworks defined by donors (Biermann and al., 2012). Within this context, the Senegalese energy transition appears as a partially co defined trajectory, in which domestic priorities are translated, reformulated and at times re hierarchised in response to international normative and financial expectations. This co production highlights the structural tension between, on the one hand, the

[64] Article 2.1(c) of the Paris Agreement states the objective of “making finance flows consistent with a pathway towards low greenhouse gas emissions and climate resilient development” (UNFCCC, 2015).
[65] The Green Climate Fund (GCF) is the principal multilateral climate finance mechanism under the UNFCCC, established to support mitigation and adaptation projects in developing countries.
[66] The Global Environment Facility (GEF) is a multilateral financing mechanism that supports environmental and climate related projects in developing countries, including in the areas of climate change mitigation and adaptation.

pursuit of strategic autonomy in defining national energy priorities, and on the other hand, integration into a global regime that conditions access to resources.

African coalitions and strategies of multilateral insertion

Finally, Senegal's positioning is embedded within regional and South South dynamics, particularly through African coalitions in climate arenas. These coalitions seek to strengthen the collective weight of African countries in negotiations by advancing shared claims regarding financing, adaptation and climate justice, a notion that will be further developed later. Within this framework, Senegal adopts the posture of a "constructive" actor, seeking to reconcile climate ambition with the right to development, in order to enhance its credibility and attractiveness to international partners. This strategy contributes to constructing an image of a "climate good student", capable of facilitating access to partnerships and financing. Yet it also unfolds within a deeply asymmetrical governance space, where the capacity to define norms, priorities and eligibility criteria remains largely concentrated among industrialised countries and major financial institutions (Roberts and Parks, 2007).

3.2.2 Energy governance: national interests and global constraints

Rather than being understood solely as multi actor coordination, Senegalese energy governance can be analysed as a set of structural mechanisms that organise decision making frameworks, produce future dependencies and redefine the very nature of political trade-offs. In this perspective, the energy transition does not merely constitute a space of negotiation between national interests and global constraints, but a process through which certain trajectories are rendered more probable than others, through lock in effects, normative frameworks and techno financial arrangements. This analysis therefore seeks to demonstrate that governance appears less as a simple procedural framework than as a set of institutional and normative devices structuring horizons of action, available options and modes of legitimising energy choices (Biermann and al., 2012; Goldthau, 2014).

Governing the transition as a conflict of temporalities

Beyond multi actor coordination, Senegalese energy governance can be understood as the management of structurally conflicting temporalities. On the one hand, national strategies of electrification, industrialisation and capacity expansion rely on long term horizons, linked to the lifespan of energy infrastructures, often between twenty and forty years, to amortisation

cycles and to trajectories of structural transformation (IEA, 2023). On the other hand, global frameworks of climate governance impose tighter horizons, based on decarbonisation pathways towards 2030 and 2050, and on the increasing integration of carbon risk into financial project evaluation. This disjunction generates a structural tension, investments perceived as necessary from the perspective of economic catch up may be reclassified, within global arenas, as incompatible with climate trajectories, particularly when they involve fossil or gas infrastructures with long life cycles (NewClimate Institute, 2023). Energy governance thus operates as a temporal arbitration, within which developing countries face growing pressure to internalise global climate tells, sometimes at the expense of their own development sequencing.

Transition and the production of future dependencies (path dependence)

A second central mechanism lies in the production of future dependencies through current choices of infrastructures, technologies and financing. The literature on 'path dependence' and carbon lock ins emphasises that energy systems tend to become locked into dominant trajectories, due to high fixed costs, institutional complementarities and increasing returns associated with infrastructures (Unruh, 2000; Pierson, 2000; Seto and al., 2016). Within this framework, the energy transition does not necessarily represent an exit from dependency, but rather a reconfiguration of dependencies. For Senegal, this dynamic is particularly visible in the technological and financial dependence associated with renewables. The vast majority of solar and wind equipment is imported, embedding the transition within a durable dependence on global value chains dominated by producers located outside the African continent (IRENA, 2023). Moreover, the financing of large-scale energy projects relies heavily on blended finance mechanisms, thereby reinforcing dependence on international financial standards and contractual frameworks. This dependence is also reflected in the overall structure of energy supply. According to the IEA, net energy imports still accounted for more than 69% of total energy supply in 2023, reflecting a persistent vulnerability to international hydrocarbon markets (IEA, 2025). Even in a scenario of expanding renewables and domestic gas, current contractual and technological choices contribute to structuring future options, rendering certain trajectories more costly to reverse. Energy governance therefore functions as a mechanism of institutional lock in, transforming present decisions into future constraints.

Technicisation and depoliticisation of energy trade offs

A third major analytical mechanism concerns the technicisation of energy choices and the displacement of politics towards arenas of expertise. In contemporary regimes of global governance, energy trade-offs are increasingly framed by technical standards, scenarios, risk assessments and criteria of "climate compatibility", which tend to transform fundamentally political decisions into choices presented as technically necessary or financially rational (Ferguson, 1994; Li, 2007; Best, 2014)[67]. In the Senegalese case, the growing integration of analytical frameworks from the IEA, the World Bank and development partners into energy planning contributes to this technocratic reframing of choices. Feasibility studies, cost benefit analyses and climate reporting frameworks structure the prioritisation of projects and define which options are considered "bankable" or "compatible" with international trajectories (IEA, 2023; World Bank, 2023). This process tends to narrow the space of political debate, by naturalising certain trade-offs as technical necessities and marginalising the distributive, sovereign and social dimensions of the transition. This technicisation is all the more significant because access to international finance is conditional upon compliance with these frameworks. Within the JETP, for example, financial commitments are explicitly linked to targets regarding the share of renewables, 40% of the generation mix by 2030, and to institutional reforms, thereby reinforcing the normative power of global standards in shaping national trajectories. Energy governance thus functions as a mechanism of partial depoliticisation, insofar as it redefines what is legitimate to debate and what is presented as belonging solely to the domain of expertise.

Taken together, these mechanisms, conflicts of temporalities, production of future dependencies and technicisation of trade-offs, enable an understanding of Senegalese energy governance as autonomy under structural constraint. The state retains real agency, particularly in prioritising objectives and negotiating partnerships, yet this capacity is exercised within a field already structured by imposed temporal horizons, locked in trajectories and transnational expertise frameworks. Energy governance therefore appears less as a simple balance between national interests and global constraints than as a process of asymmetric structuring of possibilities. It shapes not only present choices, but also future margins of manoeuvre, embedding the transition within dependencies, norms and temporalities that durably condition

[67] Ferguson (1994) analyses the depoliticisation of development policies through their reframing as technical problems, thereby masking underlying power relations. Li (2007) shows how governmental dispositifs translate political objectives into standards and management instruments, redefining legitimate terms of public action. Best (2014) highlights the role of financial expertise and risk management in transforming political trade-offs into decisions presented as technically necessary or financially rational. These frameworks are mobilised here analytically to illuminate processes of technicisation and depoliticisation in energy governance, without these authors directly addressing the energy sector.

trajectories. This configuration directly illuminates the normative and political tensions examined in the following section, particularly regarding climate justice, the distribution of adjustment costs and the risk of reproducing forms of dependency that may be interpreted as a form of green neo colonialism.

The empirical analysis of the Senegalese energy transition has revealed a deeply ambivalent configuration. On the one hand, gas exploitation, the expansion of renewables and international cooperation open prospects for energy security, growth and decarbonation. On the other hand, these dynamics remain traversed by structural constraints: technological dependencies, financial asymmetries, trade-offs between development and climate, and tensions surrounding social justice. The transition therefore appears not as a discontinuity, but as a process of recomposition of existing power relations. It is from this observation that the third part begins. It is no longer merely a matter of analysing the transition as it is, but of interrogating its political and normative meaning. Does it reproduce renewed forms of dependency? A form of green neocolonialism? Or can it become a lever of emancipation? The reflection thus shifts towards the conditions of a sovereign, solidaristic and Pan-African transition, capable of transforming climate justice into real power of energy self-determination.

PART III – Green neocolonialism put to the test of climate justice and energy decolonization

The framework of this third part aims to propose a central analytical shift. It seeks to conceive the energy transition not only as a technical and climatic transformation, but as a new space of decolonisation. It proceeds from a critical observation, far from systematically breaking with imperial history, the transition may reconfigure some of its logics. In the literature, green neocolonialism, often more broadly designated as “green colonialism”, refers to contemporary mechanisms of domination and exploitation through which external powers orient environmental policies and Southern energy trajectories, reproducing extraction, dependency and hierarchies of power characteristic of colonialism, under an ecological legitimacy. García López and Navas (2019) show that these dynamics have been conceptualised under multiple terms “eco imperialism”, “green imperialism”, “environmental colonialism”,

“green grabbing”, “carbon colonialism” or “energy imperialism”, revealing the diversity of forms of a single logic of domination. More recently, Dunlap, Verweijen and Tornel (2024) as well as Normann (2021) emphasise that the notion of green colonialism is increasingly mobilised by Indigenous peoples themselves, because it resonates with their historical experience of extractivism and territorial dispossession.

Within this framework, climate justice constitutes a normative horizon aimed at correcting asymmetries of responsibility and vulnerability in the face of climate change. Yet, far from always producing effective energy solidarity, certain practices may reinforce the economic dependency of the South, the capture of resources by the North and the asymmetry of power in the definition of transition trajectories, in a context where energy remains a strategic geopolitical resource, whose centrality has been further reinforced in the post Ukraine energy order.

Thus, Chapter I establishes the possible imperial continuity of the transition and conceptualises green neocolonialism as a regime of power. Then, Chapter II interrogates the ambivalence of climate justice through its normative, epistemic and financial dimensions, grounding it empirically in the Senegalese case through the analysis of Franco Senegalese cooperation (IRD, AFD). Finally, Chapter III proposes a normative and political transcendence, by formulating the conditions of a sovereign, solidaristic and Pan-African transition. The whole seeks to answer a major question, to what extent does the energy transition in Senegal reflect a dynamic of justice or a reconfigured green neocolonialism?

CHAPTER I – Green neocolonialism as a contemporary version of imperial practices

This first chapter proposes a critical reading of the energy and climate transition as a space of imperial continuity, advancing the idea that the “green” may function, in certain configurations, as a rationality for the reconfiguration of colonial practices rather than as a historical rupture. The objective is to analyse green neocolonialism as a regime of power at once ideological, institutional, economic and geopolitical, in which the energy trajectories of Southern countries are oriented by exogenous interests. By mobilising political ecology[68],

[68] Political ecology is an approach that links environmental issues to social, economic and political questions, seeking to understand how power, inequalities and development models influence the relationship between human societies and nature.

postcolonial studies and dependency theories, the chapter highlights the mechanisms through which the transition may reproduce structural asymmetries.

To do so, we will first show how this dynamic is rooted in a production of legitimacy, Western environmental universalism, carried by an imaginary of nature and progress, requalifies external intervention as a moral and technical necessity, while preparing its inscription within concrete mechanisms of imposition, which frame public decision making and produce a conditioned sovereignty (1.1). Then, we will subsequently shift this analysis towards the economic and territorial materiality of the transition. More specifically, the "green shift" reactivates an extractive economy, organises zones of sacrifice and, above all, transforms exploitation into durable dependencies, which de facto prioritise the strategic interests of the centre (1.2). Finally, we will reposition these mechanisms within the structure of global capitalism. Inequality there appears as an institutionalised principle of governance, the centre periphery division is recomposed into an international division of labour framed by ecological justification, and the reading in terms of the Capitalocene reveals the function of green neocolonialism as a contemporary modality of reproduction of an asymmetrical world order (1.3).

1.1 A transition shaped to serve the interests of developed countries

This analysis aims to examine how the ecological and energy transition, presented as a universal project, may function as a neocolonial apparatus, configured in such a way as to primarily serve the interests of developed countries. The central argument is that green neocolonialism does not rest solely on material relations of dependence, but on an articulation between the production of legitimacy and the institutional framing of the political and energy trajectories of the South through a space of government at a distance. In a first stage, the analysis highlights the role of the Western imaginary of nature and ecological modernity, which universalises situated categories and requalifies external intervention as a moral and technical necessity (1.1.1). In a second stage, it shows how this legitimation materialises in concrete mechanisms, conditionalities, norms, financial instruments and evaluation frameworks, which orient public decision making, reconfigure sovereignty and embed the transition within asymmetrical relations presented as technically necessary (1.1.2).

1.1.1 Justification through the Western imaginary

The analysis of green neocolonialism requires moving beyond a strictly materialist reading of relations of domination in order to also grasp its symbolic and discursive dimension. The ecological and energy transition does not impose itself solely through economic or institutional mechanisms, it also rests on a Western imaginary of nature, progress and ecological modernity which produces the conditions of its legitimacy. In this perspective, external intervention in the environmental trajectories of countries of the South appears not as a situated political act, but as the expression of a universal moral and technical necessity. This ideological construction is inscribed in a long history of representing non-Western territories as natural spaces to be preserved, disciplined or optimised, a direct legacy of colonial cosmologies which associated territorial domination, cultural hierarchisation and the government of resources (Escobar, 1995; Neumann, 1998)[69]. Thus, green neocolonialism does not constitute a rupture with the imperial imaginary, but its reformulation under an ecological grammar.

The Western imaginary of nature is historically grounded in a dualist ontology separating nature and culture, originating in European modernity and in the romantic conservationist tradition. Guha shows that Western environmentalism was constructed around the ideal of wilderness, often detached from social uses and local forms of subsistence (Guha, 2000). Escobar, for his part, analyses development, and, by extension, sustainability as a "regime of representation" producing territories and populations as objects of technocratic management, transforming social realities into administrable categories (Escobar, 1995). Within this logic, spaces of the South are frequently requalified as "biodiversity reservoirs", "carbon sinks" or "energy frontiers", erasing the social, economic and spiritual practices rooted there. This naturalisation of territories, reminiscent of colonial policies of "mise en valeur", implicitly grounds a civilisational hierarchy; Western modernity defines itself through the rational mastery of nature, whereas peripheral societies are assigned the status of objects of ecological management.

This symbolic framework nourishes an environmental discourse that functions as a new grammar of imperial legitimation. Where classical colonialism invoked the "civilising mission", green neocolonialism mobilises the "environmental mission", protecting the planet, promoting sustainability, ensuring carbon neutrality. The structural continuity lies in the claim

[69] The use of the works of Escobar (1995) and Neumann (1998) here reflects an analytical mobilisation rather than a literal doctrinal adoption. Escobar shows that development functions as a "regime of representation" producing territories of the South as objects of intervention and technocratic management, whereas Neumann highlights how the colonial construction of 'wilderness' served to erase local uses and to legitimise territorial control within conservation policies. Although these authors do not directly analyse contemporary green neocolonialism, their theoretical frameworks help illuminate the continuity between colonial representations of nature and present forms of environmental government.

to normative universality. The central categories, “sustainable development”, “just transition”, “good environmental governance”, appear morally neutral and scientifically grounded, yet they are historically situated and politically constructed. Dipesh Chakrabarty underlines that the Anthropocene tends to universalise the human condition in the face of climate change, at the risk of obscuring the historical asymmetries produced by industrial capitalism (Chakrabarty, 2009). In this configuration, domination does not disappear, it is requalified. Political constraint becomes ecological necessity, and external intervention presents itself as global responsibility. As Hamouchene notes, “Green colonialism pushes cost onto peripheral countries and communities and prioritises the energy and environmental needs…of one region of the world over another” (Hamouchene, 2023). The environmental imaginary thus operates as a moral technology which depoliticises international hierarchies while reproducing them.

A central element of this legitimation lies in the invisibilisation of local populations, which reveals a profound continuity with the colonial mindset. In many environmental discourses, local communities appear either as threats to nature, responsible for deforestation, overexploitation or “inefficient” practices, or as passive beneficiaries of policies designed elsewhere. This representation prolongs the colonial logic whereby indigenous populations were judged incapable of rationally managing their resources, thereby justifying external tutelage. Mark Dowie (2009) shows that conservation policies have often produced “conservation refugees”, expelled from their territories in the name of environmental protection, revealing the persistence of a vision in which nature must be protected against its inhabitants. Similarly, Roderick Neumann emphasises that the colonial construction of “wilderness” in Africa rested on the erasure of local uses, transforming inhabited landscapes into supposedly pristine spaces (Neumann, 1998). This invisibilisation is accompanied by an epistemic hierarchy; indigenous, pastoral or community knowledges are marginalised in favour of Western technocratic expertise, a process that Boaventura de Sousa Santos qualifies as “epistemicide”, the systematic destruction of alternative knowledges in the name of scientific rationality (Santos, 2014). Thus, environmental protection becomes a vector of symbolic dispossession, often preparing material dispossession. The continuity with the colonial spirit lies precisely in this presumption of incapacity and in the legitimation of an external governance presented as rational and necessary.

This imaginary also produces a moral and spatial hierarchisation of the world. Global climate policies frequently prioritise the environmental and energy needs of the North; emissions

reduction, supply chain security, carbon offsetting, while externalising towards the South the social, ecological and political costs of the transition. Differentiated historical responsibility, well documented by data on cumulative emissions, contrasts with the geographical distribution of climate impacts, more severe in peripheral regions (Our World in Data, 2023). This asymmetry nourishes an international moral order in which the North presents itself as responsible and rational, whereas the South is constructed as a space to be disciplined or corrected. Walter Mignolo and Catherine Walsh conceptualise the "coloniality of power" as the persistence of global hierarchies produced not only by material structures, but also by the production of norms, knowledges and subjectivities presented as universal (Mignolo and Walsh, 2018). Applied to the environmental field, this perspective sheds light on how certain global climate dynamics may contribute to naturalising international asymmetries, rendering intervention in peripheral environmental trajectories socially acceptable.

In the energy field, this logic translates into the transition as a green civilising narrative. The energy trajectories of countries of the South are evaluated according to exogenous criteria, decarbonisation, efficiency, green profitability, which naturalise profoundly political choices. The arbitrations between gas and renewables, between export and local consumption, or between centralised and decentralised projects, are frequently presented as technical and scientifically necessary, obscuring their social and conflictual dimension. The transition thus becomes a project of modernisation in which the South must "catch up" with a model defined elsewhere, reproducing the narrative structure of classical development (Escobar, 1995). This naturalisation legitimises the intervention of experts, institutions and external actors, prolonging under an ecological form the logic of colonial tutelage. The Western imaginary therefore does not merely accompany the transition, it constitutes a condition of possibility, by producing a framework of representation in which intervention appears necessary, rational and morally justified. It is precisely this symbolic dimension that enables green neocolonialism to function as a contemporary form of power, inscribing domination within the very language of sustainability and preparing the ground for the concrete imposition of policies analysed in the following section.

1.1.2 The imposition of energy and environmental policies

Beyond its symbolic dimension, green neocolonialism materialises in concrete institutional and financial mechansims which orient the energy trajectories of countries of the South. Far from being neutral, these instruments; conditional aid, technical norms, financing

frameworks and asymmetric partnerships, configure a space of government at a distance where national political choices are framed by exogenous priorities presented as technical, economic or ecologically necessary. The energy transition thus becomes a field of power in which financial dependence transforms into programmatic dependence, what is financed becomes what is politically possible. As Stiglitz emphasises, adjustment and international aid programmes have often been designed and imposed by external technocratic institutions, marginalising national political processes and local contexts (Stiglitz, 2002). This logic now extends to energy and climate policies, where access to international financing is frequently conditioned upon structural reforms, liberalisation of the energy sector, prioritisation of renewables, regulatory frameworks favourable to investors; presented as requirements of good governance and economic viability. Conditionality thereby transforms aid into an instrument of indirect government, shifting decision making power towards donors and international financial institutions (Chang, 2002; Amin, 1973).

Techno institutional normalisation constitutes a second vector of imposition. National energy policies are increasingly framed by global standards, low carbon trajectories, green taxonomies, climate performance indicators, which define what is considered sustainable, acceptable or transitional. These frameworks, primarily elaborated within institutions of the North, translate political choices into technical matrices and quantifiable indicators, contributing to the depoliticisation of energy arbitrations. The IEA for instance, in its *Net Zero Emissions by 2050* strategy, presents carbon neutrality as a global trajectory requiring coordinated structural transformations of energy systems (IEA, 2021). The technicisation of decisions thus transforms social debates; access to energy, industrialisation, development priorities, into questions of technical optimisation, evaluated according to international benchmarks. Countries of the South are then ranked and assessed according to their conformity with these standards, producing a normative asymmetry in which certain energy models are defined as “advanced” and others as “to be caught up”. This hierarchisation inscribes itself within what Hamouchene describes as a climate governance where rules and priorities are largely defined by centres of global economic power (Hamouchene, 2023).

This dynamic is accompanied by an asymmetry of power in the definition of environmental agendas. Major international institutions, World Bank, IMF, bilateral agencies and climate funds, participate in defining the objectives, implementation frameworks and indicators of success of energy policies. Within this process, national priorities, immediate energy security,

industrialisation, universal access to electricity, may be subordinated to global imperatives of decarbonation or risk reduction for investors. The State retains the legal form of decision, yet sees its substantive capacity for arbitration reconfigured by these constraints, giving rise to what some authors describe as conditioned sovereignty, that is, a formal autonomy but substantively constrained by international institutional and financial frameworks (Amin, 1973; Stiglitz, 2002)[70]. This reconfiguration does not rest on direct coercion, but on an incentive-based restructuring of public policies, where adherence to international normative and financial frameworks becomes the condition for access to resources.

In this perspective, the imposition of energy and environmental policies appears as a structural continuity of imperial logics, reconfigured under an ecological rationality. Where classical colonialism imposed legal, fiscal and productive frameworks, green neocolonialism imposes environmental, energy and financial frameworks that orient development trajectories. The civilising discourse gives way to the language of sustainability, yet the structure remains: the North produces norms, instruments and financing, while the South becomes a space of application and adjustment. Far from being a marginal dysfunction, this imposition constitutes a mode of government compatible with a decarbonised global capitalism, where the energy transition operates as a vector of reproduction of international hierarchies.

Thus, the mechanisms of legitimation and institutional framing just analysed do not belong solely to a discursive register, they trace the conditions of possibility of a transition that subsequently materialises within territories. Hence, the gaze must be shifted towards what this governance “at a distance” concretely produces: a political economy of extraction, land and dispossession at the very core of the green project.

1.2 The expansion of colonial relations of plunder and dispossession

In continuation of the previous section, the analysis here focuses on the economic and territorial materialisation of green neocolonialism through the contemporary extension of colonial relations of plunder and dispossession. As defined by Hamouchene (2023), green neocolonialism would correspond to « the extension of colonial relations of plunder and dispossession (as well as the dehumanisation of the Other) in the era of the so-called green

[70] The expression “conditioned sovereignty” is used here as an analytical category and not as a concept explicitly formulated by the cited authors. Samir Amin (1973) analyses the structural dependence of peripheral economies as a limitation of their real political autonomy within the world system, whereas Stiglitz (2002) highlights how conditionality and the influence of international financial institutions may restrict the capacity of States to freely define their economic policies.

transition. ». In this sense, the central argument is that the energy transition, far from constituting a rupture with the extractive economy inherited from colonialism, tends rather to reconfigure its forms by mobilising the territories of the South as material supports of global decarbonation. Firstly, the analysis highlights the reproduction of extractivist logics through the exploitation of strategic minerals, land appropriation and the localised concentration of socio ecological costs (1.2.1). Secondly, it demonstrates how these dynamics of exploitation transform into structural relations of dependence, economic, technological, financial and political, which durably inscribe peripheral economies in a subordinate position and prioritise the strategic interests of dominant powers within the global energy transition (1.2.2).

1.2.1 The reproduction of colonial logic through the exploitation and extraction of resources

The global energy transition, often presented as an ecological and technological rupture, tends in many contexts to reproduce extractivist dynamics historically associated with the colonial economy of resources. Far from inaugurating a post extractive model, the « green shift » reconfigures extractivism by displacing its centre of gravity towards strategic minerals, land and energy infrastructures required for decarbonation. As emphasised by the IEA, demand for critical minerals for low carbon technologies, lithium, cobalt, nickel and rare earths, could be multiplied by four by 2040 in a scenario compatible with climate objectives (IEA, 2021). This expansion redefines the territories of the South as new extractive frontiers, integrated into the value chains of the global transition according to a structurally subordinate position. Continuity with the colonial economy lies less in the resources themselves than in the manner in which they are exploited; peripheral specialisation in the export of raw materials, weak local transformation and external capture of value by industrial and financial centres (Amin, 1973). Thus, the energy transition does not break with colonial extractivism; it modifies its objects while reproducing its fundamental logics.

The exploitation of strategic minerals particularly illustrates this continuity (World Bank, 2020). Despite this centrality, local spillovers remain limited, due to control of concessions, technological dependence and the external localisation of high value-added activities, such as refining or component manufacturing. This organisation reproduces what dependency theory describes as productive extraversion, where peripheral economies remain inserted into the world system as suppliers of raw materials rather than as centres of transformation (Amin,

1973). Moreover, Hamouchene and Sandwell (2023) underline that the term ‘colonialism’ emphasises that exploitative activities and territorial expansion are perpetuated and pursued by agents within a framework of political and legal domination. Environmental impacts, soil and water pollution, ecosystem degradation, as well as precarious labour conditions reinforce this asymmetry, by externalising towards the peripheries the human and ecological costs of the global energy transition.

Beyond mineral extraction, the green transition also materialises through a dynamic of territorial appropriation linked to the deployment of renewable infrastructures. Vast areas are mobilised for solar, wind or hydroelectric parks, often financed by multilateral donors or transnational corporations. According to the Land Matrix Observatory, several million hectares have been allocated to land investment projects, including energy and environmental infrastructures over the past two decades, frequently at the expense of agricultural, pastoral or communal uses (Land Matrix, 2023). These dynamics are inscribed in a historical continuity of land grabbing, where energy transformation is accompanied by forms of social and economic dispossession. In many cases, participation of local populations remains limited, economic compensations are temporary, and local access to the energy produced remains unequal, revealing what some authors describe as an energy paradox; territories mobilised for the production of global « green » energy without fully benefiting from its returns (Borras and al., 2022). This territorial appropriation contributes to reproducing the structures of extraversion and dependence characteristic of extractive economies.

These dynamics have led to the emergence of the concept of « green sacrifice zones », designating territories where environmental degradation, social dispossession and marginalisation of populations are considered acceptable in the name of a global climate benefit. Zografos and Robbins (2020) show that certain projects linked to the energy transition generate « localised socio ecological costs, justified by global sustainability objectives ». These zones concentrate negative impacts, pollution, land conflicts, loss of livelihoods, while being integrated into narratives of necessary and inevitable transition. Local suffering is thus naturalised as collateral damage of decarbonation, which contributes to invisibilising the spatial inequalities of the transition. Finally, as observed by Juskus, « green extractivism »[71] reproduces logics of accumulation by dispossession, where the ecological transition becomes a new vector

[71] The notion of « green extractivism » refers to the integration of the energy transition into logics of accumulation by dispossession, where the global benefits of decarbonation rest upon a spatial concentration of socio ecological costs (Juskus, 2023).

of environmental inequalities (Juskus, 2023). Far from being marginal, these dynamics participate in the contemporary reconfiguration of colonial relations of exploitation.

The African empirical anchoring illustrates these mechanisms. Let us take again the example of the Taïba Ndiaye wind farm, in Senegal, often presented as a green showcase of West Africa, largely financed and controlled by foreign capital. Although it contributes to increasing national energy capacity, local critiques underline limited economic spillovers for communities and an unequal distribution of benefits, while access to electricity remains still imperfect in certain areas (World Bank, 2022). This case reveals a recurrent structure, largely exogenous design, financing and technology, peripheral role of local actors in governance and external capture of a significant share of value. Even in the renewable sector, the transition may thus reproduce patterns of extraversion and dependence, confirming that decarbonation does not necessarily imply a transformation of economic relations inherited from colonialism.

Ultimately, the extractive expansion associated with the global energy transition highlights a structural continuity between the colonial economy of resources and green neocolonialism. The exploitation of critical minerals, territorial appropriation and the formation of sacrifice zones do not constitute isolated phenomena, but the components of a political economy of transition in which peripheral territories are mobilised as material supports of global decarbonation. This dynamic is not limited to punctual extraction; it prepares the institutionalisation of relations of structural dependence, which will be examined in the following section.

1.2.2 De facto: the creation of relationships of dependency and the prioritisation of colonial economic and political interests

The extractive expansion associated with the energy transition is not limited to a punctual capture of resources; it tends to institute structural relations of dependence that durably inscribe peripheral economies in a subordinate position within the global energy system. In this perspective, green neocolonialism operates as a regime of asymmetric interdependence, where the integration of countries of the South into the value chains of the transition occurs under constraint, according to economic, technological and political structures shaped by centres of power. As emphasised by Hamouchene and Sandwell (2023), activities of exploitation and territorial expansion linked to the transition “are pursued within a framework of political and legal domination” and contribute to producing relations of dependence that privilege the

interests of dominant powers. Dependence does not appear here as a secondary effect, but as a constitutive dimension of the political economy of the energy transition.

On the economic level, as mentioned previously, the green transition tends to reproduce a logic of productive extraversion, characterised by the specialisation of peripheral economies in the export of energy resources and strategic raw materials. This structure reproduces what dependency theory identifies as subordinate integration, in which peripheral economies remain dependent on external markets, foreign investments and fluctuations of global prices (Amin, 1973). Indeed, the capture of rent by external actors, multinationals, financial investors, holders of technologies, reinforces this asymmetry, limiting the capacity of producing states to transform their resources into a lever of autonomous industrialisation.

Moreover, this economic dependence is coupled with a technological and financial dependence. The technologies required for the transition, batteries, storage systems, network infrastructures, digital solutions, are predominantly developed and patented in advanced economies, which confers to industrial centres a strategic control over innovation and technological diffusion. The Technology and Innovation Report of the United Nations Conference on Trade and Development (UNCTAD, 2023) underlines that the concentration of global technological capacities limits the possibility for many countries of the South to master the strategic segments of the energy transition. Similarly, the structure of climate finance, dominated by loans and private investments, contributes to anchoring energy policies within frameworks defined by donors, reinforcing a financial dependence that conditions national margins of manoeuvre (Climate Policy Initiative, 2023). Far from favouring structural convergence, this architecture tends to reproduce a durable hierarchy of innovation and decision capacities.

Thus, the cumulative character of these dependencies, economic, technological, financial and political, contributes to progressively reducing the margins of autonomy of peripheral economies. As their integration into the value chains of the global transition intensifies, possibilities of endogenous development, local industrialisation or experimentation with alternative energy models become constrained. Jason Hickel (2020) emphasises that green growth strategies, when they remain embedded within the current structures of global capitalism, risk reproducing dynamics of extraction and structural inequalities. Dependence therefore does not constitute a mere collateral effect, but an organising principle of green neocolonialism, through which the global energy transition reproduces structural asymmetries while sectorally reconfiguring them.

In this sense, the integration of economies of the South into the global energy transition appears less as an egalitarian partnership than as an asymmetric interdependence, in which strategic benefits, technological control, capture of value, energy security, concentrate in the centres, while the peripheries remain inserted in subordinate productive functions. This dynamic confirms that green neocolonialism is not limited to material extraction, but constitutes a system of structural dependence, oriented towards the prioritisation of the economic, energy and geopolitical interests of dominant powers.

However, the extraction and dependencies just highlighted do not constitute a simple addition of localised abuses, they aggregate into durable structures that organise inequality at the global scale. This is why the analysis must now rise in generality and grasp how these dynamics become institutionalised within the global capitalist system, by reconfiguring the centre periphery division and by normalising unequal development.

1.3 The persistence of unequal development in the global capitalist system

In the continuation of the mechanisms of legitimation (1.1) and the material dynamics of extraction and dependence (1.2), this analysis now repositions green neocolonialism within a structural reading of global capitalism, demonstrating that it contributes to the maintenance of unequal development between centres and peripheries. The objective is no longer merely to identify practices, but to understand how inequality is stabilised and rendered durable through institutional, economic and ideological frameworks. First, the analysis highlights the institutionalisation of inequalities as a mechanism of normalisation and legitimation of hierarchies (1.3.1). Next, it examines the contemporary reconfiguration of the centre periphery structure through a new international division of "green" labour (1.3.2). Finally, it situates these dynamics within the framework of the Capitalocene, underscoring how the transition may become a modality of expansion and consolidation of an asymmetric global order (1.3.3).

1.3.1 The institutionalisation of inequalitie as a mechanism for legitimizing colonial practices

One of the central mechanisms through which colonial relations persist in their contemporary forms lies in the production and institutionalisation of inequalities. Beyond material constraint or economic exploitation, structures of domination stabilise when inequality ceases to appear as a contingent injustice and instead becomes a normalised organising principle

of the system. During the colonial era, this normalisation was grounded primarily in the political production of difference. As Aníbal Quijano has shown, the "coloniality of power" institutes a global hierarchy founded on categories of race, culture and civilisation, which naturalise the superiority of the centre and the subordination of the peripheries (Quijano, 2000). Frantz Fanon similarly underscores that the colonial order rests upon a discursive construction in which the colonised subject is defined as immature and incapable of autonomy, thereby allowing domination to be presented as necessary and civilising (Fanon, 1952), which makes it possible to portray domination as necessary and even beneficial. Difference therefore does not constitute a mere description; it operates as a political technology for legitimising inequality. In contemporary forms of neocolonialism, these explicit categories of racial hierarchy give way to apparently technical classifications, level of development, institutional capacity, vulnerability, which reproduce, in a depoliticised form, an analogous logic of stratification.

This shift from ideological difference to institutional difference constitutes a decisive turning point. The hierarchies inherited from colonial history do not disappear; rather, they are transformed into legal, normative and administrative frameworks that organise global governance. The distinction between "developed countries" and "developing countries", between "donors" and "recipients", or between "experts" and "beneficiaries", today structures international agreements, financing arrangements and mechanisms of environmental governance. Arturo Escobar has shown that development, functioning as a "regime of representation", produces the territories of the South as objects of technical and administrative intervention (Escobar, 1995). In addition, James Ferguson (1990) similarly argues that development apparatuses transform political relations into technical problems, thereby contributing to the depoliticisation of asymmetries and the stabilisation of unequal power relations (Ferguson, 1990). Inequality thus ceases to appear as domination; it becomes an administrative rule, embedded in procedures, standards and categories of governance. International institutions, development banks, climate funds and cooperation agencies participate in this formalisation by defining norms, assessing compliance and conditioning access to resources, structurally positioning countries of the South as sites of implementation for global policies.

This process of institutionalisation is accompanied by legitimation through technical and environmental rationality. Michel Foucault has demonstrated that modern forms of power operate less through direct coercion than through normalisation, that is, through the production

of norms that orient conduct and render relations of domination socially acceptable (Foucault, 1977). In contemporary climate governance, decisions are frequently justified by scientific expertise, global climate imperatives or technical necessity, which contributes to the depoliticisation of hierarchies. National trajectories are assessed according to indicators of environmental performance, economic viability or normative compliance, thereby transforming structural inequalities into objective data of development. In this sense, domination does not disappear; it is reconfigured in techno normative form. In parallel, David Harvey (2005) emphasises that the institutional apparatuses of global capitalism tend to transform historically produced inequalities into durable organisational structures. Within this framework, external interventions appear rational and necessary, while the asymmetries they reproduce are naturalised as structural constraints.

Green neocolonialism fully inscribes itself within this logic of institutionalisation. The categories mobilised in environmental governance, vulnerable countries, high biodiversity zones, carbon reservoirs, spaces designated for the deployment of green infrastructure, assign specific functions to territories within the political economy of the transition. These classifications are not neutral; they organise the geographical distribution of the costs and benefits of the energy transition. As Hamouchene and Sandwell (2023) underline, contemporary colonial practices are legitimised through the institutionalisation of inequalities grounded in Eurocentric ideas of difference and marginality. Thus, inequality no longer appears as injustice, but as a functional mechanism of the global system of sustainability.

This institutionalisation produces a profound continuity with colonial logics. When inequality is embedded in legal and administrative frameworks, external intervention ceases to appear as domination: it becomes cooperation; tutelage becomes assistance; interference becomes partnership. Edward Said has shown that modern forms of imperiality rest upon the production of knowledge and categories that render domination intelligible and acceptable (Said, 1978). In the context of green neocolonialism, such normalisation renders contestation more difficult and invisibilises alternatives, because hierarchies appear neutral, necessary and inevitable. Consequently, the institutionalisation of inequalities does not constitute a mere secondary effect of the energy transition; it is its central mechanism of legitimation, through which colonial continuities are stabilised and reproduced under an environmental rationality. By transforming inequality into a rule of operation, green neocolonialism ensures the persistence of asymmetric power relations while embedding them within the durable structures of global capitalism.

1.3.2 The centre/periphery structure as the economic logic of green neocolonialsim

The global energy transition is embedded in a structural configuration that recalls the centre periphery schema elaborated by dependency theory and world systems analysis. Far from constituting a uniformly redistributive project, it tends to reproduce an international hierarchy in which dominant economies retain control over strategic segments, technology, finance, standards and governance, while peripheral territories are assigned extractive, energy or environmental functions. As Hamouchene and Sandwell suggest, colonialism historically articulates "a wealthy and developed centre with regions perceived as peripheral and underdeveloped", a dynamic in which external intervention contributes to the prosperity of the centre while marginalising the periphery, despite the abundance of resources it possesses (Hamouchene and Sandwell, 2023). Inequality thus does not constitute an anomaly of the world system, but rather its organising principle.

In this context, the energy transition contributes to instituting a new international division of labour that is "green". The peripheries are specialised in supplying resources indispensable to decarbonisation, critical minerals, renewable energy, land and ecological storage capacities, while the centre retains the high value-added segments. By way of illustration, data from the IEA show that the production of minerals essential to low carbon technologies is highly concentrated in a limited number of countries of the South, whereas their processing, refining and the manufacturing of associated technologies remain dominated by advanced industrial economies (IEA, 2021). This asymmetry is inscribed within a logic clearly identified by centre periphery theory; the periphery provides material inputs, while the centre controls knowledge, technology and value capture (Amin, 1973). The energy transition therefore does not dissolve the global hierarchy; rather, it recomposes its functions by substituting "green" extraction for earlier forms of resource exploitation.

From this perspective, green neocolonialism may be analysed as a project of the centre, insofar as the global energy transition is largely structured by the energy, industrial and geopolitical imperatives of dominant economies. This is what Manahan, Bringel and Lang underline when they argue that contemporary dynamics of green colonialism privilege the economic and political interests of the centre, to the detriment of the peripheries, by organising access to resources and shaping the configuration of global value chains (Manahan, Bringel and Lang, 2024). What is presented as a universal climatic necessity frequently corresponds to the specific needs of the centre: securing supplies of critical minerals, decarbonising domestic energy

systems, maintaining industrial competitiveness and ensuring the stability of supply chains. Ecological rhetoric universalises these priorities and contributes to depoliticising relations of domination, transforming an economic hierarchy into a moral and technical imperative.

Environmental humanities provide a complementary lens by revealing the historical and political dimension of this centre periphery structuring. Grove shows that modern environmentalism[72] was partly constituted within the framework of colonial expansion, where policies of conservation and resource management were inseparable from imperial power relations (Grove, 1995). Within this perspective, the concept of green colonialism makes it possible to analyse environmental injustices as products of historical structures of domination, rather than as contingent effects of ecological policies. It invites a critical interrogation of practices presented as "sustainable" or "beneficial for the planet" by examining their inscription within logics of peripheral extraction, social marginalisation and value capture in the centre. Political ecology therefore does not merely assess the environmental effectiveness of policies, but reveals their insertion within a geography of power inherited from colonialism.

Thus, in its contemporary configuration, green neocolonialism appears as a reconfigured rather than transformed centre periphery system. Where colonialism relied upon direct extraction, resource exportation and economic dependence, the energy transition institutes a renewed form of peripheral specialisation through the extraction of "green" resources, energy production, subordinate integration into global value chains and technological and financial dependence. The centre continues to accumulate capital, knowledge and technological capacity, while the periphery bears a disproportionate share of social and ecological costs and remains dependent on external investments, markets and strategic decisions.

1.3.3 Green neocolonialism and highlighting the asymmetrical global structures of the Capitalocene

The mobilisation of the concept of the Capitalocene makes it possible to situate green neocolonialism within a structural reading of the ecological crisis. Indeed, the issue is no longer to attribute environmental degradation to an undifferentiated "humanity" Anthropocene, but to relate it to a historical regime of accumulation grounded in extractivism, the commodification

[72] Environmentalism may be defined as a socio political, ideological and scientific movement aimed at protecting, preserving and restoring the natural environment in response to human induced degradation.

of life and the imperial expansion of global capitalism (Moore, 2017)[73]. Within this perspective, green neocolonialism is not a contingent "drift" of the transition, but a revealing symptom. It exposes the manner in which the climate response may articulate with the reproduction of centre periphery hierarchies, by perpetuating the externalisation of costs and the concentration of value within dominant economies. The critique of the Capitalocene emphasises the colonial rooting of fossil modernity; conquest, expropriation and the "valorisation" of peripheral territories constituted historical conditions of industrialisation, and therefore of the emissions trajectory that structures contemporary climate injustice (Moore, 2017). This analytical shift allows an understanding of why "green" policies may function as new forms of appropriation, not despite their climatic rationality, but sometimes through it, when sustainability is conceived as a strategy for stabilising the system rather than challenging its structural causes.

In this sense, green neocolonialism appears as a contemporary modality of the Capitalocene. Since the transition is presented as a universal response to crisis, it may also operate as a mechanism for the expansion of global capitalism by opening new frontiers of accumulation, critical minerals, energy infrastructures, carbon markets, "nature-based solutions". In this regard, Rehman's warning is illuminating; initiatives of green growth risk leading to "a new form of green colonialism that will continue to sacrifice the people of the global south to maintain our broken economic model" (Rehman, 2019). In other words, the "green" may become a language for optimising the same economic order. Thus, the transition becomes compatible with the continuation of accumulation, provided that social and ecological costs are territorially displaced towards the peripheries. The relevance of the Capitalocene lies here in its capacity to connect climate injustice to a global political economy. It is not only emissions that are unequally distributed, but also decision-making capacities, technological infrastructures and the capture of rents associated with decarbonisation.

This interpretation is reinforced by recent scholarship on climatic coloniality and imperiality, which shows that "sustainability", "green growth" or "green innovation" may incorporate imperial logics by requalifying relations of power into ecological imperatives (Bhambra and

[73] The term Capitalocene is notably proposed by Jason W. Moore to emphasise that the ecological crisis derives from a historical regime of producing "cheap nature" labour, energy, materials and territories in the service of accumulation, rather than from a generic effect attributable to "humanity" as a whole (Moore, 2017). Within this perspective, capitalism is approached as world ecology, that is, a historical system dynamically articulating capital accumulation, appropriation of nature and imperial expansion. In this sense, the Capitalocene may be understood as the era in which the logic of profit, unlimited accumulation, extractivism and the commodification of life become structuring forces in the relations between human societies and environment. The concept is mobilised as an analytical framework allowing the politicisation of the environmental crisis by situating it within the historical structures of global capitalism and its colonial dynamics.

Newell, 2023). Indeed, Bhambra and Newell (2023) notably recall that understanding the climate crisis through colonial histories requires taking seriously the continuity of asymmetries, historical contribution, vulnerabilities and climate debt, rather than dissolving them within a globalising narrative of shared responsibility. This asymmetry of contribution, combined with the geography of vulnerabilities, produces a terrain favourable to the reproduction of a climate governance in which the periphery is expected to absorb the constraints of a crisis largely produced elsewhere, which the Capitalocene conceptualises as structure rather than accident.

In the same vein, the literature on the geopolitics of green colonialism emphasises that the transition reconfigures a global system of injustice by installing a "green" arena of competition and securitisation, notably through the securing of supply chains, control over resources and energy corridors, and the deployment of infrastructures and compensation mechanisms (Lang, Manahan and Bringel, 2024). This geopolitics does not remain limited to extraction. It recomposes relations of power by circumventing or weakening the decision-making capacities of affected communities, particularly when free, prior and informed consent is minimised in the name of climatic urgency[74]. In addition, recent studies refer explicitly to a "geopolitics of green colonialism" in which global environmental injustice is rearticulated around the decarbonisation imperatives of the centres, and where the periphery is assigned functions, resource reservoir, carbon sink, space of implantation, that durably constrain its socio ecological trajectories (Post and Le Billon, 2024).

Thus, the revealing function of the concept of green neocolonialism within the framework of the Capitalocene is twofold. First, it recalls that the ecological crisis is not "universally produced", it is historically linked to a system of accumulation and to its fossil and colonial infrastructures (Moore, 2017). Second, it shows that the transition is not "universally beneficial", it may reinforce structural asymmetries by redistributing unevenly value, rights of use and margins of autonomy, while cloaking these displacements in a grammar of climatic necessity (Lang, Manahan and Bringel, 2024). In this sense, green neocolonialism does not describe a peripheral abuse of the transition, but lays bare the structures of the Capitalocene, a world order in which the response to the ecological crisis may become a new episode in the

[74] Free, Prior and Informed Consent (FPIC) refers to a reference norm concerning the rights of Indigenous peoples in relation to projects affecting their lands and resources; its circumvention is frequently discussed in critiques of extractive transition and compensation projects.

long history of expropriation, extraction and hierarchical ordering of territories under ecologised forms.

After having shown that the "green" may function as a contemporary rationality of imperial reconfiguration, a decisive question remains open, what becomes of this critique when the transition claims the language of justice? Domination no longer operates solely through extraction or constraint, but also through the vocabulary of equity, responsibility and reparation. It is precisely within this normative space that the central ambiguity of the climate transition emerges: can justice correct structural asymmetries, or does it risk, once translated into concrete mechanisms, reconfiguring them in a more diffuse form? Consequently, the task is no longer only to identify imperial continuities, but to examine whether climate justice constitutes a horizon of emancipation or a framework through which green neocolonialism may be redeployed.

CHAPTER II – The ambiguities of climate justice: towards green neo-colonialism?

Climate justice has established itself as one of the major normative frameworks of contemporary climate governance, asserting that the response to global warming must be evaluated not only in terms of environmental effectiveness, but also with regard to the distribution of responsibilities, burdens and protections. In a formulation that has become foundational, Henry Shue (2014) defines the central requirement of climate justice as the necessity to prioritise the protection of the most vulnerable and the least responsible, by articulating historical responsibility and duties of protection. Yet, this normative promise encounters, in practice, a contrasted energy sovereignty; states of the South may be legally sovereign in their transition choices, while remaining materially constrained by technological, epistemic and financial dependencies that limit their capacity to decide "according to their own rules". It is precisely this tension, proclaimed emancipation, reproduced asymmetries, that structures the present chapter and sustains the interrogation of a possible green neocolonialism. As Sultana (2022) emphasises, "green colonialism" may be analysed through the debates on climate justice, while Abram and al. (2022) recall that these debates also concern the global distribution of responsibilities, benefits, costs and reparations.

This analysis proceeds through a three stages analytical sequence. First, we will establish the normative coherence of climate justice; principles of common but differentiated

responsibilities, equity and rights, followed by a shift from distributive justice toward a structural justice attentive to the historical mechanisms of domination and dependency (2.1). Then, section 2.2 moves the analysis toward the diplomacy of knowledge, showing how models, norms, data and technologies may become infrastructures of power; it is further deepened through a case study of the French National Research Institute for Sustainable Development (IRD), understood as a specific form of Franco Senegalese scientific cooperation. Finally, we will examine financial dependence and the conditionalities of climate finance, before proposing an empirical assessment based on the case of the French Development Agency (AFD), in order to test, at the closest level of institutional mechanisms, whether climate justice may shift from a project of reparation toward an asymmetric governance of the transition. (2.3)

2.1 Climate justice as a normative project

Climate justice today constitutes a central normative framework for rethinking climate change no longer solely as an environmental issue, but above all as a matter of social, political and moral justice. Thus, this analysis aims to establish the conceptual foundations of this project by showing, on the one hand, how climate justice has been structured around key principles, differentiated responsibility, equity and rights, which make it possible to grasp the asymmetry between those who have historically contributed to warming and those who disproportionately suffer its effects (2.1.1). It highlights, on the other hand, a major theoretical shift; from a distributive conception focused on the allocation of costs and financing toward a structural approach attentive to the historical, institutional and political mechanisms that durably produce vulnerability, dependency and climate inequalities (2.1.2). This section therefore sets the normative framework from which the emancipatory potential, or the limits, of climate justice may be examined.

2.1.1 Climate justice and the principles of differentiated responsibility, equity and entitlement

Climate justice marks a decisive shift in the way climate change is conceived. From an environmental and technical problem to a question of global justice, involving differentiated responsibilities, rights and obligations. This shift rests on the idea that the climate crisis does not constitute merely an abstract collective risk, but a historically and structurally produced injustice, characterised by a profound dissociation between those who have largely contributed to warming and those who suffer its most severe impacts (Caney, 2010; Moellendorf, 2014).

As Henry Shue underlines, the gravest injustice of climate change is that those least responsible are often the most vulnerable (Shue, 2014). In this perspective, climate justice inscribes climate within the field of transnational justice, revealing asymmetries of power, historical inequalities of development and an unequal distribution of the costs and benefits of the global economic system (Pogge, 2005; Young, 2011). The climate question thus becomes inseparable from a moral and political interrogation: who is responsible, who suffers, and according to which principles should a just response be organised?

The first normative pillar of climate justice lies in the principle of Common but Differentiated Responsibilities (CBDR), enshrined as early as the United Nations Framework Convention on Climate Change (UNFCCC, 1992). This principle rests on a dual recognition; on the one hand, climate change constitutes a common problem for humanity; on the other hand, responsibilities in its production and capacities to respond to it are profoundly unequal. Three normative foundations sustain this differentiation. The first is causal, industrialised countries have historically emitted the majority of greenhouse gases accumulated in the atmosphere (IPCC, 2023). The second is moral, it would be unjust to impose identical obligations on those who have not contributed equivalently to the harm (Shue, 1999). The third is capacitary, actors endowed with greater economic and technological resources bear an increased obligation to act (Caney, 2010). As the UNFCCC affirms, States must act "in accordance with their common but differentiated responsibilities and respective capabilities" (UNFCCC, 1992, art 3.1). On the political level, this principle justifies differentiated obligations of emissions reduction, financial and technological transfers, as well as compensation mechanisms. It therefore breaks with a formalistic conception of equality in order to introduce a substantive equality grounded in history and capabilities, making climate justice an explicitly redistributive project.

Then, the second pillar is climate equity, understood as a morally justifiable distribution of the burdens, risks and benefits associated with climate change. Distributive equity interrogates how to allocate mitigation efforts, the costs of adaptation and climate finance according to criteria of historical responsibility, economic capacity and level of development (Moellendorf, 2014). It also unfolds in an intergenerational dimension, present generations bear the obligation not to compromise the conditions of existence of future generations, which implies limiting the present right to exploit fossil resources without constraint (Rawls, 1971[75]; Gardiner, 2011).

[75] The reference to John Rawls relies on an extension of the 'just savings principle' (*A Theory of Justice*, 1971). Although Rawls does not address climate change directly, this principle grounds the idea that present generations bear the obligation to preserve just conditions for future generations, an argument widely mobilised in climate justice.

Finally, intragenerational equity concerns the protection of the most vulnerable populations, often the least responsible, against the disproportionate effects of climate change. As the United Nations Development Programme underlines, climate change is not only an environmental crisis but a crisis of inequality (UNDP, 2020). Climate equity therefore cannot be reduced to financial redistribution; it entails a broader interrogation of the structure of development trajectories, in order to prevent the transition itself from reproducing or aggravating social inequalities.

Finally, the third pillar of climate justice is the growing anchoring of climate within the register of human rights. Climate change directly affects fundamental rights such as the right to life, to health, to water, to food or to a healthy environment (OHCHR, 2015). This perspective transforms climate from a global public good into a legal issue, opening the way to greater accountability of States and economic actors. The United Nations Human Rights Council recognises that "climate change poses an immediate and far-reaching threat to people and communities around the world and has implications for the full enjoyment of human rights" (UNHRC, 2015). Climate justice also insists on the protection of vulnerable groups, populations of the South, Indigenous peoples, rural communities, women and children, whose exposure to climate risks is intensified by structural inequalities (Robinson and Shine, 2018). This evolution is accompanied by an increasing judicialisation of climate, illustrated by the multiplication of climate litigations seeking to recognise responsibilities and to protect the rights of affected populations (Setzer and Higham, 2022). Law thus becomes an instrument of recognition of harm, of accountability and of protection, contributing to transform climate governance into a normative space of justice.

Taken together, these three principles, differentiated responsibility, equity and rights, constitute the normative foundation of climate justice. They translate an explicit recognition of historical injustices produced by unequal trajectories of development and morally ground the idea of differentiated international cooperation, including financial transfers, adaptation and mechanisms of "loss and damage" (UNFCCC, Paris Agreement, 2015). Climate justice therefore does not aim merely to manage climate change, but to moralise global governance by introducing criteria of responsibility, protection and reparation. Thus, as Caney (2010) argues, climate justice requires not merely efficiency in reducing emissions but fairness in how burdens and benefits are distributed. In this sense, it constitutes a powerful normative framework for conceiving climate as a global injustice and for orienting international action toward a morally

justifiable distribution of burdens, resources and protections. This normative coherence, grounded in the recognition of inequalities, the redistribution of responsibilities and the protection of rights, provides the theoretical basis necessary to examine, in the following sections, the concrete conditions under which climate justice may, or may not, translate into effective justice.

2.1.2 From distributive justice to structural justice

In its early formulations and as analysed previously, climate justice was largely inscribed within a distributive perspective, centred on the equitable allocation of responsibilities, costs and resources associated with mitigation and adaptation. Inspired by liberal moral philosophy and particularly by the Rawlsian tradition, this approach seeks to correct imbalances through mechanisms of compensation and redistribution, according to which those who have contributed most to climate harm must assume a greater share of the effort and financing (Caney, 2010; Shue, 1999). However, by conceiving injustice primarily as a misallocation of burdens or resources, the distributive perspective tends to address symptoms rather than causes. As several scholars have underlined, redistribution may mitigate the effects of injustice without transforming the social, economic and political structures that produce it (Fraser, 1995).

Thus, the rise of a structural approach to climate justice rests precisely on this observation. In the perspective developed by Iris Marion Young, structural injustice does not result from isolated actions or individual intentions, but from institutional and systemic processes that durably assign certain populations to positions of vulnerability and asymmetrically distribute power and resources (Young, 2011). Applied to climate, this analysis highlights that populations of the Global South, although minimally responsible for historical emissions, disproportionately suffer the impacts of warming while possessing limited adaptive capacities. This imbalance is not accidental but produced by historical and structural dynamics such as the colonial legacy, the international division of labour, technological and financial dependence, or the economic extraversion of peripheral societies (Pogge, 2005; Ypi, 2012). Climate injustice therefore appears less as a problem of distribution than as a property of the global system itself.

This analytical shift also leads to a reformulation of justice in terms of power and domination. In a critical perspective, justice does not consist merely in compensating a measurable harm, but in dismantling the structures that systematically limit the capacities to act of certain groups.

As Vittorio Bufacchi explains, injustice must be understood as a « structural wrong » affecting the very possibility of acting and participating in social life, which implies that reparation requires more than simple material compensation (Bufacchi, 2012). In a convergent manner, the conception of justice as non-domination, developed by Young and by Nancy Fraser, underlines that a situation is unjust when certain groups are subject to rules they have not contributed to defining and do not control (Fraser, 2008). In the climate domain, this perspective invites interrogation not only of the distribution of costs, but also of the governance of energy trajectories, the definition of technological standards and the capacity of vulnerable societies to participate in determining the policies that affect their future.

In this sense, this structural rereading further nourishes a critique of strictly compensatory solutions. Financial mechanisms, carbon markets or certain loss and damage compensation instruments may contribute to reducing some effects of injustice, yet they may also stabilise the structures that produce it. Several critical analyses have shown that such instruments can enable the continuation of extractivist models, reproduce relations of dependence or depoliticise the climate question by reducing it to a technical problem of financing and management (Hickel, 2020). Injustice then tends to be treated as a monetary deficit rather than as an issue of power, sovereignty and institutional transformation. In this perspective, the idea of a just and shared transition underlines that the financing of renewable energy projects, energy efficiency and low carbon technologies must be collectively supported. Developed countries committed, within the framework of the Paris Agreement, to mobilise USD 100 billion per year to support climate action in developing countries, a commitment extended until 2025 and conceived as a minimum threshold of international climate solidarity (UNFCCC, 2015). However, several assessments indicate that the USD 100 billion annual climate finance goal, initially expected by 2020, was only reached in 2022, contributing to persistent tensions and mistrust between Global North and South regarding the credibility of international climate finance commitments (OECD, 2024; UNFCCC, 2023).

In this perspective, structural climate justice does not consist merely in equitably distributing costs, but in transforming the structures that produce injustice. It implies, on the economic level, a questioning of extractivist logics and peripheral specialisation; on the political level, a democratisation of climate governance and a strengthening of the decision-making autonomy of vulnerable societies; on the epistemic level, a recognition of situated knowledges and a contestation of global technocratic domination. This orientation brings climate justice closer to

postcolonial critiques and political ecology, underlining that the climate question cannot be dissociated from historical relations of domination and structural inequalities of the global system. Understood in this way, climate justice does not constitute merely a project of redistribution, but a project of transformation of the economic, political and institutional structures that organise vulnerability, a necessary condition for climate justice to become effective justice.

If section 2.1 has shown that climate justice cannot be reduced to a simple redistribution of burdens, it has also shifted the question toward the very core of power: who defines the rules, the norms and the legitimate trajectories of the transition. It is precisely this shift that leads to examining, in 2.2, the diplomacy of knowledge as a silent arena of arbitration where cognitive sovereignty, technological dependencies and hierarchies of expertise are at stake.

2.2 Knowledge diplomacy in scientific and technological dependency relationships

Having established the normative foundations of climate justice, the analysis now shifts toward a decisive yet often less visible dimension: the power of knowledge and technology in structuring energy trajectories. It proceeds from the premise that the transition depends not only on material resources, but also on the capacity to produce knowledge, master technologies and define standards. In this perspective, we will first analyse the structuring role of scientific capacities and technological dependencies in energy policies (2.2.1). Then, we will anchor the analysis in an empirical case study of Franco–Senegalese scientific cooperation centred on the IRD, in order to examine the distribution of cognitive power and the production of knowledge (2.2.2). Finally, we will propose a normative synthesis assessing the ambivalence of scientific diplomacy, between the strengthening of endogenous capacities and the potential reproduction of asymmetries compatible with the hypothesis of green neocolonialism (2.2.3).

2.2.1 Endogenous capacities and technological dependence in energy policies

In the Senghorian tradition, the requirement of rootedness, of building oneself “upon the Negro-African heritage” while remaining open to other cultures, grounds a conception of endogenous knowledge as a condition of collective autonomy rather than mere cognitive “folklore” (Senghor, cited in Assemblée nationale, 2007). Transposed to the energy domain, this intuition illuminates a decisive point, climate justice is not decided solely in the tonnes of CO_2 avoided or in the volumes of aid, but in the capacity to produce knowledge, master

technologies and define the standards that render certain trajectories possible and others inaccessible. In other words, the energy transition is also a politics of knowledge, it relies on planning models, grid scenarios, sustainability standards, performance indicators and management software that structure what becomes “thinkable”, “bankable” and “legitimate”. In the perspective of Science and Technology Studies, these instruments do not merely describe reality, they participate in a co-production of knowledge and social order, by closely linking ways of knowing with ways of organising and controlling public action (Jasanoff, 2004). Consequently, the international distribution of scientific and technical capacities becomes an issue of power, whoever holds modelling infrastructures, data, engineering standards and patents can orient hierarchies of priorities, decarbonisation versus security of supply, profitability versus universal access, centralisation versus decentralised solutions, and impose “best practices” presented as universal.

This dimension is reinforced by the material and industrial concentration of key technologies. In critical segments, batteries, grids, electrolysers, photovoltaic components, the global transition relies on strongly polarised value chains. The IEA notes for example that in 2022 China, the EU and the United States accounted for more than 90% of installed global manufacturing capacity for batteries, with China alone representing 70-75% (IEA, 2023). Such a geography of production is not neutral, it conditions costs, delays, maintenance, access to spare parts, and therefore the effective sovereignty of energy policies in importing countries. It is accompanied by a concentration of innovation and intellectual property rights. The IEA highlights the shift in the geography of energy innovation toward Asia, with China having become a major actor in patenting low-carbon technologies (IEA, 2025). Regarding next-generation batteries, the analysis of the World Intellectual Property Organization (WIPO) shows a very rapid growth in patenting for solid-state batteries since the 2010s, signalling the rise of a highly strategic technological field (WIPO, 2024). In this context, technological dependence cannot be reduced to “purchasing equipment”, it includes legal lock-ins, patents, licences, technical lock-ins, proprietary standards, limited interoperability, and organisational lock-ins, maintenance contracts, captive training, closed software. The risk, frequently noted by practitioners, is that of the “turnkey” solution, a “delivered-installed-operated” project that works, yet as a black box, difficult to repair, to adapt, to reproduce locally, or to integrate into a strategy of energy industrialisation. Such lock-in may generate long-term dependence, Operations and Maintenance (O&M), software updates, renewal of components, shifting the transition from a horizon of autonomy toward one of asymmetric interdependence.

To this material dependence is added an epistemic dependence. Indeed, the asymmetry lies in the production of knowledge, data and authoritative frameworks of expertise. Northern knowledge benefits from powerful institutions, universities, think tanks, agencies, standard-setting bodies, stable funding, high bibliometric visibility and a capital of credibility that renders it immediately usable in public decision-making. Conversely, situated knowledge, experiences of rural electrification, local operational constraints, social practices of energy, is frequently relegated to the status of "anecdotes" or "acceptability", rather than recognised as structuring knowledge. Feminist and postcolonial critiques of science have precisely shown that proclaimed objectivity may conceal blind spots produced by the social homogeneity of epistemic communities, Harding thus argues that homogeneous communities often lack the resources to detect the values and interests shaping their own assumptions, hence the idea of "strong objectivity" through pluralisation of viewpoints (Harding, 1991). Applied to the energy transition, the issue is not merely symbolic "participation", but the capacity to define the problem, what constitutes a just transition in Senegal, to produce scenarios, what trade-offs between gas, renewables, storage, grid, and to control data, measurement, verification, planning. This triple asymmetry, capacities, problem definition, legitimacy, turns scientific dependence into a structural constraint liable to contradict a structural conception of climate justice, one that requires not only redistribution of resources, but redistribution of the power to decide (Young, 2011; Bufacchi, 2012).

It is at this juncture that science diplomacy emerges as a pivotal space between cooperation and power. United Nations Educational, Scientific and Cultural Organization (UNESCO) defines science diplomacy as "the use of scientific knowledge and collaboration to strengthen international relations and tackle global challenges" (UNESCO, 2024). The Royal Society and the AAAS proposed a now classical typology, 'science in diplomacy', science informs foreign policy; 'diplomacy for science', diplomacy facilitates scientific cooperation; and 'science for diplomacy', science improves international relations (Royal Society and AAAS, 2010; Royal Society, 2023). This architecture is not merely descriptive, it indicates how science can become an instrument of soft power, through the setting of research agendas, methodological standards and evaluation frameworks. In the climate field, transnational expertise arrangements, such as those informing negotiations, may stabilise certain rationalities, measurement, indicators, technological portfolios, to the detriment of approaches centred on structural transformation, local industrialisation or plurality of knowledge (Jasanoff, 2004). Finally, the "new frontier" of technosolutions (hydrogen, Carbon Capture and Storage - CCS, geoengineering) reinforces the

technopolitical dimension. Indeed, these options tend to concentrate decision-making within arenas of expertise, to displace risks and to enable the continuity of dominant economic models, which fuels critiques of a climate governed by engineering and environmental enclosure (Cabello and Gilbertson, 2012). Consequently, the question of endogenous capacities becomes the central normative criterion, without local manufacturing, without operational and maintenance skills, without Research and Development (R&D), without mastery of models and data, the transition may reduce dependence on hydrocarbons while reinforcing technological and cognitive dependence. In coherence with Senghor, the issue is not withdrawal but a controlled openness, a cooperation that enhances local capacities to define, adapt and produce, a minimal condition for climate justice to also become a justice of non-domination (Young, 2011).

2.2.2 Case study: IRD and France–Senegal scientific cooperation

The case study devoted to the Institut de Recherche pour le Développement (French National Research Institute for Sustainable Development, IRD), seeks to empirically anchor the analysis of science diplomacy by examining a structuring actor of France–Senegal scientific cooperation in the field of energy and climate. The IRD indeed plays a central role in the production of climate data, the conduct of energy feasibility studies and the training of scientific personnel, thereby contributing to the long-term structuring of the knowledge that guides public policies and the financing of the energy transition in Senegal. This position makes it a privileged observatory from which to interrogate the power dynamics linked to the production of knowledge, who defines research priorities, where models and analytical frameworks are elaborated, and what place is accorded to local knowledge and Senegalese institutions. The analysis therefore aims to assess whether scientific cooperation constitutes a lever of epistemic emancipation or whether it tends to reproduce an international division of cognitive labour. To this end, the study relies on a qualitative semi-structured questionnaire, designed to test the hypothesis of green neocolonialism in science diplomacy; the interview guide is presented in Appendix (see Appendix B).

2.2.3 Synthesis: scientific diplomacy in the face of the green neocolonialism hypothesis?

In this case study, the analysis of the completed semi-structured questionnaire highlights a structuring ambivalence in France–Senegal scientific cooperation through the IRD. It presents itself as a space of co-production and capacity-building, while simultaneously remaining

traversed by asymmetries of resources, framing and infrastructure that may, under certain conditions, sustain the hypothesis of green neocolonialism understood as the reproduction of epistemic and technological hierarchies.

On the one hand, the interviewee describes the definition of priorities as operating according to an explicitly co-constructed logic, situating agendas “at the intersection of national priorities, the institute’s strategic orientations and international agendas related to sustainable development and the Paris Agreement” (IRD Interview, 2026), and emphasizing a “hybrid process of co-construction” in which Senegalese needs, IRD mechanisms and multilateral funding opportunities “intersect” (IRD Interview, 2026). This representation aligns with the classical frameworks of science diplomacy (UNESCO ; Royal Society & AAAS) and suggests a potentially “anti-asymmetrical” form of cooperation insofar as it consolidates endogenous capacities, training, recruitment and the circulation of skills, the respondent stressing that “many young master’s and doctoral students gain expertise during their time at IRD” and that “there are Senegalese researchers recruited by IRD with permanent positions” (IRD Interview, 2026).

However, several responses simultaneously point to more diffuse mechanisms of power, characteristic of contemporary regimes of technocratic governance. Indeed, the arbitration between global objectives and national priorities is also described as constrained by “international frameworks and donor requirements” which “often impose normative objectives and standardized indicators” (IRD Interview, 2026), directly echoing the idea of the co-production of knowledge and social order (Jasanoff, 2004). In this respect, metrics, models and standards are not neutral; they define, de facto, what is “demonstrable”, “fundable” and “legitimate”. Even more explicitly, the respondent acknowledges that the capacity to say “this is not the priority” operates within a “shared but asymmetrical process” and ultimately depends on the “control of scientific, financial and programmatic resources”, conferring a decisive role upon “program steering bodies and funders” (IRD Interview, 2026); an observation consistent with analyses of epistemic dependence and governance through expertise. Project governance confirms this procedural asymmetry, even when decisions are discussed, their validation depends upon the “administrative procedures of the lead institution” and the “management rules imposed by the donor” (IRD Interview, 2026), while the absence of a “systematic formal veto right” for Senegalese partners over a scientific orientation, a publication or the use of data (IRD Interview, 2026) calls into question the reality of fully equal co-decision. Regarding

infrastructure and data sovereignty, hosting is described as “distributed”, often linked to IRD infrastructures in France or regional facilities, or to local capacities “depending on the nature of the project, donor requirements and available technical capacities” (IRD Interview, 2026), thereby reactivating issues of cognitive sovereignty, who administers access, who determines conditions of reuse, at the core of critiques of the coloniality of knowledge and epistemic heteronomy. Finally, the interviewee explicitly rejects the relevance of the concept of green neocolonialism for science as such, stating that “the term is not relevant (…) science does not constitute a Western hegemony” (IRD Interview, 2026); yet simultaneously acknowledges that funding shapes thematic orientations and that the issue becomes more pertinent when it concerns “investments related to the establishment of energy infrastructures” dependent on financing constraints (IRD Interview, 2026). This position precisely reinforces a measured conclusion ; scientific cooperation does not mechanically translate into green neocolonialism, yet it may contain its conditions of possibility when (i) the agenda is strongly structured by donors and global metrics, (ii) data infrastructures and the capacity for arbitration remain concentrated on the side of the lead institution or funder, and (iii) capacity-building proves insufficient to durably redistribute the power to define problems, control data and stabilize methodological autonomy, requirements consistent with a structural conception of justice as non-domination and redistribution of decision-making power (Young, 2011; Bufacchi, 2012; Harding, 1991).

Moreover, knowledge dependencies never operate in isolation; they materialize and stabilize within concrete arrangements, foremost among them financing, which renders certain options feasible and forecloses others. Consequently, after the question “who produces and controls knowledge?”, section 2.3 extends the analysis through a complementary interrogation: “who finances, under what conditions, and with what effects on the strategic autonomy of the transition?”

2.3 Financial dependency and climate justice under conditionality

After examining the normative (2.1) and then the epistemic and technological (2.2) dimensions of climate justice, this section analyses the structuring role of finance in the concrete organization of the energy transition. It proceeds from the hypothesis that climate finance, far from being a mere instrument of solidarity, constitutes a mechanism of power capable of shaping the political, technological and institutional priorities of recipient countries. In this

perspective, we will first highlight climate finance as a political infrastructure producing asymmetries of power and redefining energy trajectories (2.3.1). Then, we will anchor this analysis in an empirical study of the role of the AFD in Senegal, in order to assess concretely the dynamics of dependence and financial structuring (2.3.2). Finally, we will propose a critical synthesis interrogating the ambivalence of climate finance, between a lever of justice and a form of financial government of the transition (2.3.3).

2.3.1 Climate finance and power asymmetry

Climate finance is often presented as the material expression of climate justice, North–South flows intended to support mitigation, adaptation and a "just transition". Yet, once it is approached not as a simple redistributive transfer but as a political infrastructure, it appears as an instrument of power that concretely organizes what the transition becomes, where it unfolds and under what conditions. Financing, here, does not merely mean "to support", it amounts to selecting sectors, technologies, territories, metrics and actors deemed eligible. In this sense, finance "brings into existence" certain energy trajectories rather than others, by defining what is bankable, measurable and compatible with donors' risk frameworks. This centrality is all the more decisive given that, in many countries of the Global South, renewable infrastructure projects (solar, wind, hydro), but also supply chains linked to low-carbon technologies (grids, storage, electromobility), depend heavily on multilateral banks, bilateral donors, climate funds and private investors (CPI, 2023). Yet, data consolidated by Climate Policy Initiative show that the recent increase in climate finance remains strongly geographically concentrated; the rise observed in 2021–2022 has been captured predominantly by a few major investment hubs (China, United States, Europe, etc.), which tempers the idea of a massive shift toward the most vulnerable regions.

This logic of selection intersects with a geopolitical dimension of the "green". The low-carbon transition opens new frontiers of investment and reconfigures industrial priorities, securing value chains, stabilizing legal frameworks, guaranteeing outlets and standards. In this perspective, green finance may operate as an alignment mechanism, orienting the public policies of recipient countries toward models compatible with the interests, technologies and norms of donors. The issue becomes particularly evident when the expansion of renewable infrastructures is linked to the material economy of the transition. In parallel, critiques of the "political economy of carbon" have precisely shown how certain climate dispositifs may extend

logics of enclosure and dispossession under the guise of environmental efficiency. In this respect, Cabello and Gilbertson (2012) analyse climate mechanisms, particularly those related to the commodification of carbon, as forms of neoliberal enclosure that transform spaces and practices into governable assets, sometimes to the detriment of local rights and uses.

These effects are reinforced by the very architecture of climate finance. First, the composition of flows; according to the Organisation for Economic Co-operation and Development - OECD (2024), loans represented about 69% of public climate finance provided by developed countries in 2022 (around USD 63–64 billion), while grants accounted for roughly 28% (around USD 25–26 billion). This predominance of loans is not neutral. It may convert an imperative of justice into a burden of indebtedness, and increase the capacity of donors to weigh on national priorities through project structuring, contractual clauses, reporting requirements and risk frameworks. Second, conditionalities and bankability; donors tend to privilege projects that are visible, standardizable and "secure" for investors, which may marginalize objectives that are less immediately profitable yet politically crucial, universal access, decentralization, strengthening of local value chains, policies of energy industrialization. Finally, performance metrics, tonnes of CO_2 avoided, rate of return, leverage effect, may requalify justice into a technocratic exercise, where energy sovereignty and social benefits become secondary for lack of being "translatable" into dominant financial formats.

Consequently, the asymmetry of power lies not only in disparities of resources, but in the capacity of certain actors to define the rules of the financeable, legitimate technologies and the temporal horizons of the transition. Climate finance may thus function as a mode of governance of the transition in which the recipient State retains formal responsibility, yet sees its margins of strategic arbitration narrowed by standards, conditionalities and associated technical dependence (maintenance, spare parts, expertise, refinancing). This reading does not imply that all climate finance is intrinsically neocolonial; rather, it shows that, without explicit requirements of sovereignty (technological choices, local capacities, institutional control, land and social protection), green finance may reproduce the economic extraversion and structural subordination that climate justice seeks to overcome.

2.3.2 Case study: AFD in Senegal's energy transition

The case study devoted to the French Development Agency (AFD) seeks to empirically anchor the theoretical analysis of climate finance by examining a central actor of the Senegalese

energy transition. The AFD is indeed one of the principal donors in the energy sector in Senegal, particularly in the fields of solar, hydropower and electricity networks. As an heir to the historical logics of Franco–African cooperation, it occupies an ambivalent institutional position. As an instrument of French foreign policy, it simultaneously presents itself as a partner of sustainable development and of the fight against climate change. This position of donor power makes it a privileged observatory of the tensions between support for the transition and the potential reproduction of structural dependencies. In order to empirically examine the hypothesis of green neocolonialism within Franco–Senegalese energy cooperation, this study relies on a semi-structured questionnaire with a qualitative purpose; the interview guide as well as the full transcript are presented in Appendix (see Appendix C). While this single case provides a robust empirical anchoring around a key actor of energy finance, it also entails methodological limitations, notably those related to potential institutional bias and to the limited scope of a single case study.

2.3.3 Synthesis: climate justice or financial governance of the transition?

The empirical analysis derived from the interview conducted with a representative of the AFD, triangulated with the institutional frameworks of climate finance and the critical literature on development governance, highlights a constitutive tension between two partially overlapping logics. On the one hand, a discourse and certain instruments oriented toward climate justice and national ownership, on the other hand, a financial and normative structuring of the energy transition that may resemble a form of governance through finance. This ambivalence directly echoes the debates opened by critical approaches to climate justice, previously analysed, which emphasize that the low carbon transition can simultaneously constitute a vector of energy emancipation and a space for the reproduction of structural asymmetries.

From a discursive and institutional perspective, the AFD presents itself as an actor operating primarily within a logic of national ownership, at the request of the Senegalese government, asserting that “the AFD never grants financing that has not been requested by the government” (AFD Interview, 2026), and claiming a close alignment with Senegalese strategic priorities, notably Vision 2050 and the orientations of the energy sector. This emphasis on country ownership constitutes a central foundation of the legitimacy of the cooperation framework, consistent with the contemporary principles of post Paris Declaration development governance.

However, analysis of the effective functioning of the partnership reveals the existence of a structuring filtering mechanism, the AFD retains the capacity to refuse to examine or finance projects deemed incompatible with its mandate or with its sectoral priorities, as illustrated by the explicit exclusion of investments related to gas: “Gas is excluded from the AFD intervention mandate” (AFD Interview, 2026). Thus, although Senegal’s energy sovereignty is formally recognized, the space of energy choices effectively supported remains partially reconfigured by the institutional, normative and strategic constraints of the donor. This tension between declared sovereignty and external framing does not necessarily stem from direct coercive imposition, but rather corresponds to a diffuse structuring of transition pathways, consistent with what Margaret Moore and Lea Ypi conceptualize as a non-coercive but normative external constraint, in which formal political autonomy coexists with material and institutional limitations embedded in asymmetrical relations of cooperation.

It is nevertheless in the financial and normative dimension that a logic of indirect governance of the transition appears most clearly. The interview highlights the structural predominance of concessional loans, “around 80% loans versus 20% grants” (AFD Interview, 2026), embedding the energy transition within a financing architecture largely based on indebtedness. While concessionality is presented as a lever of accessibility and sustainability, it simultaneously forms part of a framework of financial discipline based on systematic assessment of sovereign risk, regular monitoring of debt sustainability and the possibility of restricting commitments in the event of deterioration of the debt profile. This configuration aligns with critical political economy analyses of development (Ferguson, 1990), which interpret aid and concessional finance as instruments of governance through finance rather than simple mechanisms of support. In this framework, the formal capacity of the Senegalese state to renegotiate or interrupt a financed project appears legally real but materially constrained, insofar as “terminating financing is very costly for the state” (AFD Interview, 2026). Consequently, dependency is constructed not primarily through direct political constraint, but through integration into an asymmetrical financial architecture that de facto limits decision making autonomy while maintaining the appearance of a voluntary partnership.

Conditionalities constitute a central vector structuring the energy transition. The interview specifies that “financing is accompanied by conditionalities mainly technical, institutional and normative” (AFD Interview, 2026), including requirements concerning sectoral governance, transparency, financial performance as well as compliance with environmental and social

standards aligned with international frameworks, and that “compliance with these requirements sometimes conditions disbursements” (AFD Interview, 2026). Although these conditionalities do not take the form of explicit political reforms, they nevertheless exert a profound influence on the organization of the energy sector, since “these conditionalities exert a structural influence on the organization of the energy sector” (AFD Interview, 2026), orienting it toward norms of financial viability, regulation and low carbon transition. This mode of action corresponds to a form of indirect governance through standards and procedures, characteristic of contemporary regimes of development finance, where the exercise of power operates less through imposition than through normalization. In this respect it aligns with what Michel Foucault conceptualizes as a form of governmentality, in which power operates through technical dispositifs, norms and frameworks of rationality, as well as with analyses of climate finance governance, which emphasize the structuring role of international standards in the gradual reconfiguration of national energy policies.

Empirical triangulation highlights the embedding of the Senegalese energy transition within global structures of technological, industrial and financial interdependence. The interview underlines persistent dependence on equipment, technologies and expertise largely located outside Senegal, particularly in critical segments such as energy storage or advanced electrical infrastructure, as well as the difficulty of achieving full technological transfer. While mechanisms for strengthening local capacities and training are implemented, their scope remains limited by the structural constraints of the global industrial system and by the outflow of trained skills. Moreover, the significant share of contracts awarded to international firms through open tenders reflects the insertion of the Senegalese energy transition into a transnational political economy in which value capture remains partially externalized. These dynamics confirm analyses in the literature on technological dependence and the international division of green labour (Newell, 2023; Bridge, 2018; Sovacool, 2013), according to which the energy transition can reproduce structural asymmetries in the distribution of resources, technologies and capacities. Thus, while these elements suggest the persistence of asymmetrical interdependence, they are not in themselves sufficient to establish the existence of green neocolonialism in a strict sense, but rather indicate a contemporary reconfiguration of economic and technological hierarchies within the low carbon transition.

Finally, the interview explicitly acknowledges the persistence of structural tensions in the implementation of the transition, particularly regarding North–South asymmetries and the risk

of climate indebtedness. It emphasizes that “asymmetries of resources, expertise and power persist” (AFD Interview, 2026) and that “the AFD tends less to resolve these contradictions than to manage them” (AFD Interview, 2026). These observations suggest that, although critiques relating to structural imbalances have been partially integrated into the design of instruments, notably through increased reliance on concessionality, stronger attention to the social dimensions of the “just transition” and a more nationally centred approach, these adjustments are insufficient to dissolve the fundamental tensions between imperatives of efficiency, financial constraints and demands of equity. This empirical recognition converges with critical climate justice analyses (Newell and Paterson, 2010), according to which the global energy transition remains shaped by structural inequalities linked to the distribution of capital, technologies and institutional power. In this perspective, Franco–Senegalese energy cooperation appears less as a dispositif of explicit domination than as a space of asymmetrical interdependence, where the pursuit of climate justice objectives coexists with mechanisms of financial and normative governance.

In conclusion, the hypothesis of green neocolonialism can neither be fully confirmed nor entirely rejected. The empirical data do not reveal the existence of direct coercive domination, yet they illuminate a financial, normative and technological structuring capable of reproducing certain asymmetries characteristic of North–South relations. Franco–Senegalese cooperation in the field of energy transition thus appears as a space of asymmetrical interdependence, in which climate justice objectives coexist with mechanisms of financial and institutional governance. Accordingly, the framework of this cooperation partially withstands the test of the green neocolonialism hypothesis, it does not amount to explicit domination, yet it remains embedded in global structures of power that constrain the energy and financial autonomy of national trajectories.

Having highlighted a fundamental tension: climate justice carries a promise of emancipation, yet its inscription within asymmetrical financial, technological and epistemic structures limits its transformative reach. In other words, justice may recognize injustice without necessarily dissolving it. The decisive question therefore becomes political, how can this ambivalence be overcome in order to genuinely transform the power relations structuring the transition. It is no longer sufficient to evaluate asymmetries, their logic must be reversed. This is precisely the purpose of the third chapter, which shifts the analysis from critique toward the construction of alternatives. To conceive a sovereign, solidaristic and Pan-African energy

transition is to repoliticize energy, no longer as a mere vector of decarbonization, but as a lever of collective autonomy, redistribution of power and reconfiguration of development trajectories.

CHAPTER III – Moving beyond green neocolonialism: towards a sovereign, united and pan-African energy transition

This third chapter seeks to move beyond the critical horizon constructed in the preceding chapters by formulating a normative and political alternative to green neocolonialism. The objective is now to articulate the conditions of a genuinely just transition. The central thesis advanced is that the energy transition can only be just insofar as it constitutes a project of self-determination, it must strengthen the effective capacity of African societies to determine their own trajectories and to capture the economic and technological value generated by the transition. This requirement entails a decisive shift, from a model of "cooperation" often compatible with dependency toward a structural solidarity measured not by the volume of financial flows, but by its capacity to redistribute decision making power, to co-produce capabilities and to durably reduce relations of subordination.

In a first step, we will therefore develop the conditions of a genuine energy solidarity. The analysis begins with a critical diagnosis of contemporary climate partnerships, frequently formally egalitarian yet materially asymmetrical, and then proposes a framework of structural solidarity grounded in non-domination and in the repair of structural injustice (3.1). We will then extend this alternative by addressing the question of the alignment between a "green" transition and the Pan-African project. Drawing on the Senegalese case, the chapter examines debates surrounding the renegotiation of hydrocarbon contracts as a moment of politicization of energy. It subsequently broadens the analysis by outlining a Pan-African political ecology of energy sovereignty, founded on regional integration, energy industrialization, universal access and energy democracy. The aim is thus to demonstrate that the alignment between "green" and "Pan-African" is only possible through a substantive sovereignty, collective and socially governed (3.2).

3.1 Towards genuine energy solidarity?

This analysis opens the third chapter by performing a decisive shift, moving from the critique of green neocolonialism toward the formulation of a normative alternative grounded in genuine energy solidarity. In the contemporary literature, energy solidarity does not refer to a mere transfer of aid, but to a relationship that reduces asymmetries of access, power and vulnerability within energy systems, by ensuring a more equitable distribution of the capacities and benefits of the transition (Sovacool, Heffron, McCauley and Jenkins, 2016; Heffron and McCauley, 2017). It therefore entails a transformation of economic, technological and institutional structures, rather than a punctual compensation for disparities in resources (Newell and Paterson, 2010). The central issue then becomes to assess whether energy cooperation genuinely strengthens the decision making and productive autonomy of partners. From this perspective, we will analyse the limits of a cooperation often structurally asymmetrical and introduce the concept of structural solidarity (3.1.1). We will then extend this analysis by proposing a model of solidarity grounded in the co-production of technical, industrial, institutional and epistemic capacities, as a condition for a truly just and sovereign transition (3.1.2).

3.1.1 From asymmetric cooperation to structural solidarity

Contemporary energy and climate cooperation readily presents itself as a partnership oriented toward a just transition; yet its dominant instruments conditionnalities, standards, externalised expertise, project selection often make it a cooperation that is formally egalitarian but structurally asymmetrical. On the one hand, the multilateral architecture mobilises a language of solidarity; on the other, the materiality of flows and rules tends to reproduce hierarchies of decision making. The most visible example is financing, as noted previously the monitoring of the OECD confirms that the USD 100 billion per year target was reached in 2022, but this result alone says nothing about the nature of the instruments nor about their effects on political autonomy (OECD, 2024). The central issue of this analysis is therefore not to measure "generosity" but to assess whether these arrangements transform the structures that generate injustice: who sets the priorities (access, energy security, decarbonization), who defines the performance metrics, and who captures the industrial value of the transition. From this perspective, cooperation may finance "green" infrastructures while leaving extraversion, technological dependence and normative subordination intact; thus remaining compatible with green neocolonialism.

This is why the section performs a shift, from assistance toward structural solidarity, understood as a transformation of power relations rather than a simple compensation for disparities in resources. On the normative level, the intuition converges with justice as non-domination, already mentioned, whereby a relationship becomes unjust when certain actors are durably subjected to rules they did not help to define, even in the absence of direct coercion (Young, 2011). In this respect, conditional cooperation, where access to resources depends on standards and procedures set elsewhere, may generate de facto heteronomy despite the proclaimed voluntarism. Likewise, justice as repair of structural wrong requires addressing the mechanisms that generate injustice rather than compensating for their symptoms, "to repair" means dismantling the arrangements that produce the harm (Bufacchi, 2012). Translated into the energy domain, this requirement implies that solidarity should be assessed according to its effects on societies' capacity to decide priorities of use, pace, mix and to produce value chains, skills, institutions, rather than by the volume of projects financed.

This requalification is all the more necessary given that investment needs far exceed the scale of current cooperation. The IEA estimates that clean energy investment in emerging and developing economies will need to more than triple by the early 2030s, rising from around USD 0.7–0.8 trillion today to well above USD 2 trillion annually (IEA, 2024). This gap creates a double risk. On the one hand, an increased dependence on donors and investors capable of "unlocking" capital; on the other, a prioritisation aligned with bankability and with the industrial interests of decision making centres. Structural solidarity responds precisely to this tension by reversing the evaluative criterion. Cooperation is solidaristic if it reduces the power gap in decision and production, not merely the financing gap.

Concretely, this implies three interrelated transformations. First, an economic transformation, namely shifting from extraversion (import of equipment, weak local transformation, external capture of margins) toward productive autonomy (industrialisation, credible local content, co ownership of infrastructures, sharing of benefits). Second, a technological and epistemic transformation, that is moving beyond "turnkey solutions" by opening black boxes (access to data, interoperability, training, joint R&D), and recognising the co-definition of performance indicators (universal access, reliability, social cost) alongside exogenous decarbonisation metrics. Third, a political transformation, namely replacing unilateral conditionality with mechanisms of co-decision joint (governance, transparency, democratic accountability),

including affected local authorities and communities. The aim is not to abolish all rules, but to make rules co-produced and contestable, therefore compatible with non-domination.

A methodological point clarifies this thesis; even within integrated legal orders, solidarity is not merely a moral intention, it becomes operative when translated into obligations of consideration and into "tests" of coherence. The jurisprudence of the Court of Justice of the European Union on the principle of energy solidarity, the OPAL case[76] illustrates that a solidarity principle can be justiciable and constrain decision making, precisely because it requires assessing the effects of a measure on other stakeholders (CURIA, 2021; EUI–FSR, 2021). Without mechanically transposing this framework to the international level, the analogy is heuristic, structural solidarity requires verifiable criteria sharing of decision-making power, reduction of dependence, real transfer of capacities otherwise it remains a vocabulary of legitimation. In sum, structural solidarity constitutes the normative alternative to green neocolonialism, it does not merely aim to "green" flows, but to redistribute power, value and knowledge, minimal conditions for a genuinely just transition.

3.1.2 For energy solidarity based on capabilities and co-production

If the previous section has shown that energy solidarity cannot be reduced to financial redistribution, it remains necessary to specify the concrete mechanisms through which it becomes transformative. The thesis advanced here is that solidarity is effective only when it translates into a co-production of capacities, that is, into the joint construction of the material, institutional and cognitive means enabling partner societies to orient their own energy trajectories. In this perspective, the issue is no longer the transfer of resources, but the transformation of the conditions that produce energy autonomy.

The first pillar of such solidarity lies in the construction of integrated energy capacities. A genuinely shared transition requires the simultaneous development of technical capacities (operation, maintenance, network engineering), industrial capacities (local transformation, integration into value chains), institutional capacities (planning, regulation, governance of

[76] The "OPAL case" CJEU, Germany v. Poland, C-848/19 P, judgment of 15 July 2021 concerns the legal scope of the principle of energy solidarity enshrined in Article 194 TFEU Treaty on the Functioning of the European Union. The Court held that this principle is not merely a political objective but a legally binding principle, requiring EU institutions and Member States to take into account the energy interests of other parties when adopting measures liable to affect the balance of the European energy system. By upholding the annulment of the Commission's decision regarding the conditions of use of the OPAL gas pipeline, the CJEU established energy solidarity as a substantive criterion for assessing energy policies. In the present analysis, this jurisprudence illustrates that effective solidarity cannot remain rhetorical, but must involve concrete mechanisms of mutual consideration and the limitation of asymmetries in energy governance.

infrastructures) and epistemic capacities (production of data, modelling, definition of indicators). The capability approach recalls that a policy is just when it expands the field of effective choices and strengthens the autonomy of action of the actors concerned (Sen, 1999). Applied to energy, this principle means that solidarity must enhance the real capacity to define the energy mix, the pace of transition and the priorities of use, rather than merely financing infrastructures. The second pillar concerns technological co production. The issue is not only access to technologies, but the capacity to understand them, adapt them and produce them. Joint programmes of research, engineering and training, associated with effective access to technical data and standards, make it possible to reduce dependence on external expertise and to foster the emergence of local ecosystems of innovation. In this configuration, technological interdependence is not abolished but rendered symmetrical and negotiated, a condition for energy sovereignty understood as capacity for orientation rather than autarky. A third pillar lies in institutional and political co production. A solidarity grounded in capacities implies that energy priorities universal access, security of supply, decarbonisation are jointly defined, and that local institutions possess autonomous means to plan, regulate and govern energy infrastructures. This dimension also includes democratic openness; the participation of local authorities, affected communities and regional actors contributes to socially defining what a "just" transition is. As collective governance theory has shown, institutional robustness depends more on the local capacity to produce and adapt its own rules than on conformity to external models (Ostrom, 1990). Finally, energy solidarity presupposes epistemic co production. The energy transition rests on choices of knowledge models, indicators, sustainability criteria which orient public policies. Integrating situated knowledges and pluralising frameworks of expertise helps reduce cognitive asymmetry and democratise the governance of the transition (Jasanoff, 2004; Escobar, 2018). Energy justice therefore concerns not only the distribution of resources, but also the distribution of the power to know and to define.

Understood in this way, solidarity grounded in capacities does not eliminate interdependence but reconfigures it into relational autonomy, partners are no longer beneficiaries but co producers. In this respect, it constitutes the principal antidote to green neocolonialism. Cooperation is solidaristic when it durably strengthens local capacities, redistributes decision making power and enables the local capture of the economic and technological value of the transition; conversely, it reproduces a neocolonial logic when it maintains dependence under the guise of greening. Co-production therefore appears as the political and normative condition of a genuinely sovereign and just energy transition.

The African energy transition is no longer played out solely in the critique of dependencies, but in the capacity to build alternatives. On the one hand, the requirement of genuine energy solidarity imposes the transformation of the power relations structuring cooperation; on the other, the ambition to align "green" and Pan-African calls for a repoliticisation of energy at the continental scale. Hence, the issue is no longer only to denounce green neocolonialism, but to understand how sovereignty, solidarity and autonomy are concretely recomposed in the making of energy trajectories.

3.2 How can we align green and pan-African?

It is now necessary to extend the analysis of structural solidarity by shifting it toward a decisive question, how can the "green" transition be turned into a Pan-African project of sovereignty, rather than a new space of dependence and value capture? It proceeds from the observation that a transition governed by exogenous capital, technologies and norms can reproduce extraversion and subordination, under the guise of decarbonisation. Aligning "green" and "Pan-African" therefore implies repoliticising energy as an issue of control over resources, mastery of value chains and definition of development trajectories. To this end, we shall first anchor the argument in the Senegalese case through the debates on the renegotiation of hydrocarbon contracts, revealing the tensions between distributive justice, sovereignty and investment credibility (3.2.1). Then, we shall broaden the analysis by proposing a Pan-African political ecology grounded in regional integration, energy industrialisation and energy democracy (3.2.2).

3.2.1 Recent debates on the renegotiation of hydrocarbon contracts in Senegal

Senegal's entry into the circle of hydrocarbon producing countries marks a major geopolitical turning point, transforming energy from a question of supply into an issue of sovereignty, redistribution and development trajectory. For recall, oil production began in June 2024 on the offshore Sangomar field, while gas exploitation linked to the Grand Tortue Ahmeyim (GTA) project and the Yakaar Teranga field is expected to structure national energy and budgetary prospects (Energy News, 2024). These resources are presented as a potential lever for growth, public financing and strategic assertion in a context of persistent financial and energy dependence.

It is within this context that the renegotiation of oil and gas contracts has emerged as a central issue in Senegalese political debate. During the 2024 presidential campaign, Bassirou Diomaye Faye pledged to re-examine contracts considered unfavourable to the national interest, a position taken up and reinforced by Prime Minister Ousmane Sonko, who situates this orientation within a broader critique of economic dependence and productive extraversion (Cuordifede, 2024). This stance forms part of a strategy aimed at making hydrocarbons not an externalised rent but an instrument of domestic development, by increasing the share of public revenues, strengthening contractual transparency and improving national participation in the value chain. As early as 2024, the new administration launched an audit of the extractive sector and established a commission tasked with examining oil and gas contracts, in order to "rebalance" terms deemed excessively favourable to international operators (Ba, 2024; Energy News, 2024).

These initiatives have opened an intense debate, revealing a structuring tension between energy sovereignty and investment security. On the one hand, renegotiation enjoys significant popular support, particularly among youth and political movements critical of the extractive legacy, who view it as a condition for distributive justice and national control over resources. On the other hand, several analysts highlight the risks associated with poorly calibrated renegotiation, notably regarding economic attractiveness and legal stability, essential elements in highly capital-intensive industries with long time horizons (Connaissance des Énergies, 2024). This tension reflects a classic dilemma of extractive economies, maximising sovereignty and redistribution while maintaining a credible framework for international investment.

Beyond its economic dimension, renegotiation appears as a moment of politicisation of energy, revealing structural power relations. Oil contracts, often elaborated within international legal frameworks dominated by major companies, may reproduce technical, financial and informational asymmetries that limit the decision-making capacity of producing states. In this perspective, demands for contractual revision align with a structural reading of justice, insofar as they interrogate not only the distribution of benefits but also control over the rules of the game (Young, 2011). The central question thus becomes, who defines the conditions of exploitation and who captures the strategic value of resources?

Ultimately, debates over the renegotiation of hydrocarbon contracts do not merely concern an economic adjustment, but a political redefinition of resource control. They reflect an attempt to move from formal sovereignty, grounded in resource ownership, to substantive sovereignty

based on governance, rent capture and decision-making autonomy. In this sense, renegotiation constitutes a pivotal moment where distributive justice, energy sovereignty and the critique of structural dependencies converge, revealing that the energy transition cannot be dissociated from the power relations that organise the political economy of resources.

3.2.2 Towards a pan-African political ecology of energy sovereignty

If the previous section has shown that national energy sovereignty constitutes a decisive stake in the reconfiguration of power relations linked to resources, it also reveals its structural limits. At the scale of many African states, market fragmentation, infrastructural weakness and financing constraints make the emergence of isolated energy autonomy difficult. Consequently, the question of sovereignty shifts; it can no longer be conceived solely at the national level, but must be reformulated at the regional and continental scale. A Pan-African political ecology does not merely entail a critique of green neocolonialism, already established, but the construction of a collective energy space capable of materially transforming the conditions of dependence. The stake thus becomes institutional: to make African energy integration not a rhetorical horizon, but a concrete condition of structural autonomy.

In this perspective, regional integration constitutes the first material dimension of a Pan-African political ecology. Energy sovereignty is not reducible to the possession of resources, but depends on the capacity to stabilise interconnected energy systems, to pool investments and to reduce vulnerability to shocks. In West Africa, dynamics of electrical interconnection, notably through the WAPP, illustrate this logic of strategic interdependence aimed at creating an integrated regional energy space. According to the World Bank, regional integration could significantly reduce electricity generation costs and improve security of supply by enabling optimisation of hydraulic, gas and renewable resources at the regional scale (World Bank, 2020). The stake goes beyond mere economic efficiency; it concerns transforming energy fragmentation into collective capacity, the condition of sovereignty no longer national but systemic.

However, this regionalisation acquires meaning only if it is articulated with a project of structural transformation. Aligning “green” and “Pan-African” implies redefining the purpose of the energy transition. For a large part of the continent, priority remains access to electricity, industrialisation and the reduction of energy poverty. The IEA still estimates that more than 600 million Africans lack access to electricity, accounting for the majority of global energy

poverty (IEA, 2023). In this context, a transition assessed strictly through the lens of decarbonisation risks marginalising development imperatives. A Pan-African political ecology, by contrast, implies subordinating decarbonisation to a broader objective of socio-economic emancipation; the transition must serve productive transformation, the creation of industrial capacities and the improvement of living conditions. This orientation aligns with African positions defended within continental frameworks, which insist on a "just and equitable" transition reconciling climate imperatives with the right to development (African Union, Agenda 2063, 2015; AFREC, 2025).

Within this framework, the regional energy space also becomes a space of industrialisation. Integration makes it possible to overcome the size constraints of national markets and to support the emergence of regional energy industries, manufacturing of equipment, maintenance, engineering, storage, capable of capturing a larger share of the economic value of the transition. Several analyses underline that the absence of energy industrialisation constitutes one of the principal vectors of dependence in transitioning economies, where added value remains concentrated in technological and manufacturing segments located outside the continent (UNCTAD, 2023). A Pan-African political ecology aims precisely to shift this centre of gravity, transforming Africa from a supplier of resources into a productive actor of the transition.

Moreover, energy sovereignty cannot be reduced to its technical or economic dimensions. It also encompasses a democratic dimension. A Pan-African political ecology implies that the energy transition is not governed exclusively by states, donors or industrial actors, but becomes a space of social participation. Approaches to energy democracy emphasise that energy justice depends on the capacity of societies to participate in decisions structuring energy systems, particularly with regard to access, redistribution and the siting of infrastructures (Sovacool and Dworkin, 2015). In the African context, this refers to a popular sovereignty of energy, where local authorities, communities and regional institutions take part in defining energy trajectories. This dimension reinforces the idea that climate justice does not consist solely in redistributing resources, but in redistributing the power to decide.

Understood in this manner, Pan-African political ecology performs a decisive analytical shift. It does not confine itself to denouncing global asymmetries, but proposes an alternative architecture founded on three pillars: regional energy integration, structural transformation oriented towards access and industrialisation, and the democratisation of energy governance. In this configuration, energy sovereignty is no longer conceived as national autarky, but as

organised collective capacity, grounded in symmetrical interdependence and institutional co construction. The energy transition thus becomes a continental political project, not merely to decarbonise, but to transform the material, social and democratic conditions of energy.

Ultimately, this perspective confers a particular strategic significance upon the African transition. It does not constitute solely an environmental response, but a lever for the recomposition of economic, technological and political power on the continent. By articulating regional integration, social justice and popular sovereignty, Pan-African political ecology opens the possibility of a genuinely emancipatory transition, capable of overcoming logics of dependence without renouncing interdependence, the ultimate condition for aligning the green transition with the Pan-African project.

Conclusion

To conclude, this thesis sought to illuminate the Senegalese energy transition from a central question, to what extent does Négritude, understood as a philosophical framework of the reappropriation of sovereignty, make it possible to interpret the contemporary transformations of the Senegalese energy system, and how does this process confront the dynamics of green neocolonialism? The historical analysis first showed that energy sovereignty cannot be understood independently of the long colonial duration; French West Africa constituted an institutional, economic and technical system structurally antagonistic to any productive autonomy, producing a durable sovereign incapacity. Within this context, Négritude appears as a founding political counter ontology, rehabilitating dignity, subjectivity and collective capacity, opening the way to an institutional translation of self-determination through Pan-Africanism and, subsequently, to the progressive emergence of energy sovereignty. The empirical study of the Senegalese transition then highlighted a hybrid configuration; the country's entry into the circle of hydrocarbon producers and the development of renewable energies redefine energy as a lever of sovereignty, security and development, yet this transformation remains constrained by institutional capacities, technological dependencies and strategic trade-offs between export, domestic valorization and decarbonization. The critical analysis finally showed that the energy transition also constitutes a structured space of power relations, certain configurations, climate norms, financial conditionalities and technological asymmetries may reconfigure rather than rupture historical logics of dependence, giving rise to what the literature conceptualizes as green neocolonialism. The principal result of this research is therefore to bring to light a constitutive tension; the Senegalese energy transition simultaneously strengthens capacities of sovereignty and the structural constraints that limit its exercise, producing a sovereignty in the making, partially realized yet not fully accomplished. In this respect, the energy transition appears as a field of power, either it strengthens African sovereignty in a Pan-African reading, or it reproduces dependencies in a critique of green colonialism. Indeed, Pan-Africanism holds that the green transition should be a lever of African power and dignity; green neocolonialism constitutes its counter model, when ecology becomes a new mechanism of dependence. The central challenge therefore lies in designing rules of the game, financing, technology, ownership, transparency, that make Africa a producer of solutions and not merely a supplier of resources. Ultimately, the real challenge is to invent an equitable energy solidarity, where projects are conceived with the countries of the Global South, in respect of their sovereignty and their priorities. Beyond the Senegalese case, this thesis

contributes to global debates on sovereignty, climate justice and energy decolonization by showing that the transition is not merely a technical process, but a political moment in which power, autonomy and dignity are redefined. From this point onward, the question may no longer be solely whether the energy transition will enable countries of the Global South to attain sovereignty, but whether it will profoundly transform the very manner in which sovereignty is defined in an interdependent world constrained by climate urgency. In other words, the future will determine whether green energy will become for Africa a new instrument of political emancipation and historical reappropriation, or whether it will constitute the matrix of a post carbon order in which global hierarchies are recomposed without truly disappearing?

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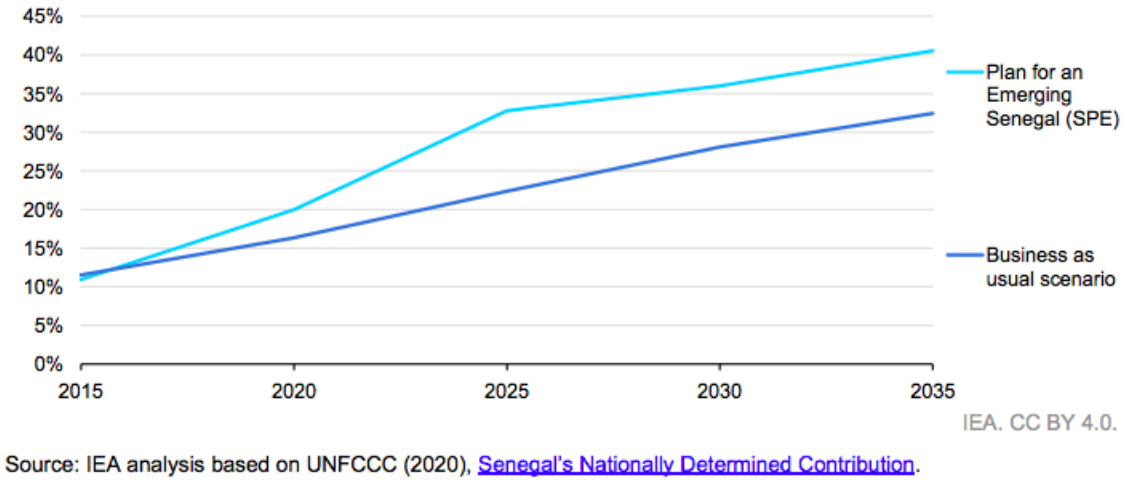
Appendices

- **Appendix A**

Figure 1: Share of renewable energies in electricity generation in Senegal (NDC), 2015-2035



Source: IEA Senegal 2023 - *Energy Policy Review* (2023)

- **Appendix B**

Appendix B – Semi-Structured Written Questionnaire with the Institut de Recherche pour le Développement (IRD)

Date: January 2026
Location: Dakar
Respondent: Second-year PhD Candidate, Eco&Sol Laboratory, Institut de Recherche pour le Développment (IRD)
Format: Semi-structured qualitative written questionnaire (completed manually)
Language: French
Note: The questionnaire was administred in written form and completed manually by the respondent in French. Below, the questionnaire has been translated into English (author's translation). The translation aims to preserve as closely as possible the meaning and nuance of the original responses.

Case study: IRD – Questionnaire (semi-structured) – Qualitative analysis

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Subject: France–Senegal scientific cooperation, energy transition and climate justice (science diplomacy)
Framework: Master's thesis in International Relations — IRD case study
Indicative duration: 20–30 minutes
Confidentiality and use of responses: This questionnaire is part of a strictly academic research process. The information provided will be treated confidentially and, unless you explicitly agree otherwise, will not allow your identification. Any excerpts cited in the thesis will be anonymized.

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0) Profile and scope (contextualisation)

0.1. Could you specify your position (title, unit/laboratory, role in projects related to energy/climate/resources in Senegal) and your length of experience on these issues?

I am a second-year PhD candidate at the Eco&Sol laboratory of the IRD. My doctoral research is embedded within two research projects. The first, Ferlo-Sine, is a scenario lab based in Senegal; its SLAM-B subcomponent focuses on the design and evaluation of territorial bioeconomy pathways towards carbon neutrality. Among other objectives, my doctoral work aims to assess the contribution of energy transition scenarios to these carbon neutrality trajectories. Ferlo-Sine is coordinated by the IRD and Cheikh Anta Diop University of Dakar.

Another project within which my doctoral research is situated is NZEMIX (Net Zero Energy Mix), which focuses on modelling possible net-zero energy mix scenarios in West Africa, with field sites in Senegal, Niger, and Côte d'Ivoire.

Regarding the energy theme, I have only been engaged with it since 2023 through the Ferlo-Sine project and since 2024 through NZEMIX (2024). My involvement in these projects remains peripheral; I am still a student and therefore not directly involved in project management. I contribute primarily to knowledge production. I have not participated in climate-related projects and have only been involved in a limited number of resource-related research projects as a service provider, with a very modest level of engagement.

0.2. On which programmes/projects (or types of projects) does your experience mainly focus? (energy, climate, Measurement, Reporting & Verification- MRV/carbon, networks, adaptation, etc.)

My experience is primarily centred on the Ferlo-Sine project, which focuses on the carbon impact of energy consumption.

0.3. In your view, what is the role of IRD in the ecosystem of the energy transition in Senegal (knowledge production, training, expertise, support to public policies, interface with donors)?

To my knowledge, the IRD representation in Dakar does not have any researcher specialising in energy. I am currently the only one working on energy, while my PhD supervisor, who specialises in energy issues in the Global Sout, is based in Montpellier. As a result, the IRD's scientific output on this theme in Senegal is very limited.

This, however, does not in any way diminish the IRD's standing within the research landscape in Senegal, whether in the field of energy or in other thematic areas. We do receive invitations to project and programme launch workshops related to energy. Since joining the IRD, I have received two invitations through the local representation to participate in reflection and project-launch workshops on the resilience of energy infrastructure in the face of climate change. It is also possible that IRD expertise is mobilised at certain decision-making levels without my knowledge.

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1) Scientific agenda and framing power (who defines "the problem" and "the solutions")

(Central axis "knowledge diplomacy": hypothesis of exogenous agenda vs co-definition)

1.1. How are IRD research priorities in Senegal on energy/climate defined (themes, methodologies, indicators)?

In Senegal, the IRD's research priorities in the field of energy and climate are defined at the intersection of national priorities, the Institute's strategic orientations, and international agendas related to sustainable development and the Paris Agreement. They are developed through a logic of co-construction with Senegalese scientific and institutional partners and aim to address local socio-ecological vulnerabilities. Thematically, these priorities focus primarily on climate change adaptation (climate variability, agricultural resilience, water management, and coastal vulnerability), the low-carbon energy transition (deployment of renewable energy, equitable access to energy, and energy efficiency), the interactions between climate and socio-ecological systems (impacts on agriculture, fisheries, and food security), as well as the governance of climate and energy policies.

• **Follow-up:** does the starting point come rather from (i) needs expressed by Senegalese institutions, (ii) IRD/France priorities, (iii) international donors, (iv) calls for projects (EU, etc.)?

Within the framework of scientific cooperation between France and Senegal, the starting point of IRD research projects in the field of energy and climate generally results from an articulation of multiple driving forces rather than from a single origin. The needs expressed by Senegalese institutions (sectoral ministries, universities, and technical agencies) play a structuring role, particularly when addressing national challenges such as climate adaptation, access to energy, or the implementation of Nationally Determined Contributions. However, these orientations are also embedded in the scientific and strategic priorities of the IRD and, more broadly, in the framework of French scientific cooperation policy, which defines certain thematic areas (energy transition, climate, sustainable development) and funding mechanisms. Furthermore, international donors (for example development banks and climate funds) significantly influence project formulation by steering themes towards globally funded priorities, while competitive calls for proposals, particularly European or multilateral ones often act as an operational trigger by structuring consortia, timelines, and scientific objectives.

In practice, projects most often emerge from a hybrid co-construction process in which Senegalese needs, IRD's institutional priorities, international funding opportunities, and the frameworks of competitive calls intersect, with varying balances depending on programmes, disciplines, and partnership configurations.

• Who has the capacity to say “this is not a priority”?

In practice, I would say that the capacity to define or set aside a priority within IRD-led projects reflects a shared but asymmetrical process. It is exercised jointly by the IRD’s scientific and programmatic leadership, Senegalese institutional partners (notably technical ministries and research institutions), and, to a certain extent, by donors who condition funding on specific thematic frameworks. However, the effective power to state that “this is not a priority” often depends on the control of scientific, financial, and programmatic resources, which generally confers a decisive role on programme steering bodies and funders, even within a formally co-constructed partnership framework.

1.2. In practice, how do you arbitrate between global objectives (decarbonisation, Measurement, Reporting & Verification – MRV, biodiversity) and national priorities (access, costs, maintenance, jobs, technological sovereignty)?

In practice, the trade-off between global objectives (decarbonisation, MRV, biodiversity) and national priorities (access to energy, costs, maintenance, employment, and technological sovereignty) in projects associated with the IRD is based on a logic of negotiated and contextualised compromise. International frameworks and donor requirements often impose normative objectives and standardised indicators, while national partners emphasise socio-economic viability, local ownership, and development outcomes. This arbitration generally operates through the co-construction of projects, the adaptation of technical arrangements to local constraints, the pragmatic prioritisation of objectives, and the gradual integration of global standards, in order to reconcile international climate imperatives with national sustainability. However, I would add that the balance depends heavily on funding relations, institutional negotiation margins, and local technical capacities.

• Could you give a concrete example of such an arbitration?

1.3. The concept of “green neocolonialism” is sometimes mobilised to criticise certain transitions. How do you understand it, and do you consider it relevant for analysing scientific cooperation?

The term is not particularly relevant when seeking to analyse scientific cooperation. Science does not constitute a form of Western hegemony, and the existence of any supposed “scientific diktat” on energy issues is not plausible. Admittedly, funding can steer certain research themes, but its influence is mainly limited to the type of innovations produced. Yet innovations transcend borders: when they are not developed locally, energy sociotechnical systems remain in a state of permanent transition, characterised by ongoing competition among different innovations, some of which prevail while others disappear. Thus, if the notion of “green neocolonialism” is to be mobilised, it appears more relevant for analysing structural policies and programmes, as well as investments related to the establishment of energy infrastructure at the national level. Indeed, the choice of such infrastructure remains strongly dependent on financing constraints arising from these forms of cooperation, which do not strictly fall within the scientific domain.

• **Follow-up:** what seems to you to fall under a presumption of intent versus a critique grounded in structural mechanisms?

2) Project governance: co-decision, co-direction, distribution of power

(Co-PI, veto, budget management: key indicators)

2.1. In your projects, what is the most frequent form of governance with Senegalese partners?
• formal co-direction (co-PI)? steering committee? simple implementation partnership?
• Is there a formal mechanism of joint decision-making on: objectives, methods, timeline, dissemination of results?

In projects conducted with the IRD in Senegal, the most common form of governance is based on a relatively flexible partnership model rather than on systematic formal co-leadership. While some configurations provide for scientific co-responsibility (co-PI) between French and Senegalese researchers, most projects operate through a steering committee bringing together the main actors of the partnership (research teams, Senegalese institutions, and sometimes donors or technical partners). This committee plays a role in monitoring, strategic orientation, and coordination, but does not always constitute a strictly formalised decision-making body in the legal or procedural sense.

2.2. Who concretely decides on budget allocations (distribution of budget lines, purchases, missions, recruitments)?

In practice, budget allocations fall under a shared responsibility, yet one structured by the project's administrative and financial lead. The distribution of budget lines, expenditure commitments, and major trade-offs are generally defined by the institution managing the funding, often the IRD or the coordinating institution in accordance with donor regulations and project agreements, and in consultation with scientific partners. At the operational level, decisions relating to procurement, field missions, or recruitment are frequently discussed among partner teams, but their validation depends on the administrative procedures of the lead institution and on funding constraints. Thus, even within a collaborative framework, effective decision-making capacity in budgetary matters remains largely tied to the control of financial resources, contractual responsibilities, and the management rules imposed by the donor.

• **Factual follow-up:** approximately, what share of the budget is executed/administered by Senegalese institutions (universities, agencies, local laboratories)?

2.3. Are there situations in which a Senegalese partner can exercise a right of veto (or an effective blocking power) over a scientific orientation, a publication, or a use of the data?
• If yes, how does this work? If not, why?

No, in practice there is generally no systematic formal veto right granted to Senegalese partners over scientific orientations, publications, or the use of data. However, in practice, mechanisms of blockage or reorientation may emerge when partnership agreements, ethical rules, national data governance frameworks, or Senegalese institutional requirements must be respected.

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3) Data, intellectual property and informational "extraction"

(FAIR & CARE, hosting, reuse: "helicopter research")

3.1. What data are produced (or mobilised) in energy/climate projects (measurements, surveys, modelling, administrative databases, geospatial data)?

The data mobilised include household survey data on energy consumption and data from the National Agency of Statistics and Demography (ANSD). The data produced consist of models and measurement data.

3.2. Where are the data hosting infrastructures (physical servers) located geographically, and who is responsible for controlling, managing and accessing this data?

I would say that data hosting often relies on a distributed configuration. Physical servers may be located either within IRD infrastructures (in France or in regional facilities) or within partner institutions, including Senegalese ones, depending on the nature of the project, donor requirements, and available technical capacities.Moreover, responsibility for data control, management, and access is generally framed by project agreements, scientific data management policies, and national regulations. In practice, the institution providing the technical hosting often holds a central role in access administration, while rights of use, dissemination, and valorisation are governed by negotiated agreements among partners, with growing attention paid to the principles of data sovereignty, shared access, and open science.

• **Follow-up:** are there mirror repositories in Senegal? parity-based data governance committees?

3.3. What are the rules governing the reuse of data after the end of the project?
• licences? restrictions? access for ministries/local researchers/Civil Society Organisations – CSOs?
• **Follow-up:** how do you manage the tension between "open science" and sovereignty/local control?

3.4. Regarding intellectual property (software, models, methods, possible patents): how is ownership distributed?

The allocation of intellectual property is in principle defined by partnership agreements and consortium arrangements. Ownership generally depends on the scientific, technical, and financial contributions of the parties: it may take the form of joint ownership between the IRD and the partner institution when results are co-produced, or ownership attributed to the lead institution when development is primarily carried out within it. The modalities of exploitation most often involve licensing agreements, sometimes non-exclusive, aimed at ensuring scientific use, dissemination, and, in certain cases, valorisation.

• co-ownership? IRD/partner ownership? licences?
• could you cite an example (even a generic one)?

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4) Endogenous capacities, transfer and technological sovereignty

(Training, maintenance, equipment, reduction of dependency)

4.1. In what ways do your projects strengthen sustainable local capacities (beyond the project itself)?
• degree-awarding training (master's/PhDs in Senegal)?

Many Master's and PhD students develop their skills during their placement at the IRD for their research work. IRD researchers are also frequently invited to contribute to teaching and training modules in certain Senegalese universities.

• permanent positions?

Indeed, some Senegalese researchers are recruited by the IRD into permanent positions.

• equipment transferred locally?

4.2. Is there an explicit "post-project" strategy (3–5 years) for equipment maintenance, continuity of data series, and methodological autonomy of Senegalese teams?
• If yes, how is it funded?

4.3. On technological sovereignty: what are, in your view, the main bottlenecks in Senegal (storage, grids, Operations & Maintenance – O&M, standards, imports), and how can scientific cooperation address them?

In Senegal, the main constraints on technological sovereignty generally relate to infrastructure capacities (data storage and hosting), network reliability, dependence on imported equipment, and limitations in Operations & Maintenance (maintenance, skills, and financing). Constraints also exist in the local appropriation of technological standards.

• **Targeted follow-up solar/gas:** can research reduce dependence on imported technologies (solar, storage) or on external consultancy (gas, contracts, MRV)?

At present, I do not see this happening, because beyond scientific production, technological sovereignty requires well-established production chains and technologies capable of gaining a share of the local market.

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5) Publications, attribution, careers: hierarchies and scientific recognition

(Authorship order, first/last authors, access to journals, asymmetries)

5.1. How do you decide on the order of authors and scientific responsibilities?
• Are there internal rules (IRD) aimed at ensuring co-signature and visibility of Senegalese partners?
• **Factual follow-up:** in your recent projects, do Senegalese partners regularly occupy first/last author positions?

Senegalese researchers occupy the position they consider appropriate in relation to their contribution to the work. As a result, they may appear either as first authors or as last authors.

5.2. How are non-academic contributions treated (data collection, mediation, local knowledge, technical institutions)?

Unfortunately, I do not have sufficient experience to answer this question categorically, but these contributions are not negligible. From the limited number of publications I have seen within the laboratory, data collection staff are considered co-authors in the publications.

• Are they recognised (acknowledgements, co-authorship, compensation)?

Individuals are considered co-authors of the scientific work.

5.3. Do training trajectories (scholarships, PhDs in France) actually lead to institutional strengthening in Senegal, or do you observe phenomena of brain drain / dependence on mobility?
• Do you have feedback or experience to share?

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6) Socio-territorial impacts, consent, justice and grievance mechanisms

(Free, Prior and Informed Consent – FPIC)

6.1. In your projects, how are social and territorial impacts taken into account (land tenure, access to resources, acceptability, risks of conflict)?

It goes without saying that social and territorial impacts are generally integrated through upstream contextual analyses and continuous monitoring throughout the project. This includes field surveys, consultations with local stakeholders, and the assessment of dimensions such as land tenure, access to resources, social acceptability, and risks of tension. These elements are taken into account in the adaptation of technical arrangements, territorial planning, and implementation modalities, with the aim of limiting negative effects, improving local ownership, and preventing potential conflicts.

6.2. Do you conduct (or require) structured local consultation procedures (inspired by FPIC)?

No, there are not systematically any formalised and standardised procedures for local consultation strictly inspired by FPIC.

• **Follow-ups:** who consults? at what stage? written record? grievance mechanism?

6.3. Are you aware of cases where "green" projects (or measurement/climate instruments) have generated local tensions (restriction of use, land conflict, resentment)?
• How can scientific cooperation avoid becoming an instrument for legitimising such effects?

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7) Science diplomacy, geopolitics and articulation with donors (AFD / JETP / EU)

("Soft power" and its instruments)

7.1. How would you describe the geopolitical role of France–Senegal scientific cooperation today (influence, presence, international competition)?

I would say that today, scientific cooperation between France and Senegal plays a geopolitical role characterised simultaneously by scientific presence, normative influence, and strategic partnership. It contributes to maintaining the sustained presence of institutions such as the IRD, fostering the joint production of knowledge, training, and support to public policies. At the international level, this cooperation is embedded in a context of Senegal's diversification of partnerships and increasing competition among scientific and financial actors (European Union, China, multilateral institutions), which tends to reposition the Franco-Senegalese relationship towards more partnership-based logics, while still retaining dimensions of scientific, technical, and normative influence.

7.2. To what extent do donors and instruments (JETP, AFD, EU, etc.) influence:
• the topics funded,
• the metrics (MRV, "impact"),
• the timeline and communication of results?

Well, in scientific cooperation projects, donors exert significant influence. They steer funded topics according to global priorities (climate, energy transition), often impose specific metrics (MRV, impact indicators), and structure timelines as well as communication through their funding and reporting requirements. This influence generally remains negotiated, but it depends heavily on the control of financial resources.

7.3. Regarding the JETP: do you see a "strong scientific dimension" (modelling, indicators, expertise) that can orient political choices?
• **Critical follow-up:** who chooses the "success" indicators and what place is left to sovereignty criteria (cost, jobs, control, mastery)?

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8) Synthesis questions

8.1. In your view, what would be the warning signs (red flags) indicating that a scientific cooperation is shifting towards logics close to green neocolonialism?
(possible examples to suggest if needed: exogenous agenda, externalised IP, data extraction, low local budget, showcase projects not maintained, etc.)

8.2. Conversely, what minimum conditions guarantee an "anti-asymmetric" cooperation (real co-governance, shared data/IP, minimum local budget, long-term maintenance, etc.)?

8.3. If you had three concrete recommendations to make (IRD / partners / donors) to strengthen Senegal's scientific and energy sovereignty in the transition, what would they be?

First, consolidate sustainable local capacities: invest in advanced training, research and data infrastructures, as well as in Operations & Maintenance systems, in order to reduce technical dependency and strengthen scientific and technological autonomy. Second, reinforce co-construction and the institutional anchoring of projects: more closely involve national institutions in defining priorities, governance, data management, and intellectual property, in order to ensure genuine local ownership of knowledge and technologies. Third, adapt funding and partnership modalities by promoting long-term, flexible, and nationally oriented programmes, including skills transfer, support for local maintenance chains, and the development of national technological ecosystems.

9) "Factual block"

"If you are able to answer approximately"

F1. To your knowledge, in the projects concerned, the share of the budget executed by Senegalese institutions is rather: <10% / **10–30%** / 30–50% / >50%?
F2. Are the data produced: hosted in Senegal / hosted in France / **mixed** / third country hosting service?
F3. Is there a written data governance agreement (FAIR/CARE)? Yes/No/Partly
F4. Is there a formal co-direction arrangement (co-PI) with Senegalese partners? Yes/No/**Variable**
F5. Regarding publications linked to the projects: the proportion of papers with a Senegalese first author is rather: rare / occasional / frequent?
F6. Is there a funded maintenance plan beyond the project (≥3 years)? Yes/No/Variable

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Acknowledgements

I sincerely thank you for your availability and for the analytical insights you have kindly shared. Your responses constitute an essential contribution to this research.

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- **Appendix C**

Appendix C.1 – Semi-Structured Interview with the Agence Française de Développement (AFD)

Date: 23 January 2026
Location: Dakar / Online
Duration: 39 minutes
Interviewee: Energy Transition Officier, Agence Française de Développement (AFD)
Language: French
Note: The interview was conducted in French. For the sake of transparency, the transcription is presented in its original French version and subsequently translated into English (author's translation). The translation aims to preserve as closely as possible the meaning and nuance of the original responses.

Case study: AFD – Questionnaire (semi-structured) – Qualitative analysis

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Subject: France–Senegal financial cooperation, energy transition and climate justice
Framework: Master's thesis in International Relations — AFD case study
Indicative duration: 20–30 minutes
Confidentiality and use of responses: This questionnaire is part of a strictly academic research process. The information provided will be treated confidentially and, unless you explicitly agree otherwise, will not allow your identification. Any excerpts cited in the thesis will be anonymized.

Block 0 – Respondent's positioning (context)

0.1. Could you specify your current position at AFD and your direct or indirect involvement in energy projects in Senegal (solar, grids, hydropower, gas, JETP)?
0.2. Since when have you been working on issues of energy transition and/or climate finance in West Africa?

Block 1 – AFD's role in the Senegalese energy transition

1.1. How does AFD define its role in the energy transition in Senegal: rather as a donor, a strategic partner, a catalyst for private investment, or a sectoral steering actor?

1.2. What are today the main energy projects supported by AFD and/or Proparco in Senegal (solar, grids, hydropower, gas, JETP)?

→ What priority objectives are assigned to them (access, decarbonisation, energy security, economic attractiveness)?

1.3. How does AFD articulate its interventions with Senegalese national strategies (PSE, LPDSE, sectoral energy/climate policies)?

Block 2 – Financial instruments, conditionality and dependency

2.1. What financial instruments does AFD mainly mobilise in Senegal in the energy sector (grants, concessional loans, sovereign loans, guarantees, export credits, technical assistance)?

2.2. How is the allocation between grants and loans (%) arbitrated in a context of a so-called "just" transition?

2.3. To what extent are AFD's financings subject to technical, institutional or normative conditionalities (standards, governance, business models)?

2.4. How does AFD assess the risk of financial dependency or indebtedness linked to energy investments, particularly within the framework of the JETP?

Block 3 – Governance, sovereignty and decision-making autonomy

3.1. How is the governance of projects financed by AFD in Senegal structured:
who decides on priorities, timelines and technological choices?

3.2. In your view, does the Senegalese State have a real margin of autonomy to refuse, redirect or renegotiate a project financed by AFD? If so, what is the scope for negotiation to reorient a project?

3.3. How does AFD conceive the notion of energy sovereignty in a context of financial and institutional interdependence?

Block 4 – Value chains, control and capture of benefits

4.1. In the infrastructure projects supported by AFD, how is the value chain distributed between:
• Senegalese actors (State, Senelec, local firms),
• foreign companies (EPC, Operations & Maintenance – O&M, equipment suppliers)?

4.2. Are there explicit requirements in terms of local content, skills transfer, or localisation of maintenance (O&M)?

4.3. How does AFD assess long-term value capture (dividends, operating contracts, O&M dependency) in the projects it finances?

Block 5 – Gas, solar and transition trade-offs

5.1. What is AFD's position on the use of natural gas as a transition energy in Senegal, particularly in the context of projects such as GTA, Sangomar or Yakaar–Teranga?

5.2. How does AFD articulate this potential support for gas with climate objectives (1.5 °C, decarbonisation, 40% renewables)?

5.3. In your view, is there a risk of fossil lock-in linked to certain investments supported by international donors?

5.4. Conversely, solar energy is often presented as a pillar of sustainable sovereignty: how does AFD address the issue of storage, technological dependency and maintenance?

Block 6 – Social justice, access and territorial equity

6.1. What indicators does AFD use to measure the social impacts of energy projects (access, tariffs, local employment, reduction of territorial inequalities)?

6.2. How does AFD ensure that financed projects effectively improve access to energy for Senegalese households and SMEs, and not only for industrial or export-oriented clients?

6.3. Are power purchase agreements (PPAs) made public or audited with regard to their impact on tariffs and energy poverty?

Block 7 – Participation, transparency and consent

7.1. What mechanisms for consultation of local populations are put in place in the energy projects supported by AFD (information, consultation, Free, Prior and Informed Consent – FPIC)?

7.2. Are there accessible and effective grievance mechanisms for communities affected by these projects?

7.3. How does AFD assess the risks of land or social tensions linked to energy infrastructures?

Block 8 – Senegal JETP and the geopolitics of the transition

8.1. How would you describe AFD's role in the Senegal JETP, particularly in its interactions with other financial and institutional partners (Germany, EU, EIB, KfW)? Has this role evolved since the partnership was first conceived? Are there any specific trade-offs or complementarities brought about by AFD?

8.2. How are the criteria for assessing the 'success' of the JETP (e.g. in terms of energy mix, access to energy, emissions or costs) conceived and discussed, and how is the participation of the various stakeholders in this process organised? Are certain agreements the subject of debate or disagreement? How are priorities between technical, social and political objectives arbitrated?

8.3. Some analyses highlight the risk that energy transition measures, even those driven by climate justice objectives, could reproduce structural imbalances between North and South. How are these issues perceived and addressed within AFD in the context of the Senegal JETP? Do these criticisms influence the design or adjustment of instruments? Are there tensions between the imperatives of rapidity, efficiency and equity?

Block 9 – Reflexivity and critical evaluation

9.1. Looking back on your experience, what factors or dynamics could constitute early warning signs that an energy transition project is likely to have unforeseen effects, particularly in terms of energy sovereignty or social justice? Are these signs primarily institutional, economic or social in nature? At what point in the cycle do they become truly visible?

9.2. From a continuous improvement perspective, what changes in financing, governance or partnership practices would you consider important in order to strengthen the truly collaborative and equitable nature of energy transitions? Are these changes more the responsibility of donors, partner countries, or their interaction? Are there already some experiments moving in this direction?

Acknowledgements

I sincerely thank you for your availability and for the analytical insights you have kindly shared. Your responses constitute an essential contribution to this research.

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Appendix C.2 - Original Transcript (French)

Interviewee (Robin Camus - AFD): Je travaille principalement sur le partenariat JETP, basé à Dakar. Je couvre surtout le Sénégal mais précédemment j'ai travaillé un peu sur l'Afrique de l'Ouest principalement sur les enjeux de transition énergétique et l'accès à l'efficacité énergétique.

Interviewer (Elisa Carrière): Pour commencer, quelle est votre fonction actuelle à l'AFD et votre implication directe ou indirecte dans les projets énergétique au Sénégal : solaire, réseau énergétique, hydraulique gaz, JETP ?

Interviewee (Robin Camus - AFD): Je suis conseiller en politique publique du secteur de l'énergie et j'interviens sur les projets de production solaire, hydraulique, mini réseaux, projets d'accès. Le gaz est exclu du mandat d'intervention de l'AFD, même si on suit le développement de ce secteur au Sénégal et sur l'efficacité énergétique le développement du secteur la régulation on est à peu près sur tous les éléments de la chaîne de valeur, or le secteur oil & gas, et évidemment le partenariat JETP dont j'assure le secrétariat à côté de l'ambassade française, parce que la France est en colis d'initiative.

Interviewer (Elisa Carrière): Depuis quand travaillez-vous sur les enjeux de transition énergétique et/ou financement climatique en Afrique de l'Ouest ?

Interviewee (Robin Camus - AFD): En Afrique de l'Ouest, ça fait six ans.

Interviewer (Elisa Carrière): Comment l'AFD définit-t-elle son rôle dans la transition énergétique au Sénégal plutôt en tant que bailleur, partenaire stratégie, catalyseur d'investisseur privé ou bien comme acteur de pilotage sectoriel ?

Interviewee (Robin Camus - AFD): Tout ça à la fois parce qu'on est évidemment bailleur des projets, le développement des énergies renouvelable est à la fois des projets de production, mais c'est avant tout de la planification du réseau puisque c'est là que se situe la principale contrainte, donc on est à la fois bailleur de la modernisation des extensions du réseau et des projets de production lorsqu'il est en maîtrise d'ouvrage public. On intervient aussi comme un bailleur classique via notre filiale Proparco lorsqu'il faut financer un développeur privé, on finance aussi énormément d'assistance technique et d'études qui sont nécessaires au développement du secteur. Là encore, sur ce qui est encore de la transition énergétique en terme de planification, de développement des infrastructures et donc d'un financement on est présent à toutes les étapes, jusqu'à ce que ce que l'on appelle la transition juste donc au Sénégal c'est moins prégnant. Mais c'est le cas par exemple en Afrique du Sud où la transition énergétique a un impact négatif sur l'emploi pour une bonne partie de la population qui repose sur l'extraction du charbon ou sur les industries qui bénéficient des coûts marginaux très faibles de production liés aux centrales de charbon et donc on intervient plutôt via des secteurs sociaux liés à l'employabilité des jeunes au développement d'une industrie résiliante. Je pense qu'on est un peu sur toute la chaîne des valeurs lorsqu'on exclut évidemment les investissements amont/ aval sur l'oil & gas, qui sont exclus de notre mandat

Interviewer (Elisa Carrière): Quels sont aujourd'hui les principaux projets énergétiques, soutenus par l'AFD ou Proparco au Sénégal. Avez-vous des projets majeurs ?

Interviewee (Robin Camus - AFD): Au Sénégal sur les dix dernières années on a financé l'interconnexion de l'OMVG qui fait le lien entre le Sénégal et la Gambie, la Guinée-Bissau et la Guinée. On a participé à la recapitalisation de Senelec dans les années 2010 à la restructuration de leur parc de production qui était obsolète en 2011, on a financé un important programme de modernisation du réseau en 2016 qui s'appelle le Smart Grid on a un projet d'accès à l'électricité qui s'appelle le PADERO qui est une extension du réseau qui est très large. À travers toutes ces années, on a un lien avec le ministère opérateur régulateur et les agences de secteur qui est très développé, encore une fois on finance énormément d'assistance technique, d'études lorsque c'est nécessaire. Dans les prochaines années, dans le cas du JETP, on envisage de financer en infrastructures deux centrales solaires et ensuite on travaille sur les minerais critiques de la transition énergétique pour appuyer le pays à les valoriser et à essayer lorsque c'est possible d'avoir l'extraction qui soit la moins impactante possible. On travaille sur les schémas directeurs, transport, distribution, production, des faisabilités sur des programmes d'efficacité énergétique. C'est le portefeuille de l'AFD sur l'énergie au Sénégal, il est extrêmement dense et ont en moyenne 250 million d'euros d'encours à mesure que les projets se renouvellent et notre engagement d'ici 2030, c'est d'engager au moins 550 millions d'euros sur le secteur de l'énergie.

Interviewer (Elisa Carrière): Quand vous disiez les minerais critiques, vous parlez du lithium, cobalt, nickel, ce genre de choses, je ne sais pas quels minerais sont présents au Sénégal ?

Interviewee (Robin Camus - AFD): On travaille avec le service géologique national, la SOMISEN qui est a société d'exploitation des minerais, le Ministère de l'Énergie et des Mines pour identifier et quantifier ce qui est présent dans le sous-sol sénégalais, en évaluer les densités pour voir ce qui est une valeur marchande en terme de densité pour l'exploitation commerciale, on est dans le très très en amont de l'exploitation minière, c'est le même sous-sol dans le quart sud est que ce qui est présent en Guinée, on parle de lithium, de bauxite, de nickel, de cuivre, d'étain, tous les minerais critiques de la transition énergétique, le manganèse aussi etc … Dans un second temps, se posera la question de faire évoluer le cadre minier au Sénégal et d'appuyer autant que possible la réglementation pour limiter l'impact environnemental et social qui n'est jamais neutre dans des projets d'exploitation minière en particulier au Sénégal, qui est une région très très riche en biodiversité, on voit déjà qu'il y aura des enjeux assez forts pour limiter ses impacts.

Interviewer (Elisa Carrière): Comment l'AFD articule-t-elle ses interventions avec les stratégies nationales sénégalaises ? J'entends par là le Plan Sénégal Émergent et la Lettre de Politique de Développement du Secteur de l'Énergie.

Interviewee (Robin Camus - AFD): On travaille toujours à la demande du gouvernement sénégalais, l'AFD n'octroie jamais un financement qui n'a pas été requis et demandé par le gouvernement en exercice du pays dans lequel on travaille, c'est le cas au Sénégal mais aussi partout où nous travaillons. L'intégralité de notre portefeuille mais non limitatif à l'énergie s'inscrit en pleine cohérence avec la vision 2050 LPDSE. C'est un pré requis, même le premier mail qu'on envoie pour un projet s'il n'est pas cohérent avec la stratégie nationale on refusera même de l'étudier.

Interviewer (Elisa Carrière): Quels instruments financiers, l'AFD mobilise t-elle principalement au Sénégal dans le secteur de l'énergie : dons, prêts concessionnels, des prêts souverains, des garanties, des crédits-export, assistance technique ?

Interviewee (Robin Camus - AFD): Alors l'AFD, en tant que structure ne peut pas proposer de crédit export. C'est seulement la Direction Générale du Trésor qui dépend des services économiques à l'international. L'AFD, en tant que groupe, nous les outils financiers qui sont à notre disposition sont avant tout des prêts concessionnels, des prêts à taux de marché, financement concessionnel parce qu'on est au Sénégal qui est un pays à faible revenu, on fait des prêts à taux de marché lorsqu'ils sont bonifiés pour être plus compétitifs que le secteur bancaire classique, lorsqu'on finance un partenariat public/privé ou un acteur du secteur privé via la filiale Proparco, on a des garanties de paiement, qui peuvent être pour l'off-taker, des garanties souveraines également, mais qu'on mobilise plus rarement au Sénégal parce que le pays a un profil macro-économique qui est trop risqué pour y faire des garanties. On a des subventions dans des montants très limités, pour de la structuration et de la maturation de projet plus que pour du financement d'infrastructures. L'infrastructure et la politique publique au Sénégal dans le secteur de l'énergie c'est avant tout du prêt concessionnel pour l'AFD.

Interviewer (Elisa Carrière): Aussi, je me demandais, comment est arbitrée la répartition entre dons et prêts en pourcentage approximatif ?

Interviewee (Robin Camus - AFD): Alors, ce n'est pas évident de te donner une répartition exacte, tout dépend des secteurs spécifiques cela varie spécialement entre la dimension de la promotions des renouvelables, l'équipement de réseaux électriques et donc la massification de l'accès à l'électricité, mais pour de donner un vaste ordre de grandeur j'évaluerai à environ 80% de prêtes contre 20% de dons sur la périodes des dix dernières années.

Interviewer (Elisa Carrière): Très bien merci beaucoup. En parallèle, je me demandais, dans quelle mesure, les financements de l'AFD sont-ils assortis de conditionnalités techniques, institutionnelles ou normatives tels que standards, gouvernance et modèles économiques ?

Interviewee (Robin Camus - AFD): Dans le cadre de la transition énergétique au Sénégal, les financements de l'AFD sont généralement assortis de conditionnalités principalement techniques, institutionnelles et normatives, plutôt que macroéconomiques ou politiques au sens strict. Sur le plan technique, les projets doivent respecter des standards internationaux élevés ainsi que les exigences climatiques de la stratégie 100 % Accord de Paris, incluant des analyses de résilience, d'efficacité énergétique et d'intégration des énergies renouvelables, souvent accompagnées d'une assistance technique obligatoire. De plus, sur le plan institutionnel, l'AFD encourage l'amélioration de la gouvernance du secteur électrique, notamment le renforcement des capacités du régulateur, la transparence financière et l'optimisation de la performance de l'opérateur public, dans une logique de soutenabilité du système. À cela s'ajoutent des exigences normatives fortes en matière environnementale, sociale et de transparence, dont le respect conditionne parfois les décaissements.

Interviewer (Elisa Carrière): Et pensez-vous que ces conditionnalités ont une influence sur l'organisation du secteur énergétique ?

Interviewee (Robin Camus - AFD): Je dirai que si ces conditionnalités n'impliquent généralement ni réformes politiques coercitives ni libéralisation imposée, elles exercent néanmoins une influence structurelle sur l'organisation du secteur énergétique, en orientant progressivement celui-ci vers des standards internationaux de gouvernance, de viabilité financière et de transition bas carbone.

Interviewer (Elisa Carrière): Comment l'AFD valide-t-elle le risque de dépendance financière d'endettement liés aux investissements énergétique et notamment dans le cadre du JETP ?

Interviewee (Robin Camus - AFD): Que ce soit dans le cadre du JETP ou pas, on demande toujours que dans l'étude de faisabilité, il y ait toujours une étude économique et financière qui soit poussée. On a un comité des risques dédiés qui tous les trois mois revoie le risque souverain lorsqu'on fait des financements à l'État et qui lui attribue une note de la même manière que le fond des agences de notation classique et quand ce comité, qui est propre à l'AFD, évalue que le pays est en situation de surendettement voir de risque de défaut, il y a des notes très précises et lorsqu'on dépasse un certain seuil, on passe ce qu'on appelle en doctrine 'Lemaire'. Et pour tous ces nouveaux engagements, l'AFD doit demander une dérogation à ses ministères de tutelle que sont le Ministère de l'Économie et le Ministère des Affaires Étrangères. Au-delà de cela, si on se place dans le cadre d'un pays qui a les moyens de s'endetter même si c'est avec des maturité longues et des taux d'intérêt faibles, comme c'est le cas avec les projets de l'AFD, on évalue quand même à chaque fois qu'on fait un projet s'il est viable économiquement, du ressort de l'investissement public et si c'est pertinent pour un partenariat public/privé. On voit alors le poids que l'État va devoir supporter vis-à-vis de son endettement mais aussi les frais d'exploitation d'infrastructure et de maintenance qui sont très élevé dans le secteur de l'énergie. Pour donner un exemple concret : dans la stratégie d'accès à l'électricité, on parle souvent des mini réseaux qui ont un coup d'investissement est assez important et après nécessitent beaucoup de maintenance et de frais d'exploitation ; c'est des choses qu'on essaye de tout englober dans le financement global du projet.

Interviewer (Elisa Carrière): C'est intéressant, je n'avais pas du tout l'idée du fonctionnement à ce niveau. Désormais, pour passer à des questions plus axées gouvernance, souveraineté et autonomie décisionnelle ; comment se structure la gouvernance des projets financés par l'AFD au Sénégal, qui décide des priorités, des calendriers, des choix technologiques puisque c'est uniquement sur demande sénégalaise ? Plus précisément ?

Interviewee (Robin Camus - AFD): Pour un projet AFD, c'est un temps qui est très long : entre le moment où les études démarrent et la réalisation du projet c'est cinq à sept ans années sans compter celles passées avant et le dialogue qu'on a entretenu avec les autorités. Ce qu'on appelle un peu le plan d'affaires de chaque agence dans le monde de l'AFD dépend grandement de la relation bilatérale qu'on a avec les ministères techniques concernés. Donc au Sénégal, on a un dialogue extrêmement nourri avec le Ministère de l'Énergie et le Ministère de l'Environnement qui nous sollicitent très régulièrement pour des orientations techniques sur l'évolution du secteur et des conseils de pair à pair avec parfois des benchmarks avec ce qui a pu être fait en France sur certains sujets lorsqu'on est compétent parce que ce n'est pas toujours le cas. Ensuite, de ce dialogue bilatéral, de cette relation qu'on a avec les autorités, émanent des besoins de financement. Et là, l'AFD choisit, parce qu'évidemment, par exemple, dans le cas du Sénégal, il y a toute une palette de projet sur lesquels, ils ont des besoins de financement qui sont assez importants. Donc je reprends l'exemple du gaz qui fait partie de la stratégie du Sénégal de manière assez importante. Mais, c'est en dehors de notre mandat d'intervention donc on va se porter plutôt sur les investissements sur le réseau réseau électrique et les énergies renouvelables, parce que c'est le mandat que nous a donné à la fois le Président de la République française et notre ministère de tutelle. Donc il y a à la fois un double filtre entre ce qui ressort de nos discussions et de nos échanges et de la relation partenariale qu'on a avec le Sénégal, ce qui nous est soumis et ce que nous on est vraiment vraiment en mesure de financer. Avec, c'est le cas pour l'AFD mais aussi les autres bailleurs aussi, dans les années à venir, sûrement, des considérations plus importantes sur l'économie et la place des entreprises européennes dans le

secteur. Donc je pense qu'on va aller progressivement vers un modèle où là où n'ont aucune valeur ajoutée et aucune compétitivité les entreprises européennes, moins de financement de l'AFD.

Interviewer (Elisa Carrière): D'accord, c'est clair aussi et donc je me demandais justement dans un cas de figure où; est-ce que l'État sénégalais dispose t-il, selon vous, d'une marge d'autonomie réelle pour refuser, réorienter ou renégocier un projet financé par l'AFD ? Si oui, existe-t-il une marge réelle pour l'État sénégalais pour remettre en cause les clauses d'un contrat ?

Interviewee (Robin Camus - AFD): Pour l'AFD, la question ne se pose pas, parce que l'AFD et une banque qui finance c'est donc l'état sénégalais qui renégocie avec lui-même s'il veut changer le projet. L'AFD n'impose jamais un projet. Deuxièmement, c'est l'État sénégalais qui met en œuvre le projet, on ne fait que vérifier la manière dont on engage les fonds, et on impose nos procédures de transparence vis-à-vis notamment de l'attribution des marchés donc c'est toujours des appels d'offres ouverts par exemple, qui permettent à toutes les entreprises internationales et nationales de candidater. Les moments où il peut y avoir des renégociations, par exemple, c'est si il y a un changement de gouvernement, comme ça a été le cas dans la mise en oeuvre du JETP, à ce moment là, nous, toujours, on pose la question : Est-ce que c'est quelque chose avec lequel vous voulez poursuivre ? Est-ce que vous voulez arrêter ? Est-ce que vous réorientez les financements ailleurs ? Et auquel cas on peut toujours mettre fin à un financement. C'est quelque chose qu'on est tout à fait en mesure de faire mais qui coûte très cher à l'état. C'est comme si demain tu achetais un appartement, et au milieu de la transaction tu te disais "non, finalement, j'en veux plus". Et donc du coup tu as payé la moitié de l'appartement, l'autre moitié n'est pas payée, tu vas payer des frais de remboursement anticipés à ta banque, ça sera la même chose avec l'AFD. L'État est entièrement maître de choisir déjà si c'est l'AFD qui finance ou non le projet de l'infrastructure qu'elle finance, de la manière dont le projet est mis une œuvre. Là où l'État sénégalais n'a pas les cartes, c'est sur les conditions tarifaires, car nous sommes banque et c'est nous qui les imposons. Jusqu'à maintenant, nous sommes l'un des bailleurs les plus concessionnels du Sénégal, donc les moins chers avec les maturités des prêts les plus longs, en général on cherchait plutôt à nous faire financer plus de projets. Avec désormais le contexte budgétaire, la situation actuelle de la France et son endettement, la politique sera peut-être revue.

Interviewer (Elisa Carrière): C'est ce que j'avais cru comprendre dans le cadre de mes fonctions à ICD. Je me demandais, en contraste avec cette question, comment justement l'AFD conçoit cette notion de souveraineté énergétique dans un contexte d'interdépendance financière et institutionnelle ?

Interviewee (Robin Camus - AFD): L'interdépendance financière et institutionnelle, ce n'est pas limitatif au Sénégal. Il n'y a qu'à voir ce qui s'est passé la semaine dernière sur le Groenland et les États-Unis. Ce qui les fait payer, c'est les 3 000 trilliards de dollars que possède l'UE et qu'ils peuvent vendre à tout moment. Donc c'est un sujet qui concerne tout le monde, et je pense que l'interconnexion financière des États contribue à la paix mondiale. La souveraineté énergétique c'est une donnée d'entrée de la stratégie de la Vision 2050. Donc nous, on la prend comme une donnée d'entrée et on essaie d'y répondre dans la mesure de ce que nous on considère pérenne pour le pays et conforme à notre mandat d'intervention. Donc encore une fois, la seule chose que nous, AFD, on a le pouvoir de faire, c'est de refuser de financer un projet. Et donc dans le cas d'espèce, on a accepté de financer un projet de centrale solaire qui est en maîtrise d'ouvrage public. Donc ça veut dire que c'est détenu à 100% par le Sénégal, et

ça contribue à cette stratégie-là. Maintenant, il peut arriver qu'on ait des différences de vues sur ce que ça veut dire d'être souverain énergétiquement parlant. Le Sénégal, par exemple, considère que la stratégie « gas to power », c'est la souveraineté énergétique. Nous, en tant que groupe AFD et division énergie, on considère que les énergies renouvelables, c'est la vraie souveraineté énergétique, parce même s'il y a parfois des développeurs IPP, on peut toujours chasser un développeur et l'infrastructure, elle reste sur place. Le développeur ne va pas partir avec ses panneaux solaires, et on n'a pas besoin d'hydrocarbures, on est indépendant des marchés internationaux et des marchés d'import. Donc on peut avoir des différences de vues. Mais encore une fois, le Sénégal est totalement maître de nous soumettre les projets qu'il souhaite, et on finance ce qui est conforme avec notre mandat. C'est à aucun moment donné à l'AFD de juger de la pertinence du projet de souveraineté que porte le Sénégal. C'est un pays qui est souverain, ils décident eux-mêmes de ce qu'est leur stratégie. Et nous, de ce qu'on arrive ou pas à financer selon nos différents comités d'instruction.

Interviewer (Elisa Carrière): D'accord, c'est clair aussi. C'est vrai que ce n'est pas toujours évident, avec une vue extérieure, de comprendre les articulations. Et justement, en ce qui concerne la chaîne de valeur dans les projets soutenus par l'AFD, comment elle se répartit entre acteurs sénégalais, j'entends par là État, Senelec, entreprises locales, que par entreprises étrangères ? Est-ce que vous savez m'en dire un petit peu plus ?

Interviewee (Robin Camus - AFD): Alors c'est une question qui est difficile à répondre. De part déjà la notion de qu'est-ce qu'une entreprise sénégalaise et qu'est-ce qu'une entreprise étrangère. On peut avoir des grands groupes qui ont des filiales. On parle souvent en ce moment des entreprises françaises mais qui ont à leur capital des fonds d'investissement américains, des fonds d'investissement chinois. Nous, on parle souvent de grands projets d'infrastructure dans lesquels, par exemple, si on prend le cas du Sénégal, souvent, la compétence n'existe pas en local. Donc nous, on essaie de faire deux choses. La seule chose qu'on impose, c'est des directives de passation de marché de l'AFD. Donc forcément, ce qu'on impose, c'est des appels d'offres internationaux qui sont publiées sur les plateformes mondiales dans lesquelles il n'y a pas de préférence nationale et on essaie dans tous nos projets de faire du renforcement de capacité des acteurs, et on encourage les entreprises qui sont internationales à faire des groupements avec des entreprises du pays, donc ici sénégalaise, pour essayer de créer de la compétence en local. Ce qu'on constate sur les marchés, en tout cas ce qui est vrai au Sénégal sur le secteur de l'énergie, c'est qu'il y a à peu près 50% des marchés qui vont à des entreprises internationales, dont françaises. Parce que souvent, on parle de choses très techniques, des marchés de fourniteurs par exemple, dans un projet d'électricité, ça va être un dispatch, ça va être un SCADA.
Ça, c'est des équipements qui sont nativement produits en Europe ou aux Etats-Unis ou en Chine. Un transformateur, par exemple. Il n'y a pas d'usine de production de transformateurs en Chine. La seule chose qui peut être produite localement, en fait, le gros de la valeur d'un marché, c'est la fourniture des équipements. La seule chose qui est produite au Sénégal, par exemple, c'est des poteaux en béton pour les lignes de basse tension et de l'acier pour faire les poteaux moyenne et haute tension. Tout le reste, ça va être des équipements qui vont être importés. Et donc ensuite, sur le reste de la valeur, va se poser la question de l'emploi local. Que ce soit un groupement international ou une entreprise sénégalaise, elle emploiera toujours des sénégalais pour faire réaliser les travaux. Et, les frais de engineering, design et de gestion de projets, et donc là, en général, c'est 50-50 entre groupements européens, internationaux et entreprises sénégalaises, suivant la complexité des marchés.

Interviewer (Elisa Carrière): Très bien, avec votre réponse, vous avez balayé aussi pas mal de mes questions c'est très bien. J'avais ensuite des questions, effectivement, sur l'arbitrage gaz, énergies renouvelables. Vous avez déjà répondu en partie tout à l'heure mais je me demandais notamment en ce qui concerne le solaire, qui est souvent présenté comme pilier de souveraineté durable. Comment, justement, l'AFD traite la question du stockage, de la dépendance technologique et de la maintenance à ce sujet ?

Interviewee (Robin Camus - AFD): Il y a plusieurs questions sur la maintenance. Dès qu'on finance un projet d'infrastructure, que ce soit du solaire ou autre chose, il y a toujours une composante d'assistance technique et de montée en compétence des autorités. Donc là, par exemple, sur le projet de centrale solaire qu'on va financer, on prévoit jusqu'à 5 millions d'euros pour qu'une entreprise spécialisée vienne exploiter et maintenir ses centrales solaires sur une durée de 2 à 5 ans et former les équipes de Senelec pour qu'une fois que l'équipement soit 100% rétrocédé à Senelec, elles soient en mesure de l'exploiter dans les bonnes conditions et sur le long terme. Donc ça, c'est quelque chose qui est toujours pris en compte. Sur la dépendance technologique, et c'est particulièrement le cas sur le stockage parce qu'il y a plusieurs cas d'usage. Je reviens sur mon point d'avant, ce sont des équipements qui sont nativement produits principalement en Chine. Ça, c'est indéniable et on ne pourra rien y faire, et la question qui se pose pour le Sénégal se pose aussi pour la France. C'est que quand on fait venir une batterie chinoise, qu'est-ce qui nous garantit que dedans, il n'y a pas un système caché qui permet d'en corrompre le fonctionnement et de faire tomber le réseau électrique ? Ce sont des questions auxquelles on n'a pas les réponses partout dans le monde. Ce qui est sûr, c'est que là aussi, on essaie toujours de rajouter des montants d'assistance technique pour avoir la meilleure prise en main des technologies, voire envisager des transferts, mais qui sont moins notre objet parce que c'est des choses qui concernent plutôt des projets industriels ; et, quand on veut transférer une technologie, faut-il encore qu'il y ait un acteur en local pour la recevoir. Au Sénégal, il n'y a ni assembliers, ni producteurs de batteries, ni même d'exploitants de batteries qui soient 100% sénégalais, et il n'y a pas de programme de transfert technologique. Donc on bute un peu sur ce point-là, bien qu'on essaie de favoriser. Et la deuxième difficulté, c'est la rétention des talents. C'est-à-dire qu'on a beau former des gens au ministère de l'Énergie à la Senelec, souvent ceux qui sont formés, bons et compétents, ils sont recrutés par le secteur privé à l'étranger, et donc on retombe à la case départ.

Interviewer (Elisa Carrière): Très bien, je vous remercie pour votre réponse. En ce qui concerne la justice sociale, l'accès et l'équité territoriale, je me demandais quels indicateurs l'AFD utilise-t-elle pour mesurer les impacts sociaux des projets énergétiques ? Concernant l'accès, les tarifs, l'emploi local, la réduction des inégalités territoriales, quels sont les indicateurs ?

Interviewee (Robin Camus - AFD): Là, on a une approche classique bailleur. Le cadre global, c'est les objectifs de développement durable. Quand tu fais passer un projet à l'AFD, tu viens piocher dans quels objectifs de développement durable le projet vient servir. Ensuite, tu déclines ces objectifs de développement durable dans des indicateurs de suivi d'évaluation qui peuvent être plus ou moins pertinents suivant le projet. Et tu mets en place une cellule dédiée avec un budget et des ressources humaines pour toute la durée d'exécution du projet, pour suivre ensuite ces indicateurs qui dépendent d'un projet à l'autre. Si on parle par exemple d'un projet d'accès à l'électricité, on va regarder le nombre de connexions nouvelles avant et après le projet, le PIB par habitant dans les localités, le nombre de petites et moyennes entreprises formelles et informelles qui ont été créées grâce à l'accès à l'électricité, l'emploi des femmes, évidemment, on essaie toujours de désagréger en s'intéressant à une minorité qui peut être vulnérable. Donc,

ça, c'est une approche qui est classique bailleur, c'est le Monitoring and Evaluation Lock Frame de la Banque mondiale qu'on applique à la lettre. D'ailleurs, nos procédures environnementales et sociales sont aussi celles de la Banque mondiale.

Interviewer (Elisa Carrière): D'accord. Oui, c'est ce que j'avais cru comprendre en me renseignant, vous me le confirmez. Et donc, je me demandais justement, est-ce que les contrats aussi d'achat d'électricité PPA sont rendus publics ou édités quant à leur impact sur les tarifs et la précarité énergétique ou pas du tout ?

Interviewee (Robin Camus - AFD): Alors, donc nous, AFD, on répond aux besoins de financement du secteur public. C'est l'État qui contractualise avec nous pour financer ces projets. Quand on parle d'un PPA, ça veut dire que c'est un développeur privé qui vient demander à l'off-taker, donc dans le cadre d'un pays où s'est intégré verticalement Senelec, au Sénégal, qui vient essayer de contractualiser avec l'opérateur. Un contrat, souvent, c'est des contrats décorpés sur une durée de 20-25 ans pour une centrale solaire, par exemple. Là, il y a deux approches. Nous, l'AFD, on recommande toujours aux autorités de faire des appels d'offres. Ça permet d'avoir le prix le plus compétitif de production et de s'assurer qu'on a un impact positif sur le tarif. On ne peut pas, nous, l'AFD, forcer la compétitivité des tarifs. C'est ce qu'on observe, par exemple, au Sénégal, où la majeure partie des contrats qui sont signés avec des développeurs privés sont passés de manière de ce qu'on appelle en gré à gré, en entente directe. Ensuite notre filiale privée, le Proparco, qui dépend du groupe AFD, peut contribuer au plan de financement de ces développeurs privés, soit en dette senior, soit en échotier. En revanche, à aucun moment donné, ni Proparco, ni l'AFD ne peuvent avoir de regard sur le prix de sortie des centrales si c'est un choix qui est porté par le pays, qui est souverain dans ses frontières. Maintenant, si, par exemple, un projet de production solaire est soumis à Proparco et qu'on considère que le PPA, il est déconnant vis-à-vis des prix du marché, on saura de manière, je dirais dissimulée qu'il y a des prises d'intérêts qui sont évidentes. Et à ce moment-là, on n'ira pas le financer.

Interviewer (Elisa Carrière): Tout à fait, ça fait sens. Sans vouloir trop entraver sur votre temps, il me reste deux interrogations sur le JETP au Sénégal. Comment décririez-vous justement le rôle de l'AFD dans le JETP, notamment dans ses interactions avec les autres partenaires financiers et institutionnels comme l'Union européenne, la Banque européenne d'investissement, la Banque allemande de développement ? Et est-ce que ce rôle a évolué depuis la conception initiale du partenariat ou pas ? Et est-ce qu'il existe des arbitrages et des complémentarités spécifiques portés par l'AFD ou pas spécialement ?

Interviewee (Robin Camus - AFD): Donc dans le JETP sénégalais, il y en a 4 pour l'instant, c'est les premières occurrences des plateformes pays, qui est un concept qui a été développé dans les années 2000, vraiment formalisé sur le papier au début des années 2010 et dont on voit les déclinaisons opérationnelles que maintenant. Donc on voit bien la complexité que ça comporte. Nous, AFD, on est avant tout une agence de financement, on est une banque qui répond à un engagement politique pris par des chefs d'État. Et donc ces partenariats JETP, c'est avant tout un accord politique qui donne un objectif contre une contrepartie financière que nous, on met en œuvre. Et dans le cadre du JETP Sénégal, la France est co-lead aux côtés de l'Allemagne. Et donc nous, AFD, on a un rôle de financeur pour répondre à l'engagement français, de conseil à nos collègues diplomates techniques sur les aspects de développement du secteur et de coordination inter-bailleur pour venir essayer de favoriser cette coordination des financements entre beaucoup d'entités qui n'ont pas forcément l'habitude de travailler de manière aussi coordonnée et étroite. Donc on est finalement au cœur de ce dispositif, en tout

cas au Sénégal, et je pense que ça a été le cas depuis le moment où l'accord a été conclu, en sachant que toutes les négociations qui ont été plus politiques avant la conclusion de l'accord, à ce moment-là passés davantage par le Ministère des Affaires Étrangères et l'Elysée directement.

Interviewer (Elisa Carrière): Très bien, merci. Finalement, certaines analyses soulignent le risque que des dispositifs de transition énergétique, même portés par un objectif de justice climatique, puissent reproduire des déséquilibres structurels entre Nord et Sud. Comment ces questionnements sont-ils perçus et traités au sein de l'AFD dans le cadre du JETP ? Ces critiques influencent-elles la conception ou l'ajustement des instruments ? Y a t-il des tensions entre impératifs de rapidité, d'efficacité ou d'équité ?

Interviewee (Robin Camus - AFD): Bien, alors, les questionnements relatifs au risque que la transition énergétique reproduise des asymétries structurelles entre Nord et Sud sont aujourd'hui reconnus et partiellement intégrés dans les réflexions de l'AFD, notamment dans le cadre du JETP. Et, en effet, sans remettre en cause l'objectif de transition bas carbone, ces critiques ont contribué à infléchir certains instruments, en favorisant un recours accru aux financements concessionnels et aux dons, une attention renforcée à la « transition juste » à savoir concernant les impacts sociaux, l'équité d'accès, et l'accompagnement des groupes vulnérables, et une approche plus « country-led » visant à aligner les trajectoires énergétiques sur les priorités nationales. Toutefois, ces ajustements ne suppriment pas les tensions structurelles qui traversent la mise en œuvre des programmes, l'impératif de rapidité et d'efficacité économique peut entrer en contradiction avec les exigences d'équité sociale et de participation, tandis que l'usage persistant de prêts, même concessionnels, alimente les débats sur le risque d'endettement climatique. Ainsi, je dirai que l'AFD tend moins à résoudre ces contradictions qu'à les gérer, en cherchant à concilier ambition climatique, soutenabilité financière et justice sociale dans un cadre encore marqué par des asymétries de ressources, d'expertise et de pouvoir entre partenaires.

Interviewer (Elisa Carrière): Ok, c'est très clair merci. Je pense qu'on a balayé plus ou moins toutes mes questions. En ce cas, je vous beaucoup pour le temps accordé et pour avoir accepté de répondre à mes questions surtout.

Interviewee (Robin Camus - AFD): Aucun souci, ce fut un échange intéressant, qui j'espère vous aidera. Bonne continuation et bon courage pour la rédaction. A bientôt.

Interviewer (Elisa Carrière): Merci encore, je te souhaite une bonne fin d'après-midi et à bientôt. Au revoir.

Appendix C.3 - English Translation

Interviewer (Elisa Carrière): To begin, what is your current role at AFD and your direct or indirect involvement in energy projects in Senegal: solar, energy grid, hydropower, gas, JETP?

Interviewee (Robin Camus – AFD): I am a public policy advisor in the energy sector and I work on solar production projects, hydropower, mini-grids, and access projects. Gas is excluded from AFD's intervention mandate, even though we monitor the development of this sector in Senegal, and on energy efficiency, sector development, and regulation, we are more or less present across all elements of the value chain, except the oil & gas sector, and obviously the

JETP partnership, for which I serve as secretariat alongside the French embassy, because France is a co-initiative lead.

Interviewer (Elisa Carrière): How long have you been working on energy transition and/or climate finance issues in West Africa?

Interviewee (Robin Camus – AFD): In West Africa, for six years.

Interviewer (Elisa Carrière): How does AFD define its role in the energy transition in Senegal: rather as a donor, strategic partner, private-investment catalyst, or sector-steering actor?

Interviewee (Robin Camus – AFD): All of these at once, because we are obviously a project funder. The development of renewable energy involves production projects, but above all network planning, since that is where the main constraint lies. So we are both funders of grid modernization and extension and of production projects when they are under public project ownership. We also intervene as a conventional lender through our subsidiary Proparco when financing a private developer is required, and we finance a great deal of technical assistance and studies necessary for sector development. Again, regarding the energy transition in terms of planning, infrastructure development, and therefore financing, we are present at all stages, up to what is called the just transition. In Senegal this is less pronounced, but it is the case, for example, in South Africa where the energy transition has a negative employment impact for a large share of the population dependent on coal extraction or industries benefiting from very low marginal production costs linked to coal-fired plants. There, we intervene more through social sectors linked to youth employability and the development of a resilient industry. I think we are present across the entire value chain, excluding upstream/downstream investments in oil & gas, which fall outside our mandate.

Interviewer (Elisa Carrière): What are today the main energy projects supported by AFD or Proparco in Senegal? Do you have major projects?

Interviewee (Robin Camus – AFD): Over the past ten years in Senegal, we financed the OMVG interconnection linking Senegal with The Gambia, Guinea-Bissau, and Guinea. We participated in the recapitalization of Senelec in the 2010s, in restructuring their obsolete generation fleet in 2011, and financed a major grid modernization program in 2016 called Smart Grid. We have a large electricity access project called PADERO, which is a broad network extension. Throughout these years, we have maintained a very strong relationship with the ministry, the operator, the regulator, and sector agencies; again, we finance a great deal of technical assistance and studies when necessary. In the coming years, within the framework of the JETP, we plan to finance two solar power plants as infrastructure and are also working on critical minerals for the energy transition to help the country valorize them and, where possible, ensure extraction is as low-impact as possible. We are working on master plans, transmission, distribution, generation, and on feasibility studies for energy efficiency programs. AFD's energy portfolio in Senegal is extremely dense, with an average outstanding exposure of €250 million as projects renew, and our commitment by 2030 is to mobilize at least €550 million in the energy sector.

Interviewer (Elisa Carrière): When you mentioned critical minerals, are you referring to lithium, cobalt, nickel, that kind of thing? I am not sure which minerals are present in Senegal.

Interviewee (Robin Camus – AFD): We are working with the national geological service, SOMISEN, the mining company, and the Ministry of Energy and Mines to identify and quantify what is present in Senegal's subsoil, assess densities, and determine what has commercial value. We are at a very upstream stage of mining. The subsoil in the south-east is similar to that in Guinea. We are talking about lithium, bauxite, nickel, copper, tin, all the critical minerals for the energy transition, manganese as well, etc. At a later stage, the question will arise of adapting Senegal's mining framework and supporting regulation to limit environmental and social impacts, which are never neutral in mining projects particularly in Senegal, a region very rich in biodiversity. We already foresee strong challenges in limiting such impacts.

Interviewer (Elisa Carrière): How does AFD align its interventions with Senegalese national strategies, namely the Plan Sénégal Émergent and the Energy Sector Development Policy Letter?

Interviewee (Robin Camus – AFD): We always work at the request of the Senegalese government. AFD never grants financing that has not been requested by the government in office in the country where we operate, this is true in Senegal and everywhere else. Our entire portfolio, not limited to energy, is fully consistent with Vision 2050 and the LPDSE. This is a prerequisite: even the very first email about a project, if it is not aligned with the national strategy, we would refuse to study it.

Interviewer (Elisa Carrière): Which financial instruments does AFD mainly mobilize in Senegal's energy sector: grants, concessional loans, sovereign loans, guarantees, export credits, technical assistance?

Interviewee (Robin Camus – AFD): AFD as an institution cannot offer export credits; that is solely the responsibility of the French Treasury. As a group, our tools are primarily concessional loans and market-rate loans. Concessional financing is used because Senegal is a low-income country ; market-rate loans are used when subsidized to remain more competitive than commercial banking, especially for public-private partnerships or private actors via Proparco. We can provide payment guarantees, sovereign guarantees, though less frequently in Senegal due to macroeconomic risk and limited grants mainly for project structuring and preparation rather than infrastructure financing. In Senegal's energy sector, infrastructure and public policy financing is primarily concessional lending.

Interviewer (Elisa Carrière): I was also wondering, how the distribution between grants and loans is determined, in approximate percentage terms?

Interviewee (Robin Camus – AFD): It is not easy to provide you with an exact breakdown, as it depends on the specific sectors involved; it varies in particular between the promotion of renewable energy, the development of electricity networks, and thus the large-scale expansion of access to electricity. However, to give you a broad order of magnitude, I would estimate that over the past ten years the distribution has been roughly 80% loans and 20% grants.

Interviewer (Elisa Carrière): Thank you very much. In parallel, I was wondering to what extent AFD financing is accompanied by technical, institutional, or normative conditionalities, such as standards, governance requirements, and economic models?

Interviewee (Robin Camus – AFD): In the context of the energy transition in Senegal, AFD financing is generally accompanied by conditionalities that are primarily technical, institutional, and normative, rather than macroeconomic or political in the strict sense. From a

technical perspective, projects must comply with high international standards as well as with the climate requirements of the "100% Paris Agreement" strategy, including resilience assessments, energy efficiency measures, and the integration of renewable energy, often supported by mandatory technical assistance. In addition, at the institutional level, AFD promotes improvements in the governance of the electricity sector, notably through strengthening the capacity of the regulator, enhancing financial transparency, and optimizing the performance of the public operator, within a framework aimed at ensuring system sustainability. These are complemented by strong normative requirements in environmental, social, and transparency matters, compliance with which may in some cases condition disbursements.

Interviewer (Elisa Carrière): And do you think these conditionalities influence the organization of the energy sector?

Interviewee (Robin Camus – AFD): I would say that, although these conditionalities generally do not entail coercive political reforms or imposed liberalization, they nonetheless exert a structural influence on the organization of the energy sector, gradually steering it toward international standards of governance, financial viability, and low-carbon transition.

Interviewer (Elisa Carrière): Right, and how does AFD assess the risk of financial dependence and indebtedness linked to energy investments, particularly under the JETP?

Interviewee (Robin Camus – AFD): Whether under the JETP or not, feasibility studies must include a thorough economic and financial analysis. A dedicated risk committee reviews sovereign risk every three months when financing the State and assigns a rating similar to rating agencies. If a country is assessed as over-indebted or at risk of default and crosses a certain threshold, we enter what is called "Lemaire doctrine," requiring a waiver from our supervising ministries. Even when a country can borrow on long maturities and low interest, we still evaluate each project's economic viability, whether it falls under public investment or PPP, and the burden on public debt, as well as high operating and maintenance costs in energy infrastructure. For example, mini-grids in electrification strategies require high upfront investment and ongoing operational costs, which we try to incorporate into overall project financing.

Interviewer (Elisa Carrière): Turning to governance and sovereignty: how is governance structured in AFD-financed projects in Senegal? Who decides priorities, timelines, technological choices, given projects are only funded upon Senegalese request?

Interviewee (Robin Camus – AFD): An AFD project takes a long time: from initial studies to implementation, five to seven years, excluding earlier dialogue. Each AFD country agency's business plan depends heavily on bilateral relations with technical ministries. In Senegal, we maintain very close dialogue with the Ministries of Energy and Environment, which regularly seek technical guidance and peer-to-peer advice, sometimes benchmarking French experience where relevant. From this dialogue emerge financing needs. AFD then selects among proposed projects according to its mandate. For instance, gas is central to Senegal's strategy but outside our mandate, so we focus on grid and renewables. There is therefore a dual filter: what emerges from partnership dialogue and what we are actually able to finance. In the future, considerations regarding the role of European companies may become more prominent; where European firms lack value-added or competitiveness, AFD financing may decrease.

Interviewer (Elisa Carrière): Does the Senegalese State have real autonomy to refuse, redirect, or renegotiate an AFD-financed project? Can it challenge contract clauses?

Interviewee (Robin Camus – AFD): For AFD, the issue does not arise. AFD finances, but the Senegalese State implements and decides; we impose only transparency procedures such as open tenders. Renegotiations may occur, for example after a government change, as during the JETP, when we ask whether the State wishes to continue, stop, or redirect funding. Terminating financing is possible but costly, like cancelling a property purchase midway. The State fully chooses whether AFD finances a project and how it is implemented. Where the State has no control is on pricing conditions, since we are a bank and set them. Historically, we have been among Senegal's most concessional lenders, but this may evolve given France's fiscal context.

Interviewer (Elisa Carrière): How does AFD conceptualize energy sovereignty within financial and institutional interdependence?

Interviewee (Robin Camus – AFD): Financial and institutional interdependence is global. Energy sovereignty is an input of Vision 2050; we take it as given and support it insofar as it aligns with our mandate and long-term sustainability. We can only refuse financing. For example, we accepted financing a publicly owned solar plant fully controlled by Senegal. However, views may differ: Senegal sees gas-to-power as sovereignty, whereas we see renewables as true sovereignty because they reduce import dependence and infrastructure remains domestically owned. Senegal remains sovereign in defining its strategy; we simply decide what we can finance under our mandate.

Interviewer (Elisa Carrière): Regarding value chains in AFD-supported projects, how are they distributed between Senegalese actors and foreign companies?

Interviewee (Robin Camus – AFD): It is complex to define "Senegalese" versus "foreign" firms. In large infrastructure projects, local technical capacity is often limited. We impose international open tenders without national preference and encourage joint ventures with local firms to build capacity. Roughly 50% of contracts go to international companies due to highly technical equipment, dispatch systems, SCADA, transformers, mostly produced abroad. Locally, only limited components such as concrete poles or steel structures are produced. Local employment remains significant, as both international and local firms hire Senegalese workers. Engineering, design, and project management tend to be split about 50-50 depending on complexity.

Interviewer (Elisa Carrière): Regarding solar as a pillar of sustainable sovereignty, how does AFD address storage, technological dependence, and maintenance?

Interviewee (Robin Camus – AFD): All infrastructure projects include technical assistance and capacity building. For example, in the solar plant project we plan up to €5 million for specialized operation and maintenance support over 2–5 years to train Senelec teams before full transfer. On technological dependence, especially storage, most equipment is produced in China. This raises global concerns about system security. We therefore include technical assistance for technology handling and potential transfer, though this depends on the existence of local industrial actors—which Senegal currently lacks. A second challenge is talent retention: trained staff are often recruited abroad, creating recurring capacity gaps.

Interviewer (Elisa Carrière): Regarding social justice, access, and territorial equity, which indicators does AFD use to measure social impacts of energy projects?

Interviewee (Robin Camus – AFD): We follow a standard donor approach based on Sustainable Development Goals. Each project selects relevant SDGs and translates them into monitoring and evaluation indicators with dedicated resources throughout implementation. For electrification projects, indicators include number of new connections, local GDP per capita, SME creation, women's employment, and impacts on vulnerable groups. We apply the World Bank Monitoring and Evaluation framework, and our environmental and social safeguards follow World Bank standards.

Interviewer (Elisa Carrière): Are Power Purchase Agreements publicly disclosed regarding tariff impacts and energy poverty?

Interviewee (Robin Camus – AFD): AFD finances public-sector needs; PPAs involve private developers contracting with the off-taker, typically Senelec, often over 20–25 years. We recommend competitive tenders to ensure cost-efficient tariffs but cannot impose pricing. Many PPAs in Senegal are negotiated directly. Proparco may finance developers, but neither AFD nor Proparco control tariff outcomes. However, if a PPA appears far above market levels and suggests conflicts of interest, we would decline financing.

Interviewer (Elisa Carrière): That makes perfect sense. Without wishing to take up too much of your time, I have two remaining questions regarding the JETP in Senegal. How would you describe AFD's role within the JETP, particularly in its interactions with other financial and institutional partners such as the European Union, the European Investment Bank, and the German Development Bank? Has this role evolved since the initial design of the partnership? And are there specific trade-offs or complementarities that AFD has taken the lead on, or not particularly?

Interviewee (Robin Camus – AFD): The Senegal JETP is among the first country platforms. AFD is primarily a financing agency implementing a political commitment made by heads of state. France is co-lead with Germany; AFD acts as financier for the French commitment, technical advisor to diplomatic counterparts, and coordinator among multiple donors. We have been central since the agreement's inception, while earlier political negotiations were led more by the Ministry of Foreign Affairs and the Presidency.

Interviewer (Elisa Carrière): Very well, thank you. Finally, some analyses emphasize the risk that energy transition frameworks, even when guided by an objective of climate justice, may reproduce structural imbalances between the Global North and the Global South. How are these concerns perceived and addressed within AFD in the context of the JETP? Do these critiques influence the design or adjustment of instruments? Are there tensions between imperatives of speed, efficiency, and equity?

I**nterviewee (Robin Camus – AFD):** Questions relating to the risk that the energy transition may reproduce structural asymmetries between the Global North and the Global South are now acknowledged and partly integrated into AFD's reflections, particularly within the framework of the JETP. Indeed, without calling into question the objective of a low-carbon transition, these critiques have contributed to adjusting certain instruments, notably by encouraging a greater reliance on concessional financing and grants, a stronger emphasis on the notion of a "just transition" that is, with regard to social impacts, equity of access, and support for vulnerable groups—and a more country-led approach aimed at aligning energy pathways with national priorities. However, these adjustments do not eliminate the structural tensions that run through programme implementation. The imperative of speed and economic efficiency may come into

tension with the requirements of social equity and participation, while the continued use of loans, even concessional ones, sustains debates over the risk of climate-related indebtedness. Thus, I would argue that AFD tends less to resolve these contradictions than to manage them, seeking to reconcile climate ambition, financial sustainability, and social justice within a framework still marked by asymmetries of resources, expertise, and power among partners.

Interviewer (Elisa Carrière): Thank you very much for your time and for answering my questions.

Interviewee (Robin Camus – AFD): My pleasure. I hope this exchange will help you. Good luck with your writing.

Interviewer (Elisa Carrière): Thank you again. Have a good afternoon. Goodbye.