Oil Sector Recovery in Yemen Urgently Needed

**INTRODUCTION**

Although Yemen isn’t a major crude oil producer compared with other countries in the region, oil played a vital role in financing the state’s budget and providing foreign exchange for capital goods and food imports since the early nineties of last century to date. Despite the drop in oil production and prices, it contributed 83.3% of the total merchandise exports and 45.3% of the total state budget revenues in 2014.

The oil sector faces growing challenges, mainly the steady decline in oil production since 2002 and the recent decline in world oil prices, against increasing fuel consumption and imports, in addition to limited investments and fragile political and security situation. In 2015, foreign oil and gas companies announced force majeure and left Yemen. Crude oil and LNG production and exports stopped and a severe fuel shortage has occurred. This has contributed to the contraction of economic activity, soaring prices, escalation of budget deficit, deterioration of national currency value and difficult access to basic social services. As a result, the living conditions of millions of Yemenis have, directly and indirectly, deteriorated. However, most of the Yemeni territory hasn’t been explored yet, including the marine areas.

To overcome these challenges and risks, this edition highlights a package of priority interventions, most importantly resuming oil and gas production and exports as an urgent priority to rescue the economic situation and ease people’s suffering.

*Dr. Mohammed Al-Maitami*
Minister of Planning and International Cooperation

**FACTS AND FIGURES**

- The public budget’s financing gap is estimated at $5.8 billion in 2016, apart from the reconstruction needs.

- Power supply through the public grid has been totally suspended in Sana’a and several other governorates for about 8 months.

- Fuel imports covered 85% and 15% of the local market needs during January and February 2016 respectively (OCHA, Shipment Snapshot, Mar. 2016).

- 14.4 million Yemenis are food insecure, and 1.8 million children at risk of malnutrition (OCHA, Humanitarian bulletin, Issue 8, Feb. 2016).

- 21.2 million Yemenis (82% of the population) are in need of humanitarian assistance, including 9.9 million children and 2.4 million IDPs (31% children) (UNICEF, SitRep, March 2016).

**HIGHLIGHTS:**

- The crude oil production and liquefied natural gas (LNG) exports declined by 76.8% and 80.3% respectively in 2015 compared to 2014. The lost opportunity cost of crude oil production and LNG exports is estimated at about $2.5 billion and $1.6 billion respectively in 2015.

- Oil refining in the Aden Refinery was suspended, oil production in Marib Refinery dropped by 4.8% and fuel imports decreased by 65.3%, resulting in a scarcity of fuel supply in the local market.

- The fuel sales of the Yemen Oil Products Distribution Company (YOPDC) fell by about 65.2% in 2015, accompanied by a drop in sales of the cooking gas by 18.5%, leading to an unprecedented fuel crisis.

- Severity of the fuel crisis varied from one area to another and also from one sector to the other. For example, Marib governorate was less affected by the fuel crisis. Fuel sales of YOPDC to the power plants, airlines companies and cement factories fell by 77%, 80.8% and 81.8% respectively in 2015.

- Fuel and cooking gas prices hit record levels in 2015. Although these prices decreased during the first quarter of 2016, they remained more than double compared to the pre-crisis levels. Fuel prices were the highest in Taiz governorate.

- The Gross Domestic Product (GDP) of the oil and gas sector shrank by about 75.7%, contributing to a drop in the GDP per capita by about 36.1% in 2015. The decline in oil and gas exports by about 84.5% in 2015 resulted in a lack of foreign exchange, deterioration of the national currency and higher inflation and poverty rates.

- Oil and gas revenues of the state public budget have declined by $3.7 billion in 2015. As a result, the budget was forced to stop most of its expenditure items, including the suspension of the cash assistance disbursement to the poor and reducing the operational costs of the basic social services.

- The fuel crisis has deprived people from accessing water and health services, particularly the IDPs. Women and children bear the burden of carrying water on their back to the house. Services of the primary health care and public hospitals have been disrupted as well.

- Nearly 91,224 gas cylinders have been destroyed and 18 fuel and gas stations sustained partial or complete damage.

**First: Importance of the Oil Sector:**

Yemen has proved reserves of oil totaling 3 billion barrels and 18.215 trillion cubic feet of primary gas reserves.

As of 2014, the oil sector (oil and natural gas) played a big role in the economic activity and financing the development process in Yemen, contributing 24.1% of GDP, 83.3% of the total merchandise exports and 45.3% of the total public budget revenues. The oil and natural gas exports are the most important source of foreign currency that strengthens the foreign exchange reserves, finances the food and non-food imports and supports the exchange rate stability.

In 2015, the foreign oil and gas companies departed from Yemen. As a result, all production and exports of crude oil and LNG in Yemen have been totally suspended since April 2015 and the world oil prices deteriorated significantly. Oil refining operations in the Aden Refinery were disrupted and a severe fuel crisis has occurred. This has reflected negatively on the overall economic indicators and balances and contributed, directly and indirectly, to further exacerbation of the living conditions of millions of Yemenis.
Second: Current Situation of Oil and Gas in Yemen:

1. Crude Oil Production Trends:

Yemen started producing crude oil in 1986 at low levels and gradually increased its production, reaching its peak in 2001, but started declining steadily after 2001 by about 6.8% per year on average during 2001-2014 as a result of maturing fields, limited exploration, and frequent sabotage of oil infrastructure that sustained 78 attacks during 2012-2013, compared with 62 attacks during the preceding 20 years. This had affected oil refining, production and exporting activities. Attraction of foreign oil investments to Yemen has been disrupted as well.

Yemen’s crude oil production declined in 2015 by 76.8%, compared to 2014, due to the departure of foreign oil companies from Yemen and the suspension of crude oil exports since April 2015. Yemen had plans to produce 61.8 million barrels in 2015, but the preliminary actual data indicates that the total crude oil production in 2015 amounted to only 13.2 million barrels. As a result, the lost opportunity cost of total crude oil production is estimated at about $2.5 billion in 2015 (Not including the cost of physical damage in the oil sector).

<table>
<thead>
<tr>
<th>Description / Year</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>LNG export (million metric ton)</td>
<td>0.400</td>
<td>4.590</td>
<td>6.877</td>
<td>5.094</td>
<td>7.634</td>
<td>6.652</td>
<td>1.311</td>
</tr>
<tr>
<td>Price (metric. tone / USD)</td>
<td>124.9</td>
<td>159.8</td>
<td>187.2</td>
<td>208.6</td>
<td>275.9</td>
<td>451.6</td>
<td>341.1</td>
</tr>
<tr>
<td>LNG export (million USD), of which:</td>
<td>48.7</td>
<td>733.7</td>
<td>1287.1</td>
<td>1062.5</td>
<td>2106.1</td>
<td>3003.7</td>
<td>447.2</td>
</tr>
<tr>
<td>Government’s share</td>
<td>6.9</td>
<td>106.1</td>
<td>183.4</td>
<td>205.9</td>
<td>379.6</td>
<td>753.5</td>
<td>63.7</td>
</tr>
</tbody>
</table>

Using the natural gas domestically to generate electricity is more rewarding than exporting it, as the estimated economic value of using gas to generate electricity is double the revenues earned from gas exports (Gerner and Tordo, 2011).

In order to improve Yemen’s gas export revenues, Yemen’s government has made price review negotiations with the LNG Project shareholders; thereby, increasing the government share in 2014. In the event of resuming the gas exports at the time being, the government’s share of gas exports is expected to decrease, compared to 2014, due to the drop in the world gas prices by more than 50%.

Technically, the country is fully ready to resume the gas exports but a political will is needed, as well as protecting the gas infrastructure and gas tankers and vessels. It’s to be noted that the security protection costs of the LNG export project in the past years were about $700,000 a year.

The figure above indicates a narrowing gap between the government’s share and total crude oil production with the passage of time. This means that the share of the government has increased (Amounted to 70% of the total production in 2013) while the share of foreign companies has decreased. After the government’s takeover of Block 10, which is expiring, and 53 concessions in 2015, the Government share has risen further.

2. Liquefied Natural Gas Production Trends

Yemen began producing and exporting liquefied natural gas (LNG) in 2009. The project’s production capacity is 6.7 million metric tons per year. The LNG export revenue contributed only 6.9% and 5.1% of the total public budget revenues in 2014 and 2015 respectively and, thus, is unlikely to offset the oil revenue shortfalls because of the declining oil production.

In 2015, the LNG exports fell by about 80.3% compared to 2014 due to the departure of the productive companies from Yemen; thereby, the LNG production and exports have been completely suspended since April 3rd, 2015. The actual data indicates that LNG exports declined to 1.31 million metric tons in 2015, while it was planned to export 6.7 million metric tons. Considering the world LNG prices, the lost opportunity cost of LNG exports is estimated at about $527.3 million during the same period.

Lost Opportunity of Total Oil Production in 2015 (Billion USD)

<table>
<thead>
<tr>
<th>Description / Year</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lost opportunity cost of crude oil production estimated at 2.5 billion USD in 2015</td>
<td>3.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expected value of oil production (Without Conflict)</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actual value of oil production (With Conflict)</td>
<td>0.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The LNG project was interrupted in 2015 due to security threats and environmental issues. The government has made price review negotiations with the LNG Project shareholders; thereby, increasing the government share in 2014. In the event of resuming the gas exports at the time being, the government’s share of gas exports is expected to decrease, compared to 2014, due to the drop in the world gas prices by more than 50%.

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Technically, the country is fully ready to resume the gas exports but a political will is needed, as well as protecting the gas infrastructure and gas tankers and vessels. It’s to be noted that the security protection costs of the LNG export project in the past years were about $700,000 a year.
3. Trends of Fuel Production and Imports:

3-1 Refining Crude Oil:

Yemen has two operating refineries in Aden and Marib. Both refineries covered on average 36% of the local market needs of fuel during 2005-2013. The Aden Refinery has been operating for about six decades with a total capacity of more than 60,000 barrels/day. It refines the light oil coming from Marib but stopped operating at the end of the first quarter of 2015 due to the physical damages sustained during the conflict, as well as the lack of crude oil supply from Marib. Complete data concerning the Aden Refinery activities over 2015 are still unavailable.

The production capacity of Marib Refinery is 10,000 barrels/day. However, the quantities of refined oil declined by 4.8% in 2015. The figure indicates an increase in the production of gasoline against a decline in diesel and fuel oil. In light of the foregoing, the oil refining activity has shrunk, along with a decline in fuel supply in local market.

3-2 Fuel Imports:

Fuel imports accounted for nearly 64% of the total domestic fuel consumption during 2005-2013. The need to import fuel from abroad increased in 2015 due to the suspension of operations in the Aden Refinery for several months. However, the preliminary data indicates a decline in fuel imports quantity by around 65.3% in 2015, compared to 2014, as a result of the import restrictions and limited foreign exchange necessary to import fuel. Consequently, local markets witnessed a fuel shortage and the fuel crisis has further worsened.

Oil imports are sucking billions of dollars annually out of the foreign exchange reserves (See the figure), thus contributing significantly toward higher pressure on the current account balance and exhaustion of foreign exchange reserves. This requires expanding the Aden Refinery, as well as constructing new refineries (After reaching a political settlement).

4. Fuel Consumption:

Yemen’s economy has sustained several fuel crises in recent years; the first of which was in 2010 where the fuel sales of the Yemen Oil Products Distribution Company (YOPDC) fell by about 4.8%. The crisis has intensified in 2011 and fuel sales declined by about 16.9%. In 2014, the fuel sales fell by about 8.6%. In 2015, fuel sales in domestic market witnessed the highest decline by 65.2% compared to 2014. Sales of gasoline, diesel and fuel oil have declined by 52.8%, 69.5% and 75.4% respectively. Despite the variation in causes of fuel crises now and then and their impact on development, a common factor in all crises is the deterioration in situation of the state’s public budget and difficulty to provide necessary foreign exchange to import fuel.
By governorate, the fuel sales of the YOPDC have increased in Marib and Al-Jawf by nearly 37.2% and 29.1% respectively. These two governorates were not affected by the fuel crisis due to their proximity to the Marib Oil Refinery. The table below shows that Aden, Lahj, Al-Dhale, Hadramout and Abyan governorates were most affected by the fuel crisis, but these governorates have received fuel from sources other than the YOPDC after August 2015.

### Sales quantity of Fuel of YOPDC by Governorate during 2012 and 2015 (million liters)

<table>
<thead>
<tr>
<th>Items</th>
<th>Aden</th>
<th>Lahj</th>
<th>Al-Dhale</th>
<th>Hadramout</th>
<th>Abyan</th>
<th>Al-Badda</th>
<th>Taiz</th>
<th>Hajjah</th>
<th>Al-Maharah</th>
<th>Raymah</th>
<th>Amran</th>
<th>Shibam</th>
<th>Sana'a</th>
<th>Ibb</th>
<th>Al-Hudiedah</th>
<th>Al-Mahweet</th>
<th>Dhamar</th>
<th>Sa'ada</th>
<th>Sana'a City</th>
<th>Al-Jawf</th>
<th>Marib</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>761</td>
<td>234</td>
<td>148</td>
<td>682</td>
<td>81</td>
<td>154</td>
<td>794</td>
<td>247</td>
<td>66</td>
<td>12</td>
<td>261</td>
<td>142</td>
<td>370</td>
<td>295</td>
<td>1060</td>
<td>36</td>
<td>270</td>
<td>166</td>
<td>661</td>
<td>32</td>
<td>132</td>
</tr>
<tr>
<td>2015</td>
<td>58</td>
<td>20</td>
<td>19</td>
<td>117</td>
<td>14</td>
<td>35</td>
<td>203</td>
<td>79</td>
<td>22</td>
<td>4</td>
<td>88</td>
<td>52</td>
<td>137</td>
<td>121</td>
<td>452</td>
<td>16</td>
<td>156</td>
<td>98</td>
<td>426</td>
<td>41</td>
<td>181</td>
</tr>
<tr>
<td>% Change</td>
<td>-92.4</td>
<td>-91.5</td>
<td>-87.2</td>
<td>-82.8</td>
<td>-77.4</td>
<td>-74.4</td>
<td>-66.7</td>
<td>-66.5</td>
<td>-66.1</td>
<td>-63.4</td>
<td>-59.0</td>
<td>-57.4</td>
<td>-54.2</td>
<td>-42.0</td>
<td>-35.5</td>
<td>29.1</td>
<td>37.2</td>
<td>-65</td>
<td>-661</td>
<td>32</td>
<td>-65</td>
</tr>
</tbody>
</table>

By sector, the table indicates a sharp decline in fuel sales of YOPDC to the industrial sector that sustained a strong shock during the first months of 2015. To reduce the fuel crisis on the private sector, it has been allowed to import its needs of fuel since August 2015.

It is to be noted that fuel sales to airline companies have fell by about 80.8%, apparently reflecting the extent of stalemate surrounding the aviation sector in Yemen as a result of war and conflict. Similarly, fuel sales to electricity sector have decreased by about 77% in 2015. This asserts the suspension of the power supply through the public grid during the last three quarters of 2015 in most of the governorates (1). As a result, part of the foreign exchange has been used to import generators and solar power systems.

### Sales quantity of Fuel Products of YOPDC by Sector (million liters)

<table>
<thead>
<tr>
<th>Sector</th>
<th>2014</th>
<th>2015</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private stations</td>
<td>3,821</td>
<td>1518</td>
<td>-60.3</td>
</tr>
<tr>
<td>YOPDC’s stations</td>
<td>402</td>
<td>123</td>
<td>-69.4</td>
</tr>
<tr>
<td>Government Agencies</td>
<td>83</td>
<td>48</td>
<td>-42.2</td>
</tr>
<tr>
<td>Other factories</td>
<td>52</td>
<td>9</td>
<td>-82.7</td>
</tr>
<tr>
<td>Cement Factories</td>
<td>137</td>
<td>25</td>
<td>-81.8</td>
</tr>
<tr>
<td>Power electricity plants</td>
<td>1,594</td>
<td>366</td>
<td>-77.0</td>
</tr>
<tr>
<td>Associations and private companies</td>
<td>338</td>
<td>136</td>
<td>-59.8</td>
</tr>
<tr>
<td>Airlines companies</td>
<td>125</td>
<td>24</td>
<td>-80.8</td>
</tr>
<tr>
<td>Others</td>
<td>112</td>
<td>71</td>
<td>-36.6</td>
</tr>
<tr>
<td>Grand total</td>
<td>6,664</td>
<td>2340</td>
<td>-65</td>
</tr>
</tbody>
</table>

5. Consumption Trends of LPG (Cooking Gas):

The local market has witnessed a shortage of liquefied petroleum gas (LPG), also known as cooking gas, due to the lower supply and higher demand for gas, as well as the roadblocks that hinder gas transportation. Gas allocated for local consumption has declined by 18.5% in 2015, as a result of the drop in production of Safer Oil Plant (in Marib governorate) and suspension of the Aden Refinery since February 2015 (See the figure below). Meanwhile, the demand for gas has increased as a result of converting several cars and generators to run on LPG instead of the unavailable and expensive gasoline and diesel. Consequently, cooking gas prices have reached unprecedented high levels; thereby, reflecting negatively on people’s living conditions and leading to the flourish of firewood trade that damages the environment.

### Sales of Aden Refinery and Safer of LPG for local consumption during 2015 (thousand metric tone monthly)

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>43</td>
<td>67</td>
<td>69</td>
<td>66</td>
<td>57</td>
<td>50</td>
<td>46</td>
<td>59</td>
<td>59</td>
<td>59</td>
<td>46</td>
<td>58</td>
</tr>
</tbody>
</table>

### Local Consumption of LPG (Cooking Gas) (thousand metric tone)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>736</td>
<td>729</td>
<td>584</td>
<td>700</td>
<td>778</td>
<td>822</td>
<td>670</td>
</tr>
</tbody>
</table>

(1) Power supply through the public grid has totally stopped in most of the Yemeni governorates due to armed conflict and the declining public resources. However, the power supply has been resumed in some southern governorates in recent months.
6. Local and World Fuel Prices:

The fuel crisis in 2015 has unprecedentedly given rise to black markets and higher fuel prices, reaching its peak in the second quarter of 2015 (See the figure). This has resulted in complete paralysis of public life activities and sharp deterioration in economic and social activities, as well as exacerbating the living conditions. The official price of gasoline and diesel was reduced in August 2015 from YR150/ liter to YR135 / liter in line with orientations to liberate (float) fuel prices. However, a liter of gasoline is currently sold in official fuel stations for over YR200, which is inconsistent with the current low world fuel prices, thus, depriving Yemeni citizens from enjoying cheap prices of fuel.

![Graph of World Fuel Prices](image)

![Graph of Weekly Trend of Fuel Prices in Yemen](image)

![Graph of % Chang of Fuel Prices in March 2016 compared to Pre-Crisis Period](image)

Third: Main Economic and Social Implications:

1. GDP Contraction:

The oil and gas production constituted nearly 24% of GDP at current prices during 2010-2014, despite the growing number of sabotage attacks on oil and gas infrastructure during the transitional period.

In 2015, the real GDP of the oil and gas sector declined by about 75.7% due to the insecurity and evacuation of foreign companies operating in the fields of oil and gas. Accompanied by other factors, the deterioration of the oil and gas sector has contributed in the contraction of the real GDP by about 34.6% in 2015. As a result, the decline in the real GDP per capita is estimated at about $331 in 2015, compared to $518/ per capita in 2014. This means that more people are sliding below the poverty line.

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(2) For more information about the implications of the fuel crisis and suspension of oil and gas production and exports, see previous YSEU editions, particularly editions No. 5,6,7,11 and 12.
2. Decline in the Public Budget Revenues and Fuel Subsidy:

The oil and gas revenues are the main resource of the state budget and contributed about 53.6% of the total public revenues during 2010-2014. The oil and gas revenues have fallen by about 77.1% in 2015 due to the war and conflict implications, as well as the lower world oil prices. In other words, oil and gas revenues have declined by $3.7 billion in 2015. The lost amount exceeds the total public budget expenses on education, health and social protection. As a result, the budget was forced to stop most of its expenditure items, including the suspension of the projects of the public investment program and the cash assistance disbursal to the poor, as well as reducing the operational costs of the basic social services, such as education, health and water.

On the other hand, the drop in world oil prices has eased the pressure on the state public budget; thereby, the total fuel subsidies decreased by about 95.7% in 2015 compared to 2014. Although the liberation of fuel prices and imports is highly feasible now and in the future, there is a need to regulate the market in conformity with the best international practices to let citizens enjoy the decline in world fuel prices in exchange for bearing the burden when prices increase.

The prices of fuel supplied to government-run power stations haven’t been floated yet. Out of the total fuel subsidies, 37.6% and 82.6% have been directed to electricity in 2014 and 2015 respectively. It was difficult for the public budget to continue to subsidize the fuel necessary to generate power in 2015, contributing to the complete suspension of diesel and fuel oil-powered stations and, as a result, imposing a heavy burden on people and the national economy.

### Table: Description/Year

<table>
<thead>
<tr>
<th>Description/Year</th>
<th>(billion USD)</th>
<th>Growth rate %</th>
<th>% of Total revenue</th>
<th>% of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total State Budget Revenues:</td>
<td>10.7</td>
<td>4.9</td>
<td>-53.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Oil &amp; Gas Revenues of which:</td>
<td>4.8</td>
<td>1.1</td>
<td>-77.1</td>
<td>45.3</td>
</tr>
</tbody>
</table>

### Fuel Subsidy (Billion USD)

- **2000**: 0.5
- **2001**: 0.4
- **2002**: 0.3
- **2003**: 0.6
- **2004**: 0.6
- **2005**: 0.8
- **2006**: 1.5
- **2007**: 1.5
- **2008**: 2.0
- **2009**: 1.9
- **2010**: 2.5
- **2011**: 2.5
- **2012**: 3.0
- **2013**: 3.2
- **2014**: 2.2
- **2015**: 0.1

### Table: Description/Year

<table>
<thead>
<tr>
<th>Description/Year</th>
<th>2014</th>
<th>2015</th>
<th>%change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total fuel subsidy of which:</td>
<td>2231</td>
<td>96</td>
<td>-95.7</td>
</tr>
<tr>
<td>Electricity fuel (diesel and fuel oil) subsidy</td>
<td>838.5</td>
<td>79.6</td>
<td>-90.5</td>
</tr>
</tbody>
</table>

3. Export Shortfall and Deterioration of the National Currency:

Oil and gas exports have been the main resource to generate hard currency in the country, accounting for 82.9% of the total merchandise exports during 2010-2014. The preliminary data indicates a decline in the oil and gas exports by 84.5% in 2015.

Consequently, the total merchandise exports have fallen sharply (81.1%); thereby, exhausting the foreign exchange reserves of the Central Bank of Yemen from $4.7 billion in December 2014 to $2.1 billion in December 2015 (By 55.3%). This has weakened the bank’s ability to intervene and protect the exchange rate and, also, forced it to stop financing the fuel and sugar imports at the official exchange rate (Y214.9/US dollar).

The exchange market witnessed increasing pressures due to the lack of US dollar and the large sums required to import fuel and other commodities. As a result, the parallel exchange rate increased by 25.6% from YR214.9/USD in March 2015 to more than YR270/USD in April 2016; thereby contributing to further escalation of the consumer price inflation and higher poverty and deprivation rates.
4. Difficulty to Access Social Basic Services:

The fuel crisis has made it difficult for people to have access to basic social services, including water and health services, because fuel is necessary to pump water and to run generators at hospitals, maintain cold chains, and run essential health equipment. The following is an overview of the fuel crisis implications on water and health services and response effectiveness:

4-1 Water Sector:

Yemen is one of the world’s most water-scarce countries. In 2013, only 29% of households had access to water inside the dwelling, while 23% of households had to walk for over 30 minutes to access water (3). In 2015, the fuel shortage, accompanied by prolonged power outages, has resulted in an almost total suspension of water supply through the public grid. According to UNICEF, 19 million people in Yemen need access to safe drinking water – nearly half are children. Water trucking was a resort and, as a result, the price of water transported by trucks has increased by about 200-400% in 2015. People, particularly the low-income residents, have been deprived from their right to water.

Response Activities:

Since April 2015, UNICEF has provided a total of 5,141,037 liters of fuel (diesel and petrol) to Local Water Corporations, Sewage Treatment Plant and Cleaning Fund - reaching 4,661,599 beneficiaries in 13 cities and numerous rural villages across Yemen. Without the support with fuel, it would not have been possible for these cities to continue operating the water networks, as electricity has stopped in most parts of the country and the conflict has had a serious impact on the water networks, as electricity was not available. The water networks in Hudaydah, Sana’a, Aden, Taiz and Ibb were the most affected. The fuel was provided on a monthly basis to the central cold room to Support a few key hospitals providing MCH services. The fuel was provided to: 1) Support maintenance of cold chain for vaccines. 2) Support over a 100 mobile teams in 14 governorates provide services to over 370 villages/localities. The fuel was provided on a monthly basis to the central cold room and 11 of the 17 governorate cold rooms. For cold chain maintenance services to over 370 villages/localities. The fuel was provided on a monthly basis to the central cold room and 11 of the 17 governorate cold rooms. The fuel was provided on a monthly basis to the central cold room and 11 of the 17 governorate cold rooms. The fuel was provided on a monthly basis to the central cold room and 11 of the 17 governorate cold rooms. The fuel was provided on a monthly basis to the central cold room and 11 of the 17 governorate cold rooms. The fuel was provided on a monthly basis to the central cold room and 11 of the 17 governorate cold rooms. The fuel was provided on a monthly basis to the central cold room and 11 of the 17 governorate cold rooms. The fuel was provided on a monthly basis to the central cold room and 11 of the 17 governorate cold rooms.

4-2 Health Sector:

The conflict in Yemen has had serious consequences on the health system and its ability to provide basic health services to the population including children, women and displaced population. Power supply outages and lack of fuel have worsened the health services’ availability and delivery of primary health services making operation of health facilities impossible and making outreach and mobile service difficult and much more expensive. The shortage of fuel threatened the cold chain that is vital for vaccines and ensuring children are immunized and protected against the 10 vaccine preventable disease.

Response Activities:

Among other organizations, UNICEF has provided over 270,000 liters of fuel to:

- Support maintenance of cold chain for vaccines.
- Support a few key hospitals providing MCH services.
- Support to over a 100 mobile teams in 14 governorates provide services to over 370 villages/localities.

The fuel was provided on a monthly basis to the central cold room and 11 of the 17 governorate cold rooms. For cold chain maintenance over 195,000 liters of fuel was provided which helped protect vaccines that was used to protect approx. 6,800,000 children.

Fourth: Examples of Damage to the Oil Sector:

- Damage to oil reservoirs and fields due to the suspension of oil production and exports.
- Technical losses in oil fields and facilities.
- Damage to the Aden Refinery and some of its premises, halt of crude oil supply to the refinery and nonpayment of salaries of employees (Nearly 300).
- Foreign oil and gas companies departed from Yemen and many employees in the oil sector lost their jobs.
- Nearly 91,224 gas cylinders have been destroyed and torn apart in Sa’ada, Taiz and Aden.
- Damages to Ras Issa Oil Terminal and the oil unloading docks in the port of Hodeida.
- Partial and total destruction of 18 oil and gas stations, including aircraft fuel supply stations in Taiz, Hodeida and Sana’a, in addition to the destruction of central gas stations on the way to Aden and Sa’ada.
- Destruction of several fuel tankers.

### Fifth: Challenges and Priorities:

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| Neutralizing the oil and gas sector | - Suspension of the crude oil and LNG production and exports, and the scarcity of foreign exchange to import fuel.  
- Departure of foreign oil and gas companies from Yemen and declaration of force majeure.  
- Interruption of oil refining operations in the Aden refinery. | - Resuming the crude oil and LNG production and exports, as well as exporting the oil in the export ports.  
- Calling the LNG production companies to resume the LNG exports, as well as providing security protection for the vessels exporting gas (as usual).  
- Initiating crude oil exports from blocks controlled by the national oil companies (Safer and PetroMasila).  
- Rehabilitating and operating the Aden Refinery, as well as ensuring regular crude oil supply from Marib. | Urgent |
| Regulating the process of importing and marketing fuel and cooking gas | - Shortcomings in the mechanism followed to import, distribute and set the price of fuel.  
- Adoption of the queuing system instead of the share-based system (Based on the needs of governorates) in LPG distribution. | - Liberating the fuel prices and imports according to the best international practices, including the establishment of an independent entity to be responsible for:  
  - Monitoring the fuel prices to ensure that local prices are adjusted periodically to the international prices and price differences are put in an account.  
  - Overseeing the implementation of energy policies and projects.  
- Inability to subsidize the fuel used to generate electricity hinders operating the public diesel and fuel oil-powered stations.  
- Decline in the production capacity of local oil and LPG refineries. | Urgent & mid-term |
| Regulating the process of importing and marketing fuel and cooking gas | - Decline in the production capacity of local oil and LPG refineries.  
- Inability to subsidize the fuel used to generate electricity hinders operating the public diesel and fuel oil-powered stations. | - Liberating the electricity prices (temporarily) to run the petrol and diesel-powered stations.  
- Using the unsold LNG reserves to generate electricity.  
- Rehabilitating and expanding the Aden Refinery, as well as encouraging the private sector to establish refineries to refine the heavy crude oil (such as Al-Masila oil).  
- Expanding the LPG refining plants. | Urgent |
| Providing security protection and reconstruction | - Frequent sabotage attacks on the oil and gas infrastructure.  
- Construction of gas stations within populated areas.  
- Roadblocks that hinder the movement of fuel and gas tankers.  
- Partial or total destruction of some oil and gas infrastructure and equipment, and scarcity of local resources. | - Providing effective security protection to the oil and gas infrastructure to avoid interrupting the oil refineries and impeding the exports, and also to attract foreign investments.  
- Enforcing the laws and regulations to prevent the construction of gas stations in residential areas.  
- Developing criteria to arrange the reconstruction interventions in order of priority.  
- Mobilizing the external resources to Rehabilitate and reconstruct the damaged facilities, as well as compensating the affected people. | Urgent & mid-term |
| Structural reforms | - Lack of an integrated strategic vision for the energy sector.  
- Steady decline in crude oil production since 2002.  
- Limited investment in the exploration and development of oil fields.  
- Scarcity of local resources to expand their activities, despite the reliance of the public budget on the revenues of those two companies.  
- Weak transparency in the oil sector’s data.  
- Drop in the world oil prices. | - Preparing a long-term integrated vision for the energy sector, including the oil, gas, electricity and alternative and renewable energy.  
- Stimulating the foreign oil companies to return to Yemen and resume and expand their operations.  
- Attracting foreign investments to explore and develop the oil fields.  
- Using commercial standards to manage the national oil companies (Safer and PetroMasila), providing them with sufficient capital resources to expand their oil and gas exploration activities and encouraging them to enter into joint ventures with foreign companies.  
- Adhering to the Extractive Industries Transparency Initiative and strengthening the control over the cost oil.  
- Diversifying the national income sources by exploiting the mineral wealth. | Mid-term |

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