# ADVANCING SDG7 IN THE ARAB REGION

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E/ESCWA/2020/POLICY BRIEF.16


## Key Messages

### Progress towards achieving SDG 7

Achieving SDG 7 in the Arab region requires significant advancements in renewable energy and in decoupling regional growth from energy consumption, which can be achieved by improving energy efficiency and energy use productivity, while protecting the climate and ensuring a healthy planet for future generations. This is a key challenge for all Arab countries in the coming decades. Conflict and instability have created additional long-term challenges to progress under SDG 7 in a number of Arab countries. Moreover, the COVID-19 crisis has highlighted the multifaceted vulnerabilities of the Arab region associated with energy system sustainability and the ability to support socioeconomic growth and development in challenging and uncertain environments.

### Access

The Arab region has made significant progress in access to energy. The region's electrification rate rose from 88.4 percent in 2010 to

92.5 percent in 2018, making it the most electrified regional group of countries in the developing world. Access to electricity is close to universal in cities across the region, but stood at 84 per cent in rural areas in 2018. However, unplanned service disruptions continue to be a challenge for electricity users, irrespective of the urban-rural or income divide.

Access to clean cooking fuels and technologies (CFTs) remains high in the Arab region, with 12 countries having almost full access in 2018; however, the Arab Least Developed Countries (LDCs) accounted for most of the deficit in the region's clean fuel and electricity access.

## Efficiency

The Arab region is not on track to achieve global energy efficiency targets. While the region has the second lowest regional energy intensity rate globally, this decline is not enough to help the region maximize the productive use of its energy resources. The transport sector remains the top energy intensive sector in all of the world's regions. Agriculture and services have seen the greatest fall in energy intensity in the Arab region since 2010.

## Renewables

Renewable energy continues to be used sub-optimally in the Arab region. As at 2017, renewable energy accounted for almost 11 per cent of the Arab region's energy mix, the lowest share in any of the world's regions. A handful of countries account for virtually all of the region's renewable energy consumption, leaving substantial scope for further uptake given the region's plentiful renewable energy resources.

## Priority actions over the next four years

- Reprioritize structural economic diversification, boost energy productivity and redirect energy subsidies to mobilize sustainable energy technologies and scale up investment in socioeconomic development, especially the health sector;
- Establish sustainable demand- and supply-side management systems, and implement large-scale energy efficiency retrofit programmes across all economic sectors;
- Open up market opportunities, remove barriers to increase private sector involvement, and develop local manufacturing of clean energy technology components;
- Strengthen information quality, data sharing, monitoring, reporting and awareness-raising, and reinforce the role of civil society, gender equality and stakeholder engagement.

## Towards 2030

- Integrate sustainable energy action plans into development strategies with clear SDG targets, and ensure their long-term commitment to these strategies;
- Make necessary policy and regulatory reforms to integrate energy, climate and environmental goals into socioeconomic development targets, and develop the required implementation mechanisms;
- Ensure that health facility energy needs are appropriately articulated in the context of national energy plans and strategies,



especially those aimed at critical industries and end users of energy services;

- Enhance interregional cooperation, trade and grid interconnection, and share and learn from best practices;
- Build institutional capacity, increase transparency and accountability, and strengthen local governance and communication.

# Energy access

**SDG7.1.1 ELECTRIFICATION.** Overall, the Arab region has made significant progress in access to energy.

By 2018, electrification access was universal in almost all but three Arab countries, namely the Sudan, Mauritania and Yemen, with near-complete electrification rates in Gulf Cooperation Council (GCC) countries and parts of the Maghreb and Mashreq from the 1990s.

The region's access deficit has been rapidly declining in recent years: the population without access to electricity fell from around 40 million in 2010 to 30 million in 2018.

**Key deficit countries.** Despite near universal access to energy in most Arab countries, large portions of the rural population in Arab LDCs lack basic electricity services, with far-reaching effects on sustainable development across different indicators. Over 90 per cent of the Arab region's entire access deficit in 2018 was concentrated in the three Arab LDCs: the Sudan (16.8 million), Yemen (6.1 million) and Mauritania (2.4 million). The rest of the region's access deficit is found in Libya and the Syrian Arab Republic, both war-torn countries, with Libya unable to recover its 100 per cent access rate since 2000.

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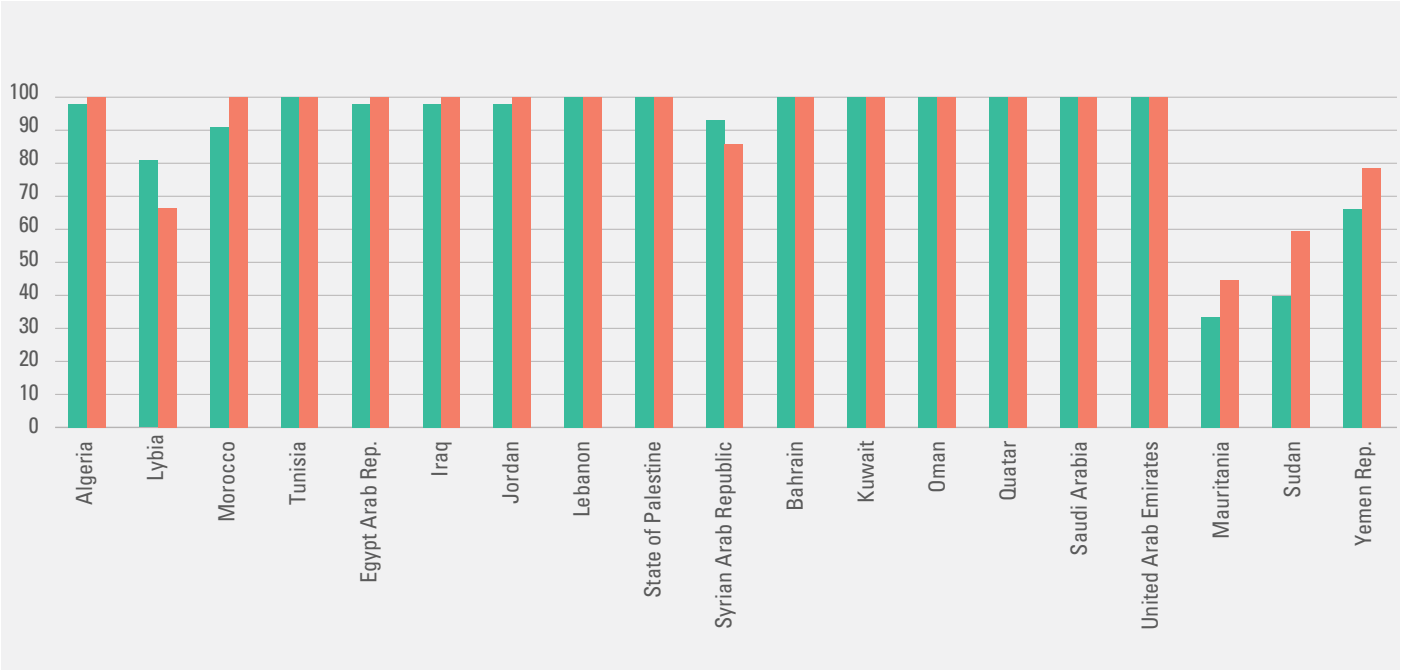
**Figure 1.** Share of population with electricity access in the Arab region, 2000 and 2018 (Percentage)




**Source:** World Bank, Tracking SDG7 – The Energy Progress Report, 2019.

**Urban rural distribution. The Arab region's electricity access deficit is predominantly a rural problem, largely affecting the Arab LDCs.** Some 88 per cent of the urban population of Arab LDCs, but only around 53 per cent of the rural population, had access to electricity in 2018.

**Conflict, occupation and instability have led to a regression in access.** In Iraq, Libya, the Syrian Arab Republic, Yemen and the occupied Palestinian territory (specifically the Gaza Strip), damaged and destroyed national infrastructure, including power-generation plants and transmission infrastructure, have contributed to the collapse of essential public facilities such as hospitals, schools, secure water access and sewerage. Libya and the Syrian Arab Republic saw declining rates of electricity access over the tracking period 2010-2017, reflecting large-scale infrastructure destruction that will likely hamper the provision of universal access to electricity for many years to come.

**Electricity access does not necessarily entail reliable electricity services.** Electricity service disruptions pose significant challenges for households, businesses, medical facilities and the public sector. Planned and unplanned service disruptions owing to insufficient generation capacity and transmission infrastructure have been of particular concern in conflict-affected Iraq, Libya, the State of Palestine, the Syrian Arab Republic and Yemen, but also in neighbouring Jordan and, particularly, Lebanon.

**The COVID-19 pandemic has put pressure on water availability and therefore on electricity.** The Jordanian water sector accounts for around 15 per cent of the total annual electricity generated. In Bahrain, Qatar and the United Arab Emirates, almost 30 per cent of fuel consumed during power and water generation is due to desalination.

**Affordability is linked to service quality and the access rate.** Electricity is therefore not equally affordable everywhere. Jordanians, Moroccans, Palestinians and Tunisians pay more than 20 times the average bill in the Arab region's lowest-cost country. This affects affordability of electricity services, particularly among low- and lower-middle income groups. Many off-grid solutions, such as mini-grids that offer access to remote settlements, remain disproportionally expensive, affecting access rates.

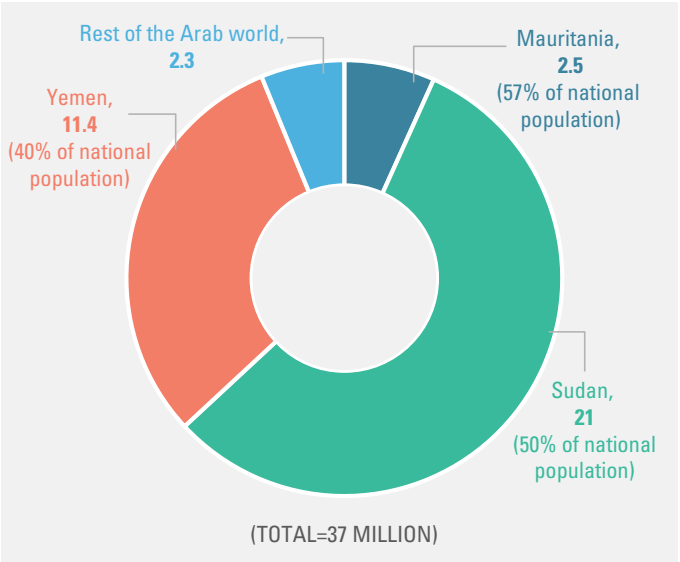
## SDG 7.1.2 CLEAN COOKING

**Overall, access to CFTs is encouragingly high in the Arab region, but lags behind progress in electrification.** Region-wide access to CFTs has grown at a slow average annual rate of 0.22 per cent since 2010, driven primarily by improved access rates in Mauritania and the Sudan, which account for a large share of the region's access deficit.

**Box 1.** Critical Role of Electricity COVID-19

The COVID-19 crisis highlights the central role and importance of electricity, and what policymakers must do to ensure that current and future systems remain reliable. Without electricity, many basic life-saving interventions in health facilities, especially those that combat the spread of COVID-19, cannot be performed safely or at all. The Arab LDCs and countries in conflict require special support to resolve the energy gap in health facilities: decision makers from the energy and health sectors must work together to ensure that the energy needs of health facilities are adequately prioritized.

**Figure 2. Arab region's clean cooking access-deficit in population numbers (millions), 2018**




**Source:** World Health Organization, Tracking SDG7 – The Energy Progress Report, 2019.

**Urban-rural divide.** Like electricity, the access deficit for CFTs is far more pronounced in rural areas than in cities. Access to finance in deficit countries remains a critical enabler of universal access to CFTs and electricity.

**Political conflict has slowed progress in access to CFTs.** The breakdown in electricity services in a number of conflict-affected countries has reduced CFT access, leading to severe health consequences and environmental destruction.

**Lockdown policies to curb the spread of COVID-19 disproportionately affect women, since they are responsible for cooking.** There is therefore an urgent need to improve the availability and affordability of suitable household energy solutions that are clean for health at the point of use.

**Box 2.** Energy Access Deficit in Yemen Exacerbated by COVID-19

Women in Yemen suffer many negative consequences from declining access rates to electricity and CFTs, including food insecurity owing to their inability to refrigerate food, and a dramatic deterioration in medical services because of health clinics' inability to refrigerate vaccines and provide other life-saving services. The COVID-19 **pandemic has exacerbated this precarious situation, thus increasing the risk of gender-based violence.**

# Energy efficiency

The Arab region's average energy intensity rate was around 4.7 MJ/$2011 PPP in 2017, reflecting a flat trend of autonomous and largely structural energy efficiency improvements since 1990. However, the Arab region's energy intensity progress rate has improved over the period 2014-2017. Changes over the period 2014–2017 at the country level show progress, with some countries' results reflecting achievements from previous energy efficiency plans, scaled-up policies, and reduced energy intensity.

The Maghreb excluding Libya, the Mashreq, and the Arab LDCs have seen a long-term trend of falling energy intensity since the 1990s.

**Conflict and instability have significantly affected some countries' energy intensity rates,** in particular Iraq, Libya, the State of Palestine and the Syrian Arab Republic.

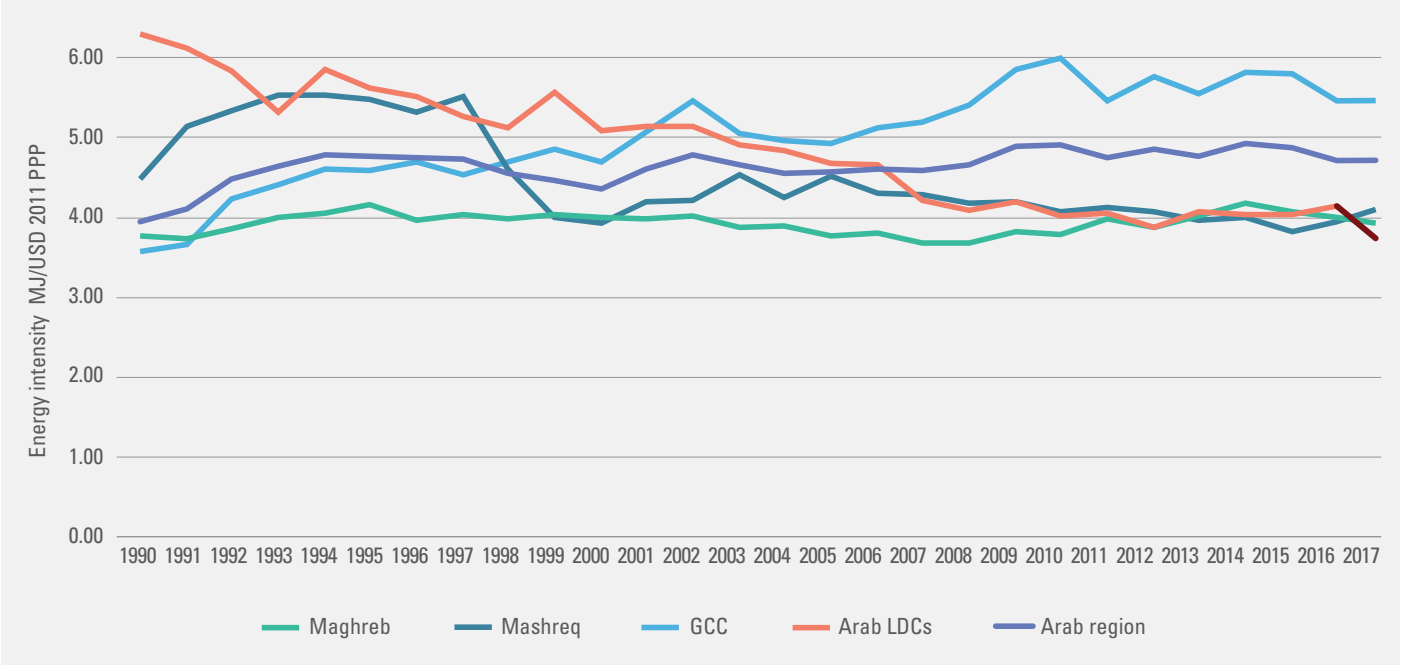
GCC countries exhibit different dynamics than other Arab countries. Overall, energy intensity in GCC countries has been rising since the 1990s. Energy intensity in Bahrain and Qatar is far above other GCC countries, but with a downward trend.

**Transport energy intensity in the Arab region is the highest worldwide, but there is significant scope for improvement.** Public transport has been developed only in parts of the region, but a range of sustainable public transport projects are being implemented and will improve mobility and travel sustainability many Arab countries. Nonetheless, rationalizing energy use in the transport sector is a key challenge.

For years, the environmental community has called on employers in the public and private sectors to accelerate telecommuting plans, reduce international travel, and decouple energy consumption from economic growth, but little has been done on the scale required, especially in the Arab region. **Among the lessons learned from the current pandemic is the urgent need to accelerate progress towards sustainable energy systems.**

**Special policy attention needs to be given to energy intensive industries** (representing over 70 per cent of industrial energy consumption in many Arab countries), reflecting the structure of large-scale energy extraction and processing activities.

**Figure 3.** Arab subregional energy intensity trends, 1990–2017 (MJ/$2011 PPP)




**Source:** International Energy Agency, Tracking SDG7 – The Energy Progress Report, 2019.

Oil and gas exports dominate industrial activity in the region's large oil exporters – Algeria, Bahrain, Iraq, Kuwait, Libya, Oman, Qatar, Saudi Arabia and United Arab Emirates – making up more than 50 per cent of industrial value added. The industrial structure shifted as fuel export value dropped, both as oil prices fell in 2014 and as processed metal and manufacturing grew since 2010.

**Agriculture constitutes a key part of several Arab economies,** especially Egypt, Jordan, Lebanon, Mauritania, Morocco, the Sudan and Tunisia. The sector's performance is already being challenged by changing weather patterns, affecting productivity and energy intensity with increasing demand for irrigation and mechanical ventilation of livestock facilities. Climate change will likely accelerate these challenges over the coming decade.

**Reducing energy intensity is a priority for agricultural producers in an already vulnerable region, as it directly affects food security and water scarcity.** As the COVID-19 pandemic continues, pressure will rise on desalinated water and food production, driven by restrictions in most countries on food exports to ensure self-sufficiency during the crisis.

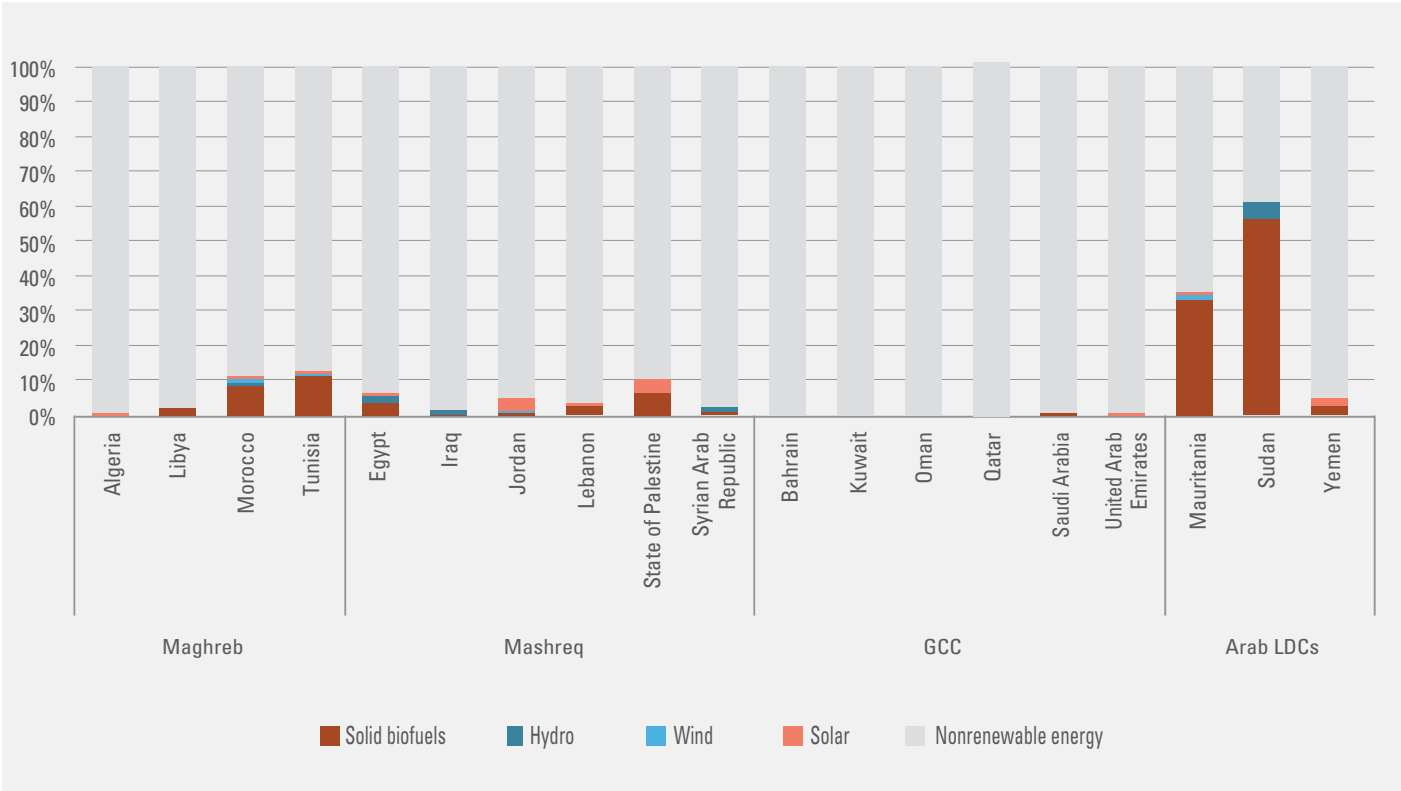
**Building energy intensity is increasing in the Arab region.** Rising living standards and incomes mean that home appliances have become more affordable for larger segments of the population. Moreover, temperatures are rising across the region, and buildings are being constructed using designs and materials that cannot withstand the heat. These factors will substantially drive up building demand for energy across the Arab region over the coming decades.

## SDG 7.2 RENEWABLE ENERGY

Since 2010, the share of renewable energy has plateaued at around 10 per cent of the Arab region's total final energy consumption, reaching 10.8 per cent in 2017, following a long-term trend of decline. Few Arab countries rely on renewable energy as a substantial share of their final energy consumption. Renewable energy contributes a substantial share – above 10 per cent – to the national energy mix in only Mauritania, Morocco, the State of Palestine, the Sudan and Tunisia, but only from solid biofuel. This form of traditional renewable energy, in many cases, provides inferior access to energy compared with modern liquid and renewable energy sources and electricity, but retains an overwhelming share in all of these countries' renewable energy consumption. Nine Arab countries, including all GCC countries, consumed no or negligible amounts of renewables, basing their energy mix entirely on fossil fuels.

Solid biofuels account for the largest share of renewable energy consumed in the Arab region – around 81 per

**Figure 4.** Share of renewable energy in Arab countries' energy mix, 2017




**Source:** International Energy Agency, Tracking SDG7 – The Energy Progress Report, 2019.

cent of total renewable energy consumption. Much of the Arab region's solid biofuel use is traditional, largely used for cooking, heating and some lighting, with low levels of efficiency and high levels of associated indoor air pollution.

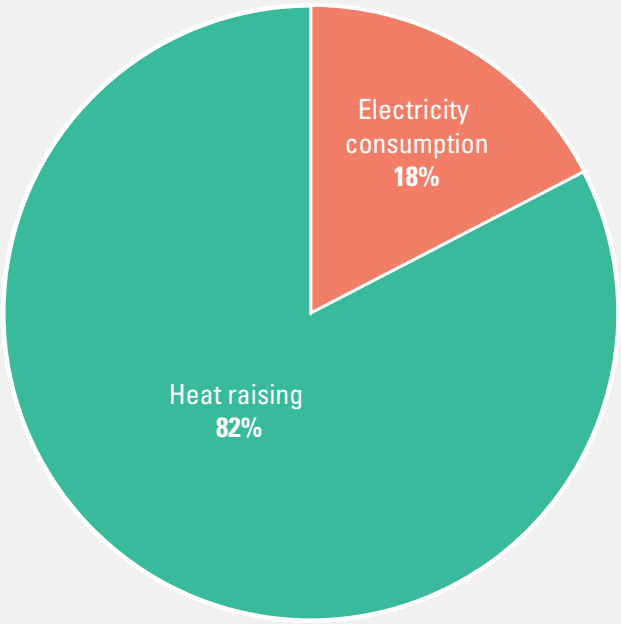
At around 13 per cent of total renewable energy consumption, hydropower is the main renewable energy source in Arab countries with hydro-resources (Egypt, Iraq, the Sudan and the Syrian Arab Republic) after solid biofuel. Only in Morocco is wind energy more widespread than hydropower.

The use of solar and wind energy has increased in recent years, with the highest shares in total final energy consumption in Jordan, the State of Palestine and Yemen. Iraq has also seen an uptake of solar energy, but limited capacity for data collection over the tracking period 2010- 2017.

**Significant cost reductions for solar power utility-size projects were driven by Arab countries.** Effective policy design to remove market barriers and encourage private investment has been key to driving up the deployment of solar and wind power in the Arab region. This includes an attractive investment climate for utility-scale solutions and attractive financing rates in GCC countries. Furthermore, effective policy design to remove market barriers and encourage private investment has increased the deployment of solar and wind power in the Arab region.

**The dominant use of renewable energy is in heat generation.** Owing to the high share of solid biofuel for use in cooking and heating in the Arab region, the residential sector remains the most dominant end-user of renewable energy. In 2016, it accounted for over 80 per cent of total renewable energy consumption, owing to the large proportion of solid biofuel used for cooking. Only 18 per cent of the Arab region's renewable energy consumption is used in electricity generation, with virtually no use of renewable energy in the transport sector.

**Figure 5.** Final consumption of renewable energy by end-use sector, 2016




ESCWA calculations based on International Energy Agency, 2018; United Nations Statistics Division

**Box 3.** COVID-19 and the Energy Supply Chains

COVID-19 has affected all energy supply chains at a moment when the Arab region's energy transition was beginning to build up steam. Low oil and gas prices may place pressure on the economics of renewable energy sources, and limit the capital available for industries and related projects. Without policy support, some renewables that have seen rapid deployment may have to wait for markets to recover, ceding ground to fossil fuels.

**The Arab region is highly vulnerable to future effects of climate change, and is not on track to meet its SDG 7 targets or its targets under SDG 13.** These challenges threaten the livelihoods of millions by reducing the availability of arable land and drinking water, because of higher temperatures and more frequent natural disasters.

Climate action needs to become an integral part of national policymaking. Regional economies have a great deal to gain from aligning their policies with the SDG framework. Moreover, national energy plans and nationally determined contributions should be clearly linked to SDGs 7 and 13, and finance for conventional energy systems must be redirected to mobilize sustainable energy technologies.

# Policy implications and recommendations

**Formulating appropriate policies and creating a larger business-friendly environment in which markets, rather than individual government-directed projects,** drive structural change is a fundamental challenge for all Arab countries. This requires the right mix of positive incentives and effective enforceable regulations to drive widespread implementation and outcomes in renewable energy and energy efficiency.

**Integration of sustainable energy programmes in wider socioeconomic policies,** such as addressing income poverty, providing access to health and credit facilities, and developing implementation capacity, are critical to the success of many of these policies.

**Investments will need to be made.** Governments are challenged to better understand the opportunities for their countries from the current and projected declining price trends for renewable energy and energy efficiency technologies. These provide Governments with opportunities to displace consumer energy subsidies with lower-cost and higher-quality services.

**Providing funding will rapidly expand implementation.** Existing investment in energy efficiency and renewable energy constitutes a small part of existing capital flows. Sufficient experience now exists in energy efficiency and renewable energy technologies in the Arab region to rapidly expand investment in their implementation. Efforts to establishing super energy service companies in the region demonstrate how to scale up sustainable energy investment.

**Developing and implementing clean energy policies will increase health-sector reliance on clean energy, promote energy efficiency,** and ensure that appropriate resources and responsibilities are allocated to the management and maintenance of health facilities' energy resources.

**Health sector subsidies are a sensitive policy issue.** The current COVID-19 crisis has highlighted the limitations and challenges in increasing investments in the health sector. Such investments could be expanded by reallocating fossil fuels subsidies to the health sector to support the most vulnerable and society at large.

**Enhancing regional and international cooperation** to ensure the resilience of energy systems can be achieved through free trade, energy interconnectivity, research and technology transfer, and mobilizing of funds in support of developing and vulnerable communities to jointly face any global, regional and national disasters,

such as COVID-19 and the long-term global threat of climate change.

**Policy commitment and implementation success rest on credible institutions and effective mechanisms for monitoring and enforcement.** Institutions must be given the mandate to carry out their work effectively. They must be staffed by appropriately trained and paid professionals, and should actively collect citizens' feedback on how policies affect people and businesses. Strong institutions benefit from increased government focus on transparency and accountability, which constitute good governance - an area that deserves greater attention in the Arab region.

**Empowering society and local markets is an inexpensive but effective means of changing consumption behaviour.** Improved consumer information through more transparent data and information management, and changes to national utility sectors that obstruct private user incentives, are a comparably inexpensive but potentially effective way of altering energy consumption patterns and diversifying the national energy mix. The private sector and markets are also paramount to driving energy efficiency improvements and technology deployment. Examples of substantial business and private sector implementation and outcomes in sustainable energy often contrast with poor outcomes and evaluation by governments. This highlights the important role of Governments as regulators and credit facilitators, rather than as central planners, providers and deployers of technology.

**Knowledge creation and effective development needs informed citizens and effective public debate.** Informed, lively and critical national debate and access to information by all citizens is critical to achieving progress across development indicators, including in energy. Lack of effective public debate, informed by good quality information and credible media, also constrains Governments' ability to mobilize and engage citizens, businesses and industries in better practice, and contributes to the persistence of ineffective policy frameworks.

Societies need to be able to evaluate whether current policies are working and whether they address the root problem - for instance, income poverty and access to health in the case of access to modern energy, or affordability in the case of more energy-efficient appliances.

**Consultation, engagement and collaboration are vital.** Achieving the SDGs is a challenge for all individuals and societies, not just a task for Governments to fulfil alone. Implementation can be best advanced through stakeholder engagement by involving business and household decision makers, civil society and religious and environmental groups in a 'grassroots' engagement towards a more sustainable and just future.

Children and young people will bear the long-term benefits of achieving the SDGs, and have a special role in shaping how policies advance SDG ambitions. Governments should consult them on SDG policies, promote self-help community programmes, and develop collaborative programmes to advance renewable energy and energy efficiency in communities.

**Reviewing outcomes to develop effective policies and implementation is important.** Aggregate trends in energy offer little insight into the effectiveness of policies or the diverse outcomes that are produced by energy efficiency and renewable energy. Policy and programme developers should actively track policy and programme impacts, so as to inform society about changes that need to be made, formulate better policies, and accelerate implementation.

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