



ACCELERATING SDG 7 ACHIEVEMENT

POLICY BRIEF 10

SDG 7 IN ARAB REGION

7 AFFORDABLE AND
CLEAN ENERGY



PART IV: REGIONAL PERSPECTIVES

POLICY BRIEF #10

SDG 7 IN ARAB REGION

Developed by

The UN Economic and Social Commission for West Asia (ESCWA)

In collaboration with

The International Energy Agency (IEA), the World Bank, and the Islamic Development Bank

Key Messages

Sustainable energy development is a critical priority for all Arab countries, not just a choice between high growth and low growth scenarios. Progress in achieving SDG 7 is essential for advancing all of the SDG goals in the face of growing climate challenges.

The Arab region lacks capacity in the areas of energy efficiency and renewable energy, while retaining an overwhelming reliance on fossil fuels. It is also affected by war, political instability, and consequent displacement and migration, which add to pressures on wellbeing, urban living space, and resources. Growing populations, with large numbers of young people, create expectations for economic opportunities, environmental sustainability and improving living standards.

Access

The Arab region's electrification rate rose from 88.4 per cent in 2010 to 92.5 per cent in 2017, at an average annual electrification growth rate of 0.7 per cent. However, in 2017, Arab LDCs reported that 88 per cent of their urban population had access to electricity, but only 50 per cent of the rural population did. Meanwhile, unplanned service disruption is a challenge for electricity users, irrespective of the urban-rural divide or income disparities.

Access to clean fuels and technologies is high in the Arab region. In 2017, 14 countries had access rates above 95 per cent. Region-wide access grew steadily at an average annual growth rate of 1.1 per cent throughout the 2000s, driven primarily by significant improvements in Arab LDCs, which account for most of the region's access deficit.

Efficiency

The Arab region historically has not been one of the most energy-intensive regions, and its energy intensity has been relatively stable over the past 25 years, while other regions have reduced their energy intensity. Energy consumption, however, has more than doubled in the Arab region since 1990, with a direct increase in GHG emissions. Transport remains by far the most energy-intensive sector in the Arab region, followed by industry and agriculture.

Renewables

Renewable energy plays a marginal role in the Arab region's energy consumption, reflecting the region's globally unparalleled reliance on non-renewable fossil fuel sources. In 2016, renewable energy, including biomass, accounted for about 10 per cent of the region's final energy consumption.

Priority actions

Over the next 4 years

- Focus on more efficient use of the region's valuable fossil fuel resources while exploring potential energy alternatives, renewable energy in particular.
- Develop and enhance legislative and subsidy settings to rationalise demand and supply patterns and increase sustainable energy.
- Build institutional capacity, transparency, accountability, data collection, dissemination, and information-sharing between institutions, as well as greater support of science and research.
- Strengthen local governance and communication between government, financial institutions, the public, and private companies, and reinforce the role of civil society.

Towards 2030

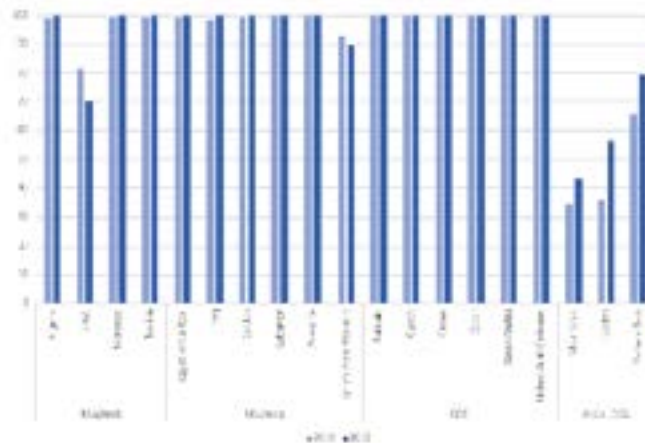
- Adopt proactive and integrated policies that manage natural resources more sustainably, especially the water-energy-food nexus, in order to address multidisciplinary energy-related issues tied to the empowerment of women and the Arab region's highly educated youth.
- Establish effective supply-side management and achieve diversification of energy supply and regional energy trade underpinning more sustainable, resilient, and cost-effective energy systems in the Arab region.
- Enhance regional trade in energy between Arab countries to achieve substantial benefits for all parties, including greater security of supply, access to cleaner energy, and considerable potential for job creation from the development of local manufacturing industries for components of clean technologies.

Energy access

Access to electricity is to a large degree a bright spot in the Arab region's sustainable development agenda.¹

Access to electricity, as well as to clean cooking fuels and technologies, is now near-universal in North Africa, the Mashreq, and the Gulf Cooperation Council—an impressive achievement, allowing the Arab region to stand out from other regions with a high share of developing economies.

Figure 1. Share of population with electricity access in the Arab region, 2010 and 2017 (per cent).²



Source: World Bank energy access database- Tracking SDG7: The energy progress report 2019

Despite very positive developments in electricity access since the 1990s, some significant gaps in access to energy remain in the Arab region. Overall, access to electricity is close to universal in cities across the Arab region, although rural access remains incomplete in 5 Arab countries, with the largest access deficit in the Arab LDCs—Mauritania, Sudan, and Yemen, where rural access ranges from 0 per cent in Mauritania to 69 per cent in Yemen. Some 29.9 million Arabs did not have any access to electricity in 2017, primarily in the Arab LDCs with small numbers of people without electricity access in North Africa and the Mashreq.

Unplanned service disruptions and reliability, on the other hand, are a challenge for electricity users, irrespective of the urban–rural divide, or indeed income divide.

War and regional instability have had a devastating impact on essential services including energy access in a number of Arab countries, exacerbating the unparalleled humanitarian catastrophe unfolding in the region in recent years. Mass migration of some 7 million refugees and around 11 million internally displaced persons according to UNHCR data—primarily in Syria, Iraq, Yemen and Libya—imposes tremendous material and logistical challenges for host countries and communities, while it deprives millions of refugees of secure access to energy in addition to other essential services such as clean water, sewerage, food, and healthcare.

Through its multifaceted links to different fields of socioeconomic development, the lack of access to energy is a major stumbling block to national development efforts in the Arab LDCs.

One of the key challenges the Arab region faces as a whole is whether primary energy and electricity should remain what has been effectively a “public good” supplied at low cost by the State to its citizens, or whether the region’s emerging economies will need to redefine the way energy is used and supplied within their

¹ The Arab region here includes North Africa (Algeria, Morocco, Libya, Tunisia) Mashreq (Egypt, Iraq, Jordan, Lebanon, Palestine, Syria), GCC (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates), LDC (Mauritania, Sudan and Yemen).

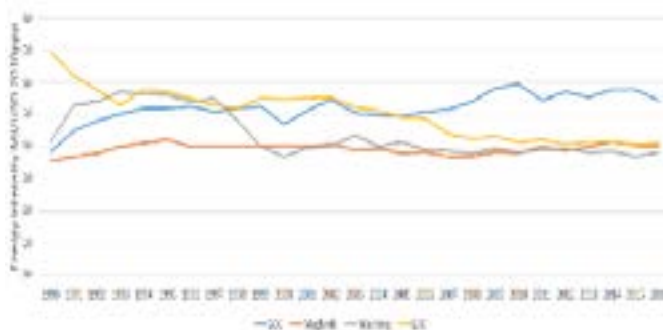
² World Bank energy access database- Tracking SDG7: The energy progress report 2019

domestic market.

Energy efficiency

Between 2000 and 2017, the Arab region has maintained relatively low energy intensities at 4 MJ/US\$ 2011 PPP over the past 26 years, which highlight significant need to address energy efficiency in Arab countries. Energy intensity rates differ considerably across the Arab region. Energy net exporting countries drive the regional trends as they have based their historical industrial growth on fossil fuels and energy-intensive industries. Net energy importers have seen fairly low and falling energy-intensity rates.

Figure 2. Energy intensity in the Arab region by subregion, 1990–2014 (MJ/2011 PPP US\$)³.



Source: International Energy Agency (IEA) Database Tracking SDG7: The energy progress report 2019

Taking the region's aggregate data, we see a moderate trend in more recent years towards falling energy-intensity levels in agriculture and transport, with declining intensity rates in industry in some economies. Power generation efficiency reflects ongoing progress in advance gas turbine technologies and integrated power and water plants. Transport, however, remains by far the most energy-intensive sector in the Arab region, followed by industry and agriculture.

On regional aggregate level, transport is more fuel-intensive than any other region of the world, reflecting increasing mobility across dispersed population centres of many Arab populations, low fuel costs, and an absence of vehicle fuel standards. Mobility improvements are necessary, enabling progress in a number of social development indicators, such as access to education and health care and rising income levels. On the other hand, most Arab countries' socioeconomic development models have been built around the concept of cheap, personal transport. There remains a significant lag in the availability of public transport systems which are inadequate in many Arab cities, suburbs, and the countryside.

Many Arab cities suffer significantly from traffic congestion, in addition to some of the highest rates of urban air pollution. Massive investments in roadworks do not keep pace with increasing vehicle numbers exacerbating congestion. The often very large additional investments in road infrastructure and vehicles and a lack of funds and policy priority on public transport continue to lock-in unsustainable transport systems.

Rising pressure for food production has also driven significant efforts at increasing the energy efficiency of the agricultural sector indirectly. The dispersed nature of agriculture, with many small farms spread across geographic conditions and outside the reach of centralized urban policymaking and legislation, further complicates the implementation of energy-efficiency and renewables measures in agriculture, while most financial markets in the Arab region lack financial products suited to the needs of farmers.

Very low, subsidized prices for energy, electricity, and water, combined with a lack of energy-efficiency regulations in different economic sectors have resulted in a large increase in per capita water and electricity consumption throughout the Arab region.

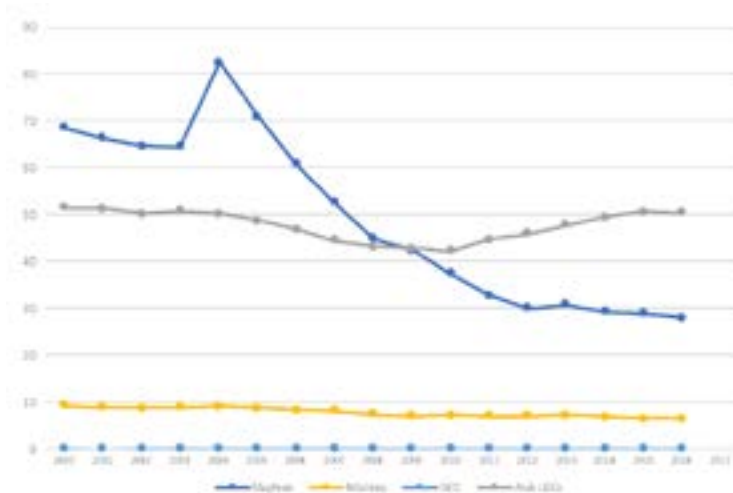
³ International Energy Agency (IEA) Database Tracking SDG7: The energy progress report 2019

Where economies and living standards have been growing, market incentives to conserve energy have been lagging significantly behind across the entire Arab region. Measures that help increase energy efficiency and therefore energy productivity over time, particularly on the regulatory side, have in many parts of the Arab region been sketchy and piecemeal. Even in high-income countries in the Arab region, policy focus and hands-on reform efforts differ markedly between countries, with historical priority having been given to fast-rising development and quick improvements in living standards. Typical market structure of the energy industry in the Arab region further affects incentives for energy efficiency.

Renewable energy

Renewable energy is, despite progress through a number of high-profile deployment projects in recent years, still a largely untapped resource in the Arab region. In 2016, renewable energy, including biomass, accounted for some 10 per cent of the region’s final energy consumption. This is despite considerable potential for renewable energy, in particular modern technologies such as wind and solar power, given the region’s favourable geography and climate conditions.

Figure 3. Share of renewable energy in total final energy consumption in the Arab region by subregion (per cent)⁴



Source: IEA and IRENA renewable energy Database Tracking SDG7: The energy progress report 2019

Over 80 per cent of the region’s consumption of renewable energy is based on solid biofuel, accounted for by a small number of countries whose primarily rural populations continue to use biomass.

Renewable energy sources have played a marginal and declining role in the region’s energy mix. In most parts of the Arab region, conventional fossil fuels have for many decades underpinned the systematic expansion of modern energy access, leading to near-universal access rates of electricity and clean cooking fuels.

The weak presence of renewable energy stems from the absence of targeted policy initiatives, as well as the prevalence of state-owned energy utilities and—particularly during the 2000s—widespread use of fossil-fuel subsidies, which have traditionally discouraged the use of new non-fossil fuel-based technologies. However, this rationale has started to change in recent years in some parts of the region, and the share of modern renewable energy stabilized in 2014–2017. Renewable energy costs have been also falling, making investments, particularly in wind and solar power, more attractive.

Recent years have seen a pick-up in modern renewable energy technologies, particularly solar power.

⁴ IEA and IRENA renewable energy database- Tracking SDG7: The energy progress report 2019

Solar resources are plentiful in the region, and solar technology has proven to be both flexible and cost-competitive. Still, deployment has been accelerated, but lags considerably behind the technology's vast potential in the region.

Nonetheless, long-term policy obstacles to deploying renewables remain in place, and while new initiatives such as competitive auctions and public-private partnerships hold considerable potential for the future of the energy sector, such business models have yet to prove their popularity regionally.

While the Arab region's recent trend in solar- and wind-power energy deployment is currently driven by a few countries, more dedicated policies to establish these technologies could substantially increase the level of deployment over the coming decades. This includes allowing markets to establish a business case for alternative technologies. In a market that remains dominated by fossil fuels—more than any other region—this will require not only more systematic reform to open up utility sectors, but also work on enabling factors for small-scale applications such as off-grid use, through mechanisms such as transparent pricing and funding.

Decentralized generation offers significant market potential, including in conflict-affected countries. While in the past, solar and wind power used to be primarily driven by the deployment of individual utility-size projects, highly encouraging developments in the use of solar stand-alone systems in countries such as Jordan, Lebanon, Palestine, and Yemen from 2014-2017 suggest far greater policy focus should be turned to distributed generation in its own right.

More market uptake requires more proactive legislation. Harvesting the significant benefits of modern renewable energy requires far more dedicated policy design—and investment—than is currently the case. Effective legislation and a business-friendly environment have been an important driving force behind recent success in deploying low-cost, large-scale solar and wind projects in the Arab region. Further growth, including in the off-grid sector, will depend on the affordability of the technology, and hence access to finance, as well as effective quality control for solar home-based products.

Interlinkages with other SDGs

Progress in sustainable energy can no longer be seen as separate from other socioeconomic development goals in the Arab region. Modern energy access is essential for the achievement of virtually all development goals, including the fight against poverty (SDG 1); in support of greater gender equality (SDG 5); decent work opportunities and economic growth (SDG 8); and the development of modern industries, innovation, and infrastructure (SDG 9). The fragile natural resource balance in many parts of the Arab region, coupled with rapid and rising economic expectations by the region's young and increasingly educated populations, means that managing the natural assets of Arab countries takes centre stage in ensuring that future generations can lead stable and successful lives.

Energy is crucially interconnected with a whole range of other factors for developmental success. Accessible, affordable energy remains the 'engine' for development. From its close link to the security of water and food supplies, sustainable energy is key to driving progress in development goals such as:

- universalizing access to modern health services and education
- gender equality and women empowerment
- the creation of sustainable living spaces
- technology innovation and productivity
- critical progress in mitigation of, and adaptation to, climate change

Policy implications and recommendations

Improving efficient natural resource governance and policy will play a pivotal role in driving the Arab region's energy transition. Existing market mechanisms provide insufficient incentives for a change in production and consumption patterns in the Arab region. Missing minimum efficiency regulation, consumer information, and enforcement of existing regulation throughout the Arab region have further increased the energy intensity of regional economic growth.

Future efficiency improvements and renewables from current policy changes will provide significant reductions in energy demand and near-term financial savings, as well as multiple benefits across other SDG goals. Over the longer term, such changes can provide significant cost savings to national economies and the reduction of deadweight loss to economies through resource waste.

Initiating proactive policymaking approach towards sustainable energy in the Arab region.

This could involve the following steps:

Strengthening the link between sustainable energy and environmental management to social and economic development goals. This includes a more efficient use of the region's valuable fossil-fuel resources, and the exploitation of the economic potential of renewable energy alternatives to deliver SDG wellbeing and environmental outcomes in the face of emerging climate stresses on the region. Moreover, the Arab region displays a wide range of experience in the arena of regulating energy efficiency, with a significant gap between the potential benefits of energy efficiency regulation and the actual progress achieved. In the case of high-income Arab countries, progress in energy efficiency also lags vastly behind income levels, and hence expected progress and level of sophistication of regulatory tools. Reconsideration of legislative settings that discourage wasteful consumption and production patterns is important; adapting energy subsidies to favour sustainable outcomes is crucial.

Using innovative policy approaches.

The deployment of renewable energy in the Arab region in recent years illustrates this positive learning curve in Arab countries that started registering positive progress in the deployment of renewables. Public-private partnerships in this context are becoming an increasingly attractive solution for Arab countries aiming to attract private finance for sustainable-energy projects but must be based on sound public policy foundations for sustainable energy and a sustainable society.

Ensuring that new policies, plans, and targets are stringent, and compliance is enforced. This is of particular importance in buildings, appliances, and vehicle technologies, where regulatory efforts implementing worlds-best practice efficiency levels are economic and critical to sustainable outcomes.

Effective government communication and strategy-making. Ultimately, the most effective way of promoting a positive energy transition is the creation of complementary policies between different government bodies that integrate individual policy changes. Ensuring regulations support a wider sustainable strategy that targets the most efficient use and management for wellbeing. Such policies promote energy efficiency and renewable energy in the national interest, with new legislation and regulation from different ministries in coordination with each other. Sustainable policy principles identify the full cost of a business-as-usual and sustainable scenarios—consulting rather than just informing—and use quantifiable goals and targets that help the public understand progress and motivate sustainable change.

Enhance research, development, and innovation in the field of sustainable energy and environmental technologies and services. Significant efforts are needed to improve research and innovation to further identify and adapt technologies to the current challenges facing the region, particularly in light of the water-energy-food nexus.

Promoting the diversification of the Arab region's energy mix would also require capital and management skills and increasing capacity for technology innovation. This can happen through pilot projects, competition, investment in research and development and community-based projects.

Increase capacity for technology innovation through dedicated public policies and provide incubation, financing and incentives for entrepreneurs to scale up innovation.

Building institutional capacity, transparency and accountability requires effective and credible institutions with sufficient access to information and data, access to skilled human resources, and professionalization of the public sector; clear institutional mandates to design, implement, and monitor policies reinforced local governance and the role of cities; greater use of existing competence by strengthening of communication channels between government institutions, financial institutions, and public and private companies; and strengthened civil society institutions that are able to communicate to their constituencies far more credibly than government institutions.

Restructuring domestic energy and water-pricing. Pricing policies are of pivotal importance for the allocation of scarce resources, including energy. The Arab region's slowly changing pricing environment for energy could be one of the most important structural drivers of a gradual improvement in energy efficiency and renewables, if social contract energy subsidies are redirected toward sustainable energy outcomes, e.g., the supply of a household PV system, negates the need for ongoing subsidy by creating energy independence and minimises further upstream supply investments. The aspect of wider energy and utility markets regulation and liberalization remains one of the most important areas for further development in the Arab region over the coming decades offering benefits to many different parties.

Preparing financial markets. Access to finance is a key factor in determining market uptake of more sustainable energy technologies. A number of financing solutions have been demonstrated to drive clean-energy deployment in the Arab region, however, illustrating the diversity of options that can work in different circumstances. These include microcredits for small-scale applications, especially in the off-grid segment; international sources of funding, with an increase in initiatives linked to clean-energy development in developing countries; and locally oriented, national policies specific to each individual country. While social contract energy subsidies exist, governments will need to stimulate demand for investment in energy efficiency and renewables.

Sustainable public transport infrastructure. Public transport infrastructure is key to ensuring the dual developmental objectives of ensuring people's mobility while managing domestic energy demand for transport fuels. Providing sustainable public transport solutions is also critical to ensure particularly the mobility of women and children, who are often disproportionately affected by the absence of safe transport options, leading to lack of access to education, work and health care. Sustainable public transport solutions are also critical to the reconstruction process currently underway in several Arab countries, or in those having recently experienced war and political conflict resulting in the systematic destruction of infrastructure. Important areas of government action are the expansion of safe, effective and sufficient public transport options in cities and in rural areas as well as the safeguard of more energy efficient forms of public transport, such as fuel-efficient public vehicle fleets and, where feasible, the electrification of public transport.

Regional energy trade. Intraregional cooperation over energy could be an important factor underpinning more sustainable, resilient, and cost-effective energy systems in the Arab region, contributing towards economic growth, shared prosperity, and reduced poverty.

Arab countries should seize opportunities for regional cooperation and public-private partnerships (PPP) by working together to expand markets for investment and trade in cleaner, more efficient technologies, and goods and services in key sectors.

Enhancing regional trade in energy between Arab countries, such as through interconnected electricity grids, would entail substantial benefits for all parties, including greater security of supply, access to cleaner energy produced in bulk where it is cheapest, and considerable potential for job creation from the development of local manufacturing industries for components of technologies whose greater deployment could be driven by increasing regional cooperation in renewable energy.

Strengthening information quality and awareness-creation. The Arab region's fast socioeconomic development over the past three decades has triggered a rise in energy consumption, but this has not been accompanied by a parallel shift in public awareness of the need for rational energy use and related topics such as environmental protection. Information management and consumer motivation are critical components in upgrading an economy's energy performance because both behavioural changes and investments in upgraded energy efficient technology require time to recoup initial investment costs. Many innovative solutions, such as rooftop solar panels, require consumer action that is frequently hampered by lack of information.

Access to data and information plays a pivotal role in government and business decisions to invest in and favour sustainable technologies and guide consumer behaviour. Overdue progress in improving information access in the Arab region will rely on a number of factors, including data collection and dissemination.

Information-sharing between institutions; communicating with final consumers; re-prioritizing sustainable energy use and environmental consciousness in the public discourse; greater freedom of science, research, and the media; and depoliticizing data are all key.

In the longer term, achieving sustainable development goals, including in the area of energy, will require a degree of data dissemination and media reporting, empowering civil society to present their interests and help governments to assess society's needs and preferences.

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