



# The political economy of fossil fuel subsidies in the Middle East and North Africa

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## Question

Review economic subsidies for fossil fuels in Jordan, Lebanon, Tunisia, OPT, Iraq, Egypt, Yemen, Algeria, Syria and Morocco, including:

- A brief economic analysis of the subsidy structure
- A high-level political economy analysis
- Analysis of pathways to change

## Contents

1. Summary.....	2
2. Fossil fuel subsidies and the MENA region .....	5
3. Jordan.....	8
4. Lebanon.....	11
5. Tunisia.....	13
6. Occupied Palestinian Territories.....	15
7. Iraq.....	17
8. Egypt.....	20
9. Yemen.....	23
10. Algeria.....	25
11. Syria.....	27
12. Morocco.....	29
13. References.....	31

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## 1. Summary

**This rapid review synthesises the academic and policy literature on the political economy of fossil fuel subsidies and their reform in ten selected countries in the Middle East and North African (MENA) region, namely Jordan, Lebanon, Tunisia, the Occupied Palestinian Territories (OPT), Iraq, Egypt, Yemen, Algeria, Syria and Morocco. Fossil fuel subsidies have a central place in the political settlements of these ten countries and reform efforts aimed at reducing their fiscal cost are controversial. More successful reforms are supported by a clear communication strategy, implemented gradually and are designed to minimise losses for politically powerful actors or involve credible commitments to compensate them. The fiscal pressures linked to the COVID-19 pandemic and recession will heighten the urgency of subsidy reform, and concurrent low oil prices provide a favourable context. Recession-induced fiscal stimulus measures targeting renewable energy (RE) investment would also support the transition away from fossil fuel subsidies, but there is little evidence of this so far.**

From a political economy perspective, fossil fuel subsidies are redistributive rents with the underlying objective of maintaining social stability. Yet as redistribution instruments they are expensive and ineffective, benefitting middle and high-income households more in absolute terms. In relative terms they do represent a greater share of low-income household expenditure, and successful reforms often exclude fuels of greater importance to the poor, e.g. Liquid Petroleum Gas (LPG) in Egypt and Morocco. Subsidies also benefit industrialists, farmers and consumers, particularly in arid regions where diesel is used to pump water for irrigation and household use. However, by making fossil fuels cheaper they encourage the use of unsustainable technologies and impede the development of RE despite the region's favourable climactic conditions, e.g. for solar energy harvesting.

Fossil fuel subsidies in MENA are mainly to consumption, and are high, both as a share of GDP, and compared to other world regions. This is especially the case for net fossil fuel importers in periods of high international prices, as prevailed in the decade to 2014. The fiscal pressure created by energy subsidies has been the main driver of reform in MENA, along with the associated reliance on international creditors such as the IMF who make financial support conditional on subsidy reduction. However, efforts to raise fuel prices are seen as breaking an implicit social contract and are often met with civil unrest. Some countries have had more success in removing fuel subsidies, such as Morocco, but for others they remain an important factor in ongoing fiscal and political crises, such as in Lebanon.

The literature points to a number of ways to maximise the chance of reforms being successful. Clear communication about the need for reforms is important, along with credible commitments to compensate losing groups, e.g. social transfers. This is a challenge in many MENA countries, where citizens often do not trust in the capabilities of states to design and implement effective social security systems. The exclusion of sensitive products most valued by groups able to mobilise to block reforms has been key to success in several countries, and promotion of RE investment is likely to reduce energy subsidy dependence and ease reforms. External factors such as low oil prices can also provide favourable conditions for reform, since

alignment of domestic prices with international markets will not immediately result in price rises.

The crisis provoked by the COVID-19 pandemic and concurrent low oil prices offers uncertain prospects for fossil fuel subsidies and their reform. The pandemic and ensuing recession is likely to increase unemployment, worsen living conditions and place additional strain on national budgets, but low oil prices may reduce the urgency of subsidy reform. Fiscal stimulus measures in MENA so far have generally not placed much emphasis on fossil fuel subsidies, but the global focus on designing economic recovery packages to accelerate the transition to RE presents an opportunity to accelerate reform.

Below a summary of findings is provided for each country.

- After successful reform efforts in the 2010s, **Jordan's** petroleum product subsidies are relatively small for the region, but subsidies to electricity remain significant. These reforms were pursued in the face of ballooning expenditure on fuel subsidies by a government seeing the need for significant change in the tumult of the Arab Uprisings. Important success factors included good communication and rapid compensation. While simulations show neutral or positive results for removal of the remaining electricity subsidy, Jordanians' attachment to it makes this politically difficult. How the pressures generated by COVID-19 will affect this calculation is uncertain.
- In **Lebanon**, cash transfers to the electricity utility claimed 9% of the 2018 budget, and are acknowledged as an unsustainable fiscal burden. For the time being, low international oil prices have reduced the cost. Fossil fuel subsidies are interwoven in the intricate sectarian partition and contestation of the state. While reform is seen as necessary, and has provoked many RE-based feasibility studies, the literature does not lay out a clear path in terms of how reform might be achieved in political terms. This challenge is compounded by the civil unrest ongoing since October 2019 and provoked by a fiscal crisis, as well as the economic contraction caused by the COVID-19 crisis.
- **Tunisia's** fossil fuel subsidies are of middling proportion for the group in relation to GDP, but nonetheless made up 8% of state expenditure in 2018. Systematic reform has not occurred since 2011, but small reform efforts in the form of tariffs partly tagged to international prices are ongoing. If RE is supported, its technical idiosyncrasies may help push Tunisia away from its subsidy dependence, but the literature is not strong on the political economy of such a move.
- The **Occupied Palestinian Territories (OPT)** have a considerable implicit subsidy to electricity consumers; electricity is mostly imported from Israel. The data and literature on the OPT is some of the weakest among the countries in question, perhaps because of its highly unique status. Subsidies equated to about one third of GDP in 2014, and are just one aspect of the OPT's endemic energy supply and distribution problems, which are entangled in highly contentious politics with Israel. A future away from subsidies and energy dependence on Israel is discussed in terms of regulatory development and solar energy generation. However, the subsidies literature does not address the much larger question of relations with Israel.

- **Iraq** is a major oil exporter but its shortage of refining capacity leads to large subsidies on imported refined products being a serious drain on state revenue. Poor government performance in other areas and the threat of generalised civil unrest make subsidy reform difficult, as do private interests in a large private generator market benefitting from subsidised diesel. Political instability makes reform very uncertain, even while solar energy offers prospects to improve electricity supply and access.
- In **Egypt**, the administration has undertaken significant subsidy reform since 2014 with the object of removing subsidies entirely, in the face of fiscal pressures and at the insistence of international financial institutions (IFIs). The interests of the military and poorer households have conditioned the design of reforms, especially the exclusion of Liquid Petroleum Gas (LPG). Variable price increases that are 'smart' to distributional impact along with strengthened social protection mechanisms are key to successful removal of subsidies.
- In **Yemen**, attempted fossil fuel subsidy reform in 2014 by President Hadi was partly resisted by the Houthi movement. The civil war and humanitarian disaster have made data and analysis on the fossil fuel subsidy political economy quite sparse. Further reform is contingent on the outcome of the conflict.
- **Algeria** has a relatively high rate of fossil fuel subsidisation for the region, which has historically been a major part of the social contract between the people and ruling elites. As an oil exporter, high international oil prices until 2013 allowed expensive and inefficient patronage-style distribution, but with dropping prices, a large fiscal gap has appeared. With the recent widespread civil protests and change of government it is difficult to predict how subsidy reform will unfold.
- The **Syrian** regime subsidises fuel to consumers, although data on their current value is not available due to the upheaval of war. Subsidised fuel has been necessary for making agriculture viable in arid parts of the country. Radical economic reforms prior to 2011 (including 50% overnight fuel price increases) contributed to the economic conditions that lead to destabilisation and conflict. Today's fragile and war-torn context show uncertain prospects for further reform.
- **Morocco** has some of the lowest levels of fossil fuel subsidies among the countries in question, due to its successful phase out through the mid-2010s. Subsidies remain on LPG (butane) gas, which reflects a political sensitivity to low-income households which rely heavily on the fuel. Reform of this subsidy would lead to poverty increase with minimal environmental impact.

While the literature on fossil fuel subsidies in MENA is fairly expansive, there are relatively few systematic political economy analyses for individual countries. The literature on reform is often focused on feasibility studies which model the distributional impacts across households, but do not always address the political economy reality. This review found only one study that addressed the gendered impact of reforms and none that treated how they affect disabled people.

## 2. Fossil fuel subsidies and the MENA region

### Defining and measuring subsidies

Sovacool, (2017: 151) recognises the “breadth and complexity” of the nature of subsidies, and provides a useful general definition from the World Trade Organisation (WTO) as “a financial contribution by a government, or agent of a government, that confers a benefit on its recipients.” In addition, it is important to distinguish between subsidies made to consumers and those made to producers (Coady et al, 2019).

Producer subsidies arise when productive organisations receive direct or indirect support, but these are barely mentioned in the literature covered in this review. Instead consumer subsidies are the focus of the literature that focuses on the MENA region, in particular ‘pre-tax’ consumer subsidies, defined as the difference between the amount consumers actually pay for a product and the cost of supplying it (IMF, 2018).<sup>1</sup> These are most commonly calculated through an estimation of all government support via the price gap method (Sovacool, 2017).

For any given example, the value of subsidies will vary with the definition and calculation methodology in use. The sources used in this review are often not explicit about subsidy definition and calculation methodology, which makes direct comparison problematic. Subsidy values of course also change due to exogenous factors including international fuel prices, exchange rates, consumption patterns, etc.

### Subsidy structure

The literature tends to focus on the magnitude of subsidies in absolute terms and in relation to Gross Domestic Product (GDP), rather than how they are administered, the structure of markets where they are present, or the exact subsidised products. In MENA there is a high prevalence of fossil fuel subsidies and they are large in relation to national economies, and compared to the rest of the world. The main study on the topic by Sdravovich et al (2014) found that in 2011, MENA energy subsidies cost US\$237 bn, equivalent to 48% of the world total, and representing 8.6% of regional GDP and 22% of government revenue. By comparison food subsidies stood at just 0.7% of MENA GDP in 2011. Oil exporters spent much more on energy subsidies (US\$204 bn, or 8.4% of GDP) than oil importers (US\$33 bn, or 6.3% of GDP), though this usually represents an implicit subsidy rather than actual expenditure.

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<sup>1</sup> The IMF also measures post-tax subsidies, i.e. the difference between actual consumer fuel prices and how much consumers would pay if prices fully reflected supply costs plus the taxes needed to reflect environmental costs (e.g. pollution) and revenue requirements. These are not the focus of the literature or this review.

Table 1. Energy subsidies in countries covered in this review, 2017 (pre-tax)

Country	Population, million	Nominal GDP/capita (1000 US\$)	Subsidy value, US\$ bn	Subsidy value, % of GDP	Subsidy value, US\$ per capita	Net oil import/export status	Lost GDP growth in 2020
<b>Algeria</b>	41.32	4.06	6.74	4.02	163.02	Exporter	-8.3
<b>Egypt</b>	97.55	2.42	14.84	6.27	152.07	Importer	-2.8
<b>Iraq</b>	38.27	5.03	2.96	1.54	77.41	Exporter	-14.8
<b>Jordan</b>	9.70	4.14	1.24	3.08	127.33	Importer	-5.7
<b>Lebanon</b>	6.08	8.91	2.34	4.31	384.08	Importer	-11.2
<b>Morocco</b>	35.74	3.06	0.40	0.36	11.16	Importer	-7.5
<b>Palestine</b>	4.45	3.25	No data	No data	No data	Importer	-2.5*
<b>Tunisia</b>	11.53	3.46	1.16	2.91	100.98	Importer	-6.2
<b>Yemen</b>	28.25	1.11	0.30	0.95	10.56	Importer	-3.0*
<b>Total</b>	286.72		29.97	3.44	104.52		
<b>Average</b>	30.32	3.04	3.75	2.93	128.33		-2.7

Source: Author's own, data taken from IMF (2018) and World Development Indicators (2020). NB: No recent data available for Syria; or on subsidies for Palestine. Lost GDP growth data (due to twin COVID-19 and oil market shocks) from World Bank (June 2020) Global Economic Prospects, Percentage point differences between June and January 2020 projections (except Yemen, from April IMF MENA outlook, represents forecast growth in 2020 only; and Palestine, represents GDP growth projection by World Bank in April).

## Political economy

While the literature on fossil fuel subsidies in MENA is fairly expansive, there are relatively few systematic political economy analyses for individual countries. It is generally agreed that fossil fuel subsidies have a central role in the regional political settlement, being one of the main ways governments attempt to provide economic security in the general absence of functioning social welfare systems (El-Katiri and Fattouh, 2017) and also a major source of finance for patronage networks in clientelist political economies (Hertog, 2017).

These subsidies have their origins in Arab Nationalism, a colonial-era independence movement that aspired to create a new middle class, remove the bourgeois elite and transform and industrialise economies. This period left Arab republics like Tunisia, Egypt and Algeria with a legacy of strong state involvement in the economy. Lebanon was an exception, as it did not have a largescale nationalistic state building project (Hertog, 2017). Trying to compete

with republics founded on Arab nationalism, Arab monarchies such as Jordan developed comparable redistributive systems.

If energy subsidies aim to distribute wealth, protect the poor and encourage development, they are generally seen as ineffective policy tools in the literature. In absolute terms, more benefits of the subsidies go to middle and high-income households than to low-income households (El-Katiri and Fattouh, 2017; Araar and Verme, 2016). The poorest quintiles in Egypt, Jordan, Mauritania, Morocco, and Yemen received only 1–7% of total diesel subsidies, while the richest received 42–77% (El-Katiri and Fattouh, 2017). However, in relative terms energy subsidies mean more to low-income households because they represent a larger share of total expenditure (Araar and Verme, 2016).

Beyond the relationship of subsidies to political bargains, and their regressive distributional impact, the literature notes a host of other political economy effects, such as increasing net importers' vulnerability to commodity price changes, fostering smuggling across borders, contributing to excessive energy consumption, undercutting and impeding the development of RE and causing bias towards capital-intensive industries that do not produce sufficient jobs (El-Katiri and Fattouh, 2017; Sdrlevich et al, 2014; Hertog, 2017).

## **Reforming fuel subsidies**

Subsidy reform in the region has been ongoing in various forms since at least the 1960s, but accelerated from the 1990s, often with technical support from the IMF and World Bank and as a condition for their financial aid. Such reforms were not uncontroversial, with fuel price rises often provoking civil unrest. In 2011 when uprisings occurred across MENA, subsidy reforms were reversed in several states for between 1-2 years, after which they tentatively recommenced (e.g. Jordan). This reflects the importance of subsidies in the social contract, and governments' fears that subsidy decreases would deepen or reignite unrest.

The literature tends to see energy subsidy reform as a fiscal imperative and also an opportunity to develop more effective and efficient social security systems (e.g. Hertog, 2017). The political economy of subsidies makes this difficult with resistance from beneficiaries encountered due to the lag between hurt and gain, popular perceptions of state incompetency at managing social safety nets and the genuine technical challenges involved (Sdrlevich et al, 2014; El-Katiri and Fattouh, 2017; Araar and Verme, 2016).

The main driver of energy subsidy reform is fiscal pressure as growing populations and economies render subsidy levels unsustainable, and governments realise their inefficiency in cementing the social contract. The period of rising oil prices in the 2000s increased the fiscal burden considerably, particularly for net oil importing countries. The current situation of low international oil and gas prices is favourable for reform because consumers will not be immediately affected by price liberalisation, but there is a risk of backsliding when prices rise again.

Various means are proposed to compensate for subsidy removal and make state distribution more effective. These include progressive policies that reallocate fossil fuel subsidies in ways that benefit low-income houses more efficiently, such as through means-tested income

support, unemployment assistance, unemployment insurance, the development of public transport and cash transfers of various types such as child allowance (Hertog, 2017; Györi and Soares, 2018; El-Katiri and Fattouh, 2017). Generally modelling shows the fiscal possibility of funding such schemes with the savings from subsidy reform. Success factors for reform include good communication, politically adroit timing, proper administrative capacity and preparation including analysis of distributional impacts of reform options, e.g. through the World Bank's 'SUBSIM' package (Inchauste et al, 2017; Banerjee et al, 2017).

The literature reviewed in this rapid review largely predates the COVID-19 crisis and concurrent fall in oil prices, so does not directly address their effects on fossil fuel subsidies. However, some scenarios can be constructed based on the projected economic effects of the twin shocks. Growth in MENA may fall by 4.2% for oil exporting countries and by 0.7% for oil importing countries in 2020 (OECD, 2020). Oil-exporters will be hit by lower global demand and lower oil prices, with oil exports declining by more than US\$250 bn across the region. The cost of energy subsidies in oil importers will be lowered by recent international price developments, but those countries will also suffer from lower remittances and likely recession. As a result, fiscal balances are expected to turn negative across the region, exceeding 10% of GDP in many cases.

How these developments will affect subsidy reform is uncertain. Heightened fiscal constraints may accelerate reform in both oil importing and exporting countries, and low international prices provide a favourable context. Conversely, governments may be wary of applying difficult or unpopular reforms when economies are already shrinking. Pezzini (2020) argues that the COVID-19 pandemic is an opportunity for subsidy reform because of the justification it provides for a shift in spending to the health sector and economic stimulus.

The following sections look at the ten countries covered in detail by this review, examining for each the economic structure of subsidies, their political economy and pathways for reform.

### **3. Jordan**

#### **Subsidy structure**

Despite some natural gas and shale resources Jordan is a net energy importer, importing 97% in 2011 (Bridle et al, 2014). After progressive reforms of petroleum product subsidies from 2008, electricity subsidies have become the most significant. We review the backward-looking literature explaining the success of petroleum product subsidy reform, as well as the forward-looking literature addressing the challenge of electricity subsidy reform.

The main actor in the electricity sector is the National Electrical Power Company, which buys all energy from producers and resells it to distributors, with the result that it bears all the financial risk from increases in fuel prices (Inchauste et al, 2017). Half of electricity subsidies are linked to transmission and distribution losses, about half to collection losses and a small amount to overstaffing (Flochel, 2014).



## Political economy of fossil fuel subsidies

The last decade is instructive for the political economy of fossil fuel subsidies in Jordan. From 2008, the government phased out cash subsidies on petroleum products, bringing prices to international levels, albeit leaving partial subsidies on LPG. Petroleum product subsidies, in 2007 worth 2.5 per cent of GDP or 3.8 per cent of budget expenditures, (Atamanov et al 2015) were eliminated by 2009 (Bridle et al, 2014). Compensatory measures were implemented in the form of salary increases for public and private sector employees and military personnel, with mixed success. However, with the beginning of the Arab Uprisings in late 2010 and early 2011, Jordan reinstated fossil fuel subsidies due to their widespread popularity (Atamanov et al, 2015). From 2012, when petroleum subsidies costs had reached 2.8 per cent of GDP or 8.8% of budget expenditures (Atamanov et al, 2015), reforms restarted in tandem with compensatory measures, but were nevertheless met with protests (Inchauste et al, 2017).

In the period up to 2008 subsidies were costly, having generalised benefits but failing to target the most vulnerable (Inchauste et al, 2017). They were regressive in that the wealthiest quintile received three times more in fuel subsidies than the poorest quintile (Atamanov et al, 2015). The government's choice to leave subsidies on LPG reflects its use for cooking and lighting by the poor, for whom it represents a large share of consumption expenditure. By contrast diesel is more important for the industrial sector and transport (Inchauste, 2017). Public surveys show that people accepted subsidy removal least for electricity and LPG, and were most accepting in the case of diesel.

Jordan's status as a net energy importer and thus its vulnerability to international price increases were important factors in reforms. Through the 2000s, rising fuel prices contributed to the high costs of subsidies and the government's determination to reform them, with the subsidy bill reaching 40% of total government spending by 2012 (Bridle et al, 2014; El-Katiri & Fattouh, 2017). The International Financial Institutions also played a role, conditioning fiscal support on subsidy reform in both 2008 and 2012.

A major reason for Jordan's success in reform efforts was their design, which as noted took into account distributional considerations through the exclusion of LPG. In addition, 2012 reforms were accompanied by compensation measures: specifically, a targeted cash transfer (Inchauste et al, 2017) to 70% of households of around US\$100. Although reform of electricity subsidies commenced in 2013, this has not progressed far (Inchauste et al, 2017).

The difference between the success of the government in carrying out subsidy reform in 2008 and in 2012 is illuminating. In 2012, the sense of crisis generated by the Arab Uprisings allowed the government to take drastic measures. Furthermore, the communication and consultation measures immediately prior to the 2012 reforms, led by a capable prime minister were important. Finally, unlike the compensation measures of 2008, those in 2012 were delivered quickly (El-Katiri & Fattouh, 2017).

## Reform

With petroleum product subsidies largely eliminated, the remaining question of electricity subsidy reform is addressed here. Two sources examine the impact of potential reform,

generally finding that if a share of subsidy savings is channelled to the most vulnerable, then the overall social impact is positive.

Cockburn et al (2018) ran a Computable General Equilibrium (CGE) micro-simulation model comparing the poverty impact of the status quo (A) with a scenario of electricity tariff increases without compensatory measures (B), and a third scenario (C) with the same electricity sector reforms as (B) plus universal child cash transfers corresponding to 10% of subsidy savings. The no reform scenario (A) shows a substantial decline in poverty from 15.3% to 12.7%; scenario B would result in poverty being 2 percentage points higher than in A; and C cuts the increase in poverty of B by one third. The study recommends 30% (rather than 10%) of subsidy savings be used to fund the child cash transfer, to fully offset the poverty impact of subsidy reforms.

Atamanov et al (2015) look at the impact of different scenarios of electricity tariff reform on income quintiles and poverty headcount. The status quo (1) is compared to two options for full subsidy removal, one with flat tariff rates across users (2A) and a 'progressive' scenario placing a disproportionate burden on richer households (2B); and final 'quasi-progressive' scenario which maintains subsidies on the lowest tariffs.

Scenario 1 bring no changes in the poverty gap, unlike the status quo scenario in Cockburn et al (2018) which shows declining poverty. Scenario 2A brings the largest savings, even when subtracting the money that will have to be distributed to get back to pre-reform poverty and poverty gap levels. It would reduce overall consumption, but also has the strongest negative impact for poorest households. Scenario 2B reduces the negative impact on the poorest, but because the burden of subsidies is placed disproportionately on richest households, it would be politically difficult to implement. Scenario 3 is both politically realistic and gives savings.

As for pathways to subsidy reform relating to RE, the literature addresses Jordan's climatic suitability rather than political economy analysis of green reforms. Jordan is particularly suited to solar energy, Photovoltaics (PV) but especially Concentrated Solar Power (CSP) because of large areas of desert, high temperatures and low sunshine (Bridle et al, 2014). Jordan has one of highest annual daily average solar irradiance on a horizontal surface in the world (Komendantova et al, 2017). The Jordanian National Energy Strategy 2007-2020 set a renewable energy target of 1,800MW, which compares to just 16.4MW capacity, the estimate for 2012, but the current status is not addressed.

There is no literature addressing how COVID-19 will affect fossil fuel subsidies and their potential reform in Jordan. The country will certainly be hit hard by the pandemic and ensuing global downturn since around 10% of GDP comes from remittances, especially the Gulf Cooperation Council (GCC) (Fairbanks, 2020). Fiscal stimulus measures include a temporary cash transfer system valued at US\$114 million and US\$23 million to support the elderly and sick (IMF, 2020). The IMF approved Jordan's request for emergency financial assistance under the Rapid Financing Instrument, equivalent to approximately US\$ 400 million.

## 4. Lebanon

### Subsidy structure

Despite their national importance, relatively few in-depth studies were found on the political economy of fossil fuel subsidies in Lebanon. Energy subsidies are large, outweighing the education and health budgets combined, and are above average for the region in terms of proportion of GDP and per capita (Sdrlevich et al, 2014).

Fossil fuel subsidies come in two major forms: in direct cash transfers to the state-owned electricity company Electricité Du Liban (EDL), and foregone revenue such as reductions in excise for gasoline in 2011 and the VAT exemption for diesel oil in 2012 (UNDP/Ministry of Environment, 2015). For electricity, there are substantial cross subsidies, as industrial customers are charged considerably higher tariffs than residential customers (El-Katiri and Fattouh, 2017).

Electricity subsidies, by far the largest in terms of cost, are at the centre of debates. Lebanon has a high dependence on oil for generating electricity (Flochel 2018) and as a net oil importer saw rapid growth in fiscal expenditure on energy subsidies with rising world market prices prior to 2014 (El-Katiri and Fattouh: 2017). In Lebanon's budget for 2018, subsidies to EDL stand at US\$1.5 billion, or 9% of total public expenditures (Salloukh, 2019). In 2019, Lebanon's subsidised electricity tariff stands on average at 0.086 US\$/kWh compared to market rates of around 0.165 US\$/kWh (Harajli et al, 2019). Lower oil prices in 2020 could have reduced this gap.

These costly subsidies are part of an energy system with serious inefficiency problems with consequences including blackouts of three to sixteen hours depending on locality (Thornton, 2016). Unpaid bills and illegal connections amount to an 18% power loss in terms of financial payback (Harajli et al 2019).

### Political economy

Even though Lebanon is in the midst of a serious fiscal-political crisis, the political economy analysis directly concerning fossil fuel subsidies is quite superficial and largely limited to the UNDP/Ministry of Energy (2015) study. From this source, it is clear that the distributional impact is very regressive. In terms of share of benefits from the electricity subsidy in Lebanon, estimates show that the top quartile receive approximately 40%, the second quartile 25%, the third quartile 20% and the fourth quartile 17%. Subsidies are also geographical distorted, benefitting the capital Beirut disproportionately (Verdeil, 2018).

Subsidies contribute to excessive electricity consumption, a factor in EDL being unable to meet market demand (UNDP/Ministry of Environment, 2015). This has left space for a private sector to establish an alternative network of generators (UNDP/Ministry of Environment, 2015). The private generator industry may therefore have an interest in EDL continuing to be unable to meet market demand, and may mobilize against its improvement; however, this is not attested in the literature, even while it is a common anecdote in Lebanon.

After 1989, in the post-Taif Agreement era, subsidies were part of the growth of the public sector and the sectarian contestation of state resources. They were also central to the inter-sectarian elite's strategy of control and co-optation as instruments of patronage, resulting in a complex context for reform (Salloukh, 2019).

## Reform

Plans to remove electricity subsidies in 2020 are mentioned in the literature (Harajli et al, 2019), but there are no sources to validate this. In comparison to the deficiency in the political economy analysis in the literature, there is a proliferation of technical reform feasibility studies since 2018, including around RE, the development of which could support to some extent the phasing out of subsidies (UNDP/Ministry of Environment, 2015; Thornton, 2016; Matsuo and Schmidt, 2017; Harajli et al, 2019). These studies see the weak state of Lebanon's energy infrastructure as a promising context for the development of RE energy, which may help reduce subsidies.

UNDP and the Lebanese Ministry of Environment (2015) model a gradual electricity subsidy phase out over 10 years. This plan is conditional on the creation of a mass transit system, 12% of supply from renewables and a 10% VAT rate applied to diesel. It would result in greenhouse gas (GHG) emissions reductions of 11%, the restoration of EDL to profitability and reduced dependence on private generators, and fiscal expenditure dropping from 30% to 25% of GDP.

Savings could be used to compensate the poor; if 20% of savings were set aside each Lebanese household could receive US\$600. However, it is argued that the best use of the savings would be a social fund invested in healthcare, education and transport, benefitting lower income households (UNDP/Ministry of Energy, 2015). Limitations of the study are that it is not clear how energy supply will meet demand; the cost and challenges of developing a mass transit system; and the difficult political issues associated with the technical roadmap are not addressed.

Matsuo and Schmidt (2017) model how fossil fuel subsidies affect the cost of RE and the impact on generation costs if RE accounts for 20% of supply. They find that removing fossil fuel subsidies could fund RE development without international finance, and that generation costs are barely affected by the scale-up of RE. Other advantages of the scenario include allowing access to international climate or subsidy reform finance that is conditioned on RE development; supporting the growth of coalitions for change away from subsidies; and reducing exposure to world energy prices.

Harajli et al (2019) assess a move to a hybrid solar voltaic - diesel system, finding it compares favourably to the current system in terms of financial and environmental benefits. Supportive conditions for moving towards RE include removal or reduction of existing subsidies (which impede RE development by making it less competitive), feed-in tariffs for RE power fed back into the grid, tax exemptions on RE components to decrease set-up costs, financial support for RE investment, smart metering and billing, political stability and political will, an

encouraging regulatory framework, public awareness, education and vocational training (Thornton, 2016; Harajli et al, 2019).

The effect of the COVID-19 crisis on subsidies is not well covered. However, the crisis will deepen Lebanon's enormous fiscal problems and may exacerbate political instability (OECD, 2020). After Libya, Lebanon is projected to be the country most impacted in terms of GDP growth. Remittances accounted for 12.5% of Lebanon's GDP in 2019, so Lebanon has been hit particularly by a decline in remittances. Furthermore, Lebanon's important tourism sector will be affected by a substantial decrease in international visitors. National fiscal stimulus measures include a LL1200 bn budget allocation for social safety nets as well as increased spending on healthcare, loan relief and a range of other interventions (IMF, 2020).

## 5. Tunisia

### Subsidy structure

According to IMF data (2018), Tunisian fossil fuel subsidies are in the mid-range relative to the region, constituting 2.91% of GDP and around US\$100 per capita (IMF, 2018). In the late 1990s, Tunisia became a net energy importer and by 2015 was importing 30% of energy needs. In the early 2010s, low electricity tariffs led to a surge in demand, and the reduction in domestic production of gas resulted in the need for large subsidies and an increasing national fiscal deficit (Schmidt et al, 2017). Between 2007-2017 the cost of subsidies was equivalent to 13% of total state expenditure and 8% in 2018 (Eibl, 2017; UNESCWA, 2019).

The government implemented some subsidy rate reductions through the early 2010s, such as an automatic pricing mechanism for fuel, though this was not fully tied to international prices. Overall, this has not amounted to a systematic overhaul of energy subsidies in the period after the overthrow of President Ben Ali in January 2011 (Eibl, 2017). Today, the three most significant fossil fuels are gasoline, diesel and fuel oil.

Subsidies are implemented as transfers to the main energy providers - to Société tunisienne de l'électricité et du gaz (STEG) for gas and electricity, and to Société tunisienne des industries de raffinage (STIR) for oil (Eibl, 2017). STEG is a vertically integrated monopolistic electricity utility mostly relying on natural gas. This reliance emerged after the 1970s oil shocks, when generation moved off petrol onto domestic gas (Schmidt et al, 2017). It was on account of this close connection between gas (initially domestic) and electricity production, that STEG became the monopolistic gas distributor, and was able to cross subsidise electricity deficits through domestic natural gas surpluses.

### Political economy

According to Cuesta et al (2016), reforms between 2014-2015 made subsidies more regressive. This source uses simulations to examine the poverty impact of the reforms announced in 2014, finding that they made poverty worse and that compensation measures were insufficient, and argues for a strengthening of compensation measures.

Taking a gender approach, Abdo (2019) argues that subsidies are overall more important for women than men in poor households because of their greater role in household labour, and that subsidy removal affects women more. The source also suggests that LPG subsidies are important to Tunisian women because it protects them from using more unsafe fuels, such as charcoal.

There is some debate on the political economy role that subsidies play in terms of which groups they target. Most sources converge on the idea that subsidies are crucial to the compact between government and people. After independence subsidies became entrenched in the social contract and functioned as a way to protect the poor and maintain political stability. Schmidt et al (2017) argue this was why subsidy reform in 2017 provoked demonstrations, while others place more emphasis on the perception that the IMF was calling the shots in generating the unrest that paused several reform attempts (Meigan, 2018).

By contrast, Eibl (2017) argues that the idea for popular support for energy subsidies is a trope both in the literature and government communications, and that instead the power of politically connected business actors underlies subsidies. However, the source does not present strong evidence to show how businesspeople are actively defending their interests in maintaining subsidies.

Schmidt et al (2017) provides the most compelling political economy account, integrating the above explanations with technological and institutional factors to argue that Tunisia became 'path dependent' on fossil fuel subsidies. STEG's reliance on natural gas exposed it to international price increases, which constrained its ability to invest in new electricity infrastructure, resulting in fuel subsidies surpassing the amount spent on human development, e.g. healthcare. This in turn exacerbated Tunisia's unemployment, economic stagnation and fiscal problems. Subsidies have co-evolved with fossil fuel technologies, and these technologies have locked in the use of fossil fuels and their subsidies.

## Reform

The latest reform efforts started in 2017 resulting in price increases of 3% on average for the three main fuel categories gasoline, diesel and fuel oil, followed by four more price adjustments in 2018 and one in March 2019. However, prospects for substantial reform are not strong. After a missed opportunity to transition to renewable energy during the period of the high oil prices of the 2010s (Schmidt et al, 2017), the possibilities for subsidy reform may be narrow in Tunisia due to high levels of dissatisfaction with the government. Various reform measures agreed with the IMF might not proceed for the time being (Meigan, 2018).

Ignoring this difficult political reality, the simulation-based literature converges in its support for reform and in giving technical suggestions for its design. Györi and Soares (2018), carried out micro-simulations to test the comparative effectiveness of energy subsidies versus a universal child allowance programme, in terms of (a) impact on poverty and (b) cost. Their results suggest the universal child allowance lifts one person out of poverty for half the price of the energy subsidies so is more cost effective.

UNESCWA (2019) model five different price increase scenarios (10%, 20%, 30%, 40% and 50%) for high voltage electricity, LPG, Gasoil50 (and others not specified) for their impact on economic growth and fiscal balance, with positive results. The five price increase scenarios do not show much variation in their growth impact (between 0.2% and 0.7% over the period) but larger tariff increases have greater impact. In terms of fiscal impact, the price increases imply a fall in total public expenditure of 1-4% of GDP. The study then tests the relative benefits of three policies to use the savings: firstly, transfers to households, secondly public investment and thirdly fiscal consolidation. It argues for overall public investment over lump sum transfer to households.

Political opportunity may lie in the technical aspects of RE and its distribution, which could disrupt Tunisia's lock-in to fossil fuel electricity generation and stimulate a departure from the subsidy-reliant social contract (Schmidt et al, 2017). There is growing dissatisfaction with STEG, with perceptions that it is resistant to technical innovation and reliant on suboptimal equipment providers. Its foray into RE development was met with criticisms of mismanagement and over-centralization. This makes private RE development more attractive, which should lead to less consumer reliance on gas and therefore a window for subsidy reform. Furthermore, building up a local RE industry is expected to create jobs directly and indirectly at a lower cost than those created by the gas sector, thus mitigating some of the social grievances created by reforming subsidies. This account is largely speculative however.

Unfortunately, this disruption theory does not delve into Tunisia's political and social context enough to outline a specific pathway to change, but suggests that international support (e.g. from the IMF) should not just create incentives to phase out fossil fuels, but should encourage RE development through financial and technical assistance. This may generate more support for the IMF engagement and acceptance of fossil fuel subsidy reform.

The COVID-19's effect on Tunisian subsidy reforms is uncertain. Low international commodity prices provide a favourable climate for further reform, and fiscal pressure will be maintained by Tunisia's exposure to falling tourism receipts and remittances (expected to decline from 5.5% to 4.4% of GDP). In terms of fiscal responses, the Tunisian government announced a TND 2.5 bn (US\$ 0.71 bn) emergency plan, including postponement of tax payments, as well as an expansion of the health budget. In addition, a TND 450 bn fund for cash transfers for low income households has been allotted (IMF 2020).

## **6. Occupied Palestinian Territories**

### **Subsidy structure**

Generally, data and analysis on fossil fuel subsidies, their political economy, and prospects for reform are sparse for the Occupied Palestine Territories (OPT). The OPT are frequently left out of MENA-wide studies (El-Katiri and Fattouh, 2017; Sdravovich, 2014; Hertog, 2017; Bridle et al, 2014; Araar and Verme, 2016). A reason for this may be Palestine's limited and contested sovereignty, and the fact that it is comprised of two separate territories (Gaza and the West Bank).

The OPT's fossil fuel subsidies have been part of a public expenditure that has grown in the last two decades faster than gross revenues, from 22% of GDP in 1997-99 to 34% in 2014. Petroleum subsidies exist but more important is an implicit and large electricity subsidy. This stood at 2.3% of GDP by 2014. In addition, while diesel fuel is not subsidized in Palestine (in the sense that it is sold at prices higher than international prices) it is still cheaper than in neighbouring Israel, where it is taxed at higher rates.

A fundamental characteristic of Palestine's energy supply is its reliance on imports, especially from Israel, as well as Jordan and Egypt (Marei, 2017). A full 100% of fossil fuels and 89% of electricity is imported from Israel (Juaidi, 2016).

## **Political Economy**

There is little political economy analysis of fossil fuel subsidies in the OPT, but this section presents a few features of the broader energy landscape. Palestine's energy sector is shaped by two major factors: the contentious political relationship with Israel, and divisions within and between the Palestinian territories.

With regard to Israel, Herman and Fischhendler (2019) contend that electricity politics are not just a symptom of the conflict, but a cause and an instrument of both conflict and reconciliation. Most directly, the electricity sector in Gaza has been damaged by Israeli attacks – e.g. on an electricity plant in July 2014 (Marei, 2017). Israel has also used its control over the energy supply as a political weapon, through reducing or stopping supply for certain periods (Herman and Fischhendler, 2019).

The split between the Hamas government in Gaza and the Palestinian Authority in the West Bank has important implications for energy supply. These two authorities have issued competing laws and regulations in various matters, including energy, which creates confusion and inefficiency (Marei, 2017).

## **Reform**

Reacting to this difficult situation, sources give technical solutions towards RE development and away from fossil fuels. However, in the literature identified, political insight about how reform might be piloted through the contentious relationship between the OPT and Israel is limited.

OPT regulatory reforms are necessary, and many can be collected under the principle of amending the Paris Protocol. This partly explains OPT's dependence on Israel since it requires imported fuel to adhere to US and EU standards and thus precludes supply from Jordan and Egypt (Marei, 2017; Juaidi et al, 2016; Åberg, 2014). Amendments to the protocol would thus free the Palestinian electricity sector to make better deals with energy suppliers elsewhere (Marei, 2017). In addition, this would guarantee OPT access to, and reasonable control of, the entirety of the Palestinian electricity system and allow Palestinians to develop power plants in the future.



Palestine is well suited to the development of solar energy, with high average daily solar radiation (Juaidi et al, 2016). One simulation based on 2014 data shows that a 10% increase in solar energy generation would have a positive impact in terms of fiscal, external trade, labour market and households (Awawda, 2014). Such RE development might provide positive conditions for fossil fuel subsidy reform, but none of the sources address this. Equally, there are few compelling accounts of how to overcome the considerable political difficulties associated with the OPT's contentious relationship with Israel.

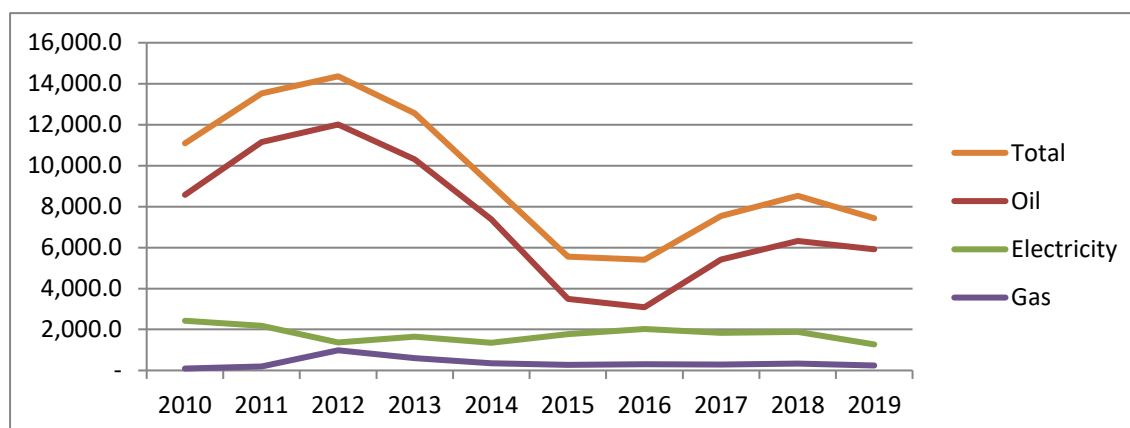
The impact of COVID-19 will be felt particularly hard in the OPT, where remittances count for 16% of GDP and will be reduced by the global downturn. A large part of this loss will come from Palestinians working in Israel, which is a major employer, and is set for at a 6.3% contraction this year (Fairbanks 2020). In terms of responses, the Palestine Monetary Authority has postponed loan repayments and launched an SME loan fund worth around US\$300m, but only US\$90m has been raised (IMF 2020).

## 7. Iraq

### Subsidy structure

Estimates of fossil fuel subsidies in Iraq vary depending on the source and methodology used. Time series data from the International Energy Agency (IEA), shown in Figure 1 below, suggests subsidies stood at US\$7.4bn in 2019 (3.3% of GDP) of which US\$5.9bn for oil, US\$1.3bn for electricity and US\$0.2bn for gas (IEA, 2020). The profile and level of subsidies has fluctuated with oil prices but appears to show a secular downward trend overall. Iraq had the seventh highest average subsidisation rate, at 52%, among major energy producing and consuming countries covered by IEA data.

Figure 1. Iraqi fossil fuel subsidies real 2019 million US\$



Source: Author's own, data taken from IEA (2020)

IMF (2018) data suggests energy subsidies were below 2% of GDP in both 2015 and 2017, while IMF (2015) estimates that in 2014 subsidies stood at around 7% of GDP, of which 3.4% on electricity and 3.6% on fuels. IMF (2015) also reports that Iraqi authorities estimate electricity subsidies alone at 13% of GDP, but this may partly be explained by the widespread

use of subsidised fuels in small generators confounding the distinction between fuel and electricity subsidies. In 2014 Iraqis received 14.6 hours of electricity per day, of which only 7.6 hours per day was provided by the electricity grid and the rest from small generators (World Bank, 2018).

Despite being a major global exporter of crude oil, a lack of domestic refining capacity in Iraq means that the country spends US\$2-2.5 bn per year on imported fuels (Mehdi, 2018). Whereas the subsidy estimates for other oil exporters often represent implicit subsidies rather than actual expenditure, this is not the case for Iraq. There is little literature on subsidies by type of fuel, partly due to a lack of accurate information on a product by product basis, according to the IMF (2015).

Perhaps partly due to a lack of data on fuels, the energy subsidy literature focuses overwhelmingly on electricity. The state has historically controlled the electricity grid system, but a new Electricity Law passed in 2017 introduces private sector participation in generation and distribution (IMF, 2015; World Bank 2018). Inadequacies in grid supply mean that around 20% of electricity demand is met through small generators (IEA, 2019) while another 16% is imported from neighbouring Iran (IMF, 2015).

## **Political economy**

Iraq declared victory against ISIS in December 2017 after three years of war, during which time around one third of its territory was controlled by the militant group (World Bank, 2018). In the wake of the conflict political and social turmoil persists, with ISIS attacks increasing again and a mass protest movement starting in October 2019 resulting in a change of government in 2020 (Hassan, 2020).

The oil and gas sectors underpin the Iraqi economy, accounting for around 60% of GDP, 99% of export earnings and 90% of government revenues, making it among the most hydrocarbon dependent states in the world (IEA, 2019). Despite doubling its oil production in the last decade through various levels of conflict, lower oil prices since 2014 and further falls in 2020 have led to a collapse in government revenues and reliance on support from international creditors (Mehdi, 2018).

Fuel and electricity subsidies occupy a central place in the political settlement, with recent protests and the change of government partly related to the low quality of public services (IEA, 2019). Iraq's reliance on imported gasoline, diesel, and kerosene is costly and the consumption subsidies on those products represent a major drain on state revenues (Mehdi, 2018).

Government agencies represent around 45% of total electricity billed (World Bank 2018), so the public sector is a major beneficiary of fossil fuel subsidies, with the share of subsidies going to government entities increasing over time relative to the share to households (IMF, 2015). During the high oil-price period from 2004 to 2013, public sector employment tripled from 1 to 3 million in line with Iraq's *muhassasa* system, whereby jobs are distributed on ethnic and sectarian lines, fostering extensive patronage networks (Mehdi, 2018).

Around one-third of the small generators which make up the shortfall in grid electricity supply are owned by government entities (IEA, 2019). The remaining two-thirds of generators are privately owned 'neighbourhood generators' directly connected to paying households and businesses (IEA, 2019). These are extremely expensive such that many households go without desired energy services, particularly air conditioning in the summer. If existing rules on neighbourhood generator tariffs were enforced, total electricity bills for consumers would be cut by two thirds, from US\$4bn to US\$1.5bn. However, enforcement is stymied by political elites with interests in private electricity generation ('electricity mafias') which has become an important source of rents (Mehdi, 2018). Fuel smuggling to and from Iraq (depending on prevailing prices) is another channel by which energy subsidies fund the political settlement (El-Katiri and Fattouh, 2017).

Residential households consumed 84% of the total grid electricity in 2019 and received 85% of electricity subsidies (IEA, 2020). Higher income households benefit most due to the structure of electricity tariffs. In 2016, 44% of total electricity was billed at the highly subsidised rate applicable for the 1–500 kWh block, but more than half of that was used by households consuming more than that level (World Bank, 2018). Industrial and commercial consumers also benefit from electricity subsidies, representing only 0.5% of total customers (15,000 out of 3 million) but constituting 35% of total energy billed.

## Reform

Several recent studies of electricity sector reforms examine options for reducing subsidies, but there is little academic discussion of fuel subsidies or their reform. The fact that fuel prices are not mentioned in recent media reports covering popular protests suggests subsidy reform is not on the agenda (Hassan, 2020). This may be because Iraq's political instability and insecurity make it very difficult to effectively reform subsidies (Sdravovich et al, 2014). Indeed, Iraqi officials are reportedly fearful that the elimination of subsidies for kerosene, cooking gas, electricity and food would cause unrest and destabilise the already fragile political process (Al-Khatteeb and Istepanian, 2015).

Attempts at electricity sector reform in recent years have been partially successful in reducing subsidies. In 2016 the government adopted a strategy to achieve fiscal sustainability over a five-year period, initially targeting high-value consumers in the public and private sectors (World Bank, 2020). Tariffs were increased from an average of US\$1.7/kWh to US\$8.0/kWh, but in the face of protests from commercial and industrial users, their tariffs were partly reduced again in 2017 so that the average tariff stood at about US\$6.0/kWh. Tariffs for households are also highly politicised, with a decision taken in 2018 to increase the usage threshold for the most subsidised electricity tariff from 1,000 kWh to 1,500 kWh, benefitting mainly middle-class consumers (IEI, 2020).

Pathways to future reform are uncertain given the unstable political situation. Observers recommend an effective communication strategy alongside electricity price hikes to increase the chance of public acceptance, as well as the need to improve quality of service (IEI, 2020). Tariff increases occurring at the same time as ongoing privatisation in the sector may be seen as private profiteering instead of rendering the utility sustainable. Further subsidy reforms

should be aided by efforts to overhaul Iraq’s social protection system, with a targeted cash-based safety net expected to increase coverage of the poor from 11% in 2015 to 50% by 2019 (World Bank, 2018).

Renewables have huge potential in Iraq given its largely untapped solar resources, with rooftop solar PV systems in particular having the potential to moderate growing grid electricity demand, especially for cooling, while reducing household bills (IEA, 2019). Previous efforts to introduce feed-in tariffs in 2017 were unsuccessful but could be examined again given the price competitiveness of solar PV. Generally, there is much scope to improve energy efficiency in electricity supply and consumption, with payoffs for households and the environment.

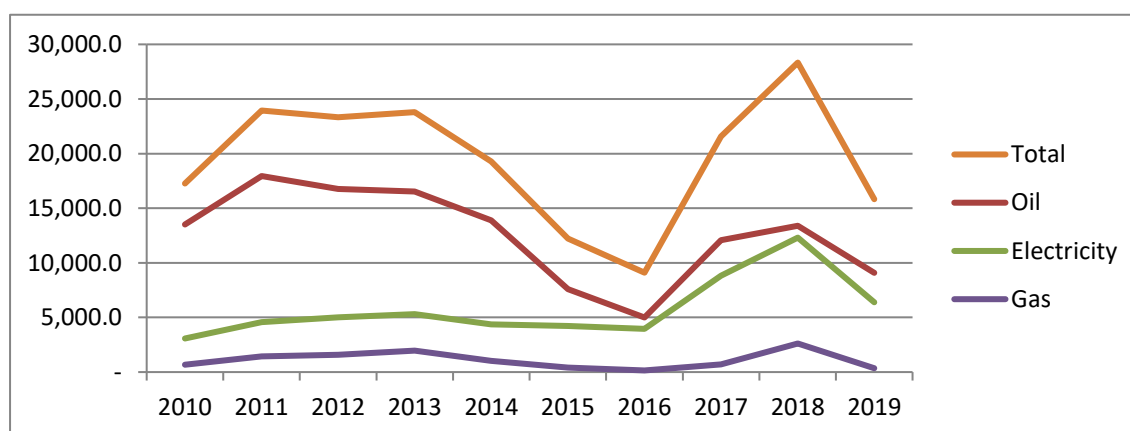
The COVID-19 crisis is intensifying in Iraq with rapid transmission of the virus in June (IMF 2020). Lockdown measures will have major impacts on the non-oil economy, and low oil prices will limit fiscal space. Nevertheless, some fiscal stimulus measures are planned (with no foreseeable impact on energy subsidies), including a repayment moratorium on SME loans and a cash transfer scheme targeting workers in the private sector, for a total value of ID 300bn (around US\$250m).

## 8. Egypt

### Subsidy structure

Time series of fossil fuel subsidy data are available for Egypt, shown in Figure 2 below, and suggests subsidies stood at US\$15.8bn in 2019 (5.2% of GDP) of which US\$9bn for oil, US\$6.4bn for electricity and US\$0.4bn for gas (IEA, 2020). The profile of subsidies has changed over time, with a relative shift in spending from oil towards electricity, and while the subsidy levels declined in the 2014-16 period they have since risen again, reaching a new peak in 2018. Egypt’s subsidisation rate stood at 42% in 2019, towards the higher end of countries covered by IEA data.

Figure 2. Egyptian fossil fuel subsidies, real 2019 million US\$



Source: Author’s own, data taken from IEA (2020)

The subsidy regime has undergone significant reform since 2014, with consumer prices rising year on year with the objective of eliminating subsidies entirely. In 2013 energy subsidies reached 6% of GDP and accounted for over 20% of total government expenditure (more than health and education combined), but the share of expenditure declined to only 6.4% in 2016-17 (Breisinger et al, 2019). The floatation and devaluation of the Egyptian pound explains the subsequent increase in subsidy expenditure shown in Figure 2.

The main subsidised energy sources are petroleum products (LPG, gasoline, diesel, heavy fuel oil (HFO), kerosene), electricity and natural gas (Griffin et al, 2016). Electricity access is universal in Egypt, though usage rises with income (Banerjee et al, 2017). For the poorest households, electricity and LPG make up almost all of energy consumption. LPG is used for cooking by nearly all rural and two-thirds of urban households, but the LPG distribution system is informal and generally provides a poor quality service to consumers. Higher income households consume more gasoline and fuel oil for transport, and use natural gas for cooking.

## **Political economy**

Fossil fuel subsidies have been foundational to Egypt's political settlement in recent decades, by all accounts. As in many MENA countries, the social contract in Egypt is characterised as a bargain between citizens and the state (the government and military), with citizens tolerating authoritarian regimes in exchange for welfare distribution through subsidised energy, food, housing etc. (Moerenhout, 2018).

The distribution of subsidies across income groups is uneven. Products such as gasoline and diesel, which are consumed more by richer households, receive the biggest subsidies, followed by LPG and electricity (Banerjee et al, 2017). In absolute terms therefore subsidies are skewed towards better-off households, with the highest and lowest income quintiles receiving 36% and 12% respectively of total subsidies in 2013/14. Nevertheless, in relative terms subsidies are more important for the poor, representing 8% of household expenditure for the poorest quintile and 6% for the richest.

Citizens as 'mobilised beneficiaries' have been a key force opposing reforms to the subsidy regime for decades (Eibl, 2017). Early attempts to increase the prices of subsidised food and energy products in 1977 and 1984 resulted in widespread unrest, leaving a lasting fear among policymakers. Public opposition to the 2014 reforms was minimised because they took place during Sisi's "honeymoon" period of popularity upon gaining power, and were accompanied by a clear communication strategy, as well as various types of social spending to partially compensate losing households (Moerenhout, 2018). The exclusion of LPG from the 2014 reforms also minimised protest, being more widely used by poorer households.

Businesses also benefit from energy subsidies, especially those in energy intensive sectors, and Eibl (2017) presents data suggesting that politically connected actors are more present in these sectors. In 2016, lobbying by the Federation of Egyptian Industries paid off when the government reduced gas prices from US\$7 to US\$4.5 per unit for steel producers.

The military is a critical actor in the political settlement, being instrumental to the removal of both Presidents Mubarak and Morsi in 2011 and 2013 respectively (Moerenhout, 2018).

Rather than being a subordinate arm of the state, the military has its own economic interests through ownership stakes in energy, manufacturing, infrastructure, and transportation sectors.

The military's support for the incumbent ruler, President Sisi, and his subsidy reforms from 2014 is seen as key to their relative success. Reforms were negotiated with the military, with the decision to exclude LPG reportedly linked to its importance as a source of rents for the military (Moerenhout, 2018). The military also led a crackdown on the Muslim Brotherhood and its political party, removing the most organised potential source of opposition to Sisi and his subsidy reforms.

International actors also play a key role in Egypt's political settlement in relation to fossil fuel subsidies. Strong support for Sisi's regime came from the Gulf states in the form of a US\$12bn stimulus package in 2013-14, which was used to pay for compensatory social spending and ensure continued supply of petroleum products before and during the subsidy reforms (Moerenhout, 2018). The IMF made further subsidy reform in 2016 a condition of a much needed US\$12bn loan, which the Egyptian government agreed to.

## Reform

The government's objective guiding the reforms from 2014 was to reduce fossil fuel subsidies to 0.5% of GDP by 2019 (World Bank, 2017), which appears unlikely to have been met in light of the IEA (2020) data presented above. This failure is partly due to the currency depreciation following the 2016 floatation, making larger price rises necessary to reduce subsidies overall.

A collapse in tourism revenues following the coronavirus pandemic has increased pressure to reduce subsidy expenditure, and in June 2020 it was announced that a 19% rise in electricity prices would take place the following month with the aim of eliminating electricity subsidies entirely by 2022 (Middle East Monitor, 2020).

Since 2013 Egypt's subsidy reform efforts have received technical support from the World Bank's Energy Sector Management Assistance Program (ESMAP), which may support further reforms (World Bank, 2017). The IMF will continue to be a key actor given their insistence on subsidy reform as a condition of previous loans, and their new support to Egypt in the wake of the coronavirus pandemic.

However, a stakeholder mapping by Banerjee et al (2017) identifies the key groups with the potential to oppose reform as:

- low and average-income households who are proportionally hit hardest by subsidy cuts;
- small businesses and farmers who are also disproportionately vulnerable;
- youth and the unemployed who are most likely to protest; and
- unions, leftists and Nasserists who are seen as ideologically opposed to reform.

To achieve the government's objective of phasing out fossil fuel subsidies altogether, Banerjee et al (2017) therefore argue the importance of a strategy to raise prices of different energy

products gradually bearing in mind the user profiles of each; expanding social protection mechanisms to mitigate the impact on vulnerable groups; as well as communicating effectively to maintain public support.

## 9. Yemen

Recent literature on fossil fuel subsidies in Yemen focuses largely on efforts at reform in 2014, but since the outbreak of war in 2015 little has been written on the subject.

### Subsidy structure

IMF data in Table 1 shows that Yemen had among the lowest levels of energy subsidies of countries covered in this review in 2017, at less than 1% of GDP and just over US\$10 per capita. This was down from 6% of GDP in 2011, when subsidies accounted for around one third of state expenditure, more than combined spending on health and education (Sdravovich et al, 2014; El-Katiri and Fattouh, 2017).

Subsidies are mainly towards electricity and fuel consumption, through low fixed prices (Atamanov, 2017). The main subsidised fuels in 2014 were LPG, gasoline, diesel and kerosene. In absolute terms, per capita subsidies are much higher for electricity than fuel, by a factor of 12 in the case of LPG and 23 for gasoline.

The state dominates the energy sector, being involved in oil production, refining, distribution, and marketing of petroleum products as well as being responsible for electricity generation, transmission, distribution, and sale through the Public Electricity Corporation (PEC) (Atamanov, 2017). The private sector is engaged in upstream oil exploration, production, and distribution of petroleum products and the filling and distribution of LPG bottles.

### Political economy

Yemen is currently in the midst of a humanitarian crisis due to civil war between forces loyal to President Hadi supported by a Saudi-led coalition on the one side, and an alliance between the Houthi rebels and the late former president Saleh's supporters on the other (Lackner, 2017).

The mainstay of the country's economy is its fossil fuel (oil and gas) resources, which also make the greatest contribution to state revenues, although production is much lower than neighbouring states (Lackner, 2017). Declining revenue from hydrocarbons, from nearly 30% of GDP in 2006 to 15% in 2013, have put pressure on public finances (Atamanov, 2017). The conflict has further reduced hydrocarbon exports but in 2019 they recovered to around one third of pre-war levels (MEES, 2019).

Fossil fuel subsidies have been at the heart of the political settlement for decades, both for their direct value as consumption goods and also due to their inextricable link to water supply, since subsidised diesel is used to pump water for consumption and irrigation in agriculture (Lackner, 2017). Yemen is notoriously water scarce, a problem set to worsen with the escalating climate crisis.

The distribution of the benefits of subsidies across income groups vary by fuel, but generally they are skewed towards richer population segments. Household fuels such as kerosene and LPG are more targeted at the poorest, with 27% and 12% respectively of direct benefits going to the bottom quintile of the income distribution, compared to only 2% for diesel (Sdrilevich et al, 2014). Electricity tariffs are progressive but subsidies for the richest households are still seven times those for the poorest (Atamanov, 2017) but in any case, little more than half the population has access to electricity (El-Katiri and Fattouh, 2017).

Diesel smuggling is a more extreme example of how subsidies benefit a minority in Yemen and underpin the political economy. Smugglers have political and military connections and in 2009 are estimated to have diverted one third of the total fuel subsidy budget, for example through buying barrels of diesel at US\$25 and selling them for US\$300 outside Yemen (Lackner, 2017). By 2011 this practice stopped due to fuel shortages, but since the war started smuggling networks have re-emerged with a focus on imports of fuel and weapons.

Various attempts at subsidy reform have been attempted since the creation of the Republic of Yemen in 1990. Price rises took place in 1994, 1995-6 and 2004 but were largely cancelled out due to local currency depreciation (Atamanov, 2017). In 2005 subsidy reductions coinciding with tax changes met with violent protests leading to policy reversals, but fuel price increases in 2010 and 2011 were more successful, seeing no protests.

Most recently President Hadi increased fuel prices by 60-90% in July 2014 under pressure from the IMF, but the reforms were rushed and took place without efforts to build consensus or a communications strategy (Atamanov, 2017). The subsidy reforms were met with street protests organised by the Houthi movement, who were able to take control of the capital Sana'a without violence, and price hikes were partly reversed (Lackner, 2017). Only after this in December were measures taken to compensate losers from the reforms, through a 50% increase in transfers to 1.5 million poor beneficiaries through the Social Welfare Fund (SWF) (Sdrilevich et al, 2014).

## Reform

Prospects for further fossil fuel subsidy reform are obviously contingent on the outcome of the ongoing conflict in Yemen. Before the war Sdrilevich et al (2014) identified several next steps for reforms: adopting a fuel pricing mechanism so domestic prices follow upward movements in international prices, minimising future outlays, expanding the SWF; and increasing infrastructure investment. The SWF ran out of funds in 2015 however and has not been operational during the conflict (Lackner, 2017).

From a poverty and political economy perspective it is important to note the different implications of reforming different energy subsidies. Increasing kerosene prices impacts the poorest segments of the population most, while raising gasoline impacts the richest most (Atamanov, 2017). A full removal of electricity subsidies would hit households with the lowest consumption hardest, but other reform options (more brackets, progressive tariff scales etc.) are available to lower inequalities.



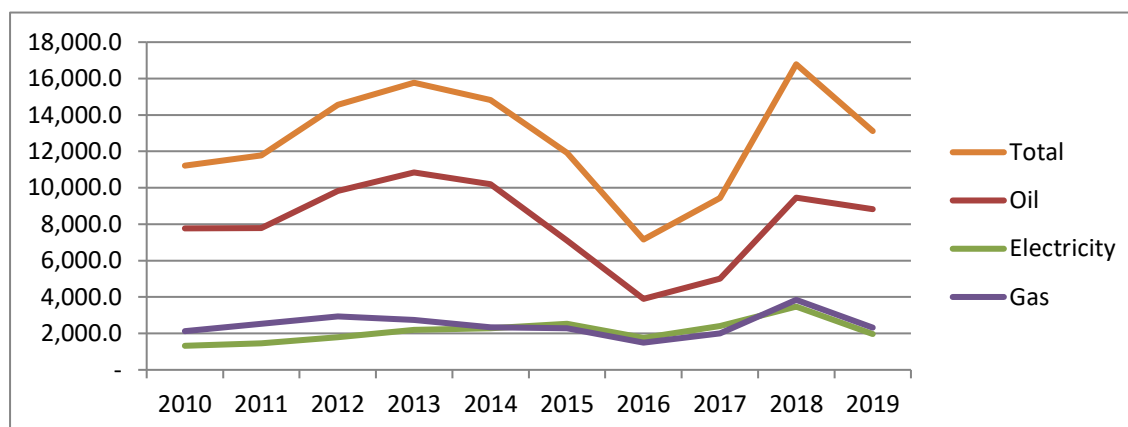
Besides the conflict, prospects for reform will be strongly affected by developments in international oil markets and the COVID-19 pandemic. Oil producers in Yemen were planning to increase production by 75% in 2020 but the changed international context of low oil prices and demand is likely to undermine this (World Bank, 2020). As a net oil importer Yemen may still benefit on balance from low oil prices, and also gain space to reform energy subsidy policy, but the global demand shock will hit remittance flows from abroad which amount to 14% of GDP.

## 10. Algeria

### Subsidy structure

Time series fossil fuel subsidy data is available for Algeria, shown in Figure 3 below, and suggests subsidies stood at US\$13.1bn in 2019 (7.6% of GDP) of which US\$8.8bn for oil, US\$2.0bn for electricity and US\$2.3bn for gas (IEA, 2020). The profile and level of subsidies has changed little over time, with overall subsidy levels fluctuating largely with oil prices.

Figure 3. Algerian fossil fuel subsidies, real 2019 million US\$



Source: Source: Author's own, data taken from IEA (2020)

Algeria had the fourth highest average subsidisation rate among countries covered by IEA data in 2019 at 64%, behind only Venezuela, Iran and Libya (IEA, 2020). Prices of natural gas, LPG and gasoline were among the lowest in the world, the latter retailing for just over US\$0.20/litre equivalent in 2015 (Kojima, 2016). Diesel and kerosene are also subsidised for consumers, while domestic crude oil is provided to refineries at subsidised rates of below US\$25 per barrel.

In 2011 total pre-tax energy subsidies were around 11% of GDP, higher than combined spending on education and health (Sdravovich et al, 2014). However, because Algeria is an oil producer, its domestic fuel subsidies are largely implicit, i.e. representing an opportunity cost (foregone export revenues) rather than actual public expenditure. The main market actors are Sonatrach, the national oil company, and Sonelgaz, the state-owned utility responsible for electricity and natural gas distribution.

## Political economy

The implicit social contract in Algeria has been characterised as between the people and the army, with the security forces providing protection from terrorism in return for impunity, political control and resource rents (Boubekeur, 2020). Relying on the support of the military and security services, former President Bouteflika headed an authoritarian and clientelist regime in Algeria for 20 years from 1999 (Grigorjeva, 2016; Hamouchene and Rouabah, 2016).

Bouteflika's removal in 2019 was forced by protests organised by the broad-based *Hirak* movement, suggesting a legitimacy crisis and a renegotiation of the political settlement (Boubekeur, 2020). However, the military's power appears largely intact, as the new President Tebboune was also their selection, and the shape of any political transition is uncertain. The coronavirus pandemic led to the postponement of political protests, but these are set to continue when conditions ease, and the *Hirak* movement will continue to push for change.

Oil and gas revenues are a cornerstone of Algeria's political settlement, and high prices up to 2014 explain the absence of domestic protests around the time of the region's Arab Uprisings (Grigorjeva, 2016). The revenues finance a sprawling system of social welfare including fossil fuel subsidies, which are among the highest in the region. The national oil company Sonatrach is a major source of income for patronage networks, along with the customs agency (Boubekeur, 2020). The smuggling of subsidised fuel to neighbouring Tunisia is also a source of rents (Kojima, 2016).

Oil and gas revenues are the backbone of Algeria's economy, making up on average 98% of export earnings, 69% of fiscal revenues, and 36% of GDP over the 2002-2014 period of rising oil prices (Grigorjeva, 2016). The oil price slump of 2015, therefore, had a major impact on the economy with export earnings declining by 41%, opening up a yawning fiscal deficit equivalent to around 15% of GDP in 2016. Oil and gas production are anyway declining to under-investment and dwindling reserves, with rising domestic consumption supported by subsidies leaving less for export.

The EU is the main export destination for Algeria's hydrocarbon exports, mainly via the Maghreb–Europe Gas Pipeline in operation since 1996 (Hamouchene and Rouabah, 2016). Algeria's close energy and security relationship with the EU and its allies is an important aspect of the country's political settlement, and is also reflected in its role as "regional policeman".

Despite the centrality of energy consumption subsidies in the political settlement, declining revenues from hydrocarbon exports have resulted in recent efforts at subsidy reform, with the goal of raising energy prices to their 'true' values (Kojima, 2016). The ground was laid by the government communicating the implicit cost of subsidies in the 2014 budget, based on the gap between international and domestic prices.

After remaining largely unchanged since 2007, the prices of diesel and gasoline increased by 48% and 54% respectively since 2016, and electricity tariffs have also been raised along with efforts to encourage rational consumption (Haddoum et al 2018). Furthermore in 2016 VAT on diesel, electricity and natural gas was raised from 7 to 17% (Kojima, 2016). The public

response was described as 'placid' in 2017, partly because prices remain low by international standards despite the increases (Aissaoui, 2017).

## Reform

With Algeria's political settlement in a state of flux, medium-long term prospects for energy subsidy reform are uncertain but the combination of low oil prices and the coronavirus-related shock to demand in early 2020 have already prompted efforts to lower subsidies. In the face of a 2.6% contraction in the economy in 2020 (compared to 0.8% growth in 2019), the government announced plans to reduce public spending by 50% and raise prices for gasoline and diesel by 5.7% and 15.5% respectively (Reuters, 2020).

These crisis-induced reforms must be situated in a broader three-part strategy for the energy sector announced in 2016 to address the fiscal deficit: reviving hydrocarbon exploration and production on the supply side; rationalising consumption on the demand side including through subsidy reductions; and a push for renewables to replace natural gas for domestic electricity generation (Aissaoui, 2017).

Increases in the price of transport fuels have been marginal and unlikely to affect consumption (Aissaoui, 2017). Increases in electricity and gas tariffs have been progressive across consumption brackets, with low-income users largely protected from price increases, but the overall level of subsidy has only diminished slightly. The wholesale price of natural gas to power generators remained unchanged in 2015.

Algeria's renewables plan was unveiled in 2011, but was barely operational in 2015, suffering from a lack of policy support despite the country's enormous potential for RE generation, particularly solar power in the Sahara Desert (Aissaoui, 2017). The 2016 strategy announcement suggests the program is now a national priority, but a step change in investment in renewables is likely to require external involvement, with the EU a potential partner (Grigorjeva, 2016).

## 11. Syria

Syria's political economy and accompanying literature has been centred on the civil war since its eruption in 2011, with little attention to fossil fuel subsidies or their reform.

### Subsidy structure

IMF (2018) does not provide data on fossil fuel subsidies in Syria due to difficulties obtaining information during the conflict. Another source notes that the government does not release details of its budget, fiscal outcomes or financing (Gobat and Kostial, 2016). The World Bank (2017b) reports that while the Syrian government continues to subsidise electricity, the extent is not known. In sum, the current level of energy subsidies in Syria is unknown.

The market for fuel in Syria in the latter years of the conflict has been characterised by widespread shortages even in government-controlled areas, linked to international sanctions and currency depreciation (Lund, 2019). The Syrian regime receives oil on credit from its key

supporter Iran, selling fuel on to consumers at subsidised rates and using the revenue to finance military and other expenditure (Cuyler, 2015). The government controls distribution of fuel through a rationing system with fixed subsidised prices but a black market exists where prices are higher, by three times in the case of cooking gas in early 2019 (Lund, 2019).

## **Political economy**

Before the outbreak of war in 2011, the ruling Ba'athist regime had undertaken various economic liberalisation measures from the 1990s which intensified following Bashar al-Assad's accession in 2000 (Selby, 2018). This took place as the basis of Syria's rentier political economy was collapsing, as oil exports dwindled and domestic energy consumption rose until in 2007 the country became a net importer of oil.

Fuel subsidies had been a central aspect of the political programme of the ruling Baath party (World Bank, 2017b: 69). As in other MENA countries, the tacit contract was an exchange of political acquiescence by citizens for state provision of a minimum level of economic welfare, with implicit fuel subsidies reaching 11% of GDP in 2004 (Cuyler, 2015).

The Ba'athist regime's traditional political base was in rural areas, with agriculture depending on subsidised fertilizer and diesel for irrigation (Selby, 2018). In the driest regions cotton and wheat production is not viable without subsidies. Herding activities also relied on fuel subsidies for transporting flocks, feed and water. Around 80% of the local diesel purchase price was covered by subsidies prior to 2008.

The fiscal crisis occasioned by the fall in oil revenues prompted the regime to rethink its outlays. Fuel and fertilizer subsidies were dramatically halved in May 2008, with the price of diesel rising 342% and fertilizers by 200-450% overnight (Selby, 2018). Fuel prices were raised by a further 50% in January 2011 with a view to eliminating subsidies by 2015, which contributed to the deteriorating economic conditions that motivated the 2011 uprisings and initiation of conflict (Cuyler, 2015).

The additional fiscal pressures of war have led to further subsidy cuts, with manufacturers no longer benefiting from subsidies on fuel oil or gas oil from October 2013 (World Bank, 2017b). This is significant given the industrial sector's reliance on subsidised fuel inputs, with the energy intensity of Syria's economy having risen by a third since 1980 (El-Katiri and Fattouh, 2017).

While subsidies remain in place for households, they have been reduced considerably, with fuel oil prices increasing 10-fold from 2011 to 2015 (World Bank, 2017b). Electricity subsidies have also been cut according to local media reports, but data is not available to quantify this (World Bank, 2017b). It is thought that the majority of electricity subsidies go to households with lower levels of consumption.

## **Reform**

Although the Syrian war has been on hold for several months due to a ceasefire brokered between Turkey and Russia, prospects for lasting peace and a normalisation of policy

concerns are uncertain, with Russian warplanes resuming airstrikes on Idlib in June (McKernan, 2020).

In the near-term, Syria faces an escalating economic crisis which has prompted protests in areas normally loyal to the regime for the first time in years (McKernan, 2020). Beyond the war and sanctions, the financial crisis in neighbouring Lebanon has had knock on effects in Syria. From January to June 2020 the currency depreciated from 700 to 3500 pounds per US\$, resulting in price spikes and worsening shortages for essentials, like food and fuel.

Prospects for sustainable fossil fuel subsidy reforms are minimal in Syria's current fragile, war-torn context. The COVID-19 pandemic will only worsen prospects for recovery, with the virus spreading rapidly given high levels of internal displacement (McKernan, 2020). No information was available about any COVID-19 related fiscal stimulus measures, although they would appear unlikely given the myriad other threats facing the regime.

## 12. Morocco

### Subsidy structure

Morocco has one of the lowest levels of fossil fuel subsidies of any country in our review, at only 0.36% of GDP in 2017 according to the IMF (2018). This is due to Morocco's successful phasing out of subsidies on all fossil fuel products except butane (a form of LPG) from 2013-15 (Verme and El-Massnaoui, 2017). However, some implicit subsidies remain in the electricity sector, with coal, oil and gas used in electricity generation (Peszko et al, 2019).

Bridle et al (2018) present data showing that subsidies for butane made up at 3.9% of the general budget in 2017 compared to 5.7% spent on healthcare, suggesting the issue is still nationally significant. Butane is sold at a fixed price with subsidies making up the difference to international prices, and is used by households for cooking and in agriculture for pumping water for irrigation (Bridle et al, 2018). The subsidised price of butane has been unchanged at 3.3 Dh/kg for more than a decade compared to the unsubsidised price of 10 Dh/kg (Peszko et al, 2019).

### Political economy

Morocco's subsidy system was introduced in 1941 by way of a stabilisation fund, the *Caisse de Compensation* (CDC), to stabilise the prices of consumer goods during the war (Verme and El-Massnaoui, 2017). By the late 1970s the CDC had become a subsidy fund and a major drain on state resources, and as a result price liberalisation was introduced gradually during the period of structural adjustment in the 1980s and into the 1990s. A system of indexation of domestic to international prices was introduced in 1995, but abandoned in 2000 as prices reached politically unacceptable levels for households and businesses.

After subsidies reached 6.6% of GDP in 2012, further subsidy reforms began in 2013, and their relative success at reducing fiscal outlay without social unrest is explained in a number of ways: the most subsidised product and the most important to the poor (LPG/butane) was

excluded; subsidies on products to be reformed started at relatively low levels; reforms were preceded by a clear communications strategy and occurred gradually over a number of years; and the external context of low oil prices was favourable for aligning domestic prices to international markets (Verme and El-Massnaoui, 2017).

The main remaining subsidised fossil fuel product, butane, is a form of LPG mostly used for cooking, particularly by poorer households in rural areas (Peszko et al, 2019). Butane subsidies benefit the richest households more in absolute terms, but are relatively more important for the poorest. Peszko et al (2019) report that 71% of the butane subsidy accrues to the richest 60% of households, but that the subsidy makes up the highest share (4%) of household expenditure for the poorest quintile, compared to 1.3% for the richest.

## Reform

A number of studies consider the potential for further fossil fuel subsidy reform in Morocco, with Peszko et al (2019) examining the case for 'environmental fiscal reform' and Bridle et al (2018) looking at the possibility of a 'fossil fuel subsidy swap' (switching subsidies from fossil fuels to renewables).

Peszko et al (2019) argue for the reform of tax rates on fuels used in power generation as a way to level the playing field for renewables, since implicit subsidies remain for coal and gas power generation. While this would necessitate higher tariffs on electricity for households, the authors argue that the revenue raised from the tax reforms could pay for the compensation of losers through social transfers.

The biggest focus in the literature for further reforms in Morocco is the potential to reduce or remove butane subsidies. Previous announcements of butane subsidy reduction have been met with protests due to their importance for low income households, and price rises would also hit small farmers who rely on butane as a primary energy input (Bridle et al, 2018). Verme and El-Massnaoui (2017) confirm that eliminating butane subsidies would lead to a significant increase in poverty and argue that compensation would therefore be necessary. Peszko et al (2019) suggest subsidy removal would have minimal environmental impact although this would depend on the alternative cooking fuels used, which include charcoal and wood for poorer households in particular.

Morocco has introduced a range of measures in response to the COVID-19 pandemic across fiscal, monetary, macro-financial and exchange rate policy areas (IMF, 2020). None of these related directly to fossil fuel subsidies or their reform.

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