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Subsidy Reform and Environmental Sustainability in the Arab Region

Working Paper



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Executive Summary

In 2015, the international community committed to addressing socio-economic and environmental challenges with the adoption of the Sustainable Development Goals (SDGs) and the Paris Agreement on Climate Change. The Arab region was no exception. With an above-average growth in population and unemployment rates, rapid urbanization, persistent subsidization of the energy and water sectors, and geopolitical instability, Arab countries are facing mounting pressure to adopt more targeted fiscal policies to address these challenges.

While there are discrepancies among countries in terms of natural resource abundance, the region as a whole is characterized by fuel-abundance and water scarcity. With increasing environmental considerations and more pronounced climate change implications, countries need to promote the efficient use of these resources and the creation of green jobs.

Water and energy subsidies are widely spread in the Arab region. They were put in place as a means to preserve political support, contribute to social safety nets, secure affordable water and energy for all, promote industrialization by supporting energy-intensive industries, protect from fluctuations in international energy prices, and as a way to share wealth and economic rents with citizens, particularly in oil-rich countries. However, in most cases they are across-the-board subsidies, benefiting the population at large, rather than targeting the poorest and most vulnerable segments.

Water and energy subsidies are significantly large in most Arab countries. Although these subsidies have positive economic impact on the poor and on industrial development, however they are associated with significant social, financial and environmental costs. To finance these subsidies, governments resort to borrowing, increasing taxes, reallocating funds away from some sectors (health and education), drawing down from savings, or through a combination of these policies. These subsidies contribute also to the misallocation of both water and energy resources; by maintaining low tariffs, they induce over-consumption – and in several cases wasteful consumption. Subsidies also act as a counter-incentive to rationalize the use of resources and to invest in their efficient management; they also contribute to increasing greenhouse gas emissions. Moreover, subsidies dissimulate the real value of water and energy resources and are not the most effective tool to target the poor and most vulnerable. They also promote energy-intensive industries at the expense of labour-intensive industries.

Recognizing the significant burden posed by subsidies on public finances and overall economic performance, many countries have initiated reforms to address the inefficiencies of this practice. Subsidy reform addresses market distortions and has an impact on environmental sustainability by controlling the wasteful consumption of natural resources, cutting down emissions and promoting investments in green technologies. On the other hand, investments in green technologies will support environmental sustainability, generate jobs, promote economic diversification and address the costs associated with subsidies.

Reforming water and energy subsidies would free financial resources which can be directed towards improving the efficiency of the water and electricity sectors, by decreasing waste, increasing coverage and improving quality of services. Adopting a progressive water tariff scheme and improving the efficient management and use of water are key issues for any water subsidy reform. Whereas incentivizing both consumers and producers to examine alternative energy sources are essential for energy subsidy reform. Incentives need to target both consumers and producers.

Arab countries stand to benefit from reforming fuel subsidies at this stage as fuel prices are low, without risking an upsurge in inflation rates. Reforming subsidies by adopting a progressive pricing scheme for water and energy might improve equity, and will release financial resources that can be invested in green technologies which would contribute to cutting CO₂ emissions. Almost all Arab countries have initiated subsidy reforms, some have revisited the prices of water and/or energy products, others have increased tariffs for large consumers, and others have rationalized energy subsidies by subsidizing only commodities used by the poor segments, such as LPG, and strengthening public transportation and social safety nets.

Arab governments have made explicit commitments to invest in green technologies and to achieve energy efficiency and renewable energy targets by 2030. In that regard, almost all countries have put in place economic incentives to promote the development of renewable energy and energy efficiency sectors, however the success of these incentives is yet to be assessed.

The renewable energy sector has been growing at a slow pace in the region and is still far from its potential. National plans and targets have been developed to shift, partially, to clean energy by 2030. Potential gains from the renewable energy sector extend beyond the environmental. Renewable energy sector can in fact play a contributing role in job creation. New jobs will be created during the manufacturing, engineering, procurement, financing and project development, construction, operation and maintenance, and decommissioning of the projects. To develop this sector, government's commitment is crucial and needs to be reflected by clear targets, a time-bound action plan, clear and dedicated policies, an enabling business environment to attract private investors, and a mature institutional framework that governs these operations.

Arab countries would benefit significantly from rationalizing subsidies. However, to be successful, subsidy reforms need to be introduced gradually in a transparent and participatory manner, with clear targets and an action plan. Subsidy reforms should go hand in hand with long-term comprehensive reform plan, and not to be a stand-alone policy. Targeted subsidies, enhanced social safety nets, mitigating measures need to be envisioned.

At the Arab regional level, many discussions have extensively addressed the issues of subsidy reform, sustainable use of water and energy resources and renewable energy. A number of regional plans and targets have been adopted by Arab countries. However, at the national level, policies are still not aligned with these plans and targets.

In September 2009, the Council of Arab Ministers Responsible for the Environment (CAMRE) launched the Arab Regional Strategy on Sustainable Consumption and Production, under the auspices of the League of Arab States and with the support of ESCWA and the United

Nations Environment Programme. The strategy promotes sustainable consumption and production in the Arab region through the rational utilization of resources to protect the environment and contribute to poverty eradication and a sustainable lifestyle.

In November 2010, the Arab Ministerial Council for Electricity (AMCE) adopted the “Pan Arab Strategy for the Development of Renewable Energy Applications (2010-2030)” developed by the League of Arab States. The strategy requires Arab countries to scale-up investments in renewable energy sector to satisfy increasing demand, to diversify sources of energy and to reduce dependency on fossil-fuels.

In terms of water resources, the Arab Ministerial Water Council (AMWC) adopted in 2011 the “Arab Strategy for Water Security in the Arab Region to Meet the Challenges and Future Needs for Sustainable Development 2010-2030” under the umbrella of the League of Arab States and subsequently formulated its action plan with the support of the Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD) and eight institutions, including ESCWA. The strategy calls for ensuring sustainable use of water resources in the Arab region to achieve water security by 2030. It was further supported by an action plan approved by AMWC in May 2014, as a practical guide to ensure the successful implementation of the strategy.

Implementation of national and regional plans in energy or water sectors needs political commitment first, then formulation of policies and allocation of financial resources. In the Arab region, political commitment has been expressed by the adoption of the above-mentioned strategies and by governments’ commitments to address climate change issues and to achieve sustainable development goals. Although this commitment is necessary, it is not sufficient: policies and financial resources are still not enough.

Introduction

As concerns over environmental sustainability are growing, recession is persisting with oil prices remaining sluggish, and unemployment pressures from an ever-increasing young population becoming a major source of concern to governments in the Arab region. Arab countries are feeling the imperative to address these concerns sooner rather than later. And while by August 2017 fourteen Arab countries had already ratified the Paris Agreement on Climate Change¹, targeted policies are still lagging behind in some countries. In parallel, governments have expressed their commitments to address the three aspects of development, namely the economic, social and environmental dimensions by the adoption of the 2030 Sustainable Development Agenda, and expressed their determination “to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations.”²

As a fuel-abundant and water-scarce region, despite wide discrepancies between different countries, water and energy subsidies are widely spread in the Arab region. Subsidies represent a significant share of public finances and have a significant effect on consumption and production patterns.

It is the aim of this paper to shed light on the impact of fiscal policies – energy and water subsidies in particular – on Arab economies and explore their linkages and contributions to environmental sustainability. In doing so, it will aim to demonstrate that rationalizing water and energy subsidies can promote environmental sustainability in the Arab Region. In turn, environmental sustainability – renewable energy and energy efficiency projects in particular – contributes to job creation.

The first section presents an overview of the environmental and developmental challenges facing the Arab region. It reviews the consumption and production patterns and discusses the magnitude of water and energy subsidies.

The second section addresses the impact and costs of water and energy subsidies. It also discusses the implications of rationalizing these subsidies on the environment and job creation through the renewable energy sector.

The third section discusses regional initiatives on sustainable consumption and production, renewable energy and water security.

The final section concludes the paper with the main key messages.

¹ UNFCCC, Paris Agreement - Status of Ratification, http://unfccc.int/paris_agreement/items/9444.php

² General Assembly, A/RES/70/1, 21 October 2015, “Transforming our world: the 2030 Agenda for Sustainable Development”, Preamble

I. Problem Analysis

The Arab region is characterized by fuel abundance and water scarcity despite wide discrepancies between different countries. It is also a region where water and energy subsidies represent a significant share of public finances. However, with the economic slowdown in the region, fluctuations in international commodity prices, oil in particular, geopolitical instability, and a number of socio-economic challenges, subsidies have become a significant burden to Arab economies. These subsidies affect consumption and production patterns and pose an additional challenge to environmental sustainability.

A. ENVIRONMENTAL AND DEVELOPMENTAL CHALLENGES

It is now undeniable that environmental considerations have become pressing issues in the Arab Region. The repercussions of climate change have become more pronounced on Arab countries over the past two decades and are expected to intensify as weather volatility increases and extreme weather events multiply. Counteracting environmental challenges is crucial at this stage, and for a number of reasons. First, on the international level, Arab countries have explicitly made a commitment to reduce global greenhouse emissions by 2030.³ Second, from a welfare perspective, rising temperatures and increased volatility in precipitation levels coupled with a low level of disaster preparedness can have a big negative impact on social welfare of citizens. Third, and from a financial point of view, the cost of inaction at this stage outweighs the benefits of continuing with business as usual. For these reasons, it can confidently be stated that the costs of inaction in the face of environmental challenges are increasing considerably, and as countries commit more seriously to counteract climate change, the main policy question has shifted from “what to do” to “how can this be done”. In light of these considerations, it has also become clear that economic growth alone cannot tackle all societal issues, and in particular, environmental challenges; for that to happen, targeted policies and inclusive growth need to prevail.

With the adoption of the Sustainable Development Goals (SDGs) and the entry into force of the Paris Agreement on Climate Change in 2015, governments, civil society, the private sector and citizens in general need to start today in counteracting the damages caused yesterday. This paper falls within SDG12 on ensuring sustainable consumption and production patterns. SDG12 focuses on promoting efficient use of resources, creating green and decent jobs and stresses that the attainment of this goal “helps to achieve overall development plans, reduce future economic, environmental and social costs, strengthen economic competitiveness and reduce poverty.” The targets associated with this goal address the issue of fossil-fuel subsidies and call for a fiscal restructuring and phasing out of these subsidies while taking into consideration the most affected and the poor.⁴ If the Arab Region is to attain SDG12, it is essential that a debate focusing on production patterns and reforming current policies that are affecting these patterns be initiated.

³ The Paris Agreement on Climate Change was signed by 21 Arab Countries (except Syria) and ratified by 14 countries, as of August 2017. UNFCCC, Paris Agreement - Status of Ratification, http://unfccc.int/paris_agreement/items/9444.php

⁴ General Assembly, A/RES/70/1, 21 October 2015, “Transforming our world: the 2030 Agenda for Sustainable Development”

In addition to the environmental and financial challenges the Arab Region is facing in its attainment of SDG12, the situation is further aggravated by a number of developmental challenges among which are an above-average growth in population, a rapid urbanization and a persistent subsidization of the energy and water sectors in some countries. In fact, over the past two decades, the region has witnessed a steady increase in its population coupled with a disproportionate increase in per capita income and in per capita use of natural resources. Population in the Arab region has been growing at a rate of 2.3 per cent between 2005 and 2015; twice the global rate which averaged around 1.2 per cent during the same range period. In 2015, the Arab population reached 392 million, with 58 per cent living in cities.⁵ By 2050, the Arab population is expected to reach 646 million, with urban population expected to reach 68 per cent.⁶ This above-average growth in population is exerting pressure on governments and on the environment. The growth in GDP per capita has been fluctuating between 4.8 per cent in 2006 and negative (0.9) per cent in 2009 and 1.1 per cent in 2015.⁷ Whereas governments are faced with an increasing demand for goods, services, resources, decent jobs, and pressure to ensure food, water and energy securities, the environment in turn is faced with unsustainable consumption of scarce resources. The unsustainable use and consumption of natural resources, such as water, is faster than the resource's ability to adjust by itself.

As to unemployment rates, the Arab Region also exceeded the global average. Unemployment is indeed a major challenge in the Arab world. In 2014, total unemployment was 11.5 per cent, twice as high as the world's average of around 5.9 per cent.⁸ Youth unemployment is very high and stands at more than double the global average, recording 30 per cent in 2013.⁹ In most Arab Countries, the Government is the main employer and government employment accounts for 14 to 40 per cent of total workforce.¹⁰ People aged less than 15 represented around 33 of overall population in 2015,¹¹ thus putting additional pressure on governments to create decent jobs in the near future for the rapidly increasing labour force.

In contrast with these challenges, the region contains 43 percent of the world's oil reserves.¹² The abundance of oil reserves has led to the development of energy-intensive industries. And while the world is moving towards less energy-intense production, the Arab Region is again adopting a diverging trend (Chart 1). In fact, while the global energy used per US\$1,000 GDP decreased by 14 per cent between 2005 and 2014, with both high income and middle income groups portraying the same downward trend, energy used per US\$1,000 GDP in oil-exporting countries of the Arab Region reached as high as 242 kg of oil equivalent in Bahrain and 154 kg of oil equivalent in Qatar in 2014. This ratio is also significant in oil-importing countries like Lebanon where energy used per US\$1,000 GDP reached 99 kg of oil equivalent in 2014, and 108 kg of oil equivalent in Jordan. Thus, energy-intensity increased by 5 per cent in the Arab region as a whole,

⁵ World Bank, World Development Indicators Database

⁶ Arab Forum for Environment and Development (AFED), "Arab Environment: Sustainable Consumption". Annual Report, 2015; Abdel Gelil, I. and Saab, N. (Eds.); Beirut, Lebanon

⁷ World Bank, World Development Indicators Database

⁸ World Bank, World Development Indicators Database

⁹ ESCWA, "Arab Sustainable Development Report 2015", E/ESCWA/SDPD/2015/3, United Nations: Beirut, 2015.

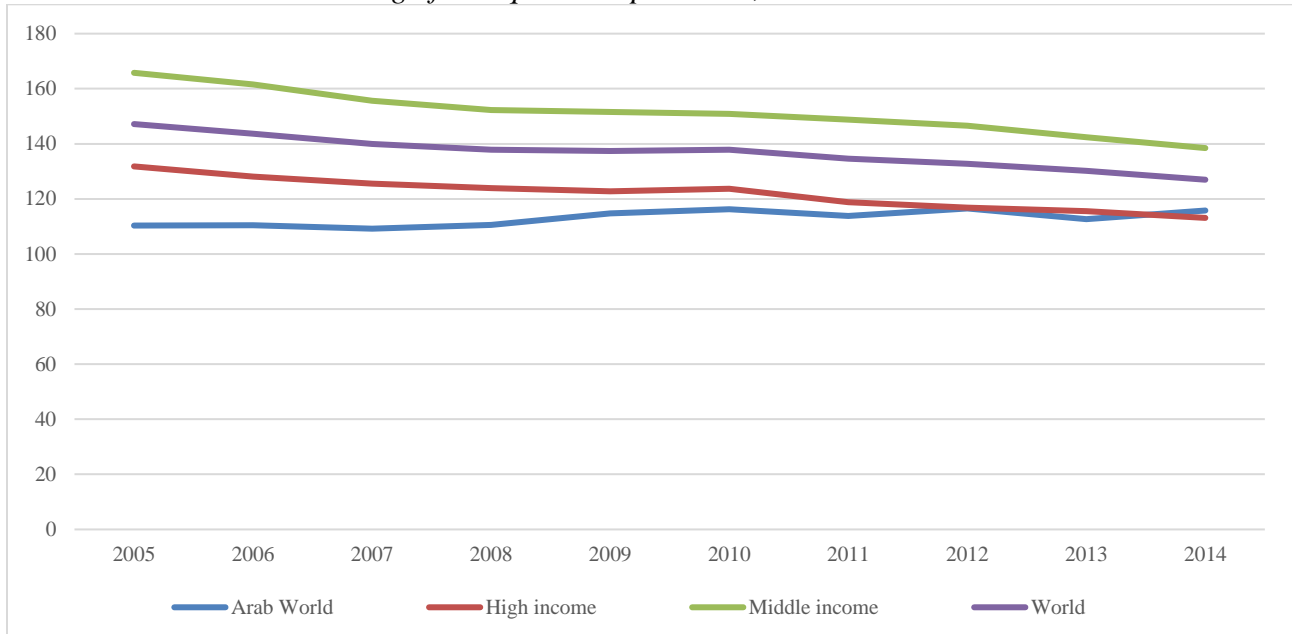
¹⁰ Ibid

¹¹ World Bank, World Development Indicators Database

¹² Arab Forum for Environment and Development (AFED), "Arab Environment: Sustainable Consumption". Annual Report, 2015; Abdel Gelil, I. and Saab, N. (Eds.); Beirut, Lebanon

and increased more significantly in almost all oil-exporting countries; 60 per cent increase in Oman and 24 per cent in Algeria.¹³ (Chart 3).

Chart 1. Energy Intensity, 2005-2014
kg of oil equivalent per US\$1,000 GDP



Source: World Bank, World Development Indicators Database

It should also be noted that domestic consumption of energy resources has risen in the Arab Region faster than domestic production, with the ratio of consumption of oil and gas compared to production increasing from 23 per cent in 1990 to 35 per cent in 2013.¹⁴ In terms of consumption, fossil fuel energy represents 97 per cent of overall energy consumed in the region, significantly higher than the world average of 81 per cent¹⁵ (Chart 2). Per capita energy consumption is higher than global average in GCC countries – global average is around 1,894 kg of oil equivalent per capita – and up to 10 times higher than the global average in Qatar in 2013.¹⁶ (Chart 3).

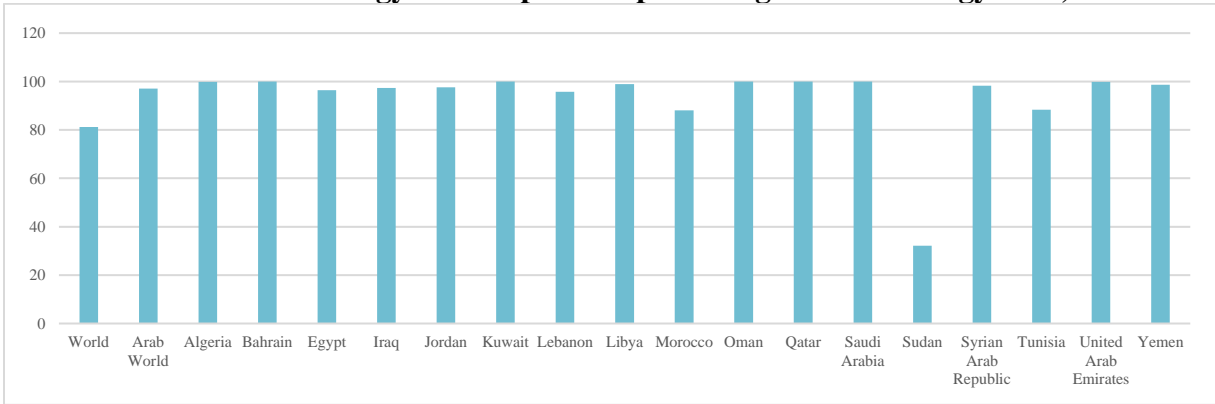
¹³ World Bank, World Development Indicators Database

¹⁴ ESCWA, “Arab Sustainable Development Report 2015”, E/ESCWA/SDPD/2015/3, 2015 United Nations

¹⁵ World Bank, World Development Indicators Database

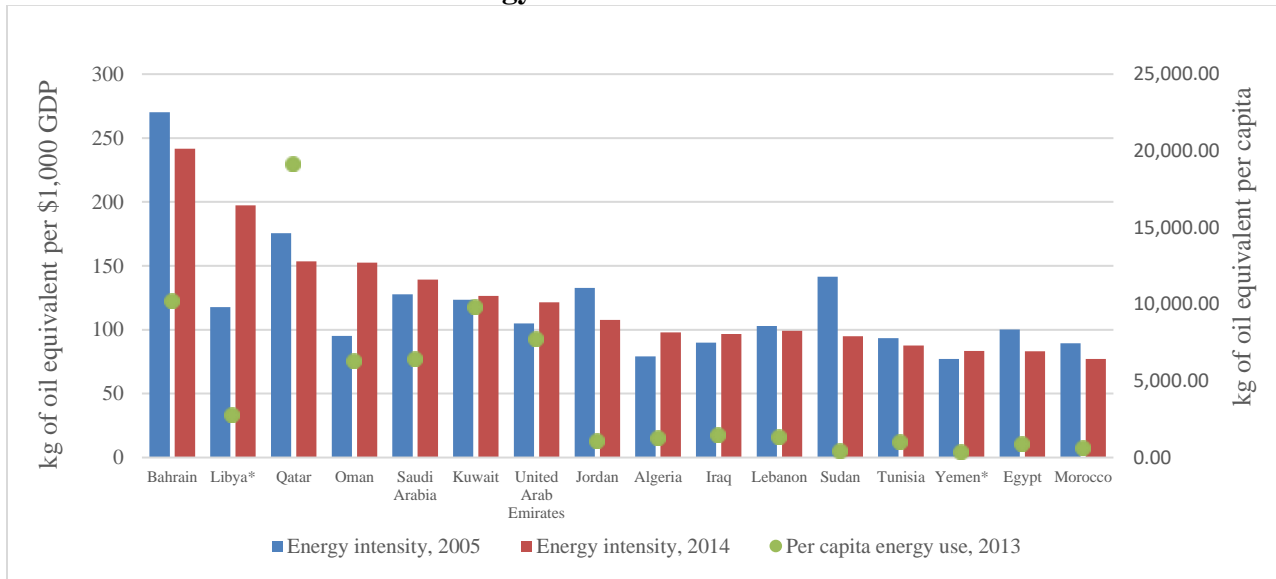
¹⁶ Ibid

Chart 2. Fossil fuel energy consumption as percentage of total energy used, in 2013



Source: World Bank, World Development Indicators Database

Chart 3. Energy use in selected Arab countries



Source: World Bank, World Development Indicators Database

* For Libya, the 2011 figure was used instead of 2014, For Yemen, the 2013 figure was used instead of 2014

In contrast with the abundance of oil is the scarcity of water. The Arab region contains only 0.3 percent of the world’s freshwater sources.¹⁷ The issue of water scarcity is expected to worsen as climate change will most likely lead to a decrease in precipitation levels across the Arab Region.¹⁸ To further complicate matters, two-thirds of available fresh water resources are shared

¹⁷ Arab Forum for Environment and Development (AFED), “Arab Environment: Sustainable Consumption”. Annual Report, 2015; Abdel Gelil, I. and Saab, N. (Eds.); Beirut, Lebanon

¹⁸ United Nations and League of Arab States, Regional Initiative for the Assessment of the Impact of Climate Change on Water Resources and Socio-Economic Vulnerability in the Arab Region (RICCAR), “Climate Projections and Extreme Climate Indices for the Arab Region”, E/ESCWA/SDPD/2015/Booklet.2

waters – including inter-Arab shared waters¹⁹ – which poses serious political challenges to governments, and sometimes raises security concerns.

In terms of access to safe drinking water, around 84 per cent of the population in the Arab region had access to safe drinking water in 2014, compared to 91 per cent as the global average in 2015.²⁰ In terms of freshwater levels, around half of the Arab population lives under the extreme freshwater scarcity level of 500 cubic meters per capita per year.²¹ However, with climate change and population growth, water availability is expected to decrease whereas water demand is projected to increase by 2030. Climate change is expected to lead to 20 per cent reduction in renewable water resources and to create more droughts in the region.²² Population growth will make the region an absolutely water poor region; population is expected to reach 500 million by 2030 and average per capita freshwater availability will decrease to as low as 500 m³/yr – noting that world average for water availability is about 7,240 m³/capita/yr.²³

With these figures and challenges in mind, the following section will assess how current policies and processes affect production and consumption patterns in Arab Countries.

B. SUBSIDIES AND PRODUCTION AND CONSUMPTION PATTERNS IN ARAB COUNTRIES

Consumption and production patterns are closely linked to prices charged to consumers and profits incurred by producers. Prices on the other hand are impacted by government's support and the availability of substitutes. Commodity subsidies represent a form of government's support that pushes prices down – increasing consumption – or increases profits earned – expanding production. While there are no substitutes for water, the case for energy consumption is different. Substitutes for fossil-fuel energy are available, but yet to be fully developed in the Arab region.

Overall Arab economies have been growing at 0.9 per cent in 2014 and 2015, ranging between 3.4 per cent in GCC countries, 2.5 per cent in least developed countries and negative (6.4) per cent in North-African countries.²⁴ Economic diversification plans have been lagging behind in oil exporting countries, which accentuated the impact of falling oil prices. The Fiscal balances are showing a deterioration in Arab countries, decreasing from 1.3 per cent of GDP in 2013 to negative (11.2) per cent in 2015,²⁵ mainly as a result of the sharp decline in oil prices that fell from US\$106 per barrel to US\$49 respectively (Chart 4). This sharp decrease in oil prices weakened the fiscal position in oil-exporting countries, as oil revenues represent the largest share of total revenues. It also led to a decrease in the export bill, resulting in a deterioration in the overall current account from a surplus of 13.6 percent of GDP in 2014 to deficits of negative (3.7) percent of GDP in 2016.²⁶ Oil-importing countries witnessed a slight improvement in their fiscal position as a result

¹⁹ ESCWA, “Arab cooperation on shared water resources”, E/ESCWA/SDPD/2017/IG.1/4, 6 February 2017

²⁰ Ibid

²¹ Ibid

²² Arab Forum for Environment and Development (AFED), “Arab Environment: Sustainable Consumption”. Annual Report, 2015; Abdel Gelil, I. and Saab, N. (Eds.); Beirut, Lebanon

²³ Ibid

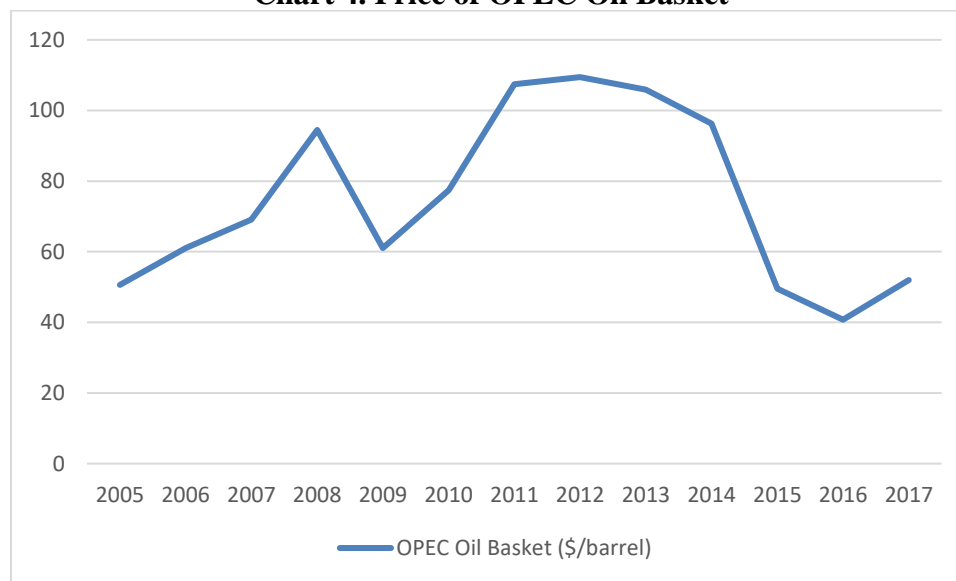
²⁴ ESCWA, “Survey of Economic and Social Developments in the Arab Region 2015-2016”, E/ESCWA/EDID/2016/1, 2016 United Nations

²⁵ IMF, “The Regional Economic Outlook: Middle East and Central Asia”, 2016

²⁶ IMF, “Economic Prospects and Policy Challenges for the GCC Countries”, Annual Meeting of Ministers of Finance and Central Bank Governors, October 26, 2016, Riyadh, Saudi Arabia

of a decrease in their import bill due to the falling oil prices and overall decrease in commodity prices.

Chart 4. Price of OPEC Oil Basket



Source: OPEC, OPEC Basket Price Database

Subsidies are a key expenditure item in a large number of economies around the world. They are tools used by governments to provide direct support to citizens and enhance their welfare. Subsidies target key sectors such as natural resources and food, mainly to decrease the price paid by consumers and in some cases to increase revenues collected by suppliers. They are adopted by governments as a form of social protection intended to support the poor and ensure they have access to basic services such as water and energy, and in particular in the absence of social safety nets. Subsidies also maintain fixed prices and protect consumers from fluctuations, in particular the lower income segments of the population. This is particularly the case with energy and food prices. The practice is also used to support the development of the manufacturing sector, which is an energy-intensive sector.

There are two types of subsidies: consumer subsidies and producer subsidies. Consumer subsidies arise when consumers are charged a price below the supply cost which reflects international prices. Producer subsidies occur when producers are receiving support that increases their profitability; this support can take the form of tax exemptions or preferential input prices. Whereas the definition of subsidies may be straightforward, estimating the real cost of consumer subsidies is a more complicated matter that has been undergoing an extensive debate.

The debate on estimating the real cost of consumer subsidies involves various international agencies and organizations, with each having its own position and approach. The International Energy Agency (IEA) adopts the price-gap approach. This method compares the price charged to consumers with a reference price, the latter consisting of supply costs, shipping costs and relevant taxes. The Organization for Economic Co-operation and Development (OECD) adopts the inventory approach, which accounts for direct budgetary support and tax expenditures that benefit

a resource. The International Monetary Fund (IMF) adopts the inventory approach, but differentiates between pre-tax and post-tax consumer subsidy. Pre-tax consumer subsidies refer to the direct effect of subsidies, emanating from a price charged to consumers that is less than the cost of supplying the good. Post-tax consumer subsidies refer to the situation when direct and indirect effects, in particular cost of environmental damage, are taken into consideration. In this case, the consumer is paying a price below the supply cost plus a tax on negative externalities – equivalent to the cost of associated environmental damage (externalities related to energy include pollution, increased use of motor vehicles which is associated with congestion, car crashes and road damage) – and an additional consumption tax. Post-tax consumer energy subsidies are significantly higher than pre-tax consumer energy subsidies, confirming that energy consumption is associated with large environmental cost.²⁷

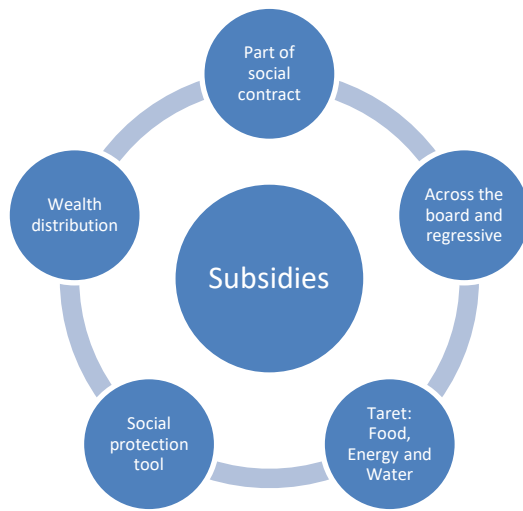
The different types of subsidies also make their computing more challenging, differentiating between explicit and implicit subsidies to producers or consumers. In the case of explicit subsidies, energy or water are charged below the cost of production, the government then undertakes cash transfers to public utility companies to cover the difference between the selling price and the international market price. This type of subsidy is mostly adopted in oil-importing countries and is usually reported in national budgets. These countries buy oil products at international market prices and sell them at discounted prices. In this case the government transfers funds to secure the supply of commodity or service at the discounted price. The government secures these funds by either reallocating funds among sectors - which would increase the opportunity costs on other sectors such as health and education - or by mobilizing additional domestic resources, either by increasing tax rates or through borrowing and increasing the debt burden.

In the case of implicit subsidies, the selling price is below international prices but above cost of production. Therefore, no direct cash transfers are made to oil companies. However, there are lost revenues incurred as a result of charging a price below international market prices. The lost revenue represents lost investments in vital or critical sectors such as health and education. This type of subsidy is usually adopted in oil-exporting countries and is difficult to compute. They are translated in fiscal imbalances and in some cases in deepening fiscal deficits.

Whether explicit or implicit, taking the form of direct budgetary support or foregone revenue, the different types of subsidies carry similar implications on public finances. This paper will focus mainly on pre-tax consumer subsidies in the Arab Region for considerations linked to availability of data.

²⁷ IMF, “How Large are Global Energy Subsidies?”, Country-level Subsidy Estimates, June 29, 2015

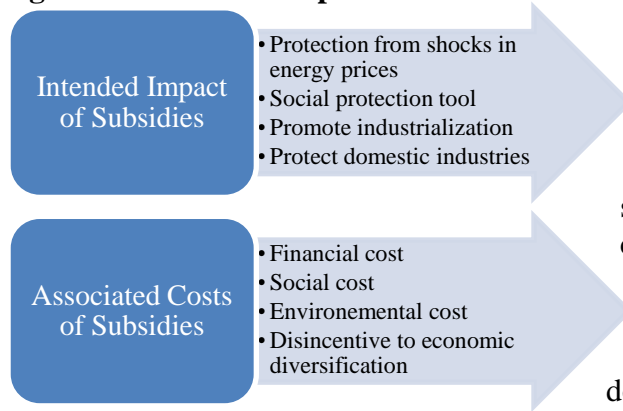
Figure 1. Characteristics of resource subsidies in the Arab region



Energy and water subsidies in the Arab Region date back to the 1960s and constitute one of the fundamental features of the social contracts established between the newly formed or independent states and their citizens. These subsidies soon became considered entitlements, and the question of rationalizing them became a political debate and not just a matter of public finance and efficiency. In fact, subsidies were envisioned as a means to preserve political support, contribute to social safety nets, secure affordable water and

energy for all, and promote industrialization by supporting energy-intensive industries from fluctuation in international commodity prices, energy prices in particular. They are also perceived by governments of resource-rich countries as a mean of sharing the country’s wealth and economic rents with citizens, in particular in oil exporting countries where oil rents as percentage of GDP reach as high as 53 per cent in Kuwait and 39 per cent in Saudi Arabia in 2014.²⁸

Figure 2. Subsidies: Impact and costs



The main rationale behind the use of subsidies lies in the need to support the poor and providing them access to water and energy at affordable prices. By providing protection from fluctuations in international energy prices, subsidies contribute to keeping inflation under control, and contribute enormously to predictability of prices. This predictability and affordability in energy prices acts as an incentive for investors on one hand and support domestic industries on the other hand, which promotes industrialization. However, this practice is

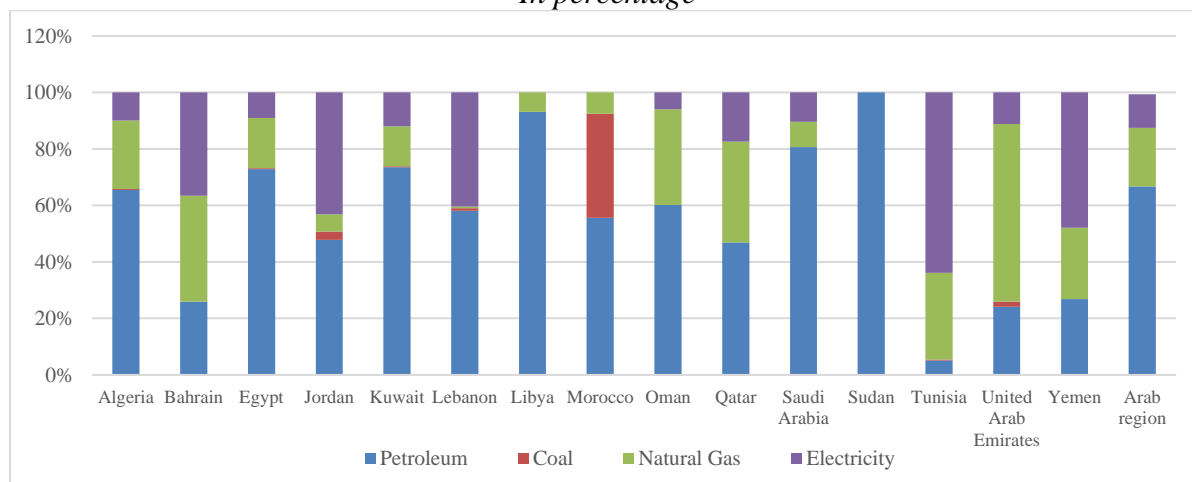
associated with significant costs, among which are financial, social and environmental costs, in addition to the development of rent-seeking behavior which curbs economic diversification (Figure 2). Therefore, it is evident that reforming these subsidies will generate substantial benefits for society as a whole.

Indeed, fuel and food subsidies account for 10 per cent of GDP and 20 per cent of total expenditure in the Arab region. It is energy subsidies however that account for the largest share of government subsidies in the Arab region. Fossil fuel subsidies cost the Arab countries around US\$423 billion in 2011 or US\$1,180 per capita. GCC countries spent the most, around US\$200

²⁸ World Bank, World Development Indicators Database

billion in 2011, the equivalent of 9 per cent of GDP – US\$4,400 per capita – and the Mashreq countries US\$146 billion, around 11 per cent of GDP.²⁹ Following the sharp decline in oil prices between 2011 and 2015, energy subsidies in Arab countries decreased in absolute terms to US\$117 billion, still representing a large share of global energy subsidies, around 27 per cent.³⁰ In absolute terms, subsidies for petroleum products represent more than 50 per cent of total energy subsidies, followed by natural gas products. Subsidies to electricity are significant in particular in oil importing countries (Chart 5).

Chart 5. Energy subsidy by product, 2015
In percentage



Source: IMF, “How Large are Global Energy Subsidies?”, Country-level Subsidy Estimates, June 29, 2015

Fluctuations in oil prices, political pressure and reforms affected significantly the volume of subsidies in the region between 2010 and 2015. In fact, the average price of OPEC basket increased from US\$77 in 2010 to around US\$106 in 2013.³¹ This increase in oil prices was translated into a significant increase in subsidies between 2010 and 2013 (Chart 6). The volume of subsidies decreased between 2013 and 2015 as a result of a combination of the sharp decrease in price of oil – drop from US\$106 in 2013 US\$49 in 2015³² – and the introduction of a number of subsidy reforms. While oil prices decreased by 54 per cent between 2013 and 2015, energy subsidies decreased by less, around 17 per cent in Saudi Arabia and 33 per cent in Kuwait, driven by increased demand for energy products (Chart 6).

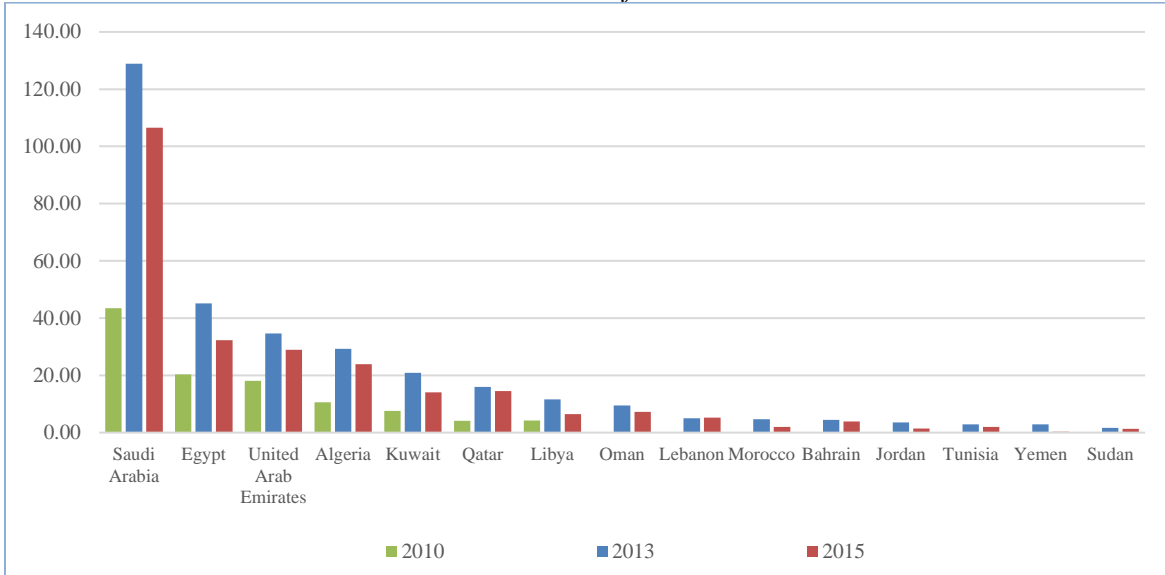
²⁹ ESCWA, “Arab Sustainable Development Report 2015”, E/ESCWA/SDPD/2015/3, 2015 United Nations

³⁰ IMF, “If not now, when? Energy price reform in Arab countries”, Annual Meeting of Arab Ministers of Finance, April 2017, Rabat, Morocco

³¹ OPEC, OPEC Basket Price Database

³² Ibid

Chart 6. Energy subsidies in selected countries, 2010, 2013 and 2015
In billion of US\$



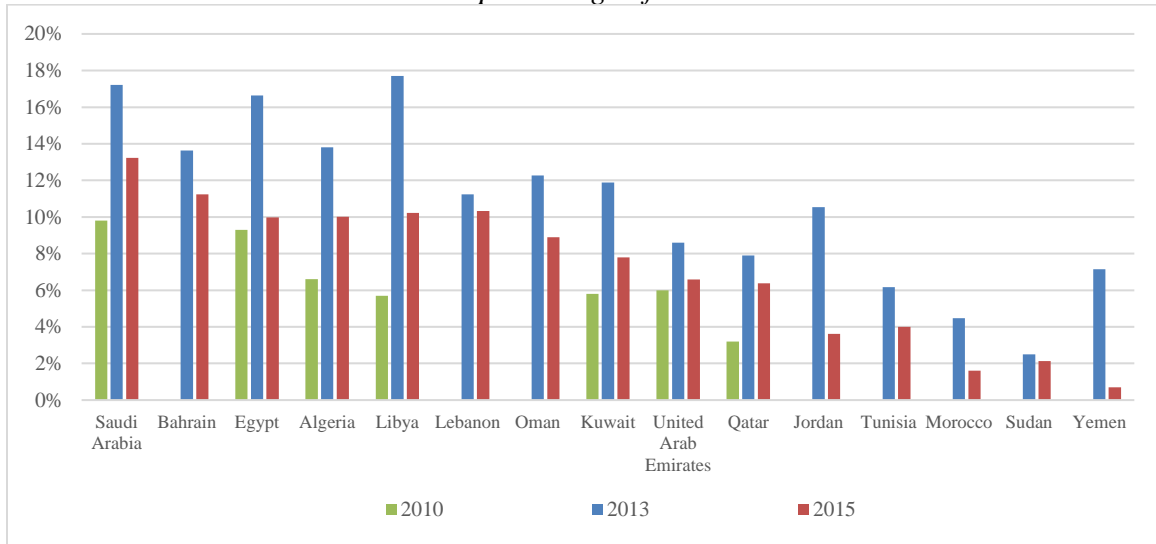
Source: 2013 and 2015 figures from IMF, “How Large are Global Energy Subsidies?”, Country-level Subsidy Estimates, June 29, 2015; 2010 figures from Arab Forum for Environment and Development (AFED), “Arab Environment: Sustainable Consumption”. Annual Report, 2015; Abdel Gelil, I. and Saab, N. (Eds.); Beirut, Lebanon

Subsidy reforms introduced by some countries had a positive impact on subsidies, both in absolute and relative terms. In Jordan for example, subsidies decreased from 11 to 4 per cent of GDP between 2013 and 2015 (Chart 7). Tunisia and Morocco were also pioneers in terms of subsidy reforms. In Saudi Arabia, the central bank (Saudi Arabian Monetary Agency (SAMA)) called for reforming energy subsidies, as they are responsible for the growth in demand for fossil fuels.³³ In Egypt, the government has also embarked in subsidy reform. In 2010, energy subsidies cost the government more than US\$20 billion, which is equivalent to Egypt’s budgeted fiscal deficit for 2010/2011 - estimated at around US\$19 billion, or 9.3 per cent of nominal GDP.³⁴

³³ Oil Change International, “G20 subsidies to oil and coal production: Saudi Arabia”, Sam Pickard and Laurie van der Burg, Country Study, November 2015

³⁴ UNDP, “Energy Subsidies in the Arab World”, The Arab Human Development Report Research Paper Series, 2012, Bassam Fattouh and Laura El-Katiri

Chart 7. Energy subsidies in selected countries, 2010, 2013 and 2015
In percentage of GDP



Source: 2013 and 2015 figures from IMF, “How Large are Global Energy Subsidies?”, Country-level Subsidy Estimates, June 29, 2015; 2010 figures from Arab Forum for Environment and Development (AFED), “Arab Environment: Sustainable Consumption”. Annual Report, 2015; Abdel Gelil, I. and Saab, N. (Eds.); Beirut, Lebanon

The following section will examine the impact of subsidies on production and consumption, and the potential gains from reforms.

II. Subsidy reform, environmental sustainability and development

Subsidies to water and energy contribute to the misallocation of these resources. These subsidies lead to wasteful consumption, which in turn contributes to increasing greenhouse gas emissions. Moreover, they act as a counter-incentive to rationalize the use of natural resources and to invest in their efficient management. Finally, subsidies do not reflect the real value of water and energy resources and are not the most effective tools to target the poor and most vulnerable.

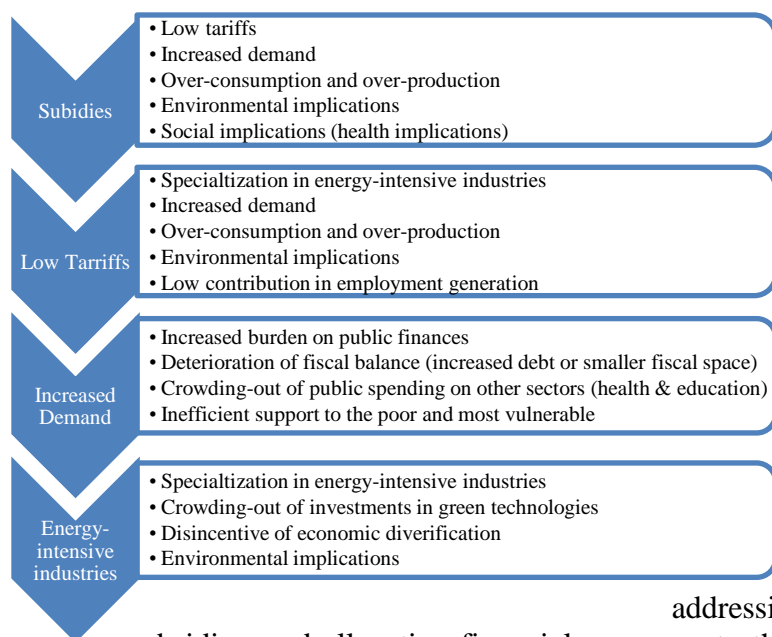
This section will tackle fiscal policies, in particular subsidy reform, within the context of addressing market distortions, promoting sustainable use and efficient management of water and energy sources and contributing to environmental sustainability. The reform will focus on rationalizing water and energy subsidies. For instance, subsidy reform can have an impact on environmental sustainability by addressing wasteful consumption of natural resources, cutting down emissions and promoting investments in green technologies. In turn, investments in green technologies will support environmental sustainability, generate jobs, promote economic diversification and address the costs associated with subsidies.

A. SUBSIDY REFORM AND ENVIRONMENTAL SUSTAINABILITY

Subsidies have been used in nearly all countries around the world, but their magnitude differs from one country to another. Having recognized the significant burden posed by subsidies to public finances and overall economic performance, many countries initiated reforms to address the inefficiencies of this practice. Whereas the SDGs call for phasing out fossil-fuel subsidies while procuring clean water and sanitation, and clean and affordable energies for all; the Paris Agreement calls for limiting greenhouse gas emissions. With these two agendas in mind, it is clear that achieving sustainable socio-economic development cannot materialize without ensuring environmental sustainability. The latter is achieved when natural resources are used in a rational and sustainable manner, whereby consumption does not lead to depletion of resources and negative externalities are contained – pollution in particular.

The costs associated with energy subsidies are considerable and extend beyond financial and social costs to include significant environmental costs (Figure 3). Subsidies place a significant burden on public finances in the Arab region and have a number of negative effects on consumption and production patterns. Increasing demand from an increasing population and high-levels of energy intensity cause increased demand for natural resources and result in an increase of subsidies in absolute terms. This increase is forcing the government to allocate more financial resources to finance larger subsidies. In order to do so, governments resort to borrowing, increasing taxes, reallocating funds away from some sectors, drawing down from savings, or through a combination of these policies. With subsidies leading to low tariffs, the latter induce over-consumption and promote higher energy use, thus reducing the incentive to conserve energy. High energy usage generates adverse environmental implications such as increasing airborne emissions and greenhouse gases, which are both associated with social and environmental implications.

Figure 3. Implications of subsidies



Energy subsidies promote the consumption of fossil fuels, which imposes a significant cost on the environment as a result of increased CO₂ emissions. On average, per capita CO₂ emissions in the Arab Region has been growing at a rate of 1.36 per cent per annum since 1980, more than six times the global average of 0.20 per cent per annum.³⁵ These CO₂ emissions exacerbate pollution and increase negative health-related implications. Thus, fiscal policies can play a significant role in promoting environmental sustainability by

addressing negative externalities, rationalizing subsidies, and allocating financial resources to the renewable energy sector. Although taxing emissions and any other externalities associated with fossil-fuel use is currently an option under consideration at the global level in order to raise revenues and cut down on use of fossil fuels, this paper will focus only on subsidies and will neither argue for, nor against, levying taxes on emissions.

Water and energy subsidies generate low tariffs and are the main cause of over-consumption – and in several cases of wasteful consumption – of these resources. In the Arab region, water is priced at around 35 percent of the cost of production, and at around 10 per cent in the case of desalinated water.³⁶ Fuel is subsidized at a rate of 50 per cent of its supply cost in Arab oil-exporting countries.³⁷ In 2015, residential electricity in all Arab countries was priced between 2 per cent of a benchmark price in the Syrian Arab Republic and 72 per cent in Morocco. The benchmark price used is the price of electricity charged in Palestine, where the socio-economic and political situation prevents the prevalence of subsidies. The difference between the price and the benchmark is the implied subsidy. Commercial electricity follows a similar trend in most Arab countries, where it is priced between 4 per cent of the benchmark price in the case of Kuwait and as high as 83 per cent in the case of Tunisia. Industrial electricity in most Arab countries ranges between 4 per cent of benchmark price in the case of Kuwait and 72 per cent in the case of Jordan.³⁸

These tariffs are low and do not provide any incentive for consumers to rationalize consumption. In Saudi Arabia and Qatar, it is estimated that only 35 per cent of residents use

³⁵ UNDP, “Energy Subsidies in the Arab World”, The Arab Human Development Report Research Paper Series, 2012, Bassam Fattouh and Laura El-Katiri

³⁶ Arab Forum for Environment and Development (AFED), “Arab Environment: Sustainable Consumption”. Annual Report, 2015; Abdel Gelil, I. and Saab, N. (Eds.); Beirut, Lebanon

³⁷ Ibid

³⁸ Regional Center for Renewable Energy and Energy Efficiency (RCREEE) and UNDP, “Arab Future Energy Index AFEX 2016 Renewable Energy”, 2016

energy-saving lamps.³⁹ The environmental implications of this over-consumption are highly significant. Moreover, low prices of energy products have a direct and negative impact on the water sector.

In fact, fuel subsidies contribute to the wasteful consumption of water, highlighting the linkages between energy and water sectors. Low energy tariffs resulting from energy subsidies make pumping ground water cheap and promote the production of water-intensive crops, thus contributing to water depletion. This relationship was evidenced in a study by the World Bank in which countries, where diesel prices were lower than average, suffered from higher water depletion as compared to countries with above-average diesel prices.⁴⁰ The same study implied that in the Syrian Arab Republic, fuel subsidies had a significant positive impact on cereal production and a negative impact on ground-water use and aquifer depletion. In the absence of subsidies, fuel prices are higher which is associated with the production of high water-productivity crops. Consequently, fuel subsidies contribute to the production of water-intensive crops and low water productivity.⁴¹ In Yemen, 28 per cent of total electricity and diesel consumption is used for pumping water for irrigation and for drainage. Low energy tariffs make the production of “qat” – a water-intensive non-nutritious crop that consumes around 40 per cent of water used – very profitable.⁴²

Given the environmental challenges facing the Arab region in terms of water availability, as outlined in the previous section, the current levels of water consumption are unsustainable. With the current pattern, the Arab region will not only soon suffer from absolute water poverty but also water, or its lack of, will become a major impediment for development.⁴³ Reforming water subsidies would free financial resources from subsidies which can be directed towards improving the efficiency of the water sector, for example by decreasing waste, increasing coverage and improving quality of services.⁴⁴

The positive implications of reforming energy subsidies extend beyond the efficient management of the resource. In fact, it would also have a direct impact on the water sector as well as on the environmental and health sectors, in addition to fiscal and economic gains. Adopting the nexus analytical framework in a human-rights’ approach for water and energy sectors would contribute to achieving access to water and energy⁴⁵ without burdening public finances and by limiting the wasteful consumption of natural resources.

In order to attain efficient and non-wasteful use of water and energy resources, the relationship between demand for commodities and availability of substitutes should be explored.

³⁹ Consumption Patterns in Arab Countries, Survey conducted by the Arab Forum for Environment and Development (AFED) in 22 countries, Arab Forum for Environment and Development (AFED), “Arab Environment: Sustainable Consumption”. Annual Report, 2015; Abdel Gelil, I. and Saab, N. (Eds.); Beirut, Lebanon

⁴⁰ World Bank, “Corrosive subsidies”, World Bank Middle East and North Africa Region MENA Economic Monitor, October 2014

⁴¹ Ibid

⁴² Ibid

⁴³ Arab Forum for Environment and Development (AFED), “Arab Environment: Sustainable Consumption”. Annual Report, 2015; Abdel Gelil, I. and Saab, N. (Eds.); Beirut, Lebanon

⁴⁴ UNEP, “Fiscal Policies and the SDGs”, policy brief, May 2016, UNEP/ETB/2016/14

⁴⁵ ESCWA, “ESCWA Water Development Report 5: The Water, Energy and Food Security Nexus in the Arab Region”, 2015, E/ESCWA/SDPD/2015/2

In fact, demand for commodities is a function of its price and the availability and price of substitutes. Therefore, achieving environmental sustainability is facilitated by revisiting prices of water and energy and by investing in green technologies in order to make substitutes available, at competitive prices.

Charging the real price of water and energy by phasing out subsidies could constitute an incentive for consumers to rationalize their consumption. Water has no substitute, and charging the real price for water has been a controversial issue for decades. Access to drinking water is a human rights issue and is considered a religious matter in many societies, which renders any increase in the price of water a challenging task. For instance, Tunisia and Jordan have introduced some reforms to ensure the sustainable use of water. In Tunisia, the government introduced the municipal water tariff, which sets seven blocks for pricing water, varying from 21 per cent of the average cost of service for the first block to 146 per cent for the last block.⁴⁶ This strategy ensures that everyone has access to affordable water to satisfy their basic needs, in particular the poor. However, as consumption increases, the value for water increases. Jordan, on the other hand, has developed “Water for life – Jordan’s Water Strategy 2008-2022” to address inefficiencies in management of water resources and adoption of a tariff schedule that represents the true value of water.⁴⁷

Progressive water tariffs and improving the efficient management and use of water are key issues for any water subsidy reform. Progressive water pricing would protect the right of the poor and most vulnerable in access to water at affordable prices, while curbing excessive consumption. Efficient management of water resources includes enhanced irrigation efficiency, revisiting crop selection, and adopting water-saving technologies. Efficient use of water includes raising awareness on rationalizing water consumption.

Energy, on the other hand, is an input for the production, transportation and delivery of many goods and services. Even though charging the real price of energy might generate inflationary pressures, the increase would in fact encourage rational consumption. It would also incentivize both consumers and producers to examine alternative energy sources. Consumers would look for energy efficiency and renewable energy options, which would decrease overall demand. For instance, the current price of fuel is very low in most Arab oil-exporting countries to the extent that only 17 per cent of AFED’s survey respondents in Saudi Arabia and 16 per cent in Qatar indicated that fuel efficiency plays a role in their decision to purchase a car.⁴⁸ In addition to rationalizing consumers’ behaviour, charging the real price of energy would incentivize producers to invest in green technologies.

As such, energy subsidies act as a counter-incentive for investments in green technologies, such as renewable energy and energy efficiency sectors. In the electricity sector in some oil importing countries, low tariffs not only crowd out investments in renewable energy and energy

⁴⁶ Arab Forum for Environment and Development (AFED), “Arab Environment: Sustainable Consumption”. Annual Report, 2015; Abdel Gelil, I. and Saab, N. (Eds.); Beirut, Lebanon

⁴⁷ Ministry of water and irrigation, “Water for life – Jordan’s Water Strategy 2008-2022”

⁴⁸ Survey conducted by the Arab Forum for Environment and Development (AFED) in 22 countries, Arab Forum for Environment and Development (AFED), “Arab Environment: Sustainable Consumption”. Annual Report, 2015; Abdel Gelil, I. and Saab, N. (Eds.); Beirut, Lebanon

efficiency sectors, but also act as a counter-incentive to reform this utility. This crowding-out effect prolongs the poor supply or poor performance of the sector, which has a significant impact on competitiveness and ultimately on growth. The electricity utility of Lebanon portrays clearly this argument.

With the adoption by the international community of the 2030 development agenda on sustainable development in 2015, almost all Arab countries have put in place targets and time frames for renewable energy and energy efficiency projects (Annex 1), guided by the Pan-Arab Strategy for the Development of Renewable Energy 2030 and the Arab Renewable Energy Framework which will be discussed in the next section. Furthermore, 19 Arab countries submitted their Intended Nationally Determined Contributions (INDCs) before the 21st session of the Conference of the Parties (COP21) that was concluded with the adoption of the Paris Agreement on Climate Change in 2015. In these INDCs, all countries presented their set targets for energy efficiency and renewable energy by 2030. In addition, five Arab oil-exporting countries, namely Algeria, Bahrain, Qatar, Saudi Arabia and the United Arab Emirates, expressed explicitly their intentions to pursue economic diversification in line with global mitigation targets for climate change, which is intended to modify the energy consumption patterns. Three countries, namely Egypt, Kuwait and Morocco, referred to their subsidy reform plans, while Saudi Arabia referred to energy subsidies as “market distorting actions”.⁴⁹

Despite these targets and pledges, Arab countries are still lagging behind in terms of energy diversity. In Arab countries, solar energy and wind power contributed to less than 0.5 per cent of electricity generated in 2014.⁵⁰ In 2009, most of these countries were below the world’s average in terms of energy efficiency in power generation, and major Arab energy producers were among the least energy efficient in the world.⁵¹ In 2015, renewable power production – hydropower, solar and wind energy – in the Arab region was less than 6 per cent of total generation capacity.⁵² The abundance of oil and gas, low investments in green technologies and persistence of energy subsidies are hindering the development of alternative sources of energy.

Morocco and Jordan are leading the Arab countries in terms of renewable energy and energy efficiency efforts. Both countries have made their first attempts in reforming energy subsidies in 2001, with Jordan formally initiating the process at the end of 2012 and Morocco in 2013. Since then, both countries have made significant progress, as attested by the 2016 Arab Future Energy Index (AFEX)⁵³ in which Morocco and Jordan scored highest.⁵⁴ It is also important

⁴⁹ UNFCCC, INDCs as communicated by Parties,

<http://www4.unfccc.int/submissions/indc/Submission%20Pages/submissions.aspx>

⁵⁰ ESCWA, “Arab Sustainable Development Report 2015”, E/ESCWA/SDPD/2015/3, 2015 United Nations

⁵¹ UNDP, “Energy Subsidies in the Arab World”, The Arab Human Development Report Research Paper Series, 2012, Bassam Fattouh and Laura El-Katiri

⁵² IRENA (2016), Renewable Energy in the Arab Region. Overview of Developments, International Renewable Energy Agency, Abu Dhabi

⁵³ Arab Future Energy Index (AFEX) assesses countries’ progress in renewable energy according to four evaluation categories: market structure, policy framework, institutional capacity, and finance and investment. Under these categories, countries are assessed according to nine different factors and 30 quantitative and qualitative indicators.

⁵⁴ Regional Center for Renewable Energy and Energy Efficiency (RCREEE) and UNDP, “Arab Future Energy Index AFEX 2016 Renewable Energy”, 2016

to note that both countries have developed the legislative frameworks that govern energy efficiency and renewable energy projects.

Improving energy efficiency would decrease the consumption of energy, which would ease financial burdens on governments: oil-importing countries would benefit from a decrease in import and a decrease in subsidies in absolute terms; oil-exporting countries would save from the decrease in consumption, and hence, decrease in volume of subsidized commodities. All countries would benefit at the environmental and social levels.

Saudi Arabia, Algeria, Egypt, Syria, and Tunisia have initiated programs for energy efficiency codes and standards of electrical appliances. Several countries have adopted Minimum Energy Efficiency Standards (MEPS) for household appliances, however, the enforcement of these standards remains fragile.⁵⁵ Algeria and Lebanon formulated their national renewable energy and energy efficiency action plans. Several countries passed renewable energy laws, namely Egypt (Decree No 203/2014), Jordan (Law No. 13 in 2010), Morocco (Law 13.09) and Tunisia (No.74/2013).

Economic incentives to promote energy efficiency and renewable energy constitute another factor that plays a role in incentivizing investments in green technologies (Annex I). Almost all Arab countries have put in place economic incentives to promote the development of renewable energy and energy efficiency sectors, however the effectiveness of these incentives in increasing investments in green technology is yet to be assessed. Jordan provides subsidies to privately owned facilities working on clean energies; Lebanon offers subsidized loans for any type of energy efficiency and/or renewable energy project, for individuals and corporate bodies; Tunisia provides subsidy or credit payable within five years for residential solar water heaters. Other incentives take the form of custom duties exemptions on energy efficiency and/or renewable energy equipment in Egypt, Jordan, Libya, Morocco, Palestine, Sudan, and Tunisia. However, qualifying for these exemptions is a complicated process, which hinders the impact of this incentive. Other countries are providing tax incentives; Egypt issued a presidential decree in 2015 providing tax incentives for renewable energy producers (Presidential Decree No 17/2015). A number of countries have implemented feed-in-tariffs to incentivize individual and corporate consumers to switch to renewable energy, namely Algeria, Egypt, Jordan, Morocco, Tunisia and United Arab Emirates.

Six Arab countries have established individual funds to promote renewable energy (Annex I). In Algeria, the “National Fund for Renewable Energies and Cogeneration” is financed by oil taxes. The “Jordan Renewable Energy & Energy Efficiency Fund” is financed by national and international institutions, including national budget allocations, and is responsible for undertaking research and development on energy efficiency and renewable energy. In Tunisia, the “Energy Efficiency Fund” is financed by receipts from taxes on some touristic car registration, value added tax and custom duties on air conditioning equipment and commodities and from fines on non-compliant and have provided US\$24 million so far to promote the use of solar water heaters.⁵⁶ In Egypt, the “Renewable Energy Fund” was established in 2012 although sources of funding have

⁵⁵ Arab Forum for Environment and Development (AFED), “Arab Environment: Sustainable Consumption”. Annual Report, 2015; Abdel Gelil, I. and Saab, N. (Eds.); Beirut, Lebanon

⁵⁶ Green Growth Knowledge Platform, “Why fiscal policy matters for a green economy transition”, 19 December 2014, <http://www.greengrowthknowledge.org/blog/why-fiscal-policy-matters-green-economy-transition>

yet to be identified.⁵⁷ Morocco has two funds, the first is the Energy Development Fund, which mobilized around US\$1 billion with contributions from Saudi Arabia (US\$500 million), the United Arab Emirates (US\$300 million) and Hassan II Fund for Economic and Social Development (US\$200 million).⁵⁸ The second, the Renewable Energy Fund, forecasts to attract around US\$200 million in equity investments in wind energy projects.⁵⁹ The United Arab Emirates established Masdar Clean Tech Fund, a government-backed entity to promote renewable energy projects nationally and internationally.⁶⁰

Despite the explicit commitments made by Arab governments to invest in green technologies and to achieve energy efficiency and renewable energy targets, the integration of the private sector in this scheme is still limited, and most investments so far have been undertaken by the public sector. The adoption of feed-in-tariff by some countries aims to incentivize domestic investors, while net metering aims to incentivize households. However, the effectiveness of these instruments has not been assessed yet and progress has been slow. In Egypt, out of the 130 eligible projects, only 10 have reached final stages due to a number of reasons.⁶¹

Arab countries stand to benefit from reforming fuel subsidies at this stage as fuel prices are low, hence the gap between domestic and international prices is small, therefore they don't risk an upsurge in inflation rates. In addition to that, oil-exporting countries suffer from a shrinking fiscal space due to the drop in oil prices and the decrease in export values. Reforming subsidies by rationalizing them will have a twofold impact:

- It decreases subsidies; released financial resources can be used to develop green technologies, provide incentives for investments in energy efficiency and renewable energy sectors, and can be used to support low income households;
- It has a positive impact on the environment. The IMF estimates that a complete elimination of subsidies in 2015 could raise global government revenue by US\$2.9 trillion, equivalent to 3.6 percent of global GDP, and most importantly would have a significant impact on the environment. This elimination would potentially cut global CO₂ emissions by more than 20 percent, and would generate significant health benefits as it would halve the number of pre-mature deaths caused by air pollution;⁶² it would also reduce CO₂ emissions in the MENAP region by 36 per cent.⁶³ Therefore, rationalizing water and energy use will have a direct positive impact on environmental sustainability and can play a contributing role in reversing climate change.

⁵⁷ Regional Center for Renewable Energy and Energy Efficiency (RCREEE) and UNDP, "Arab Future Energy Index AFEX 2016 Renewable Energy", 2016

⁵⁸ Kingdom of Morocco, Moroccan Investment Development Agency, <http://www.invest.gov.ma/>

⁵⁹ Regional Center for Renewable Energy and Energy Efficiency (RCREEE) and UNDP, "Arab Future Energy Index AFEX 2016 Renewable Energy", 2016

⁶⁰ Ibid

⁶¹ Ibid

⁶² IMF, "How Large are Global Energy Subsidies?", IMF Working Paper, David Coady, Ian Parry, Louis Sears, and Baoping Shang, May 2015

⁶³ MENAP region includes Afghanistan, Algeria, Bahrain, Djibouti, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Sudan, Tunisia, United Arab Emirates and Yemen.

Almost all Arab countries have initiated subsidy reforms (Annex 2). Several countries, Jordan and Mauritania for example, have revisited the prices of energy products and implemented price adjustment mechanisms linking domestic prices with international levels. Some countries have increased the electricity tariffs for large consumers, like Bahrain and Saudi Arabia. Morocco, the leading subsidy reformer in the region, phased out energy subsidies on most products except LPG and engaged in supporting public transportation system and strengthening the existing social safety nets. Jordan is strengthening its cash transfers system for the poor and most vulnerable while phasing out energy subsidies and developing alternative sources of energy.

B. SUBSIDY REFORM, ENVIRONMENTAL SUSTAINABILITY AND JOB CREATION

Subsidies are widely used in the Arab region and in most cases they are across-the-board subsidies, benefiting the population at large, rather than targeting the poorest and most vulnerable segments. The main beneficiaries from these subsidy programs are higher income groups as their relative consumption is significantly larger. Over 90 percent of the general subsidies go to the rich,⁶⁴ rendering them inefficient in this regard. Between 2003 and 2009, the poorest 40 per cent of the population in Egypt benefited from only 3 per cent of the subsidies on gasoline, 10 per cent of diesel and 33 per cent of LPG (Table 1). Based on chart 5, petroleum products – which include gasoline, diesel and kerosene – captured 73 per cent of subsidies in Egypt in 2015, whereas natural gas captured only 18 per cent. In Jordan, distribution of subsidies is slightly more equitable, but still not targeted. The poorest 40 per cent of the population received 20 per cent of the subsidies on gasoline, 14 per cent of the subsidies on diesel and 40 per cent of the subsidies on kerosene. These petroleum products captured around 48 per cent of total subsidies in 2015 in Jordan (Chart 5)). Electricity, which captured 43 per cent of 2015 subsidies, was evenly distributed among the different tranches of the population in Jordan (table 1).

Table 1. Direct benefits from energy subsidies in selected Arab countries, between 2003 and 2009

	Lowest quintile	Second quintile	Third quintile	Fourth quintile	Top quintile
Gasoline					
Egypt	1%	2%	4%	7%	86%
Jordan	8%	12%	13%	17%	50%
Lebanon	5%	11%	20%	26%	38%
Diesel					
Egypt	1%	9%	5%	14%	71%
Jordan	4%	10%	16%	24%	46%
Mauritania	1%	2%	6%	14%	77%
Morocco	7%	11%	16%	24%	42%
Yemen	2%	8%	9%	25%	56%
LPG					
Egypt	15%	18%	20%	22%	25%
Jordan	18%	19%	20%	20%	23%
Morocco	13%	16%	19%	22%	30%
Yemen	12%	16%	20%	23%	29%

⁶⁴ Arab Forum for Environment and Development (AFED), “Arab Environment: Sustainable Consumption”. Annual Report, 2015; Abdel Gelil, I. and Saab, N. (Eds.); Beirut, Lebanon

Kerosene					
Jordan	19%	21%	22%	23%	15%
Yemen	27%	22%	18%	19%	14%
Electricity					
Jordan	17%	18%	19%	20%	26%
Lebanon	10%	15%	19%	23%	33%
Mauritania	2%	8%	12%	25%	53%

Source: IMF, “Subsidy Reform in the Middle East and North Africa: Recent Progress and Challenges Ahead”, Carlo Sdravovich, Randa Sab, Younes Zouhar, and Giorgia Albertin. – Washington, D.C.

Note: Based on household surveys conducted between 2003 and 2009.

Low-income groups do benefit from subsidies since these enable them to consume the subsidized products at lower prices, thus contributing to Human-Rights access to basic services. The benefits of these subsidies also extend to other goods and services that use the subsidized products as an input for production and delivery such as transportation of food items. Yet, even though low-income groups do benefit from these subsidies, however, they are poorly targeted, and the cost-benefit is significantly high. Low-income groups can benefit more from targeted policies that would cost the government less. In some least developed countries, low-income groups suffer from lack of or poor access to basic services and thus hardly benefit from subsidies. In Mauritania, access to electricity is very low – less than 22 per cent of the population in 2012⁶⁵ – and the wealthiest 40 per cent of the population captured 78 per cent of the subsidies on electricity between 2003 and 2009 (table 1).

Subsidies put pressure on public spending and lead to crowding out of spending on social sectors, namely health and education, which would have a direct positive effect on the poor. In 2008, the governments’ expenditure on energy subsidies in Jordan and Egypt was equivalent to the governments’ expenditure on health and education, combined.⁶⁶ Low-income groups, and women and girls in particular, are usually the most vulnerable

In addition to their inefficiencies in targeting the poor, subsidies impose a burden on domestic economies in the Arab region, a burden that many countries are struggling to afford. Low tariffs increase domestic consumption and decrease resources available for exports which affects negatively the trade balance and foreign exchange reserves; they also promote energy-intensive industries at the expense of labour-intensive industries which add to the unemployment burden. In fact, based on general-equilibrium model developed by the World Bank, it was demonstrated that in Egypt when energy prices are high, reducing energy subsidies by 25 per cent would increase employment by 1 per cent and if energy subsidies were completely eliminated, employment would increase by 4 per cent.⁶⁷ And so, in light of the socio-economic challenges previously described, it can be stated that the Arab region has a timely opportunity to channel its fiscal policies towards sustainable growth. Energy prices are low and most of the Arab economies are struggling with recession, an increasing young population and high unemployment rates. The current means of managing and using natural resources – through water and energy subsidies – cannot be sustained

⁶⁵ World Bank, World Development Indicators Database

⁶⁶ Arab Forum for Environment and Development (AFED), “Arab Environment: Sustainable Consumption”. Annual Report, 2015; Abdel Gelil, I. and Saab, N. (Eds.); Beirut, Lebanon

⁶⁷ World Bank, “Corrosive subsidies”, World Bank Middle East and North Africa Region MENA Economic Monitor, October 2014

both from an environmental perspective and a financial perspective. The present is likely the most convenient time to introduce subsidy reforms and develop renewable energy sectors.

In that respect, the renewable energy sector has been growing at a slow pace in the region and is still far from its potential. Plans and targets have been developed by Arab countries to shift, partially, to clean energy by 2030, however, the full extent of potential gains from the renewable energy sector extend beyond the environmental. Renewable energy sector can in fact contribute to job creation. According to the International Renewable Energy Agency (IRENA), employment in renewable energy sector increased globally by 5 per cent in 2015 to reach 8.1 million persons, solar PV capturing the largest share of 35 per cent.⁶⁸ Employment in the renewable energy sector is distributed mainly among development, manufacturing and installation stages. As compared to oil and gas sector, employment in renewable energy jobs increased by 6 per cent in 2015 in the United States while employment in oil and gas decreased by 18 per cent. In China, the number of people employed in renewable energy sector exceeded the number of employed in the oil and gas sector, totalling 3.5 and 2.6 million respectively.⁶⁹ It is also estimated that doubling the share of renewable energy in total energy would create 24 million jobs by 2030.⁷⁰

The Arab region in general and the GCC countries in particular are expected to realize numerous gains from renewable energy projects. In Tunisia, the number of direct jobs created in the renewable energy sector between 2010 and 2015 is around 3,185 jobs, mainly in the production, supply, installation, operation and maintenance phases. Residential solar water heaters generate the largest number of jobs as they are the most labour-intensive.⁷¹ IRENA estimates that if GCC countries pursue their renewable energy targets – generating 80 GW renewable energy as announced in their 2030 plans and targets –140,000 persons would be employed on average every year in the renewables sector and that by 2030, 207,000 direct jobs would be created, mostly in Saudi Arabia (39 per cent) and the United Arab Emirates (44 per cent).⁷² New jobs will be created during the manufacturing, engineering, procurement, financing and project development, construction, operation and maintenance, and decommissioning of the projects. Furthermore, following that plan, GCC countries would reduce their CO₂ emissions by one gigaton by 2030; reduce their per capita carbon footprint by 8 per cent; realize savings between \$55 to \$87 billion (depending on oil prices); and achieve 16 per cent reduction in water withdrawal in the power sector by 2030.⁷³ Solar PV projects are expected to create twice as many jobs per unit of electricity generation as compared to traditional sectors like coal or natural gas.⁷⁴

To develop the renewable energy sector, government's commitment is crucial and needs to be reflected by clear targets, a time-bound action plan, clear and dedicated policies, an enabling business environment to attract private investors, and a mature institutional framework that governs these operations. Government's investments in research and development would have a positive impact on upgrading domestic knowledge and skills, developing new technologies

⁶⁸ IRENA, "Renewable Energy and Jobs" Annual Review 2016, IRENA, Abu Dhabi

⁶⁹ Ibid

⁷⁰ Ibid

⁷¹ Regional Center for Renewable Energy and Energy Efficiency (RCREEE) and UNDP, "Arab Future Energy Index AFEX 2016 Renewable Energy", 2016

⁷² IRENA, "Renewable Energy Market Analysis: The GCC Region", 2016, IRENA, Abu Dhabi.

⁷³ Ibid

⁷⁴ IRENA, "Renewable Energy Market Analysis: The GCC Region", 2016, IRENA, Abu Dhabi.

tailored for the region and most importantly, it would have a positive impact on confidence building and reflect government's commitment to clean technologies. Energy subsidy reform plays a contributing role in developing the renewable energy sector. Financial resources released from subsidies can be channelled towards the development of renewable energy sectors. However, there is not enough information on the use, or potential use, of these resources. Some countries have even announced financial resources released from subsidy reforms can be used in health and education sectors. This rationale was used in Egypt to address citizens and to curb any potential opposition.⁷⁵

Arab countries would benefit significantly from rationalizing subsidies. However, to be successful, subsidy reforms need to be introduced in a participatory approach, involving different stakeholders – governments, civil society and private sector – and be communicated to citizens in a transparent and clear manner, to prevent resistance. In 2011, the sharp increase in international energy prices led to social and political pressure in Jordan and pushed the government to suspend the automatic adjustment system (Annex 2). Subsidy reforms should go hand in hand with targeted subsidies, or enhanced social safety nets to compensate lower income groups. Subsidy reform is important to strengthen support for vulnerable and poor segments of the population, and to strengthen the fiscal position.

To have a successful subsidy reform, governments need to secure the support of citizens by raising public awareness and confidence building. In most economies, the cost of subsidies are not published and citizens are neither cognizant of their financial cost nor of the environmental implications. The government needs to inform citizens about the cost of subsidies and the plan to rationalize them. Citizens have little trust in how governments will manage financial resources released since corruption is significant in the region and transparency and equity are low. Therefore, citizens need to know that the resources released from subsidies will be used in a more productive and targeted manner, benefiting the poor and most vulnerable segments of the population, and would contribute to environmental sustainability. Engaging in communication and consensus building is beneficial. While Mauritania did not adopt any communication strategy, Jordan engaged stakeholders and the public more by providing regular updates and clear messages on the upcoming steps.⁷⁶ Morocco followed a comprehensive communication strategy (television and radio stations, newspapers, commercials) to address citizens, covering the economic rationale behind the reform and the different steps to be followed.⁷⁷ Improving the governance of the public utility sector might be an important step in building confidence; it can be achieved by improving the efficiency of resource management and the collection of fees. In this regard, Tunisia undertook an audit of its three electricity companies to introduce the necessary measures to enhance governance.⁷⁸

⁷⁵ Arab Forum for Environment and Development (AFED), "Arab Environment: Sustainable Consumption". Annual Report, 2015; Abdel Gelil, I. and Saab, N. (Eds.); Beirut, Lebanon

⁷⁶ IMF, "Subsidy Reform in the Middle East and North Africa : Recent Progress and Challenges Ahead", Carlo Sdravovich, Randa Sab, Younes Zouhar, and Giorgia Albertin. – Washington, D.C.

⁷⁷ Arab Forum for Environment and Development (AFED), "Arab Environment: Sustainable Consumption". Annual Report, 2015; Abdel Gelil, I. and Saab, N. (Eds.); Beirut, Lebanon

⁷⁸ IMF, "Subsidy Reform in the Middle East and North Africa : Recent Progress and Challenges Ahead", Carlo Sdravovich, Randa Sab, Younes Zouhar, and Giorgia Albertin. – Washington, D.C.

Furthermore, the government needs to develop a long-term comprehensive reform plan. Subsidy reform should not be a stand-alone policy, it needs to be accompanied by a long-term vision with clear objectives and an action plan. Aggressive and individual subsidy reform plans have a high risk of raising inflation, which would have significant socio-economic implications. Long-term comprehensive reform plan needs to follow a consultative process and to be based on a detailed assessment of the implications of the policy. Reform can target one product at a time but should be accompanied by corrective measures on the other hand to protect the most affected. Tunisia, for example, developed a comprehensive plan entailing energy subsidy reform along with a new social housing program, income tax reform and a new targeted household strategy (Annex 2).

Any subsidy reform needs to be gradual. Phasing out subsidies needs to be implemented in a gradual manner to enable consumers to adjust gradually to the new prices, and to enable governments to gradually introduce mitigating measures. Gradual phasing out controls inflation and prevents the transmission of inflationary pressures from one sector to another. The larger the size of the subsidy, the longer the reform period is advised to be. In the case of oil exporting countries, consumers pay as little as 20 per cent of the supply cost, hence, a sudden increase in prices erodes the purchasing power and will be opposed by consumers, thus a gradual phasing out would give more room for adjustments and would be more acceptable. Morocco initiated the energy price increases in 1999 and formally started the phasing out process of subsidies in 2011, similarly, the United Arab Emirates has been gradually increasing water and electricity tariffs since 2011 (Annex 2).

Another key aspect for a successful reform entails the adoption of mitigating measures. Mitigating measures can take the form of targeted energy subsidies or enhanced social safety nets. Targeted energy subsidies would limit subsidies to certain energy products, products used mostly by poor, like kerosene or LPG. However, this practice needs to be closely monitored to prevent illegal practices and free-riders. Since Kerosene and LPG are the most widely used products by low-income groups in many Arab countries, it might be an option to keep the subsidies for these two products. Morocco for example phased out energy subsidies on all products except LPG to incentivize low-income groups to use it, as it is a cleaner and more efficient source of energy.⁷⁹ Other countries limited the subsidized quantities, which might be an incentive for consumers to rationalize consumption, however, this practice might fail to reach out the most vulnerable who have limited connectivity to grids, like in Mauritania. In Egypt, electricity tariffs remained unchanged for the lowest bracket of consumption. Enhancing social safety is a common mitigation measure. Introducing cash transfers for the poor and vulnerable segments might be an option although reaching out to the target group might not be easy; in-kind transfers like increased subsidies to particular food items or improved and cheaper public transportation would have a wider coverage. Morocco, for example, has expanded its health insurance program to cover more low-income groups and has improved its public transport system. In Sudan, energy price increases were complemented by increases in public sector wages, wider health insurance coverage, cash transfers and an exemption of school and transportation fees for the most vulnerable (Annex 2).

⁷⁹ UNDP, "Energy Subsidies in the Arab World", The Arab Human Development Report Research Paper Series, 2012, Bassam Fattouh and Laura El-Katiri

The last important key for a successful energy subsidy reform is to develop alternative energy sources. Faced with an increase in prices, households would rationalize their consumption and would move to alternative energy sources. Government's support to renewable energy sector would facilitate this shift, and would prevent households in urban areas from shifting to wood, which has a detrimental impact on health and the environment. That's why government's comprehensive plan needs to be inclusive and to cater for these areas, rationalizing subsidies and making it more targeted are key policies for the region.

III. Regional initiatives

Subsidy reform, sustainable use of water and energy resources and renewable energy are issues that have been discussed extensively at the Arab regional level. A number of regional plans and targets have been adopted by Arab countries. However, at the national level, policies in general and fiscal policies in particular are still not aligned with these plans and targets.

In September 2009, the League of Arab States, ESCWA and the United Nations Environment launched the Arab Regional Strategy on Sustainable Consumption and Production, a joint initiative on sustainable consumption and production in the Arab region. The strategy was endorsed by the Council of Arab Ministers Responsible for the Environment (CAMRE) in November 2009.⁸⁰ The strategy aims to promote sustainable consumption and production in the Arab region through the rational utilization of resources to protect the environment and contribute to poverty eradication and a sustainable lifestyle. The strategy promotes energy efficiency, the development of renewable energy technologies, sustainable management of water resources, adoption of integrated water resources management (IWRM) tools, waste management, rural development and poverty eradication, education and sustainable lifestyles and tourism, as the main drivers for sustainable consumption and production (SCP) strategy. The strategy also calls for reforming existing energy tariffs in order to reflect the social and environmental costs of natural resource consumption and rationalizing their use, while preserving energy subsidies for low-income groups. Overall the strategy seeks to ease financial burden, contribute to poverty eradication, reduce pollution and address health-related implications, generate green jobs and improve the overall socio-economic performance. The adoption and implementation of the strategy at the national level has been weak. Jordan integrated SCP policies in its national development plan, Egypt, Morocco, Lebanon and Palestine have done some progress in developing their national roadmap,⁸¹ however, with the increasing political commitment to address climate change issues and the increasing awareness on the need to rationalize consumption of natural resources, the implementation of this strategy might pick up in the coming years.

In November 2010, the Executive Office of the Arab Ministerial Council for Electricity (AMCE) adopted the “Pan Arab Strategy for the Development of Renewable Energy Applications (2010-2030)” developed by the League of Arab States. The pan-Arab strategy was later adopted by the Arab Economic and Social Development Summit in January 2013.⁸² The strategy promotes renewable energy technologies in Arab countries to satisfy increasing demand, to diversify sources of energy and to reduce dependency on fossil-fuels. It focuses on electricity generation and aims to contribute to socio-economic development of the region and protection of the environment. The strategy was supplemented by Arab Renewable Energy Framework (AREF), which was developed under the umbrella of the League of Arab States, in collaboration with the Regional Center for Renewable Energy and Energy Efficiency (RCREEE) and GIZ, as a guide for Arab countries for the formulation of their National Renewable Energy Action Plans (NREAP). The framework, endorsed by the Arab Ministerial Council of Electricity in mid-2015, identifies key issues for a

⁸⁰ UN Environment, Final Draft Arab Strategy on SCP, November 6, 2009

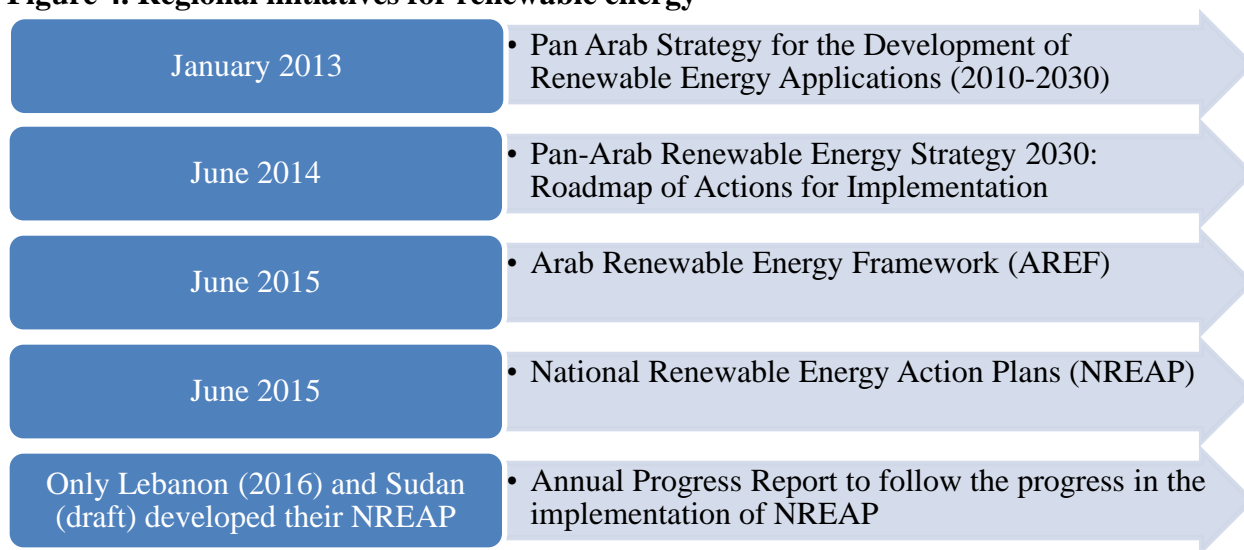
⁸¹ Arab Forum for Environment and Development (AFED), “Arab Environment: Sustainable Consumption”. Annual Report, 2015; Abdel Gelil, I. and Saab, N. (Eds.); Beirut, Lebanon

⁸² League of Arab States, IRENA, RCREEE, “Pan-Arab Renewable Energy Strategy 2030”

successful national plan and includes a suggested template. In 2016, Lebanon launched “The National Renewable Energy Action Plan for the Republic of Lebanon (NREAP 2016-2020)” based on the League of Arab States’ template and the support of RCREEE.⁸³

In June 2014, the League of Arab States, IRENA and RCREEE launched a study entitled “Pan-Arab Renewable Energy Strategy 2030: Roadmap of Actions for Implementation”⁸⁴ to support national and regional efforts to implement the Pan-Arab Renewable Energy Strategy 2010-2030. The study presents a roadmap for Arab countries to achieve their renewable energy targets by 2030 focusing on national priorities.

Figure 4. Regional initiatives for renewable energy



The “Pan Arab Strategy for the Development of Renewable Energy Applications (2010-2030)” is an ambitious strategy that requires Arab countries to scale-up investments in renewable energy sector. The successful and timely implementation of this strategy necessitates an enabling regulatory framework, investments in green technologies, conducive policies and fiscal incentives. Feed-in-tariff schemes are among the most popular incentives in the Arab region (Annex I). The Lebanese action plan relies significantly on financial incentives provided by the central bank to promote the shift to renewable energy and energy efficiency, relying mainly on subsidized loans provided by Lebanese banks and backed by the central bank.

Morocco is the pioneer in upscaling renewable energy sector. The Moroccan government adopted a national strategy to develop renewable energy and energy efficiency sector, focusing mainly on wind and solar energies. The strategy envisions to invest around US\$3.2 billion over a period of 10 years in wind energy projects to increase installed capacity from 280MW in 2010 to 2,000MW in 2020, equivalent to 26 per cent of current electricity generation and will prevent the

⁸³ Ministry of Energy and Water, Lebanese Center for Energy Conversation (LCEC), *The National Renewable Energy Action Plan for the Republic of Lebanon (NREAP 2016-2020)*, 2016.

⁸⁴ League of Arab States, IRENA, RCREEE, “Pan-Arab Renewable Energy Strategy 2030”, 2014

emission of 5.6 million tons of CO₂ per year.⁸⁵ The wind energy project, along with projects in solar energy, benefit from the Energy Development Fund.⁸⁶

On the other hand, while Saudi Arabia has set its renewable energy target to 9.5 gigawatt by 2023, the government estimates that it needs between \$30 and \$50 billion worth of investments.⁸⁷ However, implementation of these targets remains very slow. The incentives provided to private investors are minor. All national budgets up to 2015 did not allocate any funds for renewable energy sector. It was in 2016 that the national budget referred to King Abdullah City for Atomic and Renewable Energy, without any explicit budget allocation. In the 2017 national budget, around \$41 million are allocated to economic resources and general programs including projects for managing water resources, rationalizing water and electricity consumption, and supporting renewable energy sector.⁸⁸

In terms of water resources, the Arab Ministerial Water Council, under the auspices of the League of Arab States, adopted the “Arab Strategy for Water Security in the Arab Region to Meet the Challenges and Future Needs for Sustainable Development 2010-2030”⁸⁹. The strategy and its associated action plan were prepared with the support of the Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD) in partnership with eight institutions, including ESCWA. The strategy was adopted in 2011 and subsequently by the Arab Summit. These documents recognize that the Arab region faces severe water scarcity, exacerbated by rapid population growth and persisting inefficient management of water resources, in particular in irrigation. The overall objective of the strategy lies in ensuring sustainable use of water resources in the Arab region to achieve water security by 2030. The strategy calls for efficient management and use of water resources, protection from climate change, pollution and depletion, adoption of the principles of integrated water resources management (IWRM), development of human and technical capacities in the water sector, increased cooperation among Arab countries, increased investments in water sector, in particular from the private sector, development of modern technologies and scientific research on water sector, and raising awareness on water and the environment.

The strategy was further supported by an action plan approved by AMWC in May 2014. The action plan presents practical guide to ensure the successful implementation of the strategy. However, both strategy and its action plan do not address the low tariffs charged to water. The strategy elaborates on the large share of water resources wasted in irrigation and calls for development of modern technologies to enhance irrigation practices, to reduce waste and inefficiencies and the development of crops that support salinity and drought.

Tunisia and Jordan are pioneers in the Arab region in terms of addressing unsustainable consumption of water resources. Tunisia adopted tariff blocks whereby tariffs are correlated to

⁸⁵ Kingdom of Morocco, Moroccan Investment Development Agency, <http://www.invest.gov.ma/>, accessed on 15 May 2017

⁸⁶ Ibid

⁸⁷ Reuters, “Saudi Arabia pushes ahead with renewable drive to diversify energy mix”, 17 April 2017, <http://www.reuters.com/article/saudi-renewable-idUSL8N1HP10B>

⁸⁸ Kingdom of Saudi Arabia, Ministry of Finance, Budget Data, <https://www.mof.gov.sa/en/docslibrary/Budget/Pages/default.aspx>

⁸⁹ League of Arab States, Arab Ministerial Water Council (2012). Arab Strategy for Water Security in the Arab Region to Meet the Challenges and Future Needs for Sustainable Development 2010-2030.

consumption levels.⁹⁰ On the other hand, “Water for life – Jordan’s Water Strategy 2008-2022” recognizes the challenges faced in terms of water demand, management and supply. In particular it stresses on the unsustainability of past water exploitation practices and the imbalances in terms of water supply and demand and the deterioration in water quality. The strategy encompasses an institutional reform, calls for efficient use and management of water resources, reduction in the exploitation of groundwater and adoption of appropriate water tariffs and incentives to promote water efficiency. Recognizing that water for irrigation accounts for 72 per cent of water demand in 2007, the strategy promotes crops with high economic return per unit of water used, calls to remove tariffs and customs on imported agricultural products, and calls to adopt block tariffs, maintaining low tariffs for low consumption to protect the poor.⁹¹

Implementation of national and regional plans in energy or water sectors needs political commitment first, then formulation of policies and allocation of financial resources. In the Arab region, political commitment has been expressed by the adoption of the above-mentioned strategies and by governments’ commitments to address climate change issues and to achieve sustainable development goals. Although this commitment is necessary, it is not sufficient: policies and financial resources are still insufficient.

⁹⁰ Arab Forum for Environment and Development (AFED), “Arab Environment: Sustainable Consumption”. Annual Report, 2015; Abdel Gelil, I. and Saab, N. (Eds.); Beirut, Lebanon

⁹¹ Ministry of water and irrigation, Jordan, “Water for life – Jordan’s Water Strategy 2008-2022”

IV. Conclusion

As environmental concerns are increasing, it has become essential to address wasteful consumption and production of natural resources, and to reform the allocation of financial resources. Any successful reform plan requires a strong political commitment, large social support, formulation of targeted policies and allocation of financial resources. In the Arab region, political commitment has been expressed by the adoption of the 2030 development agenda and the Paris Agreement on Climate Change in 2015. This commitment is a stepping-stone and needs to be accompanied with policies and financial resources.

Water and energy subsidies are costly to Arab countries, at the social, economic and environmental levels, and there is a growing need to eliminate them. However, eliminating these subsidies might have a significant impact on the poor and most vulnerable, on inflation and productivity, therefore rationalizing these subsidies is the most beneficial policy at this level.

Rationalizing water and energy subsidies could take the form of:

- Adopting progressive tariff schemes that would improve equity. It would protect the poor by securing human-rights' access to basic services, incentivize rational consumption and discourage wasteful consumption.
- Phasing out energy subsidies on most products except products that are largely consumed by low-income groups, or products that emit less greenhouse gases. This measure would also incentivize rational consumption while protecting the poor.
- Partially increasing water and energy prices thus decreasing the price gap, by adjusting prices manually. Determining the optimal percentage increase is a challenging task. The current low international energy prices provide a timely opportunity to reform energy subsidies in the region.
- Partial phasing out of all subsidies while adopting mitigating measures, like distributing direct cash transfers, supporting public transportation systems and strengthening existing social safety nets. Enforcing these mitigating measures and ensuring equity is a challenging task, in particular direct cash transfers. Developing renewable energy sector and providing services at competitive prices is an important measure to ensure the success of phasing out mechanism.

Water and energy subsidy reforms should not be stand-alone policies, but rather part of a comprehensive plan. Governments need to prioritize improving the efficiency of the water and electricity sectors, increase coverage, improve quality of services, enhance irrigation efficiency, revisit crop selection, and promote the use and development of renewable sources of energy.

In order to have a successful subsidy reform, the action plan needs to encompass raising awareness and consensus building. It should be developed in a transparent and participatory manner, adopting gradual steps and mitigating measures.

By rationalizing subsidies, the government frees up some financial resources. These resources can be injected in the renewable energy and energy efficiency sector, scaling up investments in that regard and speeding up the shift to green technologies. Alternatively, these resources can be directed towards budget support, improving therefore the fiscal position and easing the debt burden. They can also be used to support social services sector, health, education, supporting social safety nets, increasing investments in rural areas, improving transportation, water and electricity systems. The intended use of these resources need to be spelled-out in the reform plan and to be enforced by the government to ensure the success of the plan.

Annex 1. Energy Efficiency and Renewable Energy in Arab Countries

	AFEX RE 2016 Results ¹	Number of policies ²	RE and EE targets ³	Law on RE and EE ⁴	RE Fund	Financial incentives for RE projects	Support to R&D
Algeria	47%	7	Yes, by 2030	Yes	Yes, 2011, Funds are provided by 1 per cent levy on oil tax revenues.	Yes, feed-in-tariffs	NA
Bahrain	26%	0	Yes, by 2030	NA	NA		
Djibouti	34%	1	Yes, by 2035	NA	NA	NA	NA
Egypt	55%	7	Yes, by 2022	Yes, 2014	Yes, 2012 Sources of fund not yet identified	Yes, Sales tax and custom tax reduction for RE equipment; non-tax incentives to energy producers; Feed-in-tariffs; Investor-friendly incentive scheme for investments in renewable energy projects	New and Renewable Authority (NREA) responsible for R&D.
Iraq	24%	2	Yes, by 2030	NA	NA	NA	NA
Jordan	66%	5	Yes, by 2020	Yes, 2012	Yes, Jordan Renewable Energy and Energy Efficiency Fund (JREEEF), financed by budget allocations and international institutions.	Yes, 100% exemption from income tax over 10 years for investors in RE; Feed-in-tariffs RE subsidies to privately owned and operated facilities, interest rate subsidies on commercial loans, credit facilities (by JREEEF).	JREEEF provides research and technical cooperation grants for targeted programmes and feasibility studies.
Kuwait	25%	5	Yes, by 2030	NA	NA	NA	Yes, Innovative Renewable Energy Research Program to prepare studies to identify the optimum RE technologies that fit local conditions, and conducting R&D producing novel systems to address particular future needs
Lebanon	39%	2	Yes, by 2020	NA	No, National Energy Efficiency and Renewable Energy Action (NEEREA) received a grant to finance RE projects	Yes, A national financing mechanism initiated by the Central Bank of Lebanon, via NEEREA, to green energy projects, offering subsidized loans for EE and/or RE projects (individuals,	NA

	AFEX RE 2016 Results¹	Number of policies²	RE and EE targets³	Law on RE and EE⁴	RE Fund	Financial incentives for RE projects	Support to R&D
						SME's, or corporate bodies) and to all sectors.	
Libya	18%	1	Yes, by 2030	NA	NA	NA	NA
Mauritania	33%	0	Yes, by 2020	NA	NA		
Morocco	71%	7	Yes, by 2030	Yes, 2009	Yes, Energy Development Fund (EDF) established from national and regional contributions, and Renewable Energy Fund (FER) as equity investments	Yes, Feed-in-tariffs	Yes, the National Agency for the development of Renewable Energy and Energy Efficiency, 2010
Oman	24%	0	Yes, by 2020	NA	NA		
Palestine	51%	NA	Yes, by 2020	Yes, 2015	NA		Yes, feed-in-tariffs
Qatar	29%	0	Yes, by 2030				
Saudi Arabia	33%	3	Yes, by 2023	Code	NA	Yes, Tax and tariff exemptions on imported equipment for King Abdullah City for Atomic and Renewable energies	Yes, Energy research and innovation programme
Sudan	31%	0	Yes, by 2031		NA		
Syrian Arab Republic	20%	1	Yes, NA	Yes	NA	Yes, Suspended policies	Yes, National Energy Research Centre is responsible for promoting research in that area.
Tunisia	43%	15	Yes, by 2030	Yes	Yes, 2005 National Fund for Energy Management (FNME) financed by a tax on some touristic cars registration, VAT tax and custom duties on air conditioning equipment and commodities; revenue derived from fines imposed on non-compliant companies or individuals	Yes, Tax exemptions and reduced import duties for the import of RE & EE equipment materials Feed-in-tariffs Incentives for residential solar water heaters in the form of subsidy or credit payable within five years A special incentive programme targeting the tertiary sector in the form of subsidies	NA

	AFEX RE 2016 Results¹	Number of policies²	RE and EE targets³	Law on RE and EE⁴	RE Fund	Financial incentives for RE projects	Support to R&D
					with EE practices; income derived from Clean Development Mechanisms	Premiums for RE projects, once the project is running, in the form of refunds.	
United Arab Emirates	54%	8	Yes, 2020 for Abu Dhabi and 2050 for Dubai	Regulations for RE	Yes, Masdar Clean Tech Fund for RE projects globally and domestically. Abu Dhabi Fund for Development provides soft loans for RE projects in developing countries.	Yes, feed-in-tariffs	Yes, RE education and R&D strategy: Masdar (Mubadala, an Abu Dhabi sovereign wealth fund); École Polytechnique Fédérale de Lausanne and CSEM UAE (Ras Al Khaimah Investment Authority)
Yemen	22%	1	Yes, by 2025	NA	NA	NA	NA

RE: Renewable Energy; EE: Energy Efficiency

(1) AFEX Renewable Energy 2016 Index provides an assessment of countries' progress in renewable energy according to four evaluation categories: Market Structure, Policy Framework, Institutional Capacity, and Finance and Investment. Under these categories, countries are assessed according to nine different factors and 30 quantitative and qualitative indicators.

(2) Number of policies related to renewable energy and energy efficiency, either laws, strategies, incentives...

(3) RE and EE targets and the target date

(4) Refers to new laws that were passed for RE and EE, does not include amendments to previous laws.

Source: Compiled by author from:

- IEA/IRENA Global Renewable Energy Policies and Measures Database (<http://resourceirena.irena.org/gateway/countrySearch/?countryCode=BHR>);

- Regional Center for Renewable Energy and Energy Efficiency (RCREEE) and UNDP, "Arab Future Energy Index AFEX 2016 Renewable Energy", 2016;

- Arab Forum for Environment and Development (AFED), "Arab Environment: Sustainable Consumption". Annual Report, 2015; Abdel Gelil, I. and Saab, N. (Eds.); Beirut, Lebanon;

Annex 2. Main subsidy reforms in the Arab Region

Country	Subsidy reforms
Algeria	Ad-hoc fuel price adjustment; Fuel price increase in 1995 and 2000.
Bahrain	Ad-hoc fuel price adjustment; Gas prices increased by 50% in 2012. A program of phased increases in diesel price announced in 2013, but rejected by parliament; In 2015, further increases in gas prices and fuel price in marine stations; electricity and water tariffs increased for large consumption; In 2016, gasoline prices increased by 60%; Plan to gradually increase prices of diesel, kerosene and LPG, electricity and water tariffs until 2019.
Egypt	Ad-hoc fuel price adjustment; In 2012–2013, gasoline prices increased by 112% for high-end vehicles, fuel oil by 33% for non–energy-intensive industries and by 50% for energy-intensive industries. Household electricity prices increased by 16%, no changes for the lowest consumption bracket. Natural gas and fuel oil prices for electricity generation rose by one-third; In 2014, energy subsidy cuts led to 64% increase in diesel prices in electricity and in many other refined products. The five-year program plans to eliminate all energy subsidies, except for subsidies for LPG; Plan to adopt smartcards and to expand priority social programs and targeted cash transfer.
Iraq	Ad-hoc fuel price adjustment.
Jordan	Automatic fuel price adjustment; Fuel prices increased in 2005 and 2008 to reflect international prices; In 2011, temporary suspension of the automated adjustment mechanisms due to social and political pressure, leading to a reduction in prices and taxes on fuel; In 2012, electricity tariffs increased for selected sectors (banks, telecommunications, hotels and mining) and large domestic corporations and households. At the end of 2012, fuel subsidies eliminated; In 2013, monthly fuel price adjustment mechanism resumed; In 2014, electricity tariffs increased by 7.5–15% for selected consumers; Introduction of a policy to distribute cash transfers to poor families if oil prices are above US\$100 (covering 70 % of the population); Plan to gradually increase electricity tariffs and develop new energy sources with lower generation costs.
Kuwait	Ad-hoc fuel price adjustment; In 2015, price of diesel doubled, but soon cut back prices of diesel and kerosene following political pressure and plans to remove subsidies on gasoline and electricity postponed; In 2016, gasoline price increased by around 70%; A new law to reform water and electricity subsidies will be effective in mid-2017.
Lebanon	Automatic fuel price adjustment; In 2008, fuel price subsidies eliminated by reintroducing fuel excise taxes; In 2011, fuel excise taxes reduced as a result of high international prices and increased domestic political tension.
Libya	Ad-hoc fuel price adjustment.
Mauritania	Automatic fuel price adjustment; In 2012, new automatic diesel price formula introduced, domestic fuel prices increased to match international levels; electricity tariffs increased for the service sector; Gradual reorientation of social safety nets toward well-targeted cash transfer schemes; Plan to ensure diesel pricing formula applied automatically, to eliminate electricity and gas subsidies and to develop a nationwide cash transfer program.
Morocco	Automatic fuel price adjustment; Fuel prices increased in 2005 and 2006; In 2011, government examined replacing universal subsidies with targeted transfers; In 2012, diesel prices increased by 14%, gasoline by 20%, and industrial fuel by 27%;

	<p>In 2013, partial indexation mechanism for certain petroleum products, leading to an increase in diesel prices by 8.5%, gasoline by 4.8%, and fuel by 14.2%;</p> <p>In 2014, elimination of gasoline and industrial fuel subsidies;</p> <p>In 2015, elimination of diesel subsidies. Only LPG remained subsidized;</p> <p>Gradual strengthening of existing social safety nets and their targeting to vulnerable groups by improving education, health, and assistance to poor widows and the disabled, and by supporting public transport;</p> <p>Plan to continue implementing the comprehensive subsidy reform combined with cash transfers and other social assistance programs.</p>
Oman	<p>Ad-hoc fuel price adjustment;</p> <p>In 2015, the industrial price for natural gas doubled, a 3% annual rise in gas prices for industries introduced;</p> <p>In 2016, fuel subsidy reform linking prices to international prices (diesel, gasoline), water tariffs increased for government, commercial and industrial users.</p>
Qatar	<p>Ad-hoc fuel price adjustment;</p> <p>In 2011, pump prices of gasoline increased by 25% and of diesel by 30%;</p> <p>In 2014, diesel prices increased by 50%;</p> <p>In 2015, water and electricity prices increased and linked to consumption;</p> <p>In 2016, price of gasoline increased by 30%; petrol and diesel prices liberalized, costs linked to fuel production and distribution.</p>
Saudi Arabia	<p>Ad-hoc fuel price adjustment;</p> <p>In 2010, price of electricity to non-individual users increased by more than 20%;</p> <p>In 2015, price of energy products, electricity and water to business and households increased between 10 and 134% while keeping low tariffs for households with low usage levels.</p>
Sudan	<p>Ad-hoc fuel price adjustment;</p> <p>In 2012, prices of gasoline increased by 47%, diesel by 23%, and LPG by 15%;</p> <p>In 2013, prices of diesel increased by 75%, gasoline by 68%, and LPG by 67%;</p> <p>Public sector wages increased, a monthly grant allocation and lower health insurance premium for about 500,000 urban poor families, exemption of school and transportation fees for disabled people;</p> <p>Plan to gradually phase out the remaining subsidies on petroleum products and other products while strengthening the social safety net by increasing social spending and adopting a better targeted social safety net.</p>
Syrian Arab Republic	<p>Ad-hoc fuel price adjustment;</p> <p>Reform of fuel prices began in 2008, to raise fuel prices every 3 months to reach international prices;</p> <p>In 2011, plans to phase out subsidies suspended following political protests.</p>
Tunisia	<p>Automatic fuel price adjustment;</p> <p>Fuel prices increased in 2005 and 2007.</p> <p>Subsidies effective when oil prices reached US\$52 per barrel in 2009 and US\$60 in 2010;</p> <p>Gasoline and diesel prices and electricity tariffs increased by 7%, on average in 2012 and by 7–8% in 2013;</p> <p>In 2014, energy subsidies to cement companies reduced by half by increasing electricity tariff by 47% and natural gas price by 35%;</p> <p>Electricity tariff and natural gas prices increased for medium and low-voltage consumers;</p> <p>An automatic gasoline price formula adopted;</p> <p>An additional lifeline electricity tariff for households consuming less than 100 kwh per month introduced; A new social housing program for needy families established;</p> <p>Plan to gradually phase out energy subsidies by increasing electricity tariffs and fuel prices, introduce a new targeted household support strategy and prepare a new unified registry system for vulnerable households.</p>
United Arab Emirates	<p>Ad-hoc fuel price adjustment;</p> <p>Prices reviewed in 2001, 2004, 2005 and 2007</p> <p>In 2010, prices of gasoline increased;</p> <p>In 2011, Dubai raised the water and electricity tariffs by 15%;</p> <p>In 2015, fuel pricing reforms linking gasoline and diesel prices to international prices;</p>

	<p>A comprehensive water consumption strategy was developed in Abu Dhabi in 2015, leading to 170% increase in water tariff and 40% increase in electricity tariff;</p> <p>In 2016 water and electricity tariffs increased further; Natural gas, accounting for the largest share of subsidies, remain subsidized;</p> <p>A plan to completely phase out the remaining electricity, water and gas subsidies while protecting the most vulnerable.</p>
Yemen	<p>Ad-hoc fuel price adjustment;</p> <p>Fuel price increase in 2005 followed by large protests;</p> <p>In 2011–2012, gasoline prices increased by 66% and diesel and kerosene prices doubled;</p> <p>In 2013, diesel price unified across users, including the electricity sector;</p> <p>Coverage of the Social Welfare Fund expanded to 500,000 additional families;</p> <p>Plan to further reduce energy subsidies through gradual increase in fuel prices, strengthen support through an expansion of the Social Welfare Fund.</p>

Source:

- UNDP, “Energy Subsidies in the Arab World”, The Arab Human Development Report Research Paper Series, 2012, Bassam Fattouh and Laura El-Katiri
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