MEGS

SAUDI ARABIA

Once solely reliant on oil and gas, The Kingdom of Saudi Arabia is proactively shaping the meaning of energy future. Acknowledging both environmental responsibility and economic opportunities, the Kingdom is taking a multi-dimensional approach. This includes substantial investments in renewable energy, pioneering a circular carbon economy, investing in innovative applications and solutions to address carbon-emission through hydrocarbons, and aiming to become a key producer and exporter of green and clean hydrogen as well as a global electricity exporter. Additionally, the Kingdom is empowering its youthful talent to engage with, innovate, and achieve deliver its Vision 2030 targets.

Securing **supply chain** resilience is highly important for the Kingdom's energy transition towards a reliable and sustainable energy mix. The fluctuation in **commodity prices** and the availability of essential components can significantly impact both ongoing and future projects. By developing a robust and flexible supply chain, the Kingdom ensures that it can maintain the momentum of its ambitious energy initiatives. This resilience is crucial for the timely and cost-effective completion of renewable energy projects, ultimately supporting the Kingdom's goal of a diversified and sustainable energy sector. A stable supply chain not only mitigates risks associated with global market volatility but also enhances the Kingdom's capability to build on emerging opportunities in the energy landscape.

The dynamic transformation, reforms and restructuring of the Saudi energy landscape is rapidly evolving as yesterday's uncertainties are today's norm. Detailed analysis and careful implementation paved the way to install greater confidence in the energy sector's future. The Kingdom continued to deliver on its promises in renewable energy, hydrogen, and circular carbon economy. As of 2024, the Kingdom has launched over 23 GW of renewable energy projects under different development stages, with 2.8 GW already operational. Additionally, ambitious plans call for tendering additional 20 GW increments, tendered each in 2024 and 2025, and in the following years where the renewable energy share will be equivalent to 100-130 GW (subject to electricity demand) of renewable energy capacities by 2030. Such plans are backed with the biggest regional mapping for renewable source which will involve installing measurement stations across the Kingdom. This bottom-up approach helped the kingdom achieve the lowest leveled cost of energy for its renewable project, strengthening its energy affordability and sustainability. Furthermore, the energy ecosystem is embarking on a new target in **energy storage**, eyeing 40 GWh by 2030 of energy storage to enhance **grid stability** and to better utilize renewable energy resources. Furthermore, the Kingdom is expanding the Master gas system. The project will increase supply capacity by more than 40% by 2028. It will reach out to 6 additional industrial cities and regions by adding around 4000 KM of new gas pipeline to the existing 4400 KM gas network to increase the gas distribution capacity. Also, as the Kingdom is moving toward significant increments in the natural gas production to meet the increasing local demand in multiple sectors. Additionally, Saudi Arabia considers nuclear energy to be a strategic option through the Saudi Nuclear Energy Program. The program aims to introduce 2.2-3.3 gigawatts of nuclear power to the kingdom while also exploring the potential of small modular reactors and their versatile applications.

The story of transformation goes beyond building eight (8) new efficient gas generation with carbon capture readiness to building a robust, smart and flexible infrastructure connecting conventional and renewable generation resources rich sites to load centers all over the Kingdom in harsh weather and complex terrains. Saudi's power sector **infrastructure** is another key element where the Kingdom is maximizing its resources by displacing more than one million barrels of oil equivalent to increase sustainability and lower the system cost. This includes increasing **transmission efficiency,** rolling out smart meters, digitizing grids and establishing interconnections with neighboring countries at different development stages to connect to Egypt, Iraq and Jordan. Saudi Arabia aspires to become a regional and global Power hub connecting Asia, Africa, and Europe to supply reliable, affordable and sustainable electricity to different continents.

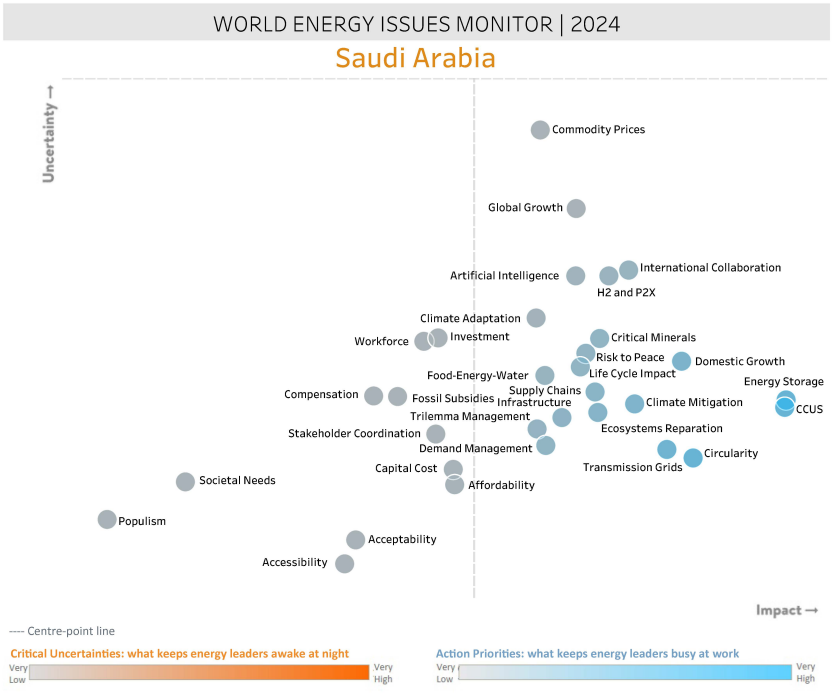
Such transformation impacts action priorities. A change in what is deemed as critical issues came as a result of multiple initiatives reaching maturity, specifically in renewable energy, energy efficiency, digitization and affordability. This has materialized in the Saudi energy efficiency system, represented by the Saudi Energy Efficiency Center, which has issued numerous policies and implemented a number of successful initiatives that have contributed to improving **energy efficiency** in the industrial, land transport, and building sectors, and reducing energy consumption intensity in the Kingdom by 12% between 2012 and 2022. Through cooperation with various relevant entities, SEEC implemented various initiatives to increase the fuel efficiency of light-duty vehicles. One major initiative is called the Saudi Corporate

Average Fuel Economy (CAFE) standard, which aims to improve vehicles' fuel economy by 3% on an annual basis.

The energy transition is fueled not just by government initiatives, but also by the biggest young and ambitious workforce in the region as observed during the 2023 MENA Climate Week in Riyadh; where government, private sector and youth mingled to discuss the regional context on **climate** change and sustainability. The private sector with its young workforce is actively involved, with the first regional electric vehicle manufacturing facility already operational and another local brand on the horizon. New Giga projects mirror the Saudi Green Initiative as NEOM's world's largest green hydrogen plant under construction and on track to be completed by 2026 while the Red Sea Development Company, the world's first regenerative tourism destination powered entirely by renewables, opened its doors in 2023. The world's largest oil company, Saudi Aramco also announced its target to reach net zero by 2050; and in fact, started working earlier in that direction as it sent the first shipment of certified blue ammonia in the world in 2020 and achieved the lowest carbon intensity in upstream activity in 2023 in the region; and came 2nd globally. The Kingdom produces one of the cleanest crude oil in the world with carbon and methane intensities, respectively; having the second lowest carbon intensity levels among all major producers. This is driven by adopting several technological solutions.

The Kingdom is also strengthening its multilateral **collaboration** in both energy and sustainability to support its national agenda in the Saudi Green Initiative; as it announced the Middle East Green Initiative at the regional level. At the same time, it continues to work with all OPEC+ members to support balance and stability in the global oil market. Saudi Arabia contributes to a more sustainable future for developing countries through programs like the Oil Sustainability Program; which provided countries access to clean fuel solutions for cooking, and strengthening energy security. It is vital to note that the Kingdom has pledged to drive transition through building a reliable energy mix that leverages the benefits of hydrocarbons while also building an environment that supports a just dialogue that encourages innovation at every stage. One such way the Kingdom is doing so is through working towards finding innovation applications for hydrocarbons in a manner that is both environmentally and economically sustainable. For instance, the Kingdom has prioritized efforts for indirect solutions for what we call, the "Materials Transition". It aims at evolving the current materials landscape by enhancing materials-induced efficiency and reducing emission-intensive materials through material substitution. Examples of this include the replacement of Balsa wood with PET foam in renewable energy materials—wind turbines—in an effort to reduce emissions, decrease deforestation and weight, increase the lifespan of materials, and address environmental degradation.

The Kingdom is leveraging its leadership & strength in both conventional and renewable energy sources of energy to capture and develop opportunities in all areas of energy from the circular carbon economy approach, such as green and clean hydrogen. Therefore, such a holistic and innovative approach positions Saudi's energy ecosystem not only as a leader in shaping the global energy landscape but also as an inspiring model for other nations.



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Saudi Arabia Member Committee