

A decade of national climate action: Stocktake and the Road Ahead

SENEGAL INSIGHTS ON CLIMATE ACTIONS TEN YEARS AFTER THE PARIS AGREEMENT

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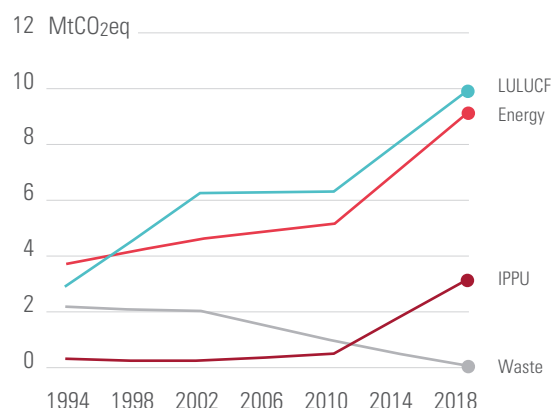
KEY NUMBERS

Senegal is a lower-middle-income country of 17 million inhabitants, marked by a young population. The economy is relatively diversified, with strong contributions from services, agriculture and fisheries, and extractive industries. Urbanization is accelerating, with nearly half the population concentrated around Dakar.

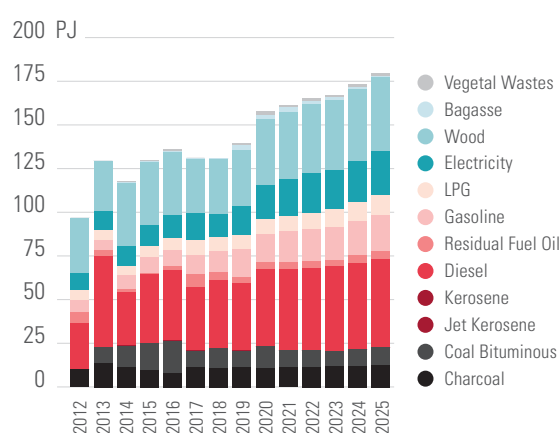
GHG missions have continuously increased in the last ten years, correlated with economic growth (+ 5,3% per year between 2015 and 2024), urbanization (+ 5% of urban population on the same period), and increased energy demand (+27% of final energy demand). The BUR of Senegal (published in 2025) estimated total greenhouse gas emissions approximately 22 387,43 Gg eq CO₂¹ in 2018 (**Figure 1**). Agriculture and land use is the most emitting sector, representing 41% of the total GHG emissions, with methane dominating and is followed by energy emissions. Apart from this category, energy represents more than 81% of GHG emission. In 2018, energy production, manufacturing industries and transport are the most energy-emitting sectors²; representing respectively 32%, 37% and 29% of energy-related CO₂ emissions. Increases in energy demand have been supported by a continuous electrification process: from 9% of energy uses in 2015

¹ BUR Senegal (2025): <https://unfccc.int/documents/645426>

² BUR Senegal (2025): <https://unfccc.int/documents/645426>

Figure 1. Comparative evolution of emissions excluding absorption

to 14% in 2024 (**Figure 2**), with still a predominant place of diesel (around 30%) and wood (from 30% to 24%). However, use of coal has been reduced, from 15 PJ to 10 PJ, direct effect from the intensive renewable electrification and political attention switching from coal to gas potential. Notably Sendou/Barny coal-fired plant was shut down since 2019 due to technical and financial difficulties only 3 years after starting operating and will potentially be reconverted from coal-fueled to gas-fuels (125 MW). Increase of electrification capacities is strongly due to the installation of new renewable capacities, representing from 13% of total electric capacities in 2015 to 29% in 2024, on the road towards JETP objective of 40% in 2030 (developed below).

Figure 2. Final energy demand per energy type

ROLE OF LONG-TERM

The process towards the elaboration of a Long-Term Low Emission Development Strategy (LT-LEDS) that Senegal intends to submit to the UNFCCC in accordance with Article 4.19 of the Paris Agreement started in 2022. For instance and due its economic circumstances, Senegalese process defines alternative development pathways for Senegal up to 2050, including appropriate scenarios considering its climate vulnerability and efforts on GHG emissions reduction and consequently, the LT-LEDS is depicted as Low Emission and Climate Resilience Development (LECRDS). For example, the most ambitious scenario considers climate resilient sectors (i.e agriculture) combined with a smooth path of reduction in energy-related GHG emissions per capita by 2050, which is a very important effort for a country like Senegal which starts from a very low level and has very important development needs. Other scenarios explore variants that focus on the use of oil and gaz to overcome short and medium term target of energy access for the household and the agricultural and industrial need. This analysis demonstrates that you can have a very different look at short-term policy decisions if you put them in the long-term context. Notably the respective roles of renewables and natural gas in supporting the development agenda are very different if you look at long-term trends instead of just sticking to the short-term policy targets.

This strategy is grounded on a very granular vision of sectoral transformations and clear identification of key drivers of change in each sector (energy, industry, transport, agriculture, waste, etc.) as well as an explicit set of narratives supporting the sectoral transitions. In addition, this strategy provides a first step of economic assessments on key indicators of the transition, notably the cost of electricity and the investment needs. The process that led to the elaboration of this strategy was based on the principles of co-construction with stakeholders and capacity building as described in subsequent sections of this report.

In parallel with this long-term strategy process undertaken under the UNFCCC umbrella (LECRDS), the new administration which came in power in 2024 under President Bassirou Diomaye Faye and Prime Minister Ousmane Sonko published its long-term vision for the country in a document called “Vision 2050: Une ambition collective pour une nation souveraine, prospère et solidaire”³ This document marks a significant step forward in aligning national development with the requirements of a net zero transition. It is worth mentioning the alignment of this new vision to the Long-Term Vision co-defined in 2023 within the LTS process. Over the past decade, the country has advanced from planning to active implementation, and this long-term strategy crystallizes those efforts into a coherent framework with specific objectives of increasing GDP per capita above 4500 USD and reducing poverty below 15%. This plan is based on four axes: competitive economy, sustainable development, human capital and social equity, and governance and African engagement. It aims at addressing economic dependence, reduce inequalities and ensure energy and food sovereignty. It adopts a new economic map structured around eight poles, and is operationalized through a master-plan for the next decade and 5-year strategies. Vision 2050 positions clean and competitive energy as a central pillar of the nation's transformation, defining specific objectives for the development of installed power generation capacity at 10 000 MW in 2050 and building on the expansion of solar and wind projects that are already operational. It also strengthens institutional governance, ensuring that regulatory systems can support and sustain the low-carbon transition. Importantly, the strategy embeds climate objectives within broader socio-economic planning, explicitly linking resilience, industrialization, and human development to low-emission growth. By sequencing reforms and investment priorities over the coming decades, Vision 2050 provides a stable framework for mobilizing resources and

scaling structural change, demonstrating that key elements of a national net zero transition have already entered full implementation.

The LECRDS integrate targets and guidelines from “Vision 2050” to reach a reference document that integrates the long-term perspective into a consistent vision of the national transition. By providing a long-term perspective, this process is instrumental for alignment of short-term actions with the long-term requirements of the transition. In particular, this strategy will in turn inform the revision of Senegal's NDC, which is also currently underway. More generally, this initiative process has ensured the consistency of these various medium- and long-term sectoral development strategies, including sectoral policies and strategies (energy, industry, waste, agriculture, water resources), NDC 3.0, and the National Adaptation Plan (NAP), etc. This work also informed the discussions during the JET-P agreement negotiation process. Furthermore, the process put in place aims to contribute, from a technical and strategic point of view to the development of national development policies and policies for climate resilience and carbon sobriety.

GOVERNANCE

Senegal has established a structured governance system to manage climate-related issues, integrating climate considerations into national policies and international engagements. The Ministry of Environment and Sustainable Development is the primary governmental body responsible for environmental policy, climate monitoring, and international representation on climate matters. The National Committee on Climate Change (COMNAC) is an intersectoral advisory and coordination body under the Ministry of Environment. It is responsible for coordinating climate initiatives, facilitating stakeholder consultation, sharing information, and monitoring key climate projects. Its membership spans ministries, the presidency, parliament, public agencies, the private sector, trade unions, and academic

³ <https://www.presidence.sn/fr/actualites/vision-senegal-2050-une-ambition-collective-pour-un-avenir-souverain-prospere-et-solidaire>

institutions. COMNACC leads national climate coordination, supported by regional committees (COMREC) that extend operations to the local level. COMNACC also serves as Senegal's focal point under the UN Framework Convention on Climate Change (UNFCCC).

Senegal features a situation where a diverse set of policy targets must be articulated including development targets (eg, electricity access by 2029), sectoral goals (eg; 40% renewable capacity by 2030 as per the JETP, see below) and longer-term objectives such as those set in the Vision 2050 document. The work of the LECRDS is the first opportunity to anchor the development agenda in a long-term perspective, by opposition with the approach which had prevailed until recently and focused on 2030.

The analytical processes supporting policy decisions has been organized in a way that involves policymakers at the different stages of development of scientific analysis, but without them controlling it. In Senegal this has gone with the establishment of a Strategic Steering Committee in the LTV and LECRDS process, under leadership and led by the Ministry of the Environment and Ecological Transition and the Ministry of Energy, Petroleum, and Mines, with a mandate to guide the process strategically and ensure integration with all sectors' needs and plans (notably to support data access, prospective capacity building, etc.) and validate eventually the results. This committee has made a tremendous insight including high level dialogue contribution, in-depth reflection about the alignment between short- and long-term targets. The steering committee is complemented by a pool of five ambassadors who have longstanding and strategic experiences about policymaking process, civil society needs, research gaps, subnational perceptions and private actors' expectations.

On the technical side the process was operationalized in five thematic groups (four transitional working groups (TWG) focused respectively focused on energy, infrastructure (transport, waste and spatial planning) industry and agriculture as well as a last crosscutting group related to climate change and sustainable development).

Each group gathers stakeholders and experts from ministries and public agencies, academia, private sector, civil society.

The analysis was conducted by experts gathered in these specific working groups. The participation of ministry of energy and ministry of economy together with ministry of environment helped a lot anchor the LTS process into concrete decision-making such as:

- The elaboration of the Long-Term Vision (LTV) in 2023 and presented in the margin of CoP27: this report was one of the requirements of JETP of Senegal
 - The energy transition scenarios as a political and analytical tool for the JETP process
 - The review and update of sectoral and climate policies (i.e. NDC 3.0, LTS Agriculture)
 - The ongoing elaboration of LTS of Senegal to comply with Article 4.19 of Paris Agreement inviting parties to submit or update their LTS.
- The process was designed to improve the traditional, compartmentalized planning approach, moving towards a systemic foresight dynamic that integrates: i) the challenges and interrelationships between sectors, ii) the multifaceted contributions and expectations of key stakeholders (decision-makers, experts, researchers, communities, private individuals, etc.), iii) long-term sequencing, and iv) territorial and spatial equity.

This process involves a strong component of capacity mobilization and capacity building to ensure smooth capacity development about transitional prospective in key economic sectors and therefore build conditions for continuity of the process over time (see below)

The bottom-line of this process is to ensure broad participation by diversity of actors, including line ministries and stakeholders to establish appropriate solutions to the priority challenges of the population and the economic system, including energy poverty, climate vulnerability of primary sector, weak industrial status, low productivity of the production system and dependency on specific energies for different uses, such as oil for transport or wood for residential uses in rural areas.

CAPACITY-BUILDING AND ENHANCEMENT OF DOMESTIC SCIENTIFIC INPUTS

Senegal has a wealth of scientific and field expertise on issues related to energy, industrial, and infrastructure transitions. However, a detailed analysis conducted with local experts identified gaps and needs regarding the deployment of technical capacity building activities. Major limitations were highlighted, including, among others, a lack of expertise in the complex models targeted at informing the analysis of transitions, the absence of consolidated databases, and weak forward-looking dynamics at the sectoral level. Based on this diagnosis, it was agreed to strengthen national technical capacities in terms of forward planning for transitions, which was done very importantly with the approach to ensure domestication of these modelling tools and analytical methods with local actors and authorities. Two parallel capacity building processes were conducted

On the one hand, in the context of the LECRD process described above, an initiative supporting capacity building was launched with the support of the Agence Française de Développement and the African Climate Foundation (ACF) to identify modelling capacity options relevant in each of the different sectors was conducted. This has led notably to the development of a specific version of the model *Low Emissions Analysis Platform* (LEAP), an internally recognized and widely distributed modelling platform of the energy system covering energy production and consumption with a high-level of detail. The flexibility of the modelling platform and the close collaboration between international LEAP experts at Fundacion Bariloche, the transitional working groups (energy and transport) under the overall and technical support of Enda Energie allowed the development of a domesticated version of the model for Senegal, which captures available data and represents the specific structure of the Senegalese economy. Importantly, this modelling tool is in the hands of the Senegalese team which has developed the capacity to use it autonomously. On the other hand, since March 2023, GIZ and

IRENA have been helping the Senegalese Ministry of Petroleum, Energy and Mining (MPEM) to build up institutional capacity for long-term energy planning with a national Energy Masterplan Development. They deployed IRENA's SPLAT-MESSAGE model to develop power system capacity expansion scenarios. The program includes hands-on training and scenario development throughout an intensive collaboration with the LEAP modelling team and also the integration of LEAP model insights (hypothesis and results) already validated. Therefore, key improvements were made in terms of domestic capacity building in the last decade; that are still ongoing and now focusing on the better integration of all sectors in prospective work, and on the connection to socio-economic analysis.

In parallel and in support of these modelling developments or improvements, an extensive work was conducted for data collection, refinement and desegregation, which is necessary to support the sectoral planning process and the prioritization of measures including energy access for different household's types, energy needs of a set of agricultural systems.

These technical capacity enhancements have allowed develop analytical exploration supporting a better understanding of transition pathways. Energy System modelling including energy production, transport, and industry was notably important to better analyze the practical implications of the use of oil and gas under different trajectories for energy access, deployment of renewables, industrial paths, mobility trends, etc. This led for example to revisit the initial understanding that maximizing oil and gas production would naturally be the best option to deliver energy access; analysis has helped the diffusion of the idea that, instead, different options can be considered with pros and cons and that the scale and timing of this exploitation should be scrutinized closely. In addition, the ongoing agricultural modelling work will help also the exploration of different trajectories by Senegalese actors to increase the collective capacity of appropriating complex systemic effects including food sovereignty issues in the context of climate change.

JETP PROCESS

In June 2023, Senegal formalized its Just Energy Transition Partnership (JETP) with the International Partners' Group (France, Germany, the European Union, the United Kingdom, and Canada), mobilizing around €2.5 billion in financing over an initial period of 3 to 5 years. The JETP sets a clear national target of reaching 40% renewable energy in the installed electricity mix by 2030, supported by an investment plan to be developed within twelve months of the agreement and structured governance mechanisms involving ministries, development partners, civil society, and the private sector.

For Senegal, a future gas producer, the JETP represents a crucial opportunity to prevent “gas lock-in,” which could lead to high energy costs, increased dependence, and less sustainable energy. Indeed, a few years earlier, in 2018, after the large offshore natural gas discoveries (Greater Tortue Ahmeyim, Yakaar-Teranga), the government launched a “Gas-to-Power” strategy, setting the basis for the development of electricity production from natural gas. The objective of this strategy is multiple, in line with the commitments of the country's highest authorities:

- Gaining energy independence by securing SENELEC's fuel supply.
- To structurally abolish the tariff compensation paid by the State; Reduce considerably the cost of energy for the population and companies in Senegal.
- And finally, to achieve universal access to energy by 2025 as well as the objective of clean energy for all Senegal. The convertible gas production capacity is estimated to be between 400 MW and 530 MW with an estimated investment need of 40.9 billion Francs. In addition, the construction of other power plants is planned with a total capacity of over 1000 MW⁴.

Even though gas was recognized during the JETP-Senegal process as a “transitional energy”, JETP-Senegal set a quantitative target for renewables and allows renewable capacities to be

developed in parallel to gas process, avoiding a tremendous share of electricity coming from gas and potential “lock-in” effects by creating a financial asymmetry (Gas-to-Power investments were meant to be funded largely through domestic resources and conventional project finance). JETP also included a commitment for Senegal to submit its LECRDS consistent with the Paris Agreement: the scale and timing of gas exploitation is still subject to changes which may affect the long-term energy and emissions trajectories. Additionally, a notable strength of the process is that the renewable energy is aligned with the long-term trajectories as for example set in the LECRDS, ensuring alignment with Senegal's Integrated Low-Cost Electricity Plan and its long-term development strategies. This grounding in national insights enhances the ownership, credibility, and feasibility of the transition pathway, while also providing a platform for mobilizing international support that responds to the country's specific circumstances.

CONCRETE PROGRESS IN SECTORAL TRANSITIONS

Renewables

Over the past decade, even though the JETP financing package is still in the programming and project preparation phase, Senegal has made tangible progress in deploying renewable energy projects, marking a decisive shift from ambition to implementation in its transition pathway. The country has successfully commissioned large-scale infrastructure, most notably the Taiba N'Diaye wind farm, which is the largest in West Africa, alongside several solar photovoltaic plants such as those in Diass and Bokhol. These projects have diversified the national electricity mix, reduced reliance on imported fossil fuels, and positioned renewables as a competitive and reliable source of energy. Beyond their immediate impact on installed capacity, they demonstrate the technical and financial feasibility of scaling clean energy in the Senegalese context, while also creating domestic expertise and open-

⁴ Just Energy Transitions and Partnerships in Africa: a Senegalese Case Study, Secou Sarr and Samba Fall, 2022

ing avenues for further private and international investment. This rollout shows that renewable energy deployment has moved into a phase of full implementation consistent with the requirements of a long-term net zero transition.

This also answered electricity access targets: national electrification rate rose from 55% in 2015 to 78% in 2022, with rural areas catching up through grid extensions and off-grid solar; and aims to reach national universal electrification in 2029.

Transport

Additionally, in the transport sector, Senegal developed an urban public transport: the Bus Rapid Transit (BRT) system in Dakar. The new system is fully electric, runs on dedicated lanes, and marks a departure from diesel minibuses and informal transit. The BRT is projected to serve around 300,000 passengers per day along an 18km corridor with 23 stations linking 14 densely populated districts between the northern suburbs (Guédiawaye) and the city center. Travel times along this corridor are expected to be cut roughly in half, from about 90 minutes down to 45 minutes. On emissions, the all-electric fleet of the BRT is estimated to reduce or avoid between 53,000 and 60,000 tCO₂/year compared with what similar operations with fossil-fuelled buses would emit. The game changers behind this shift are a political decision at national and municipal levels to prioritize clean mobility; a public-private partnership structure (with Dakar Mobilité, Meridiam, FONSIS) that mobilized large international financing (World Bank, EIB, Climate Funds) to reduce financial risk; the technological availability of high-capacity electric buses (130 buses) and charging infrastructure (23 stations) capable of serving large flows; regulatory alignment (dedicated lanes, restructured informal sector integration); and strong public discourse about congestion, air pollution, and climate impacts. While the BRT is not yet generating its full emissions savings, its design and implementation are very consistent with what is required for a national net zero transition: electrification, modal shift, infrastructure planning, regulatory reform, inclusive access, and institutional coordination.

Energy transition

Senegal has made important discoveries of natural gas and oil reserves and is now in the process of starting its exploitation. This goes with the adoption of a “Gas-to-power” strategy according to which Senegal will use gas for electricity production by converting fuel plants and building new gas plants, in parallel with the expansion of renewable capacities.

Beyond national plans, Senegal has also elaborated several sector-specific strategies that provide a more detailed roadmap for key areas of the energy transition. These include:

- Political Plan of Energy Sector Development (LPDSE 2024–2028): which defines the government's priorities for expanding access, ensuring energy security, and fostering a diversified energy mix.
- Strategic Plan for Energy Management Development (PSD 2025–2029): focused on improving energy efficiency across sectors, reducing consumption, and promoting more sustainable energy use.
- Domestic Fuel and Biofuel Strategy 2030–2035: which addresses the critical issue of household energy by promoting cleaner cooking solutions and supporting the sustainable development of biofuels.

Together, these strategies complement national frameworks by offering operational pathways for implementation in specific sub-sectors, thus strengthening Senegal's capacity to meet its long-term decarbonization and energy access objectives.

EXAMPLES OF CONCRETE BLOCKAGES

It is important to note that the co-construction process has faced some challenges. The existence of parallel and overlapping analytical processes has at times limited the effective and consistent participation of key actors, who occasionally encounter conflicting agendas. Apart the equity and climate justice matter, there is still a lack of interconnected planning process and low prospec-

tive capacity of national institutions are some bottlenecks which drive the rationale of LECRDS co-construction initiative set up by the ministries in charge of environment and energy and being implemented by Enda Energie in Senegal. Indeed, Senegal features a situation where a diverse set of policy targets must be articulated and aligned including Senegal 2050 Vision, the universal electricity access by 2029, JETP goal (40% renewable energy targets by 2030), etc. The insight and work of the LTS is the first climate process that the development agenda in the country is anchored in a long-term perspective, by opposition with the approach focused on 2030. This experience demonstrates that you can have a very different look at short-term policy decisions if you put them in the long-term context. Notably the respective roles of renewables and natural gas in supporting the development agenda are very different if you look at long-term trends instead of just sticking to the short-term policy targets. In fact, the LECRDS process helps to define intermediate targets (2025, 2030, 2035, etc.) related to industrial, energy, infrastructural and agricultural transitions. This approach adopted and defined by national experts is aligned with sectoral policies (i.e. LPSDE 2024-2029) and is supporting also the revision of current climate policies (i.e. NDC 3.0). To address this, a series of planning meetings and ad hoc bilateral discussions are conducted to identify shared interests and complementarities while respecting the objectives of each initiative.

Data sharing has also been a challenge, despite significant efforts by line ministries. Within the co-construction approach, members of the working groups are increasingly given active and prominent roles, enabling them to act as focal points for data collection and refinement. This mechanism strengthens collaboration and ensures that data is more systematically shared and leveraged across initiatives.

Additionally, despite progress in several areas, some aspects of Senegal's national transition have remained constrained. In the case of the Just Energy Transition Partnership (JETP), while an investment plan was developed with support from an external consultant, its impact was limited. The plan was not

sufficiently anchored in national realities and did not fully reflect the structural foundations of the JETP agreement, which reduced its effectiveness in guiding actionable investments. This highlights the importance of ensuring that externally supported planning processes are closely integrated with domestic priorities and institutional capacities to advance the national net zero transition.

LINK TO NON-CLIMATE QUESTIONS

Senegal has made significant progress in integrating climate considerations into its national policy processes, recognizing the interconnectedness of climate action with critical social, economic, and financial issues. The country's long-term development strategy, Vision 2050, emphasizes the transition to a low-carbon, resilient, and inclusive economy as central to its growth trajectory. This vision underscores the necessity of aligning climate objectives with broader development goals to ensure sustainable prosperity.

One of the key strategic objective of this document: "Ensuring sustainable land use planning and organized urbanization" includes targets of building sustainable cities (green, resilient, and smart) through coordination of sectoral policies, promoting sustainable land use planning, with the development of integrated economic hubs; but also other objectives such as promoting sustainable management of natural ecosystems, driving a fair and equitable energy transition or establish connectivity infrastructure⁵.

⁵ Stratégie nationale de développement, 2025-2029

This country chapter was co-funded by the European Commission Directorate-General of Climate Action (DG CLIMA) in the framework of the JUSTPATH project (Service Contract No. n°2024/14020241/ SER/929722/ CLIMA.A.2 EC-CLIMA /2024/ EA-RP/0005). It has also received financial support from the International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) through the "2050 is now: Aligning climate action with long-term climate and development goals" project.