ENERGY SUBSIDIES IN MEDITERRANEAN DEVELOPING COUNTRIES AND THEIR REFORM

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Energy & Extractives Global Practice

FISCAL REFORMS FOR LOW CARBON GROWTH IN THE MEDITERRANEAN
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* Presentation based on a working paper by Joeri De Wit, Thomas Flochel, Shan Gooptu
Energy subsidy reform: A global imperative today

- Global spending on energy subsidies amounted to $260 billion in 2016, down from $322 billion in 2015 (Source: IEA/OECD 2017)
- This compares with $140 billion in subsidies to renewable electricity
- Potential resources that could be used elsewhere by Government (climate-smart infrastructure, innovation or social programs.)
- Results in over use of fossil fuels
- Undermines efforts to mitigate global climate change and local environmental degradation (energy efficiency, adoption of renewables)
- Reduction/removal of subsidies is complex and politically charged
- Requires effective communication, protection of the vulnerable and mechanisms to prevent backsliding

In a nutshell
Dramatic Oil price collapse in 2014
Oil importers had an opportunity to reform
Dramatic Oil price collapse in 2014
Price drop was an opportunity to reform

<table>
<thead>
<tr>
<th></th>
<th>Oil exporters</th>
<th></th>
<th>Oil importers</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High oil</td>
<td>Low oil</td>
<td>High oil</td>
<td>Low oil</td>
</tr>
<tr>
<td>Fiscal urgency</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Economic cost</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Political cost</td>
<td>High</td>
<td>Lower</td>
<td>High</td>
<td>Possibly low</td>
</tr>
</tbody>
</table>

Source: Adapted from Fattouh and Sen (2015).

- Arab Spring effect of delaying overdue energy pricing reforms
- Some countries have moved to make substantial reforms: Morocco, Egypt, Jordan

Timing matters
Reform efforts since 2014

- **LEBANON**, subsidies had been eliminated for petroleum products and natural gas. Electricity subsidies were the highest in the region as a share of GDP and have remained so.

- **JORDAN**, fuel prices adjusted monthly since discontinuation of fuel subsidies in 2012 with exception of LPG. Electricity subsidies gradually adjusted towards cost-recovery in December 2015. In January 2017 an Automatic Electricity Tariff Adjustment Mechanism came into effect.

- **MOROCCO**, phased reform from 4.5% GDP (2012) for energy subsidies to price liberalization in 2016. First gasoline and HFO, then in 2014 diesel price increases (3 times/year). In 2015, government announced price changes fortnightly. Only LPG subsidies remain.

- **EGYPT**, prices of most fuels and electricity were raised starting July 2014. Fuel subsidies decreased from 7.0% to 2.7% of GDP between FY13/14 and FY17/18 and are expected to drop to 1.8% of GDP by FY18/19.

- **ALGERIA**, economy was badly hit by the fall in oil price. Prices of all energy products remain fully controlled. Price and tax increases for gasolines (83%) and diesel (68%) in 2016, 2017 and 2018, but all products are heavily subsidized. Prices changed annually.

- **TUNISIA**, weight of subsidies went from 4.7% (2013) to 2.6% (2016), introduced automatic indexation mechanism for petrol and phasing out subsidies for a few industries, but no serious attempt at reform. All products remain subsidized, in particular electricity, LPG, and diesel. And prices changed yearly.
But their resolve is tested by progressive price ramp up

- **LEBANON**, without a reform of electricity tariffs, Lebanon's high dependence on oil for electricity generation is requiring increasing subsidies.

- **JORDAN**, government has adjusted price monthly to ensure prices remain unsubsidized.

- **MOROCCO**, fuel prices fully liberalized by end of 2015. LPG subsidies remain.

- **EGYPT**, floating and devaluation of the Egyptian Pound in 2016 as well as increasing oil prices have made prices volatile. Pre-tax price to cost ratios for fuel products were still at 73% in June 2018. A fuel price adjustment mechanism is to be implemented end 2018 with the aim of controlling cost-recovery ratios.

- **ALGERIA**, as oil prices start rising, the fiscal pressure to reform is decreasing, although reserves have depleted and fiscal space still very tight.

- **TUNISIA**, set up a committee to set fuel prices and removed all electricity fuel subsidies. Committee did not materialize, but started changing prices quarterly in 2018. All energy products remain subsidized.
State of subsidies
Region with largest subsidies but diverse profiles

Energy subsidies (% of GDP)

<table>
<thead>
<tr>
<th>Country</th>
<th>2013</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>8.5</td>
<td>5.3</td>
</tr>
<tr>
<td>Egypt</td>
<td>10.0</td>
<td>4.1</td>
</tr>
<tr>
<td>Jordan</td>
<td>3.3</td>
<td>1.6</td>
</tr>
<tr>
<td>Lebanon</td>
<td>5.9</td>
<td>6.7</td>
</tr>
<tr>
<td>Morocco</td>
<td>1.0</td>
<td>0.2</td>
</tr>
<tr>
<td>Tunisia</td>
<td>4.6</td>
<td>2.8</td>
</tr>
</tbody>
</table>
State of subsidies

End user prices are generally low and regulated

But with important disparities
Some countries have price adjustment mechanisms.
Electricity subsidies not just due to underpricing

Subsidies in the electricity sector due to factors other than underpricing

- Lebanon
- Jordan
- Egypt, Arab Rep.
- Algeria
- Tunisia
- Morocco
- West Bank

Factors:
- Overstaffing
- Collection losses
- T&D losses

State of subsidies
Energy price regulation targets a number of objectives

- **Support households**: energy prices continue to form an important social safety net, albeit a highly costly and inefficient one.
- **Ease of delivery**, especially when there is no social protection infrastructure in place
- **To shield domestic consumers** from increases in, and excessive volatility of international energy prices, especially oil.
- In MNA an important element of an **unwritten social contract**, where governments have extracted their countries’ hydrocarbon riches in return for citizens' participation in sharing resource rents
- Foster domestic **industrial growth**.
Energy subsidy impacts
Macro-Fiscal

- Subsidies are costly to governments raising national debt
- Create uncertainty in the budgeting process as subsidies fluctuate with international prices
- Source of macroeconomic vulnerabilities

Public debt in oil exporting vs. oil importing countries

- Average
- Median

<table>
<thead>
<tr>
<th>Year</th>
<th>Oil exporting countries</th>
<th>Oil importing countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-2007</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008-2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011-2014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015-2017</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Energy subsidy impacts

Environmental

- Energy mix
- Emissions intensity
- Local air pollution
- NDCs

Specific GHG Emissions (in kg/kWh)

<table>
<thead>
<tr>
<th>Source</th>
<th>CO2 per kWh of electricity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal: Ultra-supercritical PC w/o CCS</td>
<td>850-900</td>
</tr>
<tr>
<td>Heavy Fuel oil</td>
<td>800-850</td>
</tr>
<tr>
<td>Diesel</td>
<td>750-800</td>
</tr>
<tr>
<td>Gas (simple cycle)</td>
<td>700-750</td>
</tr>
<tr>
<td>Gas (Combined cycle w/o CCS)</td>
<td>650-700</td>
</tr>
<tr>
<td>Coal: Ultra-supercritical PC w/ CCS</td>
<td>600-650</td>
</tr>
<tr>
<td>Geothermal</td>
<td>550-600</td>
</tr>
<tr>
<td>Hydro</td>
<td>500-550</td>
</tr>
<tr>
<td>Solar thermal (tower)</td>
<td>450-500</td>
</tr>
<tr>
<td>Solar PV</td>
<td>400-450</td>
</tr>
</tbody>
</table>

Total primary energy supply

- Other
- Hydro
- Natural gas
- Coal
- Oil

CO2 per kWh of electricity

- World
- Middle East
- Algeria
- Egypt
- Jordan
- Lebanon
- Morocco
- Tunisia

Energy Sector Management Assistance Program

WORLD BANK GROUP
Energy subsidy impacts
Environmental

- Energy mix
- Emissions intensity
- NDCs
- Local air pollution

**Specific GHG Emissions (in kg/GJ)**

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lignite</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
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<tr>
<td>Hard coal</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
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<tr>
<td>Fuel oil</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Diesel</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>Crude oil</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Kerosene</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Gasoline</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Refinery gas</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Liquid petroleum gas</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Natural gas</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

**CO2 per kWh of electricity**

- World
- Middle East
- Algeria
- Egypt
- Jordan
- Lebanon
- Morocco
- Tunisia

**Total primary energy supply**

- Algeria
- Egypt
- Jordan
- Lebanon
- Morocco
- Tunisia

Key:
- Other
- Hydro
- Natural gas
- Coal
- Oil
Energy subsidy impacts

Social impacts

- Social contract
- Distributional impacts
- Crowding out social spending and investment in social protection systems
Energy subsidy impacts

Energy sector impacts

Market concentration with little or no competition
• Price subsidies channeled through national oil company

Energy shortages with substantial economic damage
• Blackouts, reliance on expensive diesel power generation
• Fuel shortages

Opaque sector with flourishing corruption
• Black marketing of liquid fuels
• Fuel smuggling
• Subsidies based on “self-reporting” by companies

Declining investment in the energy sector
• Net exporters becoming net importers
• Major crude oil exporters importing petroleum products
Subsidy reform

The goal: targeted support and efficient costs in the sector

• Efficient economic regulation of natural monopolies (power transmission and distribution, pipeline transportation) by an independent regulator
  – Open access regime

• Price deregulation in a market with fair and healthy competition and enforcement of sound regulations
  – Level playing field irrespective of ownership
  – Efficiency gains passed on to consumers as low prices

• Comprehensive, integrated social protection program meeting the basic needs of the vulnerable
  – Not sector-specific interventions, but meeting needs arising from any shock (food, oil, hurricanes, financial crisis, ...)
Lessons learned on pricing

1. Depoliticize pricing of energy
2. Getting consumers used to frequent and regular price adjustments is important.
3. The more formal the way in which the decision to reform pricing is communicated, the less likely is policy reversal
4. Price smoothing schemes are (almost never) self-financing
5. Price subsidies for network energy are easier to target
Lessons learned about reform

- Subsidy removal is easier for gasoline than diesel, and easier for diesel than for cooking and home heating fuels.

- Important to consider wider impacts of transport fuel prices and substitution between transport fuels

- Indirect impacts can be important through inflation and exchange rate effects.

- Well designed communications campaigns are an essential tool to facilitate buy-in of the citizens to accept the Energy Subsidy reforms.

- As large energy consumers, firms are heavily hit when energy subsidies are removed.
Subsidy reform
The Energy Subsidy Reform Assessment Framework

**Overview available at:** [https://www.esmap.org/esraf](https://www.esmap.org/esraf)

**Context**
- **Fiscal Impacts**: Assessing the fiscal cost of subsidies and the fiscal impact of reform.
- **Household Impacts**: Analyzing the incidence of subsidies and impact on households. Assessing the readiness of social safety nets to mitigate this impact.
- **Political Economy**: Assessing the political context for reforming subsidies.
- **Communication**: Assessing public opinion and designing communications strategies.
- **Economic & Environmental Impacts**: Identifying the impacts of reform on firms and industrial competitiveness.
- **Firms & Industrial Impacts**: Modeling macroeconomic effects and impact of reform on GHG emissions. Assessing the impact of subsidies on the environment.
Subsidy reform
ESRAF Focuses on the Diagnostics…

…but it is not as an end in itself

Figure: Effective FFS reform includes not only subsidy removal, but also a range policy measures – all of which must be carefully timed (adapted from Rentschler & Bazilian, 2016).
THANK YOU

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Sudarshan Gooptu (sgooptu@worldbank.org), GMFD1
Subsidy reform
Price smoothing mechanisms

• Price smoothing schemes are seldom, if ever, self-financing
• Self-financing depends critically on frequent price reversion to the mean, not seen since the early 2000s
• Political pressure to withdraw in times of high fund balance can amplify, rather than reduce, price volatility
• A successful alternative is adjustable tax
### Subsidy reform
#### Emerging lessons

<table>
<thead>
<tr>
<th>How</th>
<th>Examples</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Law</td>
<td>Mexico 2014</td>
<td>Implemented</td>
</tr>
<tr>
<td></td>
<td>Iran 2010 for all forms of energy</td>
<td>Law amended in 2012</td>
</tr>
<tr>
<td>Presidential decree</td>
<td>Kerosene in Nigeria in June 2009</td>
<td>Decree has not been gazetted</td>
</tr>
<tr>
<td></td>
<td>Gasoline and diesel in 2014 in Indonesia</td>
<td>Decrees not implemented because of political factors and socioeconomic considerations</td>
</tr>
<tr>
<td>Ministerial decree</td>
<td>Gasoline and diesel in 2014 and 2015 in Indonesia</td>
<td></td>
</tr>
<tr>
<td>Announcement by regulatory authority</td>
<td>China</td>
<td>Implemented in recent years</td>
</tr>
<tr>
<td></td>
<td>Deregulation in Ghana in June 2015</td>
<td>Implemented so far</td>
</tr>
<tr>
<td></td>
<td>Automatic adjustment in Malawi in June 2012</td>
<td>Not systematic</td>
</tr>
<tr>
<td>Announcement to reporters</td>
<td>Gas price increase in Nigeria announced in late 2014 to take effect in Jan 2015</td>
<td>Not implemented</td>
</tr>
</tbody>
</table>
End user tariffs today

End user tariffs do not cover costs
What is “ESRAF”? 

- A framework for carrying out a comprehensive assessment of issues related to energy subsidy reforms in a country.
- Consists of 10 Guidance Notes prepared by authors from respective World Bank Global Practices.
- These are meant to serve as a methodological toolkit to underpin the assessment of Energy Subsidy Reform (ESR) readiness and help design of ESR Reform Plans.
- They highlight the tools, methods and practices that are being used by different GPs in the World Bank Group to take stock of, analyze, and facilitate the various aspects of reform of energy subsidies.
- ESRAF provides a harmonized approach.
ESRAF builds on Lessons from World Bank operations

- Energy subsidies are not trivial to measure or identify
  - Fuel
  - Electricity
  - District Heating

- Subsidies occur on consumption side and/or production side.

- Fiscal impact can be huge, including through contingent liabilities that generate “hidden deficits”.

- Subsidies often benefit the rich more, but reforms can be very harmful to the poor and vulnerable.

- Often intended to fill the role of social protection and social compact of Government with its citizens, but these are not always ready to be scaled up to shield the poor from the price hikes that accompany subsidy removal.
Collaboration is Key in Energy Subsidy Reforms

<table>
<thead>
<tr>
<th>A. The Nature and Value of Subsidies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are the various subsidies?</td>
</tr>
<tr>
<td>2. How are various energy products priced?</td>
</tr>
<tr>
<td>3. How are the subsidies financed?</td>
</tr>
<tr>
<td>4. How and where are the subsidies delivered?</td>
</tr>
<tr>
<td>5. How does the country compare with similar countries?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. Economic and Social Consequences of Subsidies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is the macro-fiscal impact of subsidies?</td>
</tr>
<tr>
<td>2. Do subsidies help the poor or vulnerable?</td>
</tr>
<tr>
<td>3. Do subsidies help improve the competitiveness of industries engaged in producing tradeable goods and services?</td>
</tr>
<tr>
<td>4. What are the opportunity costs of energy subsidies?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C. Reform Options and Priorities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What supports and what hinders reform?</td>
</tr>
<tr>
<td>2. What are the options and priorities for reducing subsidies?</td>
</tr>
<tr>
<td>3. What short-run consequences need mitigation measures?</td>
</tr>
</tbody>
</table>

ESRAF

World Bank Group

Energy Sector Management Assistance Program
ESRAF draws on Global experience on Subsidy Reforms

Technical Assistance
35 total engagements, including 7 regional engagements
28 country engagements
19 countries
ESRAF draws on Global experience on Subsidy Reforms

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35 total engagements, including 7 regional engagements
28 country engagements
19 countries

Knowledge exchange
8 international webinars connecting 22 governments
ESRAF draws on Global experience on Subsidy Reforms

Technical Assistance
35 total engagements, including 7 regional engagements
28 country engagements
19 countries

Knowledge exchange
8 international webinars
4 regional workshops
2 FFFSR events
1 international conference
Energy subsidy reform linked DPOs by region

ESRF - LINKED WB OPERATIONS BY REGIONS

- ECA: 25%
- MNA: 33%
- SAR: 33%
- SSA: 8%
- LAC: 0%
- EAP: 0%

Energy Subsidy Reform–linked WB operations by regions (US$ Millions)

- ECA: 1364
- MNA: 2750
- SAR: 1750
- SSA: 150
- LAC: 0
- EAP: 0

NEEDS UPDATE
In summary
Implementing Energy Subsidy Reforms

Figure: Key elements of an integrated fossil fuel subsidy reform (adapted from Rentschler & Bazilian, 2016).
ESROC
Learning from your peers

Energy Subsidy Reform
Online Community (ESROC)