AFSD 2023

Arab Forum for Sustainable Development Solutions and Action

Forum arabe pour le développement durable Solutions et action

المنتدى العربي للتنمية المستدامة

حلولٌ وعمل

14-16 March 2023 – 2023 آذار/مارس 16-14

50 YEARS PARTNERING FOR PROSPERITY

E/ESCWA/RFSD/2023/INF.3

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7 AFFORDABLE AND CLEAN ENERGY

SDG 7

Affordable and clean energy

Ensure access to affordable, reliable, sustainable and modern energy for all

Although the Arab region has made significant progress towards universalizing access to electricity, the deployment of renewable energies has been slow and marks an untapped potential for sustainability in the region, which derives just 4.6 per cent of its final energy consumption from renewable sources.[1] Rapid increases in domestic energy consumption and rising energy intensity associated with economic growth have been significant challenges for years, while recent shocks emanating from the war in Ukraine have added new strains to the region's energy systems, particularly in least developed countries (LDCs) and conflict- and crisis-affected countries. Accelerating progress on SDG 7 requires decisive policy shifts to decouple economic growth and energy consumption, enhance the efficiency and productivity of electricity generation, and increase investment in and use of clean and renewable energy.

The ongoing COVID-19 recovery offers Arab countries an opportunity to build greener, more resilient economies buttressed by robust sustainable energy systems. Governments can use the recovery to increase investment in sustainable energy solutions that improve access for all, create quality jobs and strengthen their economies. A whole-of-society approach based on partnerships with the private sector, academia, civil society, financial institutions, and regional and international partners can amplify such investments and facilitate a just and inclusive energy transition that leaves no one behind.

Impact of COVID-19 and other crises on SDG 7 in the Arab region

The pandemic was an unprecedented shock for the global economy, as measures to contain the spread of COVID-19 disrupted global supply chains, shifted consumption habits and strained national budgets. As countries moved to recover from the crisis, the war in Ukraine destabilized global energy and commodity markets. Following an initial surge that saw crude oil and natural gas sell at their highest prices in years, the energy market has remained volatile, further challenging Arab countries' efforts to achieve affordable and clean energy for all. **The long-term impacts of these shocks on the region's achievement of SDG 7 are uncertain and are expected to unfold differently across Arab countries depending on their energy mix and policies.**

COVID-19 and the war in Ukraine threaten to slow or reverse the use of clean cooking fuels, particularly in LDCs. Overall, an estimated 86.8 per cent of the Arab region's population were using clean cooking fuels and technologies in 2020.[2] However, this percentage was just 46.9 per cent in the Arab LDCs where the inaccessibility or unaffordability of such fuels has led many to continue using traditional biomass fuels that contribute to household air pollution and are a major risk factor for a range of health problems.

COVID-19 caused an estimated 9 million people in the Arab region to fall into extreme poverty,[3] and many more saw their livelihoods negatively impacted by the crisis. This lost income has threatened household

1 ESCWA, Arab SDG Monitor.
2 Ibid.
3 ESCWA, Impact of COVID-19 on Money Metric Poverty in Arab Countries, 2020.

capacities to afford modern cooking technologies.[4] More recently, energy price instability due to the war in Ukraine has further threatened the affordability of clean cooking fuels and may prompt a return to cheaper, less safe fuels.[5]

Recent shocks have cast uncertainty over the directions of energy investments. In the initial phase of the pandemic, global energy prices plummeted. In addition to straining the budgets of energy-exporting countries, this decline encouraged the continued use of fossil fuels and weakened financial incentives to invest in renewable energy transitions – particularly at a time when emergency government spending prioritized social protection and economic stabilization measures.

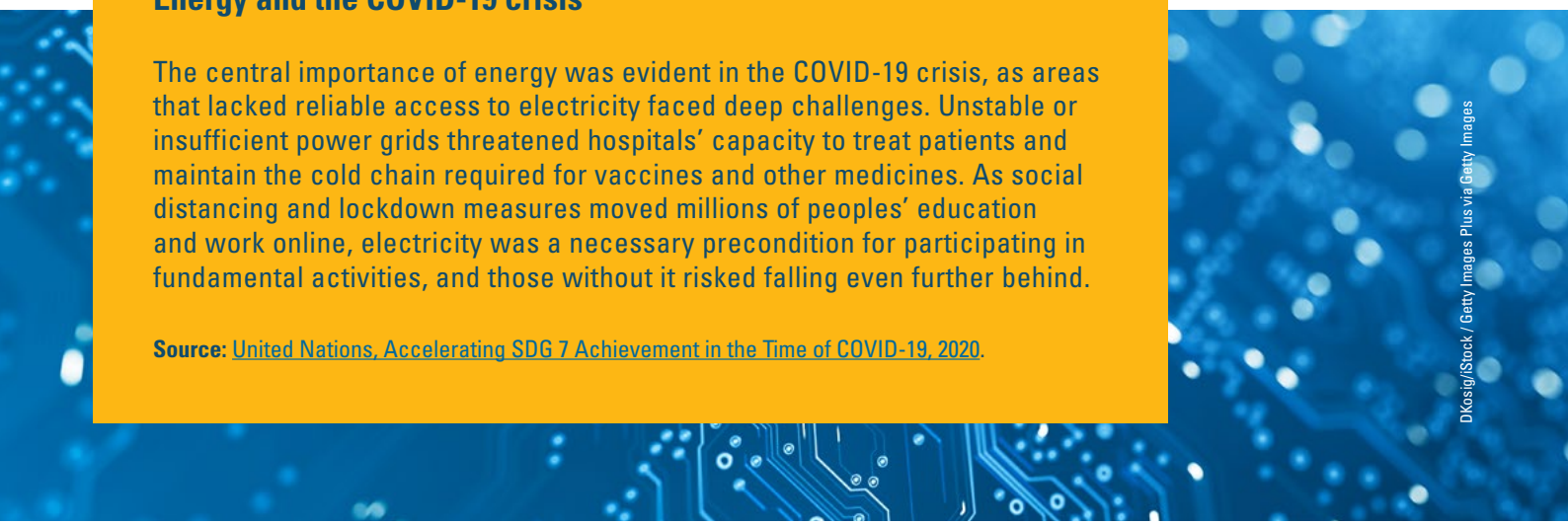
Energy prices recovered, however, and skyrocketed due to the war in Ukraine, which has roiled global markets. Initially, prices for crude oil and natural gas exploded to their highest levels in a decade and, since then, have experienced high degrees of volatility. Energy price increases have resulted in higher electricity generation costs, which in combination with high debt loads and shrinking fiscal space have strained some Arab countries' abilities to provision their electrical grids, leading to rationing and unplanned service disruptions.

At the global level, clean energy investment has continued to accelerate since 2020, but spending has remained flat in most emerging and developing economies, particularly as public sources face increasing challenges related to rising debt loads and diminishing fiscal space. In the region's energy-exporting countries, high profits in the oil and gas sectors risk shifting investment back into extractive industries, with some national oil companies in the region announcing substantial increases in their investment spending.[6] Some countries have made the choice, however, to use profits to boost green energy investments. Oman, for example, announced its intention to take advantage of the windfall from high energy prices to raise investments in its zero-carbon hydrogen sector, which is pivotal to its decarbonization strategy.[7]

Energy and the COVID-19 crisis

The central importance of energy was evident in the COVID-19 crisis, as areas that lacked reliable access to electricity faced deep challenges. Unstable or insufficient power grids threatened hospitals' capacity to treat patients and maintain the cold chain required for vaccines and other medicines. As social distancing and lockdown measures moved millions of peoples' education and work online, electricity was a necessary precondition for participating in fundamental activities, and those without it risked falling even further behind.

Source: United Nations, Accelerating SDG 7 Achievement in the Time of COVID-19, 2020.



DKosig/iStock / Getty Images Plus via Getty Images

4 Pachauri et al., Access to clean cooking services in energy and emission scenarios after COVID-19, Nature Energy, 2021.
5 International Energy Agency, World Energy Outlook 2022, 2022.
6 International Energy Agency, World Energy Investment 2022: Overview and key findings, 2022.
7 International Energy Agency, World Energy Outlook 2022, 2022.

Measures taken by Arab Governments

1. In their responses to the COVID-19 pandemic and the price volatility caused by the war in Ukraine, Arab Governments have sought to insulate households and businesses from the economic repercussions of the crises. **In response to the pandemic, most Arab countries subsidized energy consumption, either directly or indirectly, through discounts, waivers or extended repayment plans.**[8] While in some cases, these measures were targeted specifically at poor households or included fuel subsidies for workers in sectors such as transportation, in other cases, measures were universal and even extended to the commercial and industrial sectors.

In response to more recent energy price volatility brought on by the war in Ukraine, countries have once again resorted to subsidies to limit the impact of rising prices on their populations, often through automated mechanisms that increase food and energy subsidies in response to price shocks. Several countries have allowed upward adjustments of domestic gasoline prices or announced temporary targeted measures, such as cash transfers or utility vouchers to protect low-income households and certain vulnerable groups.[9] According to estimates by the International Monetary Fund , energy subsidies in oil-importing countries may have increased by as much as $22 billion in 2022,[10] averaging 0.8 per cent of their gross domestic product (GDP) and, in some cases, reaching as high as 3 per cent, a large amount that risks crowding out spending on other priorities. Overall, the crisis has slowed efforts to implement energy price reforms and will further delay progress on reducing energy intensity in the region.

2. **Countries have continued to announce commitments to reduce greenhouse gas emissions, with some declaring net-zero emissions as their long-term objective.** As of December 2022, 20 Arab countries have submitted nationally determined contributions (NDCs) to the United Nations Framework Convention on Climate Change,[11] including 17 countries that have either submitted or updated their commitments since the advent of the COVID-19 pandemic. In a majority of cases, Arab countries' NDCs specify reductions of greenhouse gas emissions and quantify targets in the energy sector, such as increases in the share of renewables in the energy mix, reductions in consumption levels, and improvements to energy efficiency. Four countries in the region (Bahrain, Oman, Saudi Arabia, and the United Arab Emirates) have announced targets to reach net-zero emissions by 2050 or 2060.[12]

3. **Although additional investment is still needed to realize their full potential, renewable energy projects and technologies have progressed in the region.** Notably, the region has achieved significant cost reductions for utility-scale solar and wind projects, driven by effective policies to remove market barriers and encourage private sector investments. As a result of such policies, countries in the region, particularly those in the Gulf Cooperation Council (GCC), have some of the lowest solar generation costs in the world, with projects in Qatar,[13] Saudi Arabia,[14] and the United Arab Emirates[15] setting global low-price records in 2020 and 2021. In crisis-stricken countries, such as Iraq,[16] Lebanon,[17] the State of Palestine,[18] and the

8 ESCWA, COVID-19 Stimulus Tracker (accessed on 1 December 2022).
9 IMF, Regional Economic Outlook, Middle East and Central Asia: Mounting Challenges, Decisive Times, 2022.
10 Azour, Menkulasi, and Garcia-Verdu, Middle East and North Africa's Commodity Importers Hit by Higher Prices, International Monetary Fund Blog, 2022.
11 United Nations Climate Change, Nationally Determined Contributions Registry (accessed on 12 December 2022).
12 Energy and Climate Intelligence Unit: 2023 Net-Zero Scorecard (accessed on 3 January 2023).
13 Keating, Qatar utility hails ultra-low tariff in tender for 800MW bifacial PV park, PV-Tech, 2020.
14 Bellini, Saudi Arabia's second PV tender draws world record low bid of $0.0104/kWh, PV Magazine, 2021.
15 Bellini, Abu Dhabi's 1.5 GW tender draws world record low solar bid of $0.0135/kWh, PV Magazine, 2020.
16 Al-Monitor, Iraqi company to build solar-powered street lights, 2022.
17 Hamdan, Lebanese streetlights continue to be people powered, 2022.
18 Duboust, Tired of power cuts, blockaded Gaza turns to solar panels, Euronews, 2022.

Syrian Arab Republic,[19] solar solutions have been adopted as an alternative to unreliable and more expensive energy sources, often at small scales. Meanwhile, major projects, including the Abu Dhabi Power Corporation's Al-Dhafra solar plant and Mauritania's AMAN project promise to transform the energy mix of the Arab region, reduce carbon emissions, and expand access to clean and affordable electricity.

Mauritania: the AMAN project

Mauritania has set the target of achieving universal access to electricity and generating 50 per cent of its energy mix from renewables by 2030. Like most countries in the region, Mauritania's geography endows it with enormous potential for solar and wind power generation, which form the basis of its renewable energy strategy. In 2021, Mauritania announced plans for the $40 billion AMAN project. The project aims to generate nearly 110 terawatt-hours (TWh) of electricity through solar and wind energy, along with over 50 million cubic meters of freshwater for local communities and agriculture, and 1.7 million tons of green hydrogen and 10 million tons of green ammonia for use in local and global industry.

In 2022, the project's momentum continued, and the government of Mauritania and CWP Global signed a framework agreement on the next steps in its development.

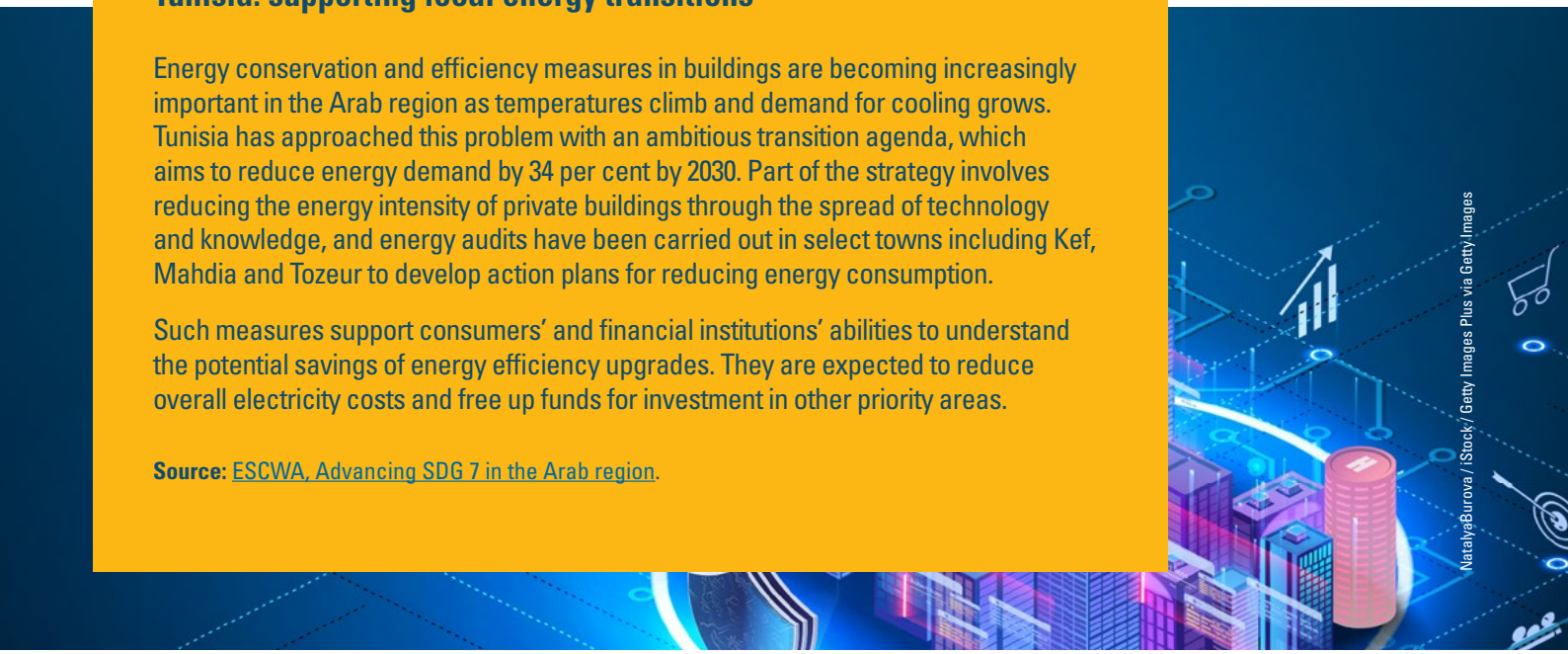
Source: International Renewable Energy Agency, "Global Hydrogen Trade to Meet the 1.5°C Climate Goal. Part III: Green Hydrogen Cost and Potential", 2022 ; Atchison, "Mauritanian mega-project takes next steps", Ammonia Energy Association Blog, 2022.

Tunisia: supporting local energy transitions

Energy conservation and efficiency measures in buildings are becoming increasingly important in the Arab region as temperatures climb and demand for cooling grows. Tunisia has approached this problem with an ambitious transition agenda, which aims to reduce energy demand by 34 per cent by 2030. Part of the strategy involves reducing the energy intensity of private buildings through the spread of technology and knowledge, and energy audits have been carried out in select towns including Kef, Mahdia and Tozeur to develop action plans for reducing energy consumption.

Such measures support consumers' and financial institutions' abilities to understand the potential savings of energy efficiency upgrades. They are expected to reduce overall electricity costs and free up funds for investment in other priority areas.

Source: ESCWA, Advancing SDG 7 in the Arab region.



19 Al-Monitor, Another solar project completed in Syria, 2022.

Most at risk of being left behind

Despite progress in ensuring access to electricity and clean fuels in the Arab region, many continue to face obstacles in accessing affordable, reliable and sustainable energy in their homes, schools and communities. The COVID-19 pandemic and subsequent shocks have threatened to deepen energy divides.

The following groups were identified in the 2020 Arab Sustainable Development Report as facing an elevated risk of being left behind, and must be considered in the region's efforts to achieve SDG 7:

Arab LDCs remain behind the rest of the region in terms of access to electricity and clean fuels and technology. Access to electricity is lowest in Mauritania (47.3 per cent of the population), Somalia (49.7 per cent) and the Sudan (55.4 per cent), while access to clean cooking fuels and technologies stands at just 3 per cent in Somalia, 8 per cent in Comoros and 10 per cent in Djibouti. These shortfalls hinder socioeconomic development broadly and negatively impact the well-being of affected populations.

Countries affected by conflict and political instability have seen electrification efforts stall or deteriorate, as damage to infrastructure or difficulty in provisioning power stations with fuel have rendered electrical grids less reliable. Libya, the Syrian Arab Republic, and Yemen have experienced significant backslides in electricity access due to conflict, while in Lebanon, the lack of resources for public power generation has resulted in a dramatic decline in public power provision.

Rural and remote communities are notably less likely to have access to electricity and clean fuels and technology for cooking than urban areas within the same country. At the regional level, 97.5 per cent of urban residents have access to electricity, compared to just 81.7 per cent of rural populations. In cities, 93.2 per cent of people use clean fuels compared to 77.6 per cent in rural areas. The urban-rural divide compounds with other disadvantages, with rural residents of LDCs and conflict-affected countries being the least covered population in the region.

People living in informal settlements and refugee camps are less likely to have reliable access to electricity than those in formal settlements, and their power connections are often characterized by interruptions and substandard cabling.[20]

Women are generally the most impacted by household air pollution stemming from the use of unclean cooking fuels, since they are more likely to be responsible for cooking. Biomass fuels have been linked with birth defects, respiratory and neurodegenerative diseases, and other severe health problems.[21] Such fuels are most likely to be used in rural areas and LDCs.

20 UN-Habitat, Informal Settlements in the Arab Region, 2020.

21 ESCWA, Policy brief: advancing SDG7 in the Arab region, 2020.

Policy recommendations for ensuring an inclusive recovery and achieving SDG 7 by 2030

To achieve SDG 7 and realize its promise of ensuring access to affordable, reliable, sustainable and modern energy for all, Arab countries must adopt proactive policy approaches and deepen regional cooperation. The Arab Sustainable Development Report 2020 identified a series of recommendations to accelerate the achievement of SDG 7,[22] which can guide the region's efforts to build back better from COVID-19, bolster resilience against future shocks, and achieve a just and inclusive energy transition. These recommendations remain pertinent today:

1

Integrate energy policies with wider socioeconomic objectives to achieve just and sustainable energy transitions. Integrated energy strategies can support health, food security, environmental and growth objectives while providing lower-cost and higher-quality service to consumers and creating decent jobs in the green energy sector. Collaborative decision-making processes involving civil society, non-governmental organizations and private sector partners can accelerate clean energy projects while ensuring that these benefits are realized. Attention should be paid to strengthening energy governance, building strong institutions, developing intellectual and technological capacity, and reskilling labour forces.

2

Restructure energy pricing systems and implement complementary policies to mitigate unintended negative consequences of reforms on vulnerable groups. To rationalize consumption and encourage renewable and clean energy uptake, prices must reflect the full cost of energy production and use, including externalities. This includes restructuring subsidy programmes that encourage overconsumption of fuel and electricity; however, complementary policies should be introduced to ensure that such reforms do not harm vulnerable populations.

3

Increase public investment in clean energy. Governments should prioritize clean energy access by setting ambitious targets and implementing renewable energy projects. Detailed implementation plans should be backed by public investments and supported with technical and financial resources by the international community.

4

Leverage innovations and digital technologies to improve energy services. Innovative off-grid solar deployment has accelerated electricity access in rural areas, while artificial intelligence has enabled more accurate forecasting of renewable power generation, thus facilitating better grid management. Mini-grids and peer-to-peer energy trading have the potential to extend electricity access well beyond the limits of centralized grids.

5

Enhance regional and international partnerships for energy. Arab countries can achieve gains through energy integration, including by establishing electrical grid connections, investing in joint infrastructure projects and deepening market ties.

22 For a comprehensive analysis of these recommendations, see ESCWA, Arab Sustainable Development Report, 2020.

Key facts on SDG 7

		Arab region		World	
7.1.1 Access to electricity	Proportion of population with access to electricity (2020)	90.3%		90.5%	
		Urban 97.5%	Rural 81.7%	Urban 97.3%	Rural 82.6%
7.1.2 Clean fuels and technology	Proportion of population with primary reliance on clean fuels and technology (2020)	86.8%		69.0%	
		Urban 93.2%	Rural 77.6%		
7.2.1 Renewable energy	Renewable energy share in the total final energy consumption (2019)	4.6%		17.7%	
7.3.1 Energy intensity	Energy intensity measured in terms of primary energy and GDP (2019)	4.9%		4.7%	
7.a.1 Renewable energy	International financial flows to developing countries in support of clean energy research and development and renewable energy production, including in hybrid systems (2019)	$1,201,000,000 (11% of world total)		$10,887,300,000	
7.b.1 Renewable energy	Installed renewable energy-generating capacity in developing countries (in watts per capita) (2020)	51.9		245.7	

Source: ESCWA, Arab SDG Monitor.

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