Morocco's Energy Transition: Prioritizing Natural Gas, Embracing Green Hydrogen, and Global Collaboration at COP28

To enhance its energy security as a net importer, Morocco has intensified efforts to develop a domestic vision of energy self-sufficiency while adhering to guidelines for transitioning to cleaner sources.

In that sense, Morocco's choice to prioritize natural gas was not solely based on its transitional attributes but also considering the opportunity costs. In fact, natural gas is favored due to its lower greenhouse gas (GHG) emissions compared to oil and coal. Its versatility allows for easy storage, delivery through pipelines, or liquefaction for shipping. The adaptability of gas-fired power plants to quick on-and-off cycles makes natural gas a convenient solution for addressing both seasonal and short-term demand fluctuations.

However, Morocco heavily relies on natural gas imports, surpassing its domestic production levels. In 2020, domestic production stood at 3,473 TJ, while imports soared to 28,194 TJ. The key consumer is the Office National de l'Electricité et de l'Eau Potable (ONEE), the national water and electricity utility, with a consumption of 884.3 million cubic meters (mcm), compared to 98.7 million cubic meters for various industries like the automotive, ceramic, mechanical and metallurgical, and pharmaceutical sectors.

The country's strategic focus on natural gas is articulated through a domestic roadmap, the Natural Gas roadmap, which aims to create a regulated market that stimulates evolving demand. The roadmap envisions the development of essential gas infrastructure, ensuring access to competitive energy for industrialists and consumers. It also aims to enhance the competitiveness of Moroccan industrial exporters while fostering ancillary subcontracting activities around the natural gas sector.

The roadmap unfolds in several steps, with the first phase involving the establishment of a regulatory framework for the natural gas sector. This includes the promulgation of draft laws, the extension of regulatory authority, and the creation of a Moroccan Natural Gas Transmission System Operator. The second step emphasizes assessing demand dynamics, anticipating a surge in demand from industries shifting towards cleaner and competitive natural gas. This phase aligns Gas-to-Industry demand as a catalyst alongside Gas-to-Power for gradually replacing coal. The third step focuses on evaluating diverse options for supplying Natural Gas (NG) and Liquefied Natural Gas (LNG), exploring avenues such as gas pipelines, floating storage and regasification units, onshore terminals, and multidirectional flows. This diversification aims to ensure flexibility in supply and guarantee regularity and continuity.

The Natural Gas roadmap is guided by specific time objectives set by the Moroccan Ministry for Energy Transition and Sustainable Development. In the short term (until 2025), the emphasis is on procurement, LNG, , and onshore terminals. The medium-term phase (2020-2030) shifts focus on diversifying supply sources, with the Nigeria-Morocco Pipeline playing a central role. The long-term vision underscores the critical need for diversifying Natural Gas and LNG sources, as a risk hedging mechanism, given Morocco's heavy reliance on energy imports (90% of total energy). This strategic roadmap reflects Morocco's commitment to securing a sustainable and diversified energy future.

From renewables standpoint, Morocco has pursued an ambitious energy strategy since 2009, focusing on increasing renewable energy capacity, enhancing energy efficiency, and fostering regional integration.

Furthermore, Morocco introduced in 2021 its green hydrogen roadmap. The future potential of green hydrogen in Morocco involves optimistic scenarios for both domestic and international demand. Domestically, green hydrogen could be used as an input in industrial processes, especially in the fertilizer industry, to a lesser extent as an alternative fuel in transportation, and for residential applications, and finally as a flexibility and storage solution for renewable energy sources. Externally, export demand is projected to represent 75% of the demand and reach 10.3 TWh by 2030 in the realistic scenario and 21.7 TWh in the optimistic one, growing to 114 TWh and 229.5 TWh by 2050, respectively. Morocco's strategic geographic position and maritime infrastructure are vital for hydrogen distribution. However, green hydrogen projects require collaboration between governments and the private sector, with suggested optimal financing structures emphasizing a mix of bank loans and green bonds to reduce risk and attract private investments.

The COP28 was also another opportunity to showcase Morocco's advancement towards a just energy transition that leverages the power of collaboration. Among the key initiatives reached during the conference in December 2023, Morocco and Ethiopia signing a MoU to establish a Coalition for Sustainable Energy Access (CSEA), reflecting Morocco's commitment to South-South cooperation for addressing climate change. The CSEA, an inclusive UN-recognized entity, aims to promote knowledge sharing in sustainable energy, with its headquarters in Ethiopia. Additionally, the EU pledged €50 million to Morocco at COP28 to support green energy and carbon removal initiatives, emphasizing collaborative efforts for sustainable development. Finally, during the conference, several countries, including Morocco, launched a declaration to triple global nuclear energy capacity by 2050, recognizing its vital role in addressing climate change and achieving sustainable energy goals.

Overall, Morocco's pursuit of a resilient energy future is highlighted in its multifaceted approach, combining a strategic focus on renewable energy sources to accompany its energy transition but also diversifying its energy mix, to ensure a sustainable energy transition, without compromising its energy security.