



ACCELERATING SDG 7 ACHIEVEMENT

# POLICY BRIEF 22

ACHIEVING SDG 7  
IN THE ARAB REGION

7 AFFORDABLE AND  
CLEAN ENERGY





# **POLICY BRIEF #22**

## **ACHIEVING SDG 7 IN THE ARAB REGION**

### **Developed by**

United Nations Economic and Social Commission for West Asia (UNESCWA)

### **In collaboration with**

FIA Foundation and IRENA

## KEY MESSAGES

### Status of the Arab region and progress towards achieving SDG 7

- The development of sustainable energy systems is a crucial priority for all economies across the Arab region, especially to meet the expectations of their overwhelmingly young populations for economic opportunities and improving living standards.
- Overall, access to electricity is close to universal in cities across the Arab region but remains fixed at approximately 80 per cent in rural areas, with a total of around 36 million people lacking access to electricity in 2014. Planned and unplanned service disruptions in many countries in the region are a challenge for electricity users, irrespective of the urban–rural divide or income disparities. In some areas, war, regional instability and mass migration also present significant challenges in providing energy access to millions of people.
- Overall, the share of the Arab region’s population using clean cooking fuels and technologies has risen continuously since the 2000s, and stood at 88 per cent in 2014, with intra-regional differences ranging from close to 100 per cent access in the Gulf Cooperation Council (GCC) economies and the Mashreq, to less than 40 per cent in the Arab LDCs.
- While the Arab region has historically not been one of the most energy-intensive regions in the world, it has been the only one to have no reduction in its energy intensity over the past 25 years, while energy consumption has more than doubled since 1990. Residential and service sectors combined accounted for at least two-thirds of total annual electricity consumption in the region, of which around 73 per cent was consumed by the residential sector alone. A recent study by the World Bank estimated the potential savings from energy efficiency at 21 per cent of projected TPES in the Middle East and North African countries by 2025.
- Despite a considerable potential for use of modern renewable energy technologies, such as wind and solar power, renewable energy still plays a marginal role in most Arab countries, at 4 per cent of TFC in 2014, including biomass. Its overall low contribution to the energy mix reflects the region’s globally unparalleled reliance on non-renewable sources. However, over two-thirds of the region’s consumption of renewable energy is based on biomass, accounted for by a small number of countries whose primarily rural populations continue to use biomass.

### Priority actions

- Develop and implement suitable policies and institutional frameworks to boost energy efficiency measures and practices, and to address the various barriers preventing progress in energy efficiency and renewable energy deployment, including inadequate market and energy pricing incentives.
- Build institutional capacity, transparency and accountability, monitoring and data collection systems, dissemination and information-sharing between institutions and a stronger role for science and research.
- Strengthen local governance and communication between government, financial institutions and the public and private sectors, and reinforce the role of civil society and stakeholder engagement.
- Enforce proactive and integrated policies that manage natural resources more sustainably, especially the water-energy-food nexus.
- Develop a more rational use of the region’s fossil fuel resources by boosting their productivity and optimizing their inputs into the energy mix in conjunction with renewable energy.

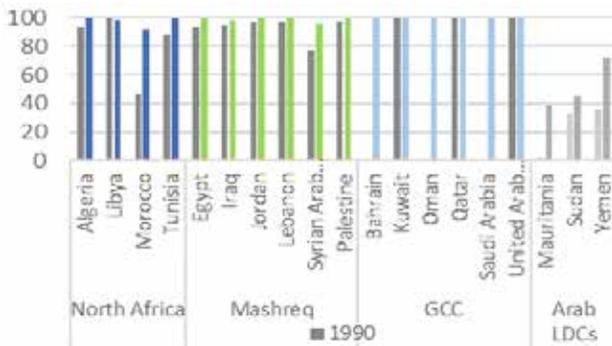
Enhance interregional Arab cooperation and trade and develop local manufacturing of renewable energy technologies components.

## Energy Access

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<sup>1</sup>—an impressive achievement, allowing the Arab region to stand out from other regions with a high share of developing economies.

Figure 22.1

### Share of population with electricity access in the Arab region, 1990 and 2014 (per cent)<sup>2</sup>



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 but remains fixed at approximately 80 per cent in rural areas, with a total of around 36 million Arabs who did not have any access to electricity in 2014, primarily in the Arab LDCs, and small numbers of people without electricity access in North Africa and the Mashreq.<sup>3</sup>

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

War and regional instability present the Arab region with the separate challenge of supplying modern energy access—among other essential services—to a rapidly increasing number of people, with highly detrimental effects on energy access and the environment. Mass migration 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 health care.

Through its multifaceted links to different fields of socioeconomic development, the lack of access to energy is a major stumbling

<sup>1</sup> 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).

<sup>2</sup> World Bank (2017): Global Tracking Framework 2017: Progress Towards Sustainable Energy

<sup>3</sup> UN ESCWA (2017) Arab Region Progress in Sustainable Energy—Global Tracking Framework Regional Report

block for national development efforts in the Arab LDCs.

Access to other energy services is also essential to support health, education, water and other infrastructure facilities, and to power economic activities, including agriculture in rural areas.

Access to these other energy services to meet other basic human needs should be the focus of the next steps of insuring universal energy access.

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 all of its citizens, or whether the region’s emerging economies will need to redefine the way energy is used and supplied within their domestic markets, based on a system that reflects the real costs, but at the same time protects the most vulnerable segments of society and includes mitigation measures for those with low to medium amounts of income.

## Energy Efficiency

While the Arab region has historically not been one of the most energy-intensive regions in the world, it has been the only one to achieve no decrease in its energy intensity over the past 25 years.<sup>4</sup>

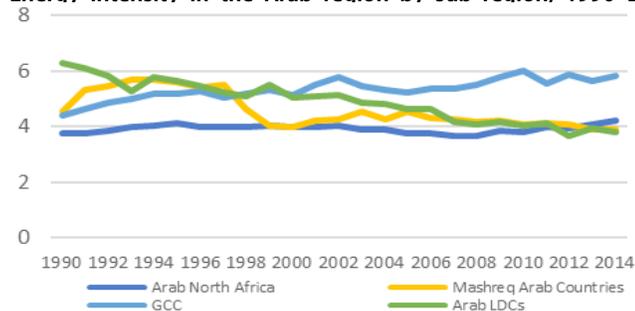
Reductions in energy intensity in the Arab region have lagged significantly behind those in other regions. Between 2000 and 2014, global energy intensity fell by around 1 per cent annually, 2 per cent per year since 2010, while the average intensity in Arab countries rose by around 1 per cent during the 2000s and has since been largely stagnant.<sup>5</sup>

Energy intensity rates differ considerably across the Arab region. Energy net exporters drive the regional trend in rising energy intensity, having based their historical industrial growth on fossil fuels and energy-intensive industries. Net energy importers have seen fairly low and falling energy-intensity rates.

<sup>4</sup> UN ESCWA (2017) Arab Region Progress in Sustainable Energy—Global Tracking Framework Regional Report

<sup>5</sup> World Bank (2017): Global Tracking Framework 2017: Progress Towards Sustainable Energy

Figure 22.2

**Energy intensity in the Arab region by sub region, 1990–2014**

(MJ/2011 PPP US\$)<sup>6</sup>

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. Transport remains by far the most energy-intensive sector in the Arab region, however, followed by industry and agriculture.

On a regional aggregate level, transport is more fuel-intensive than in any other region of the world reflecting on the one hand the increasing mobility of many Arab economies' populations, along with progress in a number of social development indicators, such as access to education and health care, and rising income levels. On the other hand, many Arab countries' socioeconomic development models have been built around the concept of cheap, personal transport, with a significant lag in the availability of public transport systems, which are inadequate in many Arab cities, suburbs and the countryside. In addition, a significant number of the road transport vehicles, whether for passengers or freight, are in aging fleets, which contributes to worsening energy performance in this sector. Policy priority should focus on promoting public transport with cleaner energy sources and stringent rules about pollutant emissions from all types of vehicles. A comprehensive review and redesign of the transportation system in each Arab country may be needed to properly address this sector.

Residential and service sectors account for a growing share of the Arab region's energy consumption. They are both large final user groups of electricity, which makes them important driving forces behind electricity demand, in addition to the demand from related sectors that consume primary energy and electricity, water and food. The two sectors combined accounted for at least two-thirds of total annual electricity consumption in the region, of which around 73 per cent was consumed by the residential sector

alone.<sup>7</sup> Furthermore, all forecasts indicate that electricity demand in these two sectors is set to rise considerably in the near future. Rising pressure for food production has also driven significant efforts to increase the energy efficiency of the agricultural sector. The dispersed nature of agriculture, with many small farms spread across geographic conditions and outside the reach of centralized urban policymaking and legislation, complicates the implementation of energy-efficiency measures in agriculture, while most financial markets in the Arab region lack financial products particularly 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 large increases in per capita water and electricity consumption over time throughout the Arab region.

Where economies and living standards have been growing, market incentives to conserve energy have been lagging significantly behind. Measures that help increase energy efficiency and therefore energy productivity, 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. The typical market structure of the energy industry in the Arab region further affects incentives for energy efficiency. In the absence of corrective measures, this will lead to a loss in revenues, slowing down of development efforts, increasing vulnerability to international energy price fluctuations and a weakened energy situation across the region.

A recent study from the World Bank estimates the potential for savings from energy efficiency at 21 per cent of projected total primary energy supply in Middle East and North African countries by 2025. Nearly three-quarters of these savings are from greater efficiency in end-use sectors, including industry, residential, commercial users, transport and public services.<sup>8</sup>

Therefore, there is a need to work towards a change of scale in achieving energy efficiency in the building sector (residential and non-residential) and appliances and commercial equipment. Earnestly, and rapidly, improving energy efficiency will increase energy productivity in the region and contribute to its economic and social development.

### Renewable Energy

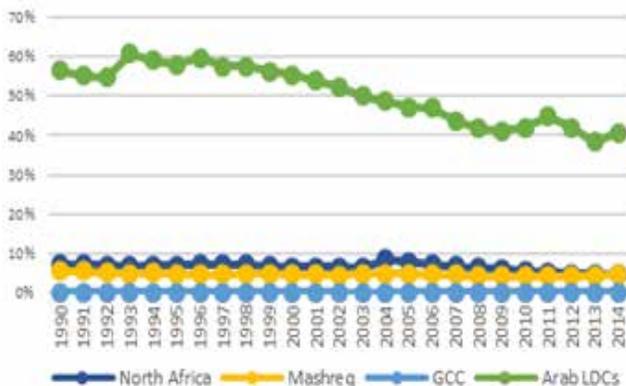
Renewable energy is still a largely untapped resource in the Arab region, despite recent efforts in several Arab countries to boost

<sup>6</sup> World Bank (2017): Global Tracking Framework 2017: Progress Towards Sustainable Energy

<sup>7</sup> Based on published figures in the Statistical Bulletin of the Arab Union of Electricity, 25th issue—2016

<sup>8</sup> World Bank (2016): Delivering Energy Efficiency in the Middle East and North Africa

renewable energy contributions in their energy mix. In 2014, renewable energy, including biomass, accounted for some 4 per cent of the region's final energy consumption, with similar trends continuing up to now despite the implementation of successful renewable energy projects in some Arab countries. This contrasts with the considerable potential for renewable energy, in particular modern technologies such as wind and solar power, offered by the region's favourable geography and climate conditions.



**Figure 22.3: Share of renewable energy in total final energy consumption in the Arab region by sub-region 1990–2014<sup>9</sup>**

Over two-thirds of the region's consumption of renewable energy is based on biomass, accounted for by a small number of countries whose primarily rural populations continue to use biomass.

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.

Some of the key challenges hindering more accelerated penetration of renewable energy include the absence of targeted policy initiatives, as well as the prevalence of state-owned energy utilities and 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. The share of modern renewable energy stabilized in 2012–14 and has since increased in several leading countries in the region. Renewable energy costs have been also falling dramatically, making investments, particularly in wind and solar power, more attractive, with some of the lowest auction results obtained in the region for solar PV, as well as competitive prices for wind technologies.

Although the Arab region is still at an early stage of investing in renewable energy technologies, there is potential for strong growth over the next decade, in particular for solar energy. Nonetheless,

there are still policy and regulatory obstacles hindering a more accelerated deployment of renewable energy. On the other hand, new initiatives such as competitive auctions and public–private partnerships have been successfully implemented in several countries in the region, and hold considerable potential for the future of the energy sector. Such business models could be considered in other parts of the region.

While the Arab region's recent trend in solar and wind energy deployment is currently driven by only a few countries, more dedicated policies to establish these technologies could substantially increase their 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 more systematic reform to open up utility sectors.

Also, many energy services can be directly provided by dedicated renewable energy (RE) systems, without the need for producing electricity as an intermediary step. Mature renewable energy solutions exist for thermal applications, whether for domestic, commercial, recreational, industrial or agricultural uses, and offer much more efficient solutions for providing these services than renewable energy electricity generation.

Grid-connected individual systems, mainly PV, can offer an immediate and cost-effective alternative for increasing power generation capacities in the Arab region. These types of systems can be deployed gradually, with a high participation from energy consumers in covering their costs, offering an additional relief to state budgets.

Micro-, mini- and off-grid renewable energy options can also offer a cost-effective alternative for improving access to energy services in remote areas.

Developing such renewable energy small-scale applications will require the implementation of enabling tools and measures, through specific and appropriate dissemination and financing mechanisms that need to be developed based on each country's conditions.

Enhancing regional integration, collaboration and trade among the Arab countries and take benefit of each country specific comparative advantage to develop local manufacturing of RE components which would boost deployment of RE in the energy mix.

### Interlinkages with other SDGs

“Energy is crucial for achieving almost all of the Sustainable Development Goals, from its role in the eradication of poverty through advancements in health, education, water supply and industrialization, to combating climate change.”<sup>10</sup>

<sup>9</sup> World Bank (2017): Global Tracking Framework 2017: Progress Towards Sustainable Energy

<sup>10</sup> Report of the Secretary General on Progress towards the Sustainable Development Goals, E/2016/75\*

Progress in sustainable energy can no longer be seen as separate from other socioeconomic development goals in the Arab region. The fragile natural resource balance in many parts of the 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 has to take 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. It plays a major role in ensuring the security of water and food supplies, and in enabling key development goals such as universalizing access to modern health services and education, gender equality and women's empowerment, the creation of sustainable living spaces, technology innovation, and critical progress in mitigation of, and adaptation to, climate change.

### Policy implications and recommendations

Efficient natural resource governance and policy should 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 region. Future efficiency savings resulting from near-term policy changes can provide significant reductions in the rate of growth in energy demand, and near-term financial savings as well. Over the longer term, such changes can provide significant savings to national economies and 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:

- **Strengthening the links between sustainable energy, environmental management, and social and economic development goals.** This includes a more rational use of the region's valuable fossil fuel resources, as well as exploitation of the economic potential of energy alternatives, in particular renewable energy, and reinforcement of legislative settings that promote sustainable consumption and production patterns.
- **Using innovative policy approaches.** The increased deployment of renewable energy in the Arab region in recent years illustrates the positive learning curve in Arab countries that have experienced 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 whilst retaining a public hand in energy projects.

- **Ensuring that new policies, plans and targets are stringent and mandatory.** This is of particular importance in contexts where various economic interests are involved, such as in regulatory efforts to improve energy efficiency.
- **Effective government communication and strategy-making.** Ultimately, the most effective way of promoting a positive energy transition is through the creation of complementary policies among different government bodies that integrate individual policy changes, such as in areas of regulation with a wider policy strategy that targets the most efficient use and management. Such policies are those which promote energy efficiency and renewable energy in the national interest, embracing new legislation and regulation from different ministries in coordination with each other, including by: identifying the full cost of a business-as-usual scenario; consulting rather than just informing; and using quantifiable goals and targets that help the public understand progress. A participatory approach involving all stakeholders implicated in each targeted area is a major condition for a successful implementation of the developed policies and regulations.
- **Building institutional capacity, transparency and accountability** requires: effective and credible institutions with sufficient access to information and data; 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 strengthening civil society institutions that are able to communicate with their constituencies far more credibly than government institutions. These efforts will require the development of suitable institutional frameworks and effective implementation instruments with the mobilization of adequate financial and human resources necessary to reinforce, or create, the appropriate structures and meet the associated challenges.

#### Restructuring domestic energy and water-pricing.

The Arab region's slowly changing pricing environment for energy may yet prove to be one of the most important structural drivers for a gradual improvement in energy efficiency. Wider energy and utility market regulation and liberalization remains one of the most important areas for further development in the Arab region over the coming decades. However, ongoing experiences show that it is highly recommended that the reforms be implemented gradually and accompanied by mitigating measures for the segments of society that will be negatively affected by these reforms, along with

a well-designed communication campaign explaining the need for such price restructuring.

### Preparing financial markets.

Access to finance is a key factor in determining market uptake of more sustainable energy technologies. Several financing solutions have been demonstrated to drive clean energy deployment in the Arab region, illustrating the diversity of options that can work in different circumstances. These include: microcredits for small-scale applications, especially in the off-grid segment; implementation of certain energy efficiency measures; international sources of funding, with an increase in initiatives linked to clean energy development in developing countries; and locally oriented, national policies and financial instruments specific to each individual country. Arab states may also need to review their existing instruments for implementing sustainable energy solutions and consider certain experiences in the region involving the development of public, or public-private partnership, structures with a certain *critical size*, allowing the mobilization of the required financial and human resources to manage the sustainable energy solutions implementation processes and meet associated challenges.

### Strengthening information quality and awareness-creation.

Policy trends, and their macroeconomic, social and environmental impacts, need to be monitored through pertinent macro policy indicators that are based on reliable energy and socioeconomic data. These indicators are essential in evaluating the effectiveness of the designed policies at attaining the broad national goals set for the sustainable energy transition. In addition, access to information plays a pivotal role in government and business decisions to invest in and favour one technology over another and in guiding final consumer behaviour. 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; and a stronger role for science, research and Media and depoliticizing data.

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 members to present their interests and help governments to assess society's preferences.

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