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If Not Now, When? Energy Price Reform in Arab Countries

Prepared by Staff of the International Monetary Fund

I N T E R N A T I O N A L M O N E T A R Y F U N D

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EXECUTIVE SUMMARY

Regulating energy prices has been a common practice around the world. Access to energy products is central to people's well-being and countries' economic development, and thus many governments tend to regulate domestic energy prices and keep them relatively low and stable—despite the significant volatility of global prices. This practice has been prevalent in Arab countries, where domestic energy prices are among the lowest in the world.

However, energy price regulation also leads to a number of unintended consequences and costs. Low energy prices encourage wasteful and excessive consumption, and they inhibit energy efficiency. Keeping energy prices low also discourages investment in the energy sector, locking in inefficient technologies and affecting energy production. In addition, low energy prices result in subsidies—because prices are lower than import costs plus transportation and distribution margins or, for oil exporters, because prices are lower than what could be earned by selling oil in international markets. Such subsidies, whether explicit or implicit, erode fiscal space. Finally, low energy prices are regressive—they benefit wealthier people more than the poor.

The current environment of low oil prices offers an opportunity for reform. When the price gap—the difference between domestic prices and international benchmarks—is smaller, so is the size of the required adjustment to close it. Hence, it is easier to implement price changes to close the gap. At the same time, when oil prices are low, the urgency of reform is more acutely felt by oil exporters because their budget and external positions are weaker.

Many Arab countries have taken encouraging steps to reform energy prices in the current low oil price environment. Indeed, all Arab oil exporters have raised domestic prices, with many committing to future reforms as well. However, price gaps remain considerable for many. Arab oil importers have also reduced their price gaps to varying degrees and in various ways—either through full indexation or ad hoc adjustments of domestic prices. Overall, ad hoc price adjustments, particularly for non-petroleum products such as natural gas and electricity, have been the instrument of choice.

International experience suggests that a well thought-out and comprehensive reform strategy is key to ensuring success. In examining country experiences, five broad lessons emerge:

- **Formulate an integrated reform strategy.** The various reform pieces—better alignment of energy prices to market/cost recovery levels, creation of incentives to reduce energy intensity and inefficiency, and support for consumers and producers that stand to lose—should be considered holistically. The pace and scope of reform needs to be calibrated countries' administrative capacity and institutional framework.
- **Protect the most vulnerable.** While the poor do not benefit the most from energy pricing regulation, they are particularly exposed to higher energy prices. Compensating measures should ideally include targeted cash transfers, though in practice universal cash transfers may

be easier to implement. Experience also suggests that cash measures are preferable to in-kind compensation.

- **Build broad public support.** The public needs to be made well aware of the costs and benefits of energy price subsidies, and careful consultations and/or clear communication are needed to create buy-in for energy price reform.
- **Refrain from ad hoc adjustments that do not address the root of the problem.** Transparent and simple formulas to adjust prices have shown to be more conducive to successful and sustainable reform. Ad hoc, one-time adjustments do not provide a lasting solution as prices continue to change. Automatic price mechanisms can help depoliticize the reform process, help avoid reform reversal, and facilitate the transition to a fully liberalized pricing system.
- **Move gradually when feasible.** One-off adjustments are often large, leading to popular discontent. Therefore, they come at a large political cost that can lead to reform reversal. Gradual adjustments allow consumers and businesses to adjust to the new reality of higher and more volatile energy prices. However, large and sudden adjustments can be unavoidable when countries face large fiscal adjustments.

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¹ This paper was prepared by a team led by Annalisa Fedelino, comprising Olivier Basdevant, Greg Basile, and Robert Tchaidze, under the supervision of Aasim M. Husain.

There seems to be something special about energy prices. Our reliance on energy for virtually anything we do—and anywhere we go—make them particularly visible and sensitive. Low energy prices allow people to access services that they might not otherwise be able to afford; and they facilitate the development of industries that rely particularly on energy inputs. Moreover, for countries that are natural resource producers, low prices provide a way to share their resource wealth with their citizens. For these reasons, many governments have often involved themselves in the pricing of energy products. They have tended to keep energy prices relatively low and stable—in contrast to the volatility of world energy prices—in order to minimize disruptions to consumers and producers. In this vein, low energy prices have helped achieve a number of economic, political, and social objectives.

But when energy prices are maintained at low levels, inefficiencies arise, with significant economic and budgetary costs. In addition, as regulated prices often tend to benefit the better off, regressivity and inequities also emerge. Yet, energy price controls have been relatively common—it was only four decades ago that fuel prices were regulated in many advanced economies (including the United States), giving rise to supply bottlenecks and other inefficiencies (Jacobs, 2016). But while many countries have since embraced energy price liberalization, others have maintained active energy price management by their governments.

This is particularly true in the Arab world,² where letting domestic energy prices follow international market prices remains a challenge. In many Arab oil exporters—but also in a significant number of oil importers—energy prices remain heavily regulated and kept at low levels. And despite recent price increases, energy prices in many Arab countries are still among the lowest in the world, encouraging overconsumption, blunting incentives for efficiency, and undermining economic diversification and competitiveness by locking in energy-intensive technologies. And from a fiscal perspective, low energy prices often lead to the emergence of costly (implicit or explicit) subsidies, which stand in the way of fiscal consolidation efforts or, more generally, rationalization of public spending toward pro-growth/pro-jobs programs. Arab countries are also among the largest greenhouse gas (GHG) emitters in the world in per capita terms, with implications for traffic congestion, health, pollution and, ultimately, climate change.

In the current environment of low international oil prices, there seems to be increasing recognition that the time is ripe for further energy price reform in the Arab region, and encouraging first steps have been taken. For oil exporters now facing large fiscal deficits, the need for sustained fiscal consolidation adds an additional dimension to the opportunity (and necessity) of reforming energy prices and reducing the related implicit or explicit fiscal costs.

In the context of the ongoing debate on energy pricing reform in the Arab region, this paper looks at energy-price regulation, its objectives and implications; outlines key principles underlying the “right” energy price level and pricing regime; illustrates the possible impact of energy subsidy removal on growth and public debt; and distills lessons from successful reform episodes. Energy price reform is politically difficult, requires careful planning and implementation, especially in terms of compensating measures, and takes time. But the potential gains from well-crafted reform are large.

² The countries covered in this paper include the following. Oil exporters: Algeria, Iraq, GCC countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates); oil importers: Djibouti, Egypt, Jordan, Lebanon, Mauritania, Morocco, Sudan and Tunisia. Libya, Syria and Yemen are excluded owing to lack of information.

Regulating Energy Prices: Does It Work?

The essential role played in economic and social development by the various types of fuel and electricity provides many governments with arguments in favor of subsidizing energy prices

Fattouh and El-Katiri, 2012

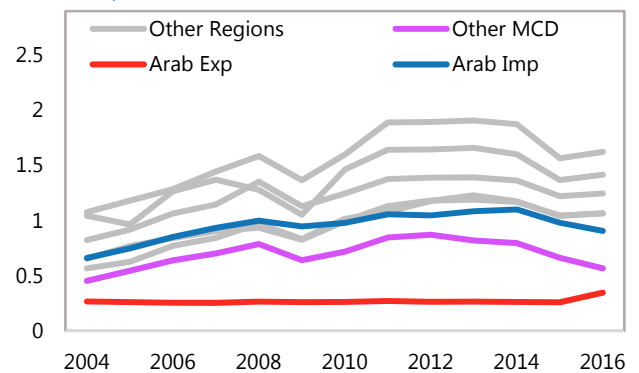
Countries often regulate energy prices...

Given the importance of energy products for maintaining day-to-day activities, governments often tend to regulate their prices in order to avoid disruptions to their economies.³ In many countries, the provision of low-cost energy products is viewed as a basic right of citizens; this applies even more to oil producers, where controlled prices are considered a way to share their natural resource wealth.

... and Arab countries are no exception, though they stand out globally

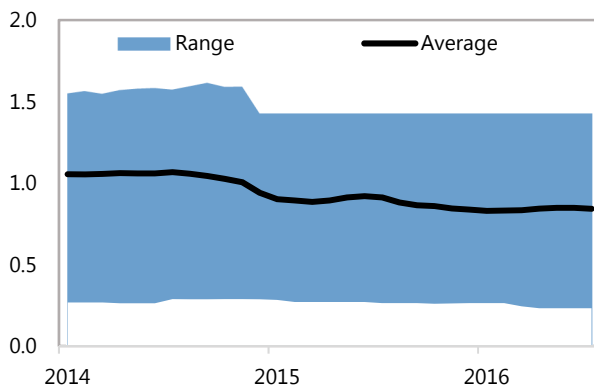
Arab countries have long maintained low domestic energy prices. Indeed, an international comparison shows that their gasoline prices are the lowest in the world. And despite welcome recent price increases in Arab oil exporters, their prices remain significantly below a number of benchmarks (see Figure 1). Oil importers have generally fared better—in large part, lower prices compared to the rest of the world reflect generally lower levels of fuel taxation.

Average Gas Prices by Region
(In USD per liter)



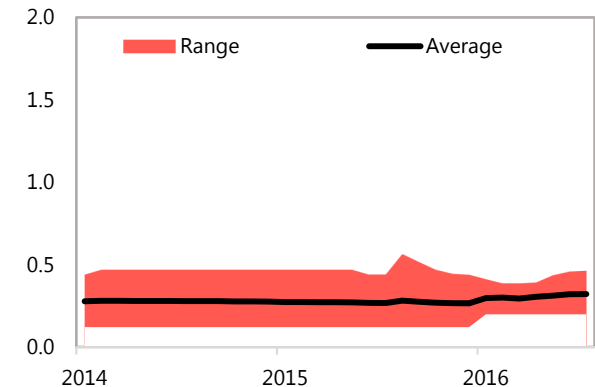
Sources: IEA and IMF staff calculations.

Gasoline Prices in Arab Oil Importing Countries
(In USD per liter)



Source: IMF staff calculations.

Gasoline Prices in Arab Oil Exporting Countries
(In USD per liter)



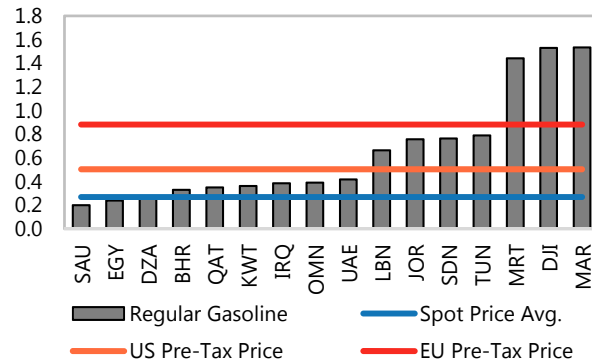
Source: IMF staff calculations.

³ In this paper we focus on prices of petroleum products (gasoline, diesel, and kerosene), natural gas and electricity.

Figure 1. Arab Region: Average Petroleum Prices by Country, 2016

Average Regular Gasoline Prices, 2016

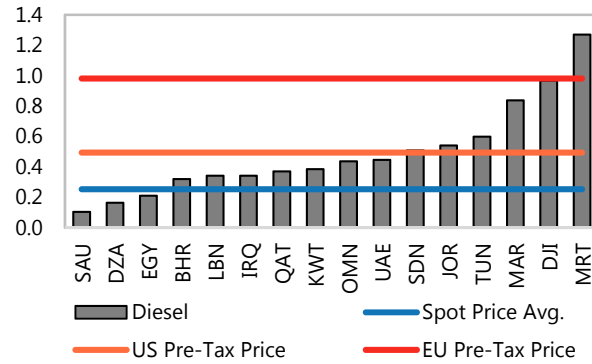
(US\$ cents per liter)



Sources: European Commission, IEA, and IMF staff calculations.

Average Diesel Prices, 2016

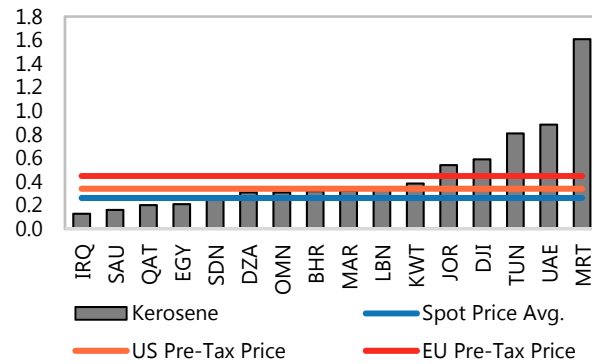
(US\$ cents per liter)



Sources: European Commission, IEA, and IMF staff calculations.

Average Kerosene Prices, 2016

(US\$ cents per liter)



Sources: European Commission, IEA, and IMF staff calculations.

Energy price regulation targets a number of objectives

Energy price regulation exists for a number of reasons:

- To support households, businesses or industries, by providing cheap energy.
- To shield domestic consumers from increases in, and excessive volatility of, international energy prices, especially oil.
- To protect the most vulnerable and, in the case of energy exporters, redistribute wealth generated by countries' natural resource endowments.

... though it also creates a number of side effects

However, regulated energy prices have a number of well-known and less-benign consequences, which often serve to undermine the achievement of their stated goals (see, for example, Sdravovich et al., 2014; Meltzer et al., 2014; el Katiri and Fattouh, 2015; and Fattouh and Sen, 2016) (Summary Table 1).

Table 1. Regulated Energy Prices: Goals and Side Effects

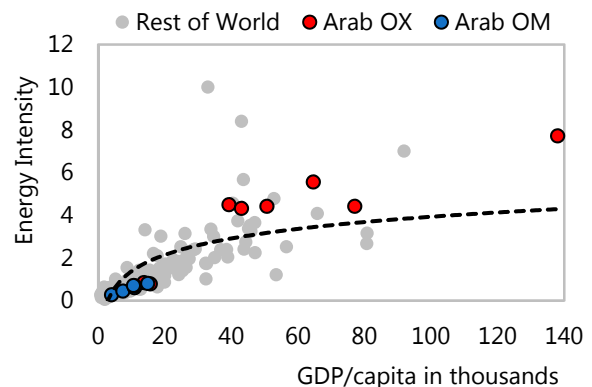
Goals	Side Effects
Support domestic consumers, businesses and industries by providing cheap energy	Encourages wasteful and excessive consumption Inhibits use of energy efficient technologies Discourages investment by energy producers and distributors, affecting the ability to produce more energy efficiently Feeds into smuggling activities
Protect consumers by avoiding high prices and limiting the volatility in domestic energy prices	Results in costly subsidies, with implications for fiscal and external positions Affects the environment through excessive emissions and pollution
Allow access to energy for vulnerable citizens Distribute resource wealth (exporters)	Tends to favor the well-off as regulated prices tend to be badly targeted

Low energy prices lead to high energy intensity

Low energy prices create incentives to use energy-based technologies, pushing the structure of economies toward energy- and capital-intensive industries, such as petrochemical, fertilizers and cement. This is evident in Arab oil exporting countries, where energy intensity lies well above the global trend based on per capita income. Their energy intensity is also rising over time, contrary to global developments (El Katiri and Fattouh, 2015). Availability of cheap energy has also muted incentives to

Energy Intensity vs. GDP per Capita

(In kg of oil equivalent per one thousand people)



Sources: IEA and World Bank.

invest in alternative sectors. These are also the very sectors that can help create jobs and address unemployment.

...as shown in Arab countries

These issues are particularly salient in Arab oil exporters (Meltzer et al. 2014), given their extremely low energy prices. But they also affect Arab oil importers (for example, Lebanon and Morocco), which have been ranked among the least efficient countries in terms of domestic power generation (El Katiri and Fattouh, 2015).

Overall, skewed incentives in Arab countries have resulted in a domestic energy mix that favors fossil fuels. As a result, Arab countries remain dependent on oil and natural gas for 95 percent of their domestic energy needs, more than any other region in the world (El Katiri, 2014). And this energy dependency makes oil importers particularly vulnerable to commodity price cycles.

Finally, distorted investment in inefficient transportation, buildings and industrial infrastructure has a lock-in effect, making it difficult to reduce energy intensity in the future (Meltzer et al., 2014).

...discourage investment in energy production

Low energy prices also have medium- and long-term effects on domestic energy production. Low energy prices tend to reduce profits or lead to outright losses for national oil and electricity companies, especially when these cannot rely on export markets and the bulk of their production is absorbed domestically; in such cases, low energy prices also discourage the maintenance and investment needed for improved production and broad access to reliable utility services. Moreover, reduced incentives for private companies to invest in the energy sector can also result in poor service quality and, in some cases, energy shortages (El Katiri and Fattouh, 2015).

... and feed into smuggling activities across borders

Sharp differences in fuel prices among neighboring countries may, and often do, incentivize large-scale smuggling across borders (El Katiri and Fattouh, 2015). Smuggling, of course, comes at the expense of the domestic economy, undermining the external position of countries and, as any shadow activity, lowering the tax intake. It can also lead to or substantially exacerbate already existing fuel shortages in the countries with lower prices.

Low prices may also create subsidies

Regulating energy prices often leads to emergence of subsidies. Subsidies can take a variety of forms and impact directly producers and consumers. Subsidies are said to be *explicit* when the costs of the public service obligation done on behalf of the government by private/public provider are included as an explicit line item in the budget. When there is no immediate transfer from the government to the company/provider to cover the shortfall in revenue caused by the presence of the subsidy, the latter is said to be *implicit*. Consumer subsidies tend to be implicit and administered through setting low consumption prices relative to international levels (opportunity cost of low domestic prices), while explicit subsidies are usually provided to energy producers or distributors. Typically, governments compensate companies that incur losses from setting prices below cost-recovery or market levels, especially when fuel products are imported at full prices. This would imply either subsidizing the company directly through budget transfers, or indirectly by, for example, undertaking investment on behalf of the company or allowing for less than full tax payments.

Estimating subsidies is a complex exercise

Evaluation of subsidies is complicated by a number of factors: as mentioned, a significant portion of subsidies may be administered implicitly, where the necessary data may be hard to come by. More generally, subsidies are calculated by comparing effective prices with a suitable benchmark (e.g. opportunity cost for internationally-traded products such as gasoline; and cost recovery for other products, such as electricity). Calculating this benchmark can be complex, particularly if the aim is to include necessary maintenance costs, or foregone revenues in case of exportable energy that is consumed domestically. A commonly used method in the literature is the so-called *Price Gap Approach* (Box 1), evaluating subsidies based on actual consumption levels and using international trade prices of the relevant products.

Box 1. Price-Gap Approach to Measuring Subsidies

There is no universally accepted methodology to measure energy price subsidies. A commonly used approach is based on *price-gap analysis* and estimates energy subsidies as a difference between the market price and an assumed reference price, multiplied by consumption. The reference price is usually a benchmark/international price, adjusted for transportation and distribution costs in the case of oil importing countries. This method has the advantage of simplicity and clarity, though it often involves some judgment (e.g., estimates for transport and distribution costs).

The starting point is the equation defining the price gap per consumption unit:

$$\text{Price Gap} = \text{Reference Price} + \text{Transportation Costs} - \text{Retail Price}$$

From which we can derive the total subsidy:

$$\text{Subsidy} = \text{Price Gap} * \text{Consumption}$$

In this paper, we use the price-gap methodology to compute subsidies. The data sources are as follows:

- Retail prices are provided by IMF country desks, based on country authorities' inputs. Transportation costs are assumed constant at US\$ 0.20 per liter (Coady, Parry, Sears, and Chang, 2015).
- For reference prices, US retail prices (available from the U.S. Department of Energy) are used for gasoline and diesel; Henry Hub spot price for natural gas; and US tariffs (available from the U.S. Department of Energy) for electricity. Taxes are excluded.
- Energy consumption is available until 2012 from IEA. Energy consumption for 2013 onwards is estimated using the growth rate of countries' (non-oil) real GDP.

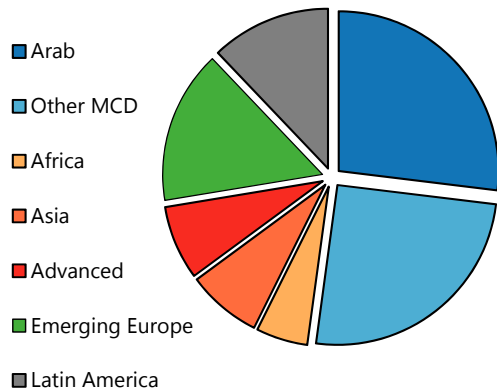
In terms of coverage, we estimate subsidies for petroleum products (regular gasoline, diesel, kerosene), electricity, and natural gas (unless otherwise noted). The price-gap methodology is a measure of "implicit" subsidies, which as such can differ from subsidies reported in fiscal accounts. In oil importing countries, budgeted subsidy amounts typically represent actual cash outlays (for example, to compensate energy providers) and not estimated subsidies for the full range of energy products; while in oil exporting countries, this approach captures the opportunity cost of selling energy products at a price lower than what could be obtained in international markets. In addition, the choice of a reference price explains differences across studies on price-gap estimates. Under this approach, when prices gaps are negative (that is, domestic prices are higher than the reference prices), subsidies are set to zero (see also Box 2).

To be precise, subsidies defined in this Box and estimated throughout the paper are what is often referred to as *pre-tax subsidies*, as opposed to *post-tax subsidies* that, in addition, include an adjustment for efficient taxation to reflect both revenue needs and a correction for negative consumption externalities.

Arab countries have the largest energy price gaps

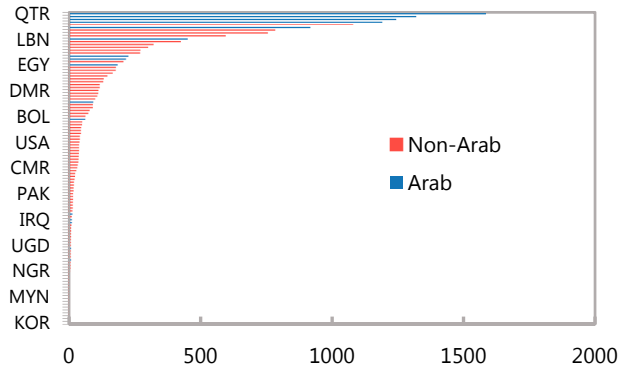
Arab countries as a group accounted for more than a quarter of global energy subsidies in 2015, estimated at \$117 billion out of \$436 billion total world-wide. Arab oil exporters, accounted for the lion's share (\$94 billion or about 5½ percent of their GDP).⁴ Accordingly, these countries also display the largest subsidies per capita. On average, subsidies in oil exporting countries are much larger than those in oil importing countries, as their price gaps are wider in view of their typically very low level of domestic energy prices.

Subsidies by Region, 2015



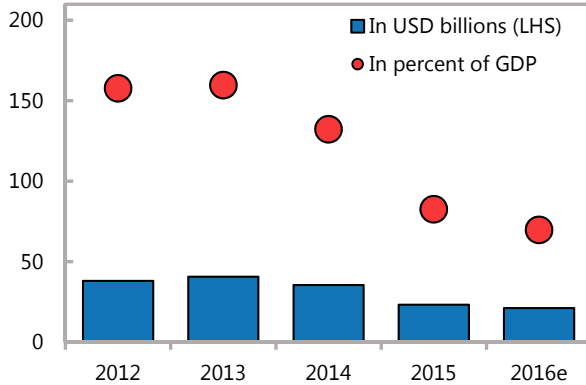
Sources: IEA and IMF staff calculations.

Subsidies per Capita, 2015
(In USD per person)



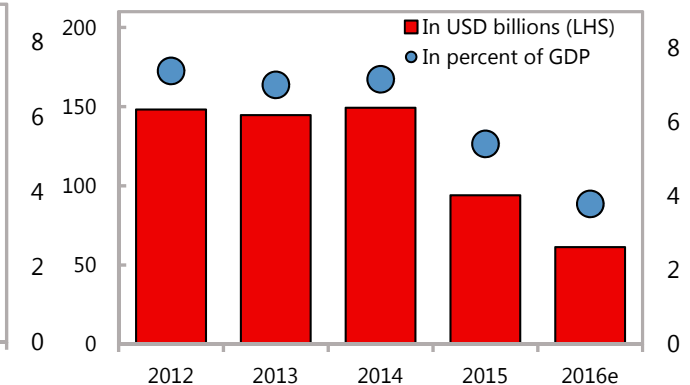
Source: International Energy Agency.

Energy Subsidies in Arab Oil Importers



Sources: IEA, country authorities, and IMF staff calculations.

Energy Subsidies in Arab Oil Exporters



Sources: IEA, country authorities, and IMF staff calculations.

Low energy prices result in significant fiscal costs

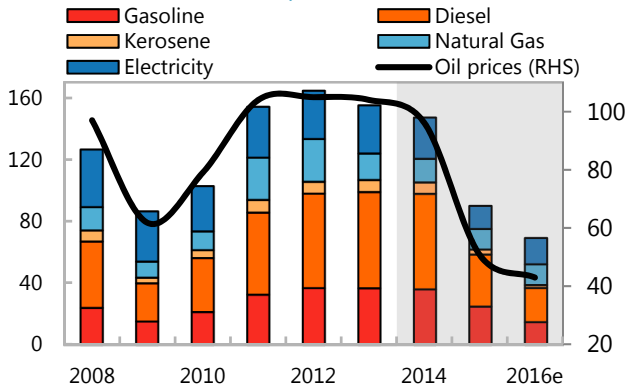
Fiscal costs arise in a variety of ways: explicit subsidies drive expenditures up; implicit subsidies (via fixing prices at low levels) can result in substantial foregone revenue or reduce profits (or lead to outright losses) for state-owned energy-related enterprises. And ultimately, low prices can result in a lower government take from export- and

⁴ As noted in Box 1, estimates in this paper use U.S. retail prices as benchmark prices, in line with earlier IMF work (see, for example, IMF, 2015, and IMF, 2016). An alternative, for example used in Coady et al. (2015), proxies benchmark prices by the nearest regional f.o.b. price, and would yield generally somewhat smaller estimates of price gaps for Arab countries.

consumption-related taxes (McLure 2013). In addition, weaker fiscal positions resulting from energy subsidies have further implications—higher deficits and increased debt tends to lead to higher interest rates, which then adds further to the debt burden. In Arab countries, petroleum product subsidies account on average for the largest share of energy subsidies (about 65 percent of total, though results vary by country, see below). A gradual recovery in oil prices could lead to a return of higher petroleum subsidies over time, absent price reform (see below).

Energy Subsidies in Arab Oil Exporter Countries

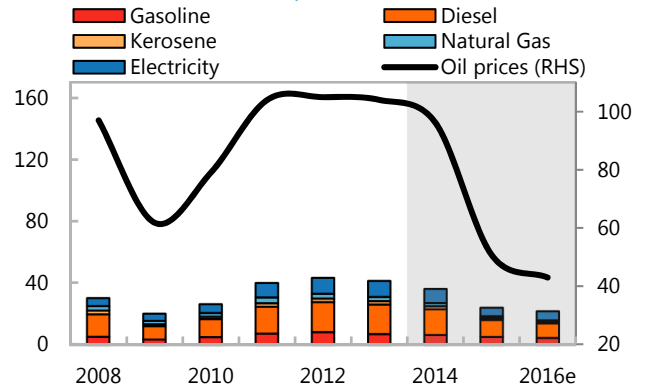
(In billions USD, and USD per barrel)



Sources: Country authorities, and IMF staff calculations.

Energy Subsidies in Arab Oil Importer Countries

(In billions USD, and USD per barrel)

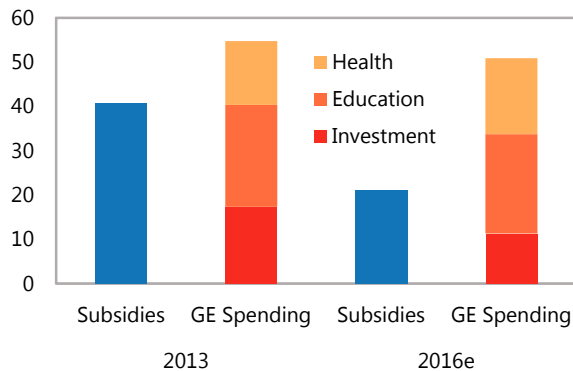


Sources: Country authorities, and IMF staff calculations.

... detract from more productive spending

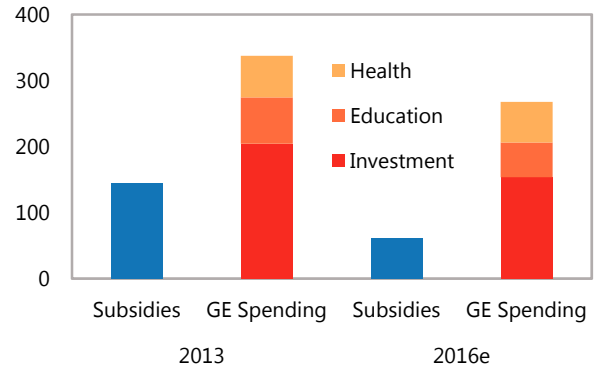
Furthermore, within a given fiscal resource envelope, energy subsidies, whether explicit or implicit subtract from other, potentially more productive expenditures. These include growth-enhancing investment in infrastructure, spending on health and education as well as pro-poor spending. Indeed, in Arab oil-exporting countries energy subsidies tend to be higher than spending on health and education and, in the case of oil-importing countries, investment.

Oil Importers: Subsidies vs Growth Enhancing (GE) Spending (In USD billions)



Sources: IMF WEO, WHO, UNESCO, and IMF staff calculations.

Oil Exporters: Subsidies vs Growth Enhancing (GE) Spending (In USD billions)



Sources: IMF WEO, WHO, UNESCO, and IMF staff calculations.

... and tend to complicate budgetary processes

When subsidies are provided through regulated prices that are adjusted infrequently, as in the majority of Arab countries, fluctuations in global commodity prices lead to fluctuations in fiscal costs and substantial budgetary uncertainty.

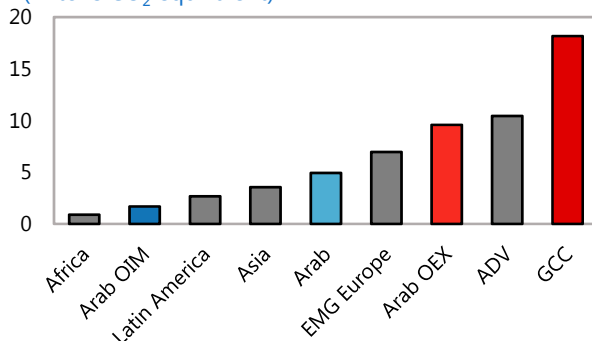
Low energy prices bear on countries' external positions as well

Subsidies and overconsumption may also contribute to a deterioration in the balance of payments, owing to higher energy imports (for energy-importing countries) or lower exports (for energy-exporting countries). And as noted above, low energy prices may promote smuggling, with related export revenue losses.

Energy overconsumption creates significant externalities

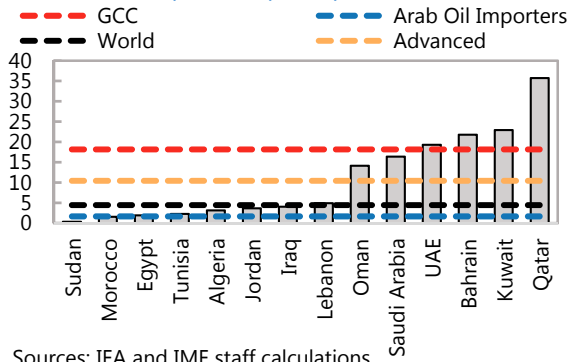
Low prices also promote excessive use of automobiles (contributing to pollution, eroding road infrastructure, as well as causing higher rates of traffic accidents). As a result, Arab countries are among the largest greenhouse gas (GHG) emitters in the world in per capita terms, especially GCC oil exporters.

Per Capita Green House Gas Emissions, 2014
(In tons CO₂ equivalent)



Sources: IEA and IMF staff calculations.

Green House Gas Emissions, 2014
(In tons CO₂ equivalent per capita)



Sources: IEA and IMF staff calculations.

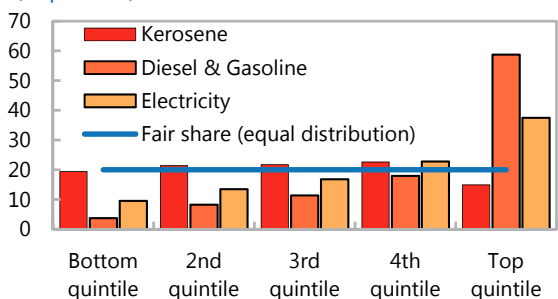
Low energy prices do not help meet social goals

It is also well known that energy subsidies, as with other generalized subsidies, are relatively regressive (Clements et al, 2013; Sdravovich et al, 2014). The largest benefits accrue to the richest segments of the population, rather than the poorest and most vulnerable segments, where needs are greatest. Indeed, energy subsidies tend to benefit middle- and high-income groups in particular, owing to their higher energy consumption and car ownership rates and their relatively higher access to subsidized products (e.g. better connectivity to electricity grids). For example, according to the authorities, the top 20 percent receive 60 percent of the energy subsidies in Egypt.

Gasoline and diesel subsidies are particularly regressive

For diesel and gasoline, for example, the top quintile is above the "fair share," benefitting from more than 50 percent of the subsidies. Kerosene subsidies are an exception, as the poor are the biggest consumer of this type of fuel. However, kerosene subsidies represent only 3½ percent of total petroleum subsidies in Arab countries.

Subsidy Distribution by Income Groups
(In percent)



Sources: Country authorities, and IMF staff calculations. Average distribution computed for Egypt, Jordan, Lebanon, Mauritania, and Morocco, with data collected between 2003 and 2010.

Finding the Right Price

It's human nature, not just Arab nature, to bridle when something that was once free or low cost suddenly costs more—even if the consumers can easily afford it.

Chase Untermeyer, former U.S. Ambassador to Qatar

What is the right level of energy prices?

As noted in the previous section, low energy prices tend to create significant inefficiencies and distortions, and generally result in costly subsidies. The question then arises: what should be the right level of energy prices?

In many cases, there is often no obvious or universally agreed benchmark or reference price, and estimates are often subject to considerable judgement. Accordingly, there is no commonly agreed single definition of what represents a subsidy and its measurement remains problematic (El Katiri and Fattouh, 2015).⁵ But regardless of benchmarks, many Arab countries continue to have domestic energy prices well below international levels.

The answer is relatively easy for oil importers...

For oil importers, there would be no price gaps if the domestic energy prices were set to cover the cost of securing the energy product. For example, for oil products this would be equivalent to the import cost plus transportation and distribution margins (Box 1).

... but less straightforward for oil exporters

But for some oil producers, this issue is perhaps less intuitive. To the extent that energy products are sold domestically at a price that is higher than production costs, no direct or explicit subsidy would arise. In this case, the national oil companies that sell petroleum domestically are not incurring any financial losses—and correspondingly, the government does not need to make any explicit transfer to compensate for such losses (see also Spitzky, 2012).

However, in these cases the relevant benchmark is the opportunity cost—the revenue forgone by not selling the product at the price it would have fetched on the international market. In other words, by choosing to sell energy products at a lower price, the government is implicitly making a transfer to consumers. The fact that such a transfer does not appear in the budget or in the producer's financial records does not mean that resources are not implicitly passed on to consumers. And this is a very distinct aspect of implicit subsidies: very often governments and their citizens are unaware of how costly they are. By extension, it is not always appreciated that, if subsidies were to be eliminated, the additional resources could be used to promote a number of the very objectives—social and economic—that low energy prices seek to address, but with fewer distortions and inefficiencies. Alternatively, the savings could be used to reduce public debt, thus lowering debt servicing costs and fiscal vulnerability.

⁵ IEA/OPEC/OECD/World Bank (2010) notes the existence of a disagreement among international organizations concerning the choice of the reference price, and consequently on a commonly agreed definition of subsidies.

The balance of incentives for reform is mixed, though more favorable during low oil prices

The timing of reform matters and depends on the prevailing level of international energy prices (Fattouh and Sen, 2015) (Table 2).

When oil prices are low, oil importers appear to be less compelled to reform. With a smaller price gap, the fiscal cost of providing cheaper energy is lower, and the economic cost is more contained. And while energy-price reform is often less urgent when prices are low, the political costs of reform are also low—though this depends on specific circumstances. Therefore, the current oil-price environment may provide a valuable window in which to pursue a change in policy (Ladislav and Cuyler, 2015).

On the contrary, low oil prices tend to boost the urgency of reform in oil exporters, owing to the impact of reduced export revenues and worsening budget positions. But the economic cost of reform is relatively low—as the gap between effective prices and (reduced) external opportunity costs is smaller. The political cost of reform for exporters, however, cannot be easily determined. Many citizens may resent being exposed to price increases at a time when the overall economic conditions have tightened. At the same time, though, the tougher economic and fiscal outlook may make reform easier to accept by the public— especially if the costs and benefits of the reform are clearly explained and appropriate compensation mechanisms for the vulnerable are introduced (see below).

Table 2. Energy Price Reform: Fiscal, Economic and Political Incentives

	Oil exporters		Oil importers	
	High oil prices	Low oil prices	High oil prices	Low oil prices
Fiscal urgency	Low	High	High	Low
Economic cost	High	Low	High	Low
Political cost	High	Lower	High	Possibly low

Source: Adapted from Fattouh and Sen (2015).

All Arab oil exporters have taken promising steps

In an unprecedented move, all Arab oil exporters have recently increased domestic energy prices—be it petroleum products, natural gas or electricity (Table 3 and Annex 1).

- Starting in 2015, GCC countries have adjusted local fuel (petroleum products and natural gas) prices substantially, ranging from a total elimination of fuel price gaps in relation to opportunity cost (UAE) to sharp increases but with sizable price gaps remaining (Bahrain, Kuwait, Oman, Qatar, and Saudi Arabia) (see IMF 2015 and 2016).⁶ Algeria has increased tax rates on gasoline and diesel in 2016 and 2017, in addition to a general increase of the VAT rate by 2 percentage points.
- Electricity tariffs were also adjusted upwards in most GCC countries (Bahrain, Kuwait, Qatar, Saudi Arabia, and UAE, where Dubai led the way after the Global Financial Crisis), while

⁶ As noted in Box 1, our subsidy estimates include all energy products and therefore may differ from authorities' calculations scope (i.e., some authorities may not include implicit subsidies in their estimates) may differ, thereby resulting in different estimates.. In addition, the benchmark prices used in our estimates may differ from those used by authorities, and even the

Oman is due to increase electricity tariffs for government and large commercial and industrial users in 2017; according to the authorities' estimates, these increases should reduce consumption by 20 percent. Algeria increased the VAT for both electricity and gas in 2016; and Iraq increased electricity tariffs in early 2015 (increasing the share of cost recovery coverage from 10 percent to 50 percent).

... and oil importers as well

Substantial energy price adjustments have also taken place in oil importers (see Table 3 below).

- Morocco, and Jordan have eliminated fuel subsidies altogether using local price adjustments rather than relying on lower international oil prices. Egypt, Sudan, and Tunisia have implemented a number of ad hoc discretionary changes in local prices, but have refrained from allowing full indexation to global prices.
- Jordan has phased out electricity or natural gas subsidies completely.⁷ Other countries have embarked on a more medium-term process (Egypt adjusted electricity and gas in 2013–15, and plans further tariff increases over the next five years). Tunisia allowed one-off tariff rate increases in 2012 and 2013.

Table 3. Arab Countries: Status of Energy Reforms, 2016

	Petroleum	Natural Gas	Electricity	Measures to protect the poor? (Y/N)	Medium-term plan? (Y/N)
MENA					
Oil importers					
Djibouti				No	Yes
Egypt				Yes	Yes
Jordan				Yes	Yes
Lebanon				No	No
Mauritania				Yes	Yes
Morocco				Yes	Yes
Sudan				Yes	Yes
Tunisia				Yes	Yes
Oil exporters					
Algeria				Yes	No
Bahrain				No	Yes
Iraq				Yes	Yes
Kuwait				No	Yes
Oman				No	No
Qatar				No	No
Saudi Arabia				Yes	Yes
UAE				No	No

Subsidies eliminated
 Reform initiated, subsidies remain
 No specific measure

Source: Country authorities.

⁷ However, some sizeable electricity cross-subsidies from large industrial consumers to households remain. For gas, there are small (0.1 percent of GDP in 2016) subsidies to the most vulnerable segments of the population.

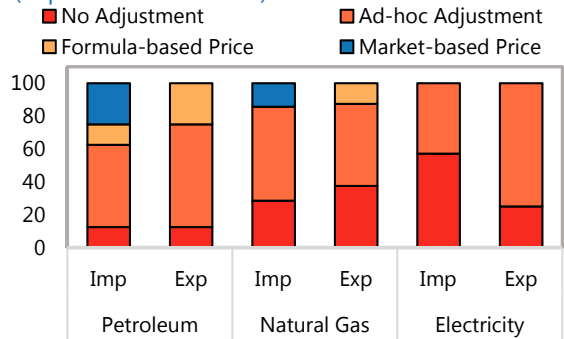
But ad hoc energy pricing regimes still prevail

However, despite recent steps, most Arab countries still follow discretionary price setting mechanisms. This is particularly true for electricity, whose prices are closely managed, followed by natural gas prices. Petroleum prices (gasoline, diesel and kerosene) represent the area where most progress has been made, with three oil-importers having either fully embraced market-based pricing mechanisms (Lebanon and Morocco) or using a formula-based approach (Jordan); while among oil-exporters, Oman and the UAE have recently switched to automatic pricing formulas (Box 2).

countries still follow discretionary price setting

Energy Price Adjustment Regimes, 2016

(In percent of countries)



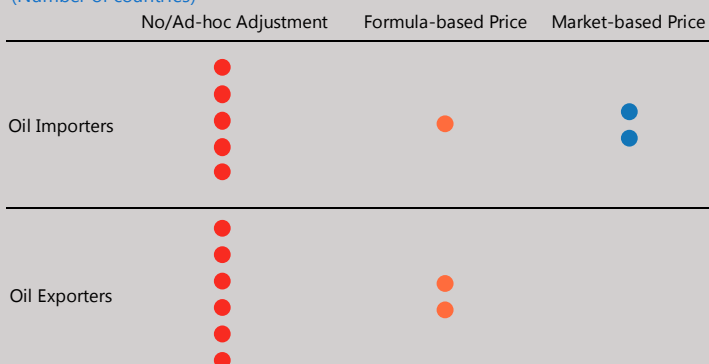
Sources: Country authorities and IMF staff calculations.

Box 2. A Closer Look at Petroleum Prices and Pricing Gaps

Out of the 16 Arab countries covered in this paper, 11 have ad hoc pricing regimes (though some, as noted above, have implemented discretionary price increases). Only two oil importers (Lebanon and Morocco) have fully liberalized petroleum product prices and follow market-based systems; while Jordan has adopted a formula-based system. Among oil exporters, two (Oman and the UAE) have recently adopted formula-based pricing regimes. Qatar has also introduced a formula, though its application is not automatic.

Petroleum Price Adjustment Regimes, 2016

(Number of countries)



Sources: Country authorities and IMF staff calculations.

Given that the majority of Arab countries do not follow automatic pricing of domestic petroleum products, pricing gaps remain—and they are at risk of rebounding if world prices rise. Indeed, although petroleum price gaps are now much below earlier levels—between 2013 and 2016, subsidies declined by close to 3 percent of GDP—the bulk of the reduction is accounted for by the decline in world prices. In other words, most countries' price gaps have been exogenously reduced, but such reductions may not last over time.

Petroleum Price Subsidies, 2013-16

(In percent of GDP)

	2013	2016	Change	Contribution to change ¹			Residual
				Intl oil price change	Price adjustment ²	Consumption ³	
Arab	4.9	2.1	-2.8	-3.5	0.0	1.0	-0.4
Oil importers	4.1	1.9	-2.2	-3.7	0.8	-0.4	1.1
Djibouti ⁴	0.0	0.0	0.0
Egypt	6.9	3.2	-3.6	-3.2	-0.2	-0.5	0.3
Jordan	2.1	1.2	-0.9	-8.1	6.7	-0.5	1.0
Lebanon	2.0	2.7	0.7	-6.1	6.6	-0.4	0.7
Mauritania ⁴	0.0	0.0	0.0
Morocco	1.0	0.2	-0.9	-3.5	0.6	-0.2	2.3
Sudan	2.7	0.0	-2.7	-2.8	-0.6	-0.6	1.3
Tunisia	2.1	0.3	-1.8	-3.0	0.8	0.3	0.1
Oil exporters	5.2	2.2	-2.9	-3.4	-0.2	1.5	-0.9
Algeria	5.6	3.1	-2.5	-3.5	0.1	2.3	-1.4
Bahrain	2.8	0.8	-2.1	-1.6	-0.5	0.4	-0.3
Iraq	7.1	1.9	-5.2	-5.5	0.0	1.3	-1.0
Kuwait	3.4	0.8	-2.6	-2.1	-0.9	2.4	-2.1
Oman	4.5	0.8	-3.7	-3.3	-0.6	2.1	-1.8
Qatar	2.2	0.7	-1.5	-1.5	-0.3	1.3	-1.0
Saudi Arabia	8.0	4.1	-3.9	-4.2	-0.6	2.1	-1.3
UAE	0.9	0.2	-0.7	-2.2	0.4	0.0	1.1

Sources: Country authorities, IEA, and IMF staff estimates.

¹Contributions calculated by changing the relevant component and holding all other variables constant. Thus, estimates should be viewed only as linear, first-order approximations.

²Contribution of domestic price adjustments.

³Contribution of changes in domestic consumption as a share of GDP.

⁴Where the price gap is negative, a zero subsidy level is assumed. Therefore, the contributions calculation does not apply.

A closer look by country

A closer look at overall energy subsidies by country suggests the following (Table 4):

- Among oil exporters, the UAE stands out for its low level of subsidies. In all the others, subsidies remain large despite recent declines. The recent domestic price increases, while definitely a laudable step, have not been a major contributor to the decline in energy price gaps, which has owed much more to the decline in benchmark international prices.
- Among oil importers, Jordan and Morocco have reaped the benefits of more flexible petroleum pricing. While petroleum subsidies in Lebanon are very small, electricity subsidies are sizable as electricity tariffs have not been adjusted in over a decade.

Table 4. Energy Price Subsidies, 2012–16^{1,2,3}
(In Percent of GDP)

	2013	2016	Change		2013	2016	Change
Oil Exporters	7.0	3.5	-3.5	Oil Importers	6.3	2.9	-3.4
Algeria	8.5	5.3	-3.2	Djibouti	0.4	0.4	0.0
Bahrain	6.9	3.8	-3.1	Egypt	10.0	4.1	-5.9
Iraq	7.7	2.2	-5.5	Jordan	3.3	1.6	-1.8
Kuwait	7.3	6.8	-0.5	Lebanon	5.9	6.7	0.8
Oman	7.4	3.0	-4.4	Mauritania	0.7	1.0	0.3
Qatar	5.1	3.8	-1.3	Morocco	1.0	0.2	-0.9
Saudi Arabia	9.4	4.4	-5.0	Sudan	2.7	0.0	-2.7
UAE	2.0	0.7	-1.3	Tunisia	4.6	2.8	-1.8

Sources: Country authorities, IEA, and IMF staff estimates.

¹Excludes Libya, Syria, and Yemen.

²Energy subsidies include regular gasoline, diesel, kerosene, natural gas, and electricity.

³Energy subsidy levels may differ from country authorities' estimates due to the use of a different reference price.

Some gains from energy price reform

Removing energy price gaps would have a number of macroeconomic implications (for example, on growth and inflation) that are country specific (see, for example, IMF 2015 for a discussion on GCC countries). For illustrative purposes, we highlight the positive impact that the fiscal space created by removing price gaps and associated explicit and implicit subsidies could have on growth and debt dynamics if countries decided to use savings to partly increase investment and partly pay back public debt (the latter being equivalent to reducing the fiscal deficit; Box 3). The exercise points to significant gains that countries could reap from energy price reform.

.. with also positive spillovers from better income distribution

While Arab countries have inequality levels (as measured by the Gini index) broadly in line with world averages (around 38), the fact that energy subsidies are large and regressive suggest that these countries could easily address inequalities through energy price reforms. An additional argument in favor of energy price reform is that relatively small improvements in income distribution can lead to significant improvements in growth duration (Berg, Ostry and Tsangarides, 2008, and Berg, et al., 2014). Applying the results of Berg, Ostry and Tsangarides (2008) to Arab countries, and assuming a reduction in the Gini coefficient of 2.5 points (broadly in line with the decline in the Gini coefficient in Iran when universal cash transfers were introduced alongside a large increase in fuel prices), positive growth periods could be increased from an average of 5½ years to 6½ years. In other words, introducing more progressive means of redistribution would not only support social objectives, but would also be essential to support higher and more inclusive growth.

Box 3. Removing Energy Subsidies: It's Good for You and Your Debt

Among the most straightforward benefits of abandoning regulated prices is the freeing up of resources that are otherwise either earmarked for explicit subsidies or represent foregone revenue. These resources could have been used by the public sector (government or state-owned energy enterprises) for other needs, including increasing investment, improving and expanding social safety nets, or paying back public debt (or containing/avoiding further accumulation of debt).

In case the removal of subsidies were not a temporary/one-off change but a sustained one (for example, if the price gap were to be eliminated by linking domestic prices to international ones via full price liberalization or the adoption of an automatic price formula), the benefits could be quite substantial as the reform impact would accumulate over time. Two illustrative scenarios below illustrate how large the benefits could be.

- *Scenario 1:* Redirecting subsidies into productive investment (into physical or human capital via improvements to health services, education, and vocational learning programs) could boost growth, helping alleviate unemployment problems (including among youth) and generating additional tax revenues. Estimating the impact on growth of such a reform can be difficult, as the vast literature on fiscal multipliers shows. Assuming a rather conservative value of 0.35 for the multiplier (or more specifically, for the difference between an investment multiplier and a current consumption multiplier, as resources freed up by reducing subsidies are assumed to be injected into additional investment) produces a cumulative growth dividend of about 2 percentage points over six years for every percentage point of GDP in reduced subsidies. For a country that annually spends 3 percent of GDP in subsidies, the dividend would hence be a cumulative 6 percentage points of additional growth if energy subsidies were to be eliminated.
- *Scenario 2:* If governments were to redirect subsidies towards paying down their public debt (or, equivalently, towards fiscal deficit reduction) from 2016 onwards, then over the next six years, every percentage point of GDP of subsidies used for this purpose could generate savings of between 4.5-6.3 percentage points of GDP, depending on interest rates countries pay and projected GDP trends. Again, for a country that spends 3 percent of GDP a year on subsidies, savings may result in debt reduction of as much as 20 percentage points of GDP cumulatively after 6 years. The associated reduction in debt service costs could then be used to mitigate the impact of withdrawing subsidies or for other productive spending programs.

Adjusting to the Right Price: A Strategy for Reform

Some countries have tweaked policies, but with oil prices so low, there is a golden opportunity to adjust prices and reduce waste. It's a shame more countries aren't taking advantage

The Persistent, and Pernicious, Fuel Subsidy (New York Times, November 14, 2016)

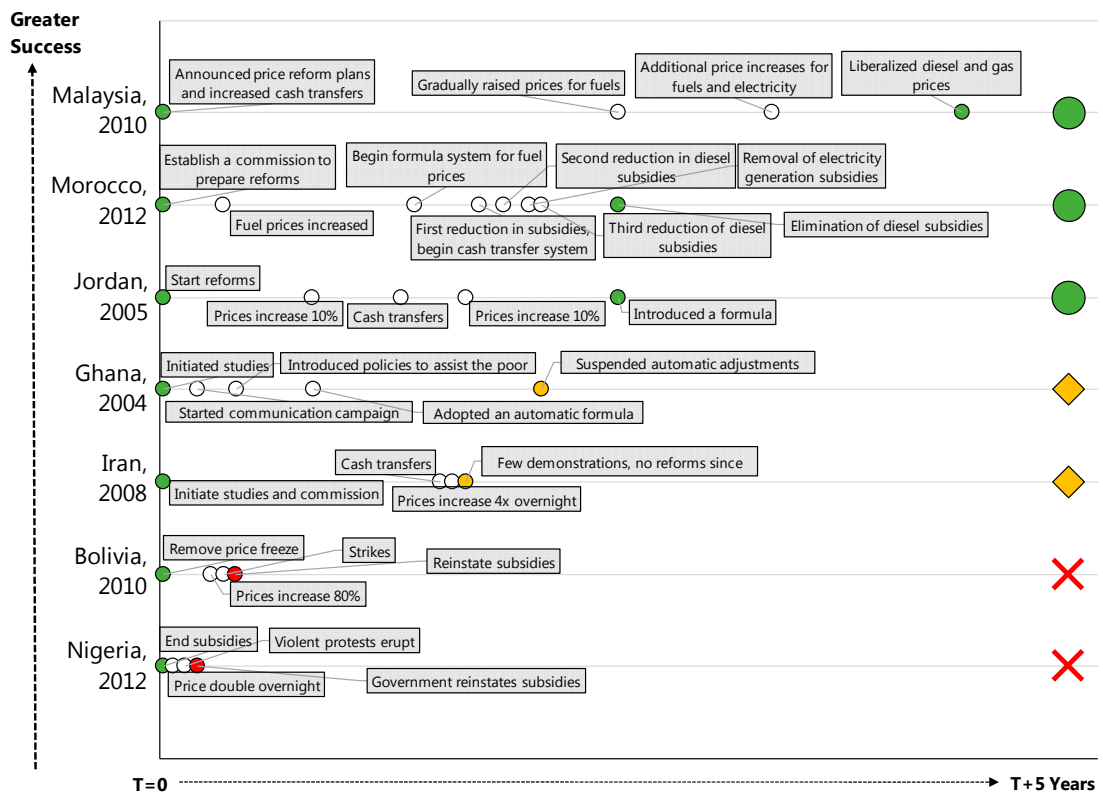
Energy price reform is difficult but feasible

There seems to be a general recognition and acceptance in Arab countries that energy price reform is now warranted (Ladislaw and Cuyler, 2015). But starting a reform is difficult, and maintaining momentum is even more so. Experience suggests that, over time, many countries only partially implement their initial reform agendas, or abandon them altogether: Clements et al. (2013) find that out of 28 reform episodes, only 12 were classified as a success, 11 partially or fully lost earlier reform gains over time, and five did not succeed. So what are the elements that make an energy price reform successful?

Seven case studies

International experience points to some important lessons. We use seven country examples—varying in terms of regional coverage, level of development and success—to distill some key policy messages.

Table 5. Energy Reforms and Steps Timeline, by Country¹



Source: Based on World Economic Forum (2013) and Clements et al. (2013).

¹ Green indicates success, orange indicates possible success, and red indicates lack of success.

Malaysia: In light of rising deficits and falling trade surpluses, Malaysia began planning to reduce energy subsidies back in 2010 over a 3 to 5-year period, as a part of the 10th Malaysia Plan (2010-15). The reform was preceded by several press statements by the prime minister, highlighting the need to better target the poor, phase in reforms slowly, and strengthen the government's fiscal position.

Move slowly & adopt price formula to avoid politicization

Fuel prices began to rise in late-2010, but further price increases were stalled until after the election in 2013, as opposition parties objected to increasing prices before improving social safety nets and public transport. At the same time, the prime minister assured that cash allocations to those making below certain income thresholds would be increased to offset the impact of rising fuel prices. The slow movement in prices eventually led to floating diesel and gas prices in 2015.

Morocco: In late 2000, Morocco decided to implement a fixed price fuel subsidy program to shield its citizens from the then large increases in world oil prices. The government directly took on the cost of administering lower retail prices while attempting to limit the regressivity of such a scheme. To this end, it taxed super and diesel fuel products to further subsidize butane, more heavily used by the poor. However, this did not fully eliminate the regressivity of the scheme, and certainly did not reduce its cost.

Consult extensively & plan well

As oil prices continued to rise through the 2000s, the fiscal costs of the subsidies also rose, from 2.5 percent of GDP in 2000 to 6.5 percent of GDP in 2012 (while the fiscal deficit had increased to 7 percent of GDP). In early 2012, the government established three commissions (including government and civil society representatives) to evaluate: (i) proposals on how to revise the price structures for fuels; (ii) the macroeconomic impact of such reforms, and (iii) options to assist the poor with better targeted social safety nets. These steps led to a small increase in several fuel prices six months later, and to a formula pricing mechanism a year after that, with caps to prevent excessive monthly increases. At the same time, the government expanded support for school-aged children, subsidized medical expenses for the poor, and increased funding for public transportation. Over the following 18 months, subsidies continued to be reduced, with most cuts occurring prior to the large fall in oil prices starting in mid-2014. While some political parties encouraged protests to these reforms, public discontent/protests never became widespread. And in 2015, fuel prices were fully liberalized.

Jordan: Jordan successfully reformed energy subsidies in 2012, after a protracted period of failed attempts. It used to import crude oil, refine it, and sell refined products domestically at controlled prices, while directly compensating the refinery for its losses. By 2005, increasing fuel prices had pushed explicit fuel subsidies to almost 6 percent of GDP. A wave of reforms in the early 2000s led to increases in petroleum products, supported by formula-based adjustments. However, prices were kept below international prices, and subsequently subsidies re-emerged in 2011–12.

Move gradually & generate buy-in

General fuel price subsidies were removed in November 2012, by bringing all fuel products to operational cost recovery. A monthly fuel price adjustment was reinstated in early 2013. The government of Jordan took a successful set of measures under the past Stand-By Arrangement to bring NEPCO, the national electricity company, back to operational cost-recovery. On the revenue side, electricity tariffs have been increased three times since 2013. On the cost side,

Jordan started importing LNG as a result of the construction of a terminal in the port of Aqaba. This allowed NEPCO to increase its generation efficiency by shifting back most of its generation from fuel oil and diesel to LNG by mid-2015.

To compensate for the negative social impact of the reform, the government implemented a number of mitigating measures: (i) an increase in public sector wages and pensions for those with low monthly income; (ii) compensatory cash transfers of \$100 per person for families with an income below \$1,130 a month (70 percent of population) if the oil price is above \$100 per barrel; and (iii) upgraded food subsidy program with improved targeting. Wage increases benefitted some 60 percent of population and in total the mitigation program cost an estimated 7 percent of GDP (World Energy Forum, 2013). However, its wide advertisement helped generate popular support for the reform.

Ghana: In 2005 Ghana embarked on fuel subsidy reform that had all the elements to be successful, but ultimately proved not to be. The first step taken by the government was to commission a study to assess the implications of the reform, which showed that the subsidies were disproportionately benefitting the rich. The results were widely shared with the public through announcements by the president, radio broadcasts by the minister of finance, ads in national newspapers and interviews with various officials, including from trade unions. In addition, a number of mitigating measures were introduced, such as the elimination of fees for state-run primary and secondary schools, increases in public buses, a ceiling on public transport fares, increases in the daily minimum wage, and a program for increased electrification in rural areas.

The government adopted an automatic price adjustment formula in 2005, and its administration was transferred to the newly created National Petroleum Agency, in charge of making recommendations on price adjustments to the Minister of Energy based on price developments in the preceding two weeks. However, the system has not proved as robust as originally intended. For example, in the run-up to political elections in 2008, automatic price adjustments were temporarily suspended. And in 2011 and 2012, adjustments took place very infrequently, at substantial cost to the budget as the price gap was allowed to widen significantly (Clements et al., 2013).

Iran: The reform started in the high-oil price environment of 2010. Contrary to earlier plans—according to which subsidies would be eliminated and replaced by targeted, direct cash transfers tilted towards low-income households—a universal and unconditional transfer scheme was eventually implemented. Indeed, 80 percent of the savings were intended for Iranian citizens and 20 percent for businesses affected by the price change. As domestic prices for fuel increased dramatically—by 400-1,000 percent—simultaneous direct cash transfers were made to almost all of the 75 million citizens and the poverty rate fell. To operationalize the cash transfers, banks opened some 16 million new accounts and new ATMs were installed in remote areas.

The reform was initially hailed as a success. However, with the intensifications of sanctions, and later the sharp drop in oil prices, the revenue collected to finance the cash transfers declined and a large deficit opened in the Targeted Subsidy Organization, requiring additional budgetary support to finance the universal cash transfers. The government ended spending about twice as much as the removed implicit subsidies, ultimately resulting in additional budget financing

and higher inflation. Meanwhile the value of the cash transfer halved in real terms due to high inflation during 2011-13, causing the poverty rate to rise; failure to adjust some fuel prices, for example diesel, has also caused the subsidy on some fuels to re-emerge.

The government has more recently tried to recalibrate the targeting of the cash transfer, but designing a mean-tested system has proved challenging. Identifying the upper-income households has been difficult, and only around 2 million of them have been removed from the beneficiary list, resulting in limited savings (see also Ladislav and Cuyler, 2015).

The Iranian experience overall shows that the development of universal social safety nets, coupled with active public communications campaigns, can lead the population to accept a bold reform (with drastic increases in fuel prices). However, the reforms need to be supported by appropriate monetary and fiscal policies to keep inflation well anchored; by well-targeted cash transfers that move line with inflation to safeguard against excessive fiscal spending pressures while shielding the poor from the brunt of price adjustments; and by a depoliticized fuel and energy price-setting mechanism to prevent subsidies from re-emerging.

Bolivia: Following a six-year price freeze, Bolivia increased fuel prices in 2010, in an effort to combat smuggling. But the sudden price increase (by a sizeable 80 percent) led to thousands of demonstrations in major cities and teacher and transport unions' strikes. In response, the government revoked the price hikes.

Nigeria: In 2011, fuel subsidies were estimated at 1.9 percent of GDP (US\$8 billion) and expected to increase further in tandem with fuel prices. In January 2012, under severe fiscal pressures, the government decided to end abruptly the fuel subsidy program and gasoline prices more than doubled virtually overnight.

Weak institutional framework undermined public confidence This price hike ignited violent mass protests, stoked by widespread corruption concerns and fears that the subsidy removal was orchestrated by interest groups to seize control over the country's natural resources. The unrest forced the government to cut gasoline prices by one third, partially restoring the subsidies.

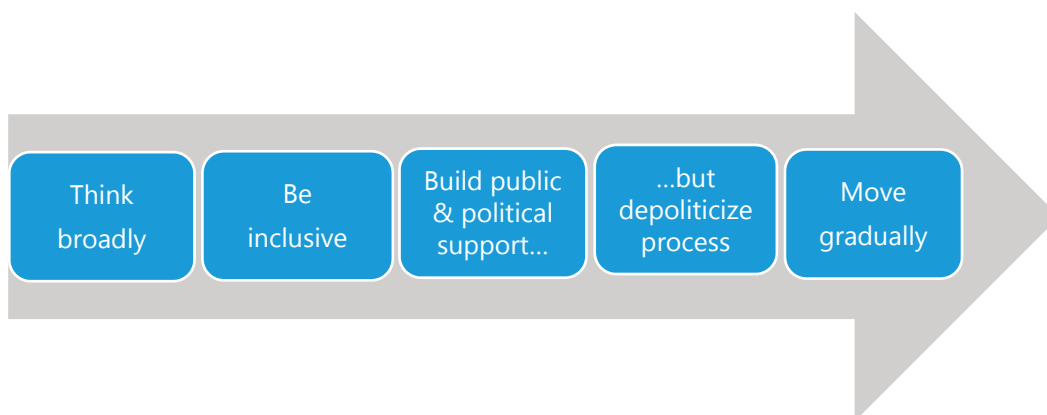
While it is easy to blame failure of the reform on the absence of a communication strategy, it should be noted that, in general, the public had little faith in the political institutions; it is thus possible that the government had limited ability to convincingly argue the case for reforms.

Do's and Don'ts for Arab Countries

A sustained low-price environment is a challenge to oil producers, but well-conceived fossil fuel subsidy reform could turn that challenge into an opportunity.

Ladislaw and Cuyler, 2015

Some key lessons Five key messages emerge from the country cases, and these can help Arab countries succeed in their efforts to implement energy price reform. Energy reform is complex and difficult. Success is a function of proper preparation, equitable implementation, and clear communication. The robustness of the reform also depends on de-linking it from political interference as much as possible, and implementation should proceed gradually.



Think broadly: A need for a comprehensive strategy Reforming energy pricing is key to addressing subsidies and reducing fiscal costs. Price increases need to be part of a broader strategy to promote energy efficiency over time, while being mindful of the trade-offs of reform (including its impact on the poor, which needs to be mitigated, see below). The seven case studies show that reform success tends to be a function of careful preparation and gradual implementation—quick and large steps, while courageous, do not typically last. Thus, a comprehensive strategy is not just one that looks at the various reform pieces (such as better alignment of energy prices to market/cost recovery levels, creation of incentives to reduce energy intensity and inefficiency, support for consumers and producers that stand to lose), but also at their time profile. The case studies also highlight the need to calibrate the pace and scope of reform to countries' administrative capacity and institutional framework.

Be inclusive: Compensating measures are key Although low fuel prices are not well-targeted to relieve poverty, their removal will have a significant impact on the poor (McLure 2013). Thus, whenever energy prices are adjusted, there is a need to introduce compensating measures to support the poor—not only those with access to the energy products whose prices are being affected, but also those who will be indirectly affected, for example via a generalized increase in inflation and erosion of purchasing power; or workers laid off in the industries affected by increased energy prices.

The preferred approach would be to introduce targeted cash transfers or vouchers, which afford flexibility to consumers and limit the costs to the government. However, it is administratively difficult to target specific households, due to lack of information (as the example of Iran shows). In such cases, universal cash transfers should be considered, though their cost may quickly outstrip the savings from the subsidy reform. In an effort to reach

needier energy consumers, an enrollment program could be implemented—possibly resulting in a lower number of beneficiaries as wealthier ones could find it inconvenient to register given the size of the compensation relative to their income. In the context of electricity reforms, a practice adopted by a number of countries was to set *lifeline* tariffs for households consuming below a certain threshold level (as in Armenia, Brazil, Kenya, and Uganda).

When directly targeting consumers, experience suggests that cash measures are to be preferred to in-kind compensation. For example, in a number of countries where consumers (or taxi drivers) were provided with cheap gasoline when retail prices were increased, significant distortions were created, such as creation of a black market and opportunities for corruption (for example, in Iran). In India, the government in 2013 replaced a system of direct provision of LPG cylinders per household per year at a subsidized price with a system of Direct Benefit Transfer (DBT), whereby buyers pay the full price for LPG and then receive a cash transfer into bank accounts linked to a single specified LPG connection. The DBT for LPG (DBTL) has since become one of the largest cash transfer programs in the world. The shift to the DBTL system is intended to minimize fraudulent LPG connections and non-eligible consumption of subsidized LPG (by businesses for example) through stricter linkage between the purchase of LPG and the receipt of subsidy (in an approved bank account) (GSI, 2016). However, these schemes require a certain degree of financial inclusion (for example, availability of banking-type services) and proper targeting to be successful.

Other options to compensate for the reduction/removal of price subsidies include public spending that boosts physical and human capital via expansion of public works, education and health programs in poor areas (as in Ghana and the Philippines; these could also take a form of conditional cash transfers linked to households' investment in education and health); measures that help households switch to a cheaper source of energy (for example, the governments of Indonesia and Yemen helped households substitute kerosene with low cost LPG); and provision of social assistance and training to workers laid off from enterprises that are adopting more energy-efficient technologies (as in Iran and Poland).

Build public & political support: Consult and communicate

For energy price reform to be accepted, the public must be informed of the costs and benefits of energy price subsidies—which in turn require careful assessment. The case studies point to the critical importance of broad consultation with a wide range of stakeholders (as in Malaysia and Morocco) and effective communication to the public. Communication of plans well in advance of the actual implementation of the reforms, together with an increase in cash transfers that precedes the reforms, make adjustments to the new prices easier to understand and accept.

Depoliticize process: Stay away from ad hoc solutions

The end-point of the reforms matters as well: a transparent and easy-to-understand formula-based approach or a complete liberalization of energy prices are more convincing options than yet another discretionary price fix. The latter, as noted above, also reduces the price gap only temporarily, and therefore does not provide a lasting solution to addressing the related fiscal costs. In contrast, automatic prices adjustments allow for gradual increases in domestic petroleum prices that can be easily tailored to countries' specific circumstances and evolving international oil prices (see Box 4 for two illustrative examples). Most importantly, automatic

price mechanisms help depoliticize the reform process, help avoid reform reversal, and facilitate the transition to a fully liberalized pricing system.

**Move
gradually:
Avoid sudden
price increases**

Governments implementing abrupt and sizeable energy price increases too quickly (in some cases literally overnight) are more likely to face popular discontent, ending in a reversal of price increases or an abandonment of further reforms. On the contrary, countries that were successful in implementing the reforms and liberalizing prices have done so gradually and over a prolonged period of time, giving businesses and households an opportunity to adjust.

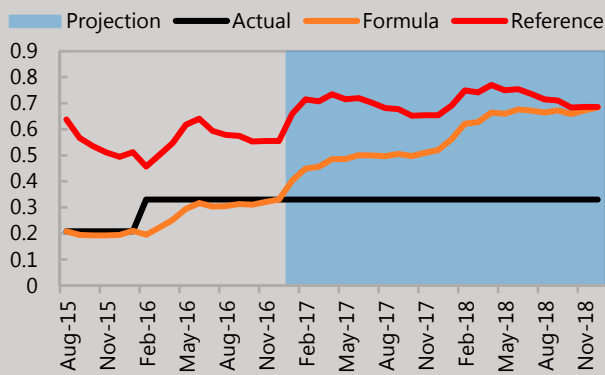
Box 4. A Formula-Based Adjustment in Petroleum Prices

An automatic formula-based approach can help to gradually eliminate the gap between country-level and reference (i.e. international) petroleum prices. This approach offers two key advantages: (i) the pace of price changes can be tailored to a country's political and economic circumstances; and (ii) it allows to continuously re-evaluate conditions in a transparent fashion.

Under this approach, the price gap prevailing at time t is subsequently reduced each period (in our case, on a monthly basis) by a pre-determined percentage that reflects the preferred length of the adjustment process. Accordingly, at each following step the gap (as a percent of the reference price) is further reduced by the pre-determined amount. This automatic price mechanism continues until the country-level price equals the reference price. Once the price gap is closed, full market liberalization could be adopted to ensure that no price gap re-emerges. Two illustrative examples are provided below.

Bahrain, Gasoline Prices

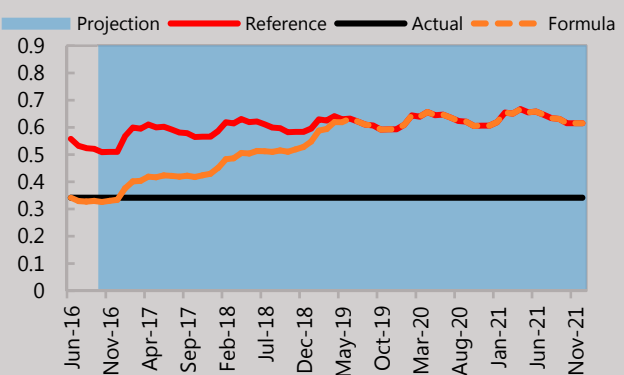
(In USD/liter)



Sources: IEA, country authorities, and IMF staff calculations.

Lebanon, Diesel Prices

(In USD/liter)



Sources: IEA, country authorities, and IMF staff calculations.

Example 1: In early 2016 Bahrain implemented a one-off adjustment in its gasoline prices by increasing prices from US\$0.2 per liter to US\$0.33. The adjustment allowed the government to lessen the price gap. A counter-factual scenario assumes that the same adjustment could have taken place over a period of sixteen months at a more gradual pace; and, by continuously reducing the existing gap under a formula-based approach, Bahrain could have already had a system in place to remove subsidies by 2018.

Example 2: Lebanon's current diesel price has remained below the reference price (though prices have moved). A hypothetical scenario shows how with gradual adjustment over three years, the domestic price could reach the (currently prevailing) reference price, before shifting to market-based pricing.

Data sources: Actual prices are provided by IMF country desks, based on country authorities' inputs. Reference prices come from the IEA data on gasoline/diesel prices for the US, minus any taxes on gasoline/diesel; while forecasts are obtained using the most recent WEO projections for changes in the oil price.

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Annex. Arab Countries: Recent Energy Price Measures

	Gasoline	Fuel Diesel	Kerosene & Other Fuel Products	Electricity	Gas	Mitigating Measures
Oil Importers						
Egypt						
<i>2012–13</i>	Increase for 95 octane gasoline by 112 percent for high-end vehicles.		Fuel oil price increase by 33 percent for non-energy-intensive industries and by 50 percent for energy-intensive industries.	Tariff increase by 16 percent on average for households.		Electricity tariffs have remained unchanged for the lowest consumption bracket.
<i>July 2014</i>	Increase for businesses and households (B&H) by about 20–80 percent.	Increase for B&H by about 20–80 percent on average.	Increase for B&H by about 20–80 percent on average.	Tariff increase by 10-50 percent.		Additional social expenditure budgeted in 2014 to cover a higher number of beneficiaries of social security pensions.
<i>July 2015</i>				Tariff increase for large consumers by 10–25 percent.		
<i>July 2016</i>	Increase by 40 percent.	Increase by 31 percent.	Increase by 30 percent.	Increase by 40 percent on average.	Increase in LPG prices by 87.5 percent.	1 percent of GDP in savings for 2016/17 has been set aside to be spent on social protection.
Jordan						
<i>2012</i>	Subsidies eliminated in November. Fuel prices adjusted monthly since January 2013, in line with international price developments.			Tariff increase for selected sectors (banks, telecom, hotels, mining) and large domestic B&H.		Compensatory cash transfers of \$100 per person is going to families with an income below \$1,130 a month (70 percent of population) if the oil price is above \$100 per barrel.

Annex. Arab Countries: Recent Energy Price Measures

	Gasoline	Fuel Diesel	Kerosene & Other Fuel Products	Electricity	Gas	Mitigating Measures
<i>2013–15</i>				Various tariff increases for selected consumers.		
<i>February 2015</i>				Half of the 2015 electricity tariff increases repealed. The planned 15 percent increase for 2016 and 2017 not implemented.		
Lebanon	Gasoline prices are fully liberalized, though fuel taxation is very low (diesel is exempted from VAT and is not subject to excises).			Unchanged tariffs since 1996.		
Mauritania <i>2012</i>		New automatic diesel price formula introduced, to bring domestic fuel prices up to international levels. But formula has not been applied since then.				Gradual reorientation of social safety nets toward well-targeted cash transfers schemes, but progress has been very slow.
<i>July 2014</i>					Increase from 15 to 50 percent, maintaining a partial subsidy.	
Morocco <i>June 2012</i>	Price increase by 20 percent.	Price increase by 14 percent.	Industrial fuel price increase by 27 percent.			Direct transfers to electricity company to last four years while measures are taken to ensure the financial viability of the company.

Annex. Arab Countries: Recent Energy Price Measures

	Fuel			Electricity	Gas	Mitigating Measures
	Gasoline	Diesel	Kerosene & Other Fuel Products			
<i>September 2013</i>	Partial indexation mechanism of certain products, with gasoline price increases by 4.8 percent.	Partial indexation mechanism of certain products, with diesel price increases by 8.5 percent.	Partial indexation mechanism, with fuel price increases by 14.2 percent.			Gradual strengthening of the existing social safety nets and social programs targeting the most vulnerable population groups through improvements in education, health, and assistance to poor widows and the disabled. Supporting public transport.
<i>February 2014</i>	Gasoline subsidies eliminated, with prices reviewed twice a month.	Per-unit subsidy of diesel reduced during 2014.	Industrial fuel subsidies eliminated (in June for fuel used for electricity generation), with prices reviewed twice a month.			
<i>November 2015</i>	Full liberalization of fuel product prices (diesel, gasoline and kerosene).					
Sudan						
<i>June 2012</i>	Price increase by 47 percent.	Price increase by 23 percent	Jet fuel liberalized		LNG price increase by 15 percent.	Public sector wage increase of about SDG100; a monthly grant allocation of SDG150 for about 500,000 urban poor families (end-2014 target). Lower health insurance premium for about 500,000 poor families; and exemption of school and transportation fees for disabled people.
<i>September 2013</i>	Price increase by 68 percent.	Price increase by 74.7 percent			LNG price increase by 66.7 percent.	
<i>January 2016</i>					LNG price increase by 200 percent.	

Annex. Arab Countries: Recent Energy Price Measures

	Fuel			Electricity	Gas	Mitigating Measures
	Gasoline	Diesel	Kerosene & Other Fuel Products			
<i>November 2016</i>	Price increase by 30 percent.	Price increase by 32 percent		Tariffs increase by 160 percent		Expanding the number of families covered by the cash-transfers program to 750,000 over the medium term.
Tunisia						
<i>September 2012</i>	Price increase by about 7 percent.	Price increase by about 7 percent.		Tariff increase by about 7 percent.		Introduction of an additional lifeline electricity tariff for households consuming less than 100 kwh per month. Creation of a new social housing program for needy families. Increase of income tax deduction for the poorest households. Increase and expansion of the cash transfers program for poor families.
<i>March 2013</i>	Further 7–8 percent price increase.	Further 7–8 percent price increase.		Further 7–8 percent price increase.		
<i>May 2014</i>					Natural gas prices increased by 10 percent.	
<i>July 2014</i>	Price increase by 6.4 percent.	<i>July 2014:</i> diesel prices increased by about 7 percent.		Tariff increase for medium and low-voltage consumers by 10 percent.		
<i>2015</i>	Programmed increases for gasoline, diesel and electricity suspended.					

Annex. Arab Countries: Recent Energy Price Measures

	Gasoline	Fuel		Electricity	Gas	Mitigating Measures
		Diesel	Kerosene & Other Fuel Products			
<i>January 2016</i>	Price structure modified through an increase of excises.	Price reduced by 20 percent.	Price structure modified through an increase of excises.			
<i>July 2016</i>	Adoption of a symmetric fuel price mechanism to two types of gasoline, with partial implementation during the subsequent months.	Application of a symmetric fuel price mechanism to two types of diesel fuel. Adoption of a symmetric fuel price mechanism to diesel, with partial implementation during the subsequent months.				
Yemen						
<i>2011–12</i>	Prices increase by 66 percent.	Diesel price doubled. Diesel price unified across users in 2013.	Kerosene price doubled.			Increase in the Social Welfare Fund (SWF) transfers to the poor by 50 percent in December 2014.
<i>2013</i>				Electricity prices unified across users.		
<i>July–September 2014</i>	Price increase by 20 percent.	Private sector companies allowed to directly import diesel at international prices. Diesel price increased by 20 percent.	Kerosene price increased by 50 percent.			Coverage of SWF expanded to 500,000 additional families.

Annex. Arab Countries: Recent Energy Price Measures

	Gasoline	Fuel Diesel	Kerosene & Other Fuel Products	Electricity	Gas	Mitigating Measures
Oil Exporters						
Algeria						
<i>January 2016</i>	Tax on petroleum products (TPP) increased from 1 dinar to 2.91 dinars, applied to the price of gasoline, resulting in a price increase of about 34–38 percent.	Tax on petroleum products (TPP) increased from 1 dinar to 2.91 dinars, applied to the price of gasoline, resulting in a price increase of about 34–38 percent. VAT on the sale of diesel increased from 7 to 17 percent.		VAT on the consumption of electricity beyond 250 kWh/quarter increased from 7 to 17 percent. Electricity rates increased by 15–31 percent for H&B consuming more than 250 kWh/quarter.	VAT on the consumption of natural gas beyond 2,500 thermal units/quarter increased from 7 to 17 percent. Natural gas rates increased by 15–42 percent for H&B consuming more than 2,500/thermal units/quarter.	
Bahrain						
<i>April 2010</i>					Gas prices for new customers were increased from \$1.30 to \$2.50.	
<i>January 2012</i>					Gas prices for old industrial customers were increased 50 percent, from \$1.50 to \$2.25 per mmbtu.	
<i>October 2013</i>				Tariffs for electricity and water for non-domestic use were raised.		

Annex. Arab Countries: Recent Energy Price Measures

	Gasoline	Fuel Diesel	Kerosene & Other Fuel Products	Electricity	Gas	Mitigating Measures
<i>March 2015</i>			The authorities increased fuel prices in marine stations		Authorities announced annual increases of \$ 0.25 per mmbtu in the gas price for industrial users starting on April 1, 2015 until the price reaches \$4.0 per mmbtu by April 1, 2021	
<i>January 2016</i>	Regular gasoline prices were increased by 56 percent to about US\$0.33 per liter; premium gasoline prices increased by 60 percent to about US\$0.043 per liter.					
<i>March 2016</i>				Electricity tariff increases will be phased in through 2019, with prices increasing 95 percent over that time period.		Nationals will be exempted from higher water and electricity tariffs announced in March 2016 on their first house.
Iraq						
<i>2000–08</i>	Prices for gasoline raised 9-folds (from 50 dinars per liter to 450 dinars)		Administered prices for LPG increased 26 folds (from 150 dinars/cylinder			

Annex. Arab Countries: Recent Energy Price Measures

	Fuel			Electricity	Gas	Mitigating Measures
	Gasoline	Diesel	Kerosene & Other Fuel Products			
<i>January 2016</i>			<p>to 4,000 dinars, over the entire period).</p> <p>Prices for kerosene raised 30 folds (from 5 dinars/liter to 150).</p> <p>Domestic price for gas oil raised 40 folds (from 10 dinars per liter to 400).</p>	<p>Administered electricity tariffs were raised for all sectors to make the tariff structure more progressive,</p>	<p>Reducing gas flaring from oil wells and capturing the gas to be used as fuel in power generation (or for export) instead of reliance on imported gas or fuel is being addressed with the assistance of the World Bank.</p>	<p>The poorer segments of the population are not affected by the tariff increases.</p>
Kuwait						
<i>January 2015</i>		Price increase by 100 percent.	Price increase by 100 percent.			

Annex. Arab Countries: Recent Energy Price Measures

	Gasoline	Fuel Diesel	Kerosene & Other Fuel Products	Electricity	Gas	Mitigating Measures
<i>May 2016</i>				Effective from 2017, increase in electricity and water prices for foreign residents (residing in apartment buildings) and businesses (Kuwaiti citizens exempted). For foreign residents, electricity prices will go up from 2 fils to 5 fils for consumption levels below 1,000 kWh/month, 10 fils between 1,000–2,000 kWh/month and 15 fils above 2,000 kWh/month.		
<i>September 2016</i>	Price increase by 70 percent. Low octane petrol rose by 41 percent (to 85 fils 28 US cents per liter), high grade petrol increased by 61 percent (to 105 fils 34 US cents per liter), and “ultra” petrol by 74 percent (to 165 fils 54 US cents per liter). A government committee will revise prices quarterly, depending on international oil prices.					

Annex. Arab Countries: Recent Energy Price Measures

	Gasoline	Fuel Diesel	Kerosene & Other Fuel Products	Electricity	Gas	Mitigating Measures
Oman						
<i>January 2015</i>						Industrial price for natural gas has doubled
<i>January 2016</i>	Price increased by 23 percent, to about US\$0.36 per liter.	Price increased by 10 percent to US\$0.42 per liter				
<i>Feb-2016</i>	Monthly adjustments of prices. As of February 2017 gasoline price is US\$0.48 per liter.	Monthly adjustments of prices. As of February 2017 diesel price is US\$0.53 per liter.				
<i>Feb-2017</i>	The Omani authorities decided to fix the price for grade M91 fuel (regular gasoline) at the level announced for the month until a mechanism is in place to support certain segments of population					

Annex. Arab Countries: Recent Energy Price Measures

	Gasoline	Fuel Diesel	Kerosene & Other Fuel Products	Electricity	Gas	Mitigating Measures
Qatar						
<i>January 2011</i>	Prices increased by 25 percent	Prices increased by 30 percent				
<i>May 2014</i>		Price increase up by 50 percent. Started improving desalination technologies and awareness of sustainable energy use.				
<i>October 2015</i>				Electricity prices raised and tiered according to consumption.		
<i>January 2016</i>	Price increase by US\$0.35.					
<i>April 2016</i>	Announcement of more regular adjustments of fuel prices, based on developments in the global and regional markets.					
<i>August 2016</i>	Price increase by 4 percent (to US\$0.45). The formula is indicative and applied on an ad hoc basis					

Annex. Arab Countries: Recent Energy Price Measures

	Gasoline	Fuel Diesel	Kerosene & Other Fuel Products	Electricity	Gas	Mitigating Measures
Saudi Arabia						
<i>July 2010</i>				Increased the average price of electricity sold to non-individual users by over 20 percent.		
<i>December 2015</i>	Price of higher-grade gasoline increased by about 50 percent, to \$0.24 per liter, while regular gasoline increased from \$0.12 to \$0.2 per liter.	Diesel prices increased from \$0.07 per liter to \$0.12 per liter for the transportation sector and \$0.09 per liter for the industrial sector.		The authorities announced a reduction in electricity and water subsidies. Electricity tariffs for households increased by 35 percent on average.	Price of Methane and ethane gas raised from \$0.75 per liter to \$1.25 per liter and to \$1.75 per liter, respectively.	
United Arab Emirates						
<i>January 2015</i>				Abu Dhabi increased electricity tariffs by 40 percent.		
<i>August 2015</i>	Fuel subsidies terminated, with pump prices of gasoline and diesel set on the basis of world prices and adjusted automatically every month.					
<i>January 2016</i>				Electricity tariffs increased by 14 to 17 percent.		