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INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROGRAM DOCUMENT FOR A PROPOSED LOAN

WITH THE CONCESSIONAL FINANCING FACILITY SUPPORT

IN THE AMOUNT OF US\$250 MILLION

TO THE

HASHEMITE KINGDOM OF JORDAN

FOR A

SECOND PROGRAMMATIC ENERGY AND WATER SECTOR REFORMS DEVELOPMENT  
POLICY LOAN

November 9, 2016

Water Global Practice and Energy and Extractives Global Practice  
Middle East and North Africa Region

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## THE HASHEMITE KINGDOM OF JORDAN - GOVERNMENT FISCAL YEAR

January 1 – December 31

### CURRENCY EQUIVALENTS

(Exchange Rate Effective as of November 4, 2016)

Currency Unit	=	Jordanian Dinars (JD)
US\$1	=	JD 0.70850000
JD 1	=	US\$ 1.41143260

### ABBREVIATION AND ACRONYMS

AFD	<i>Agence Française de Développement</i>
ASEZA	Aqaba Special Economic Zone Authority
CAPEX	Capital Expenditure
CBJ	Central Bank of Jordan
DPL	Development Policy Loan
EA	Environmental Assessment
EE	Energy Efficiency
EFF	Extended Fund Facility
EIA	Environmental Impact Assessment
EMRC	Energy and Minerals Regulatory Commission
EPL	Environmental Protection Law
EU	European Union
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GFMIS	Government Financial Management Information System
GIZ	<i>Deutsche Gesellschaft für Internationale Zusammenarbeit</i>
IMF	International Monetary Fund
JREEEF	Jordanian Renewable Energy and Energy Efficiency Fund
JVA	Jordan Valley Authority
KfW	<i>Kreditanstalt für Wiederaufbau</i>
LNG	Liquefied Natural Gas
MCM	Million Cubic Meters
MoF	Ministry of Finance
MoICT	Ministry of Information, Communication and Technology
MoPIC	Ministry of Planning and International Cooperation
MEMR	Ministry of Energy and Mineral Resources
MoWI	Ministry of Water and Irrigation
NAF	National Aid Fund
NEEAP	National Energy Efficiency Action Plan
NEPCO	National Electricity Power Company
O&M	Operation and Maintenance
PDO	Program Development Objective
PFM	Public Financial Management
RE	Renewable Energy
SBA	Standby Arrangement
SME	Small and Medium Enterprise
TSA	Treasury Single Account

USAID  
WAJ

U. S. Agency for International Development  
Water Authority of Jordan

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# THE HASHEMITE KINGDOM OF JORDAN

## SECOND PROGRAMMATIC ENERGY AND WATER SECTOR REFORMS DEVELOPMENT POLICY LOAN

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## SUMMARY OF PROPOSED LOAN AND PROGRAM

### THE HASHEMITE KINGDOM OF JORDAN

#### SECOND PROGRAMMATIC ENERGY AND WATER SECTOR REFORMS DEVELOPMENT POLICY LOAN

Borrower	The Hashemite Kingdom of Jordan
Implementing Agency	Ministry of Planning and International Cooperation (MoPIC)
Financing Data	Financing Amount: US\$250 million consisting of: A Non Concessional Loan of US\$ 225 million on a Variable Spread with a 35 year-maturity including 4.5 years of grace period, and A Concessional portion of US\$ 25 million from the Concessional Financing Facility on a grant basis.
Operation Type	Second single tranche operation of a programmatic series of two consecutive Development Policy Loans (DPLs).
Pillars of the Operation and Program Development Objectives (PDOs)	The objective of the DPL is to improve the financial viability and increase efficiency gains in the energy and water sectors in Jordan.  The policy program supported by the DPL will be structured around two pillars: (i) improving the financial viability of the electricity and water sectors and (ii) increasing efficiency gains in the energy and water sectors.
Result Indicators	<p><b>Pillar A: Improving the Financial Viability of the Electricity and Water Sectors</b></p> <p>(a) Achieving electricity tariff cost recovery is measured by the cost recovery level of the end user tariffs: <i>Baseline (2014)</i>: The electricity tariff cost recovery is 56 percent. <i>Target (2017)</i>: The electricity tariff cost recovery is 100 percent.</p> <p>(b) Resolving the National Electricity Power Company’s (NEPCO) debt is measured by the development and implementation of a Debt Management Plan for NEPCO: <i>Baseline (2014)</i>: No specific NEPCO’s Debt Management Plan in place and fuel-related commercial debt at JD 1,884 million. <i>Target (2017)</i>: NEPCO’s Debt Management Plan is approved and fuel-related commercial debt is reduced by JD 84 million by 2017.</p> <p>(c) Achieving operation and maintenance (O&amp;M) water cost recovery is measured by cost recovery level in the water sector (defined as the Water Authority of Jordan (WAJ) and the three regional water companies): <i>Baseline (2014)</i>: Cost recovery is 70 percent. <i>Target (2017)</i>: Cost recovery is 85 percent.</p> <p><b>Pillar B: Increasing Efficiency Gains in the Energy and Water Sectors</b></p> <p>(d) Diversification of fuel sources for power generation with increased reliance on cleaner energy sources is measured by (i) Number of natural gas import contracts: <i>Baseline (2014)</i>: One contract. <i>Target (2017)</i>: At least three contracts. (ii) Share of renewable capacity in the capacity mix. <i>Baseline (2014)</i>: Renewable energy capacity is 0 percent of the capacity mix (in MW). <i>Target (2017)</i>: Renewable energy capacity is at least 10 percent of the capacity mix.</p>

	<p>(e) Reduction in electricity distribution network losses is measured by: <i>Baseline (2015)</i>: The distribution sector has losses of 14.04 percent and lacks multi-year loss reduction targets. <i>Target (2017)</i>: Network Loss Reduction Program is under implementation and 2017 loss reduction target of 13.25 percent is achieved</p> <p>(f) Increase in energy savings in the water sector according to the implementation of the Action Plan accompanying the Energy Efficiency and Renewable Energy Policy: <i>Baseline (2013)</i>: Annual energy savings are 0 GWh. <i>Target (2017)</i>: Annual energy savings are 50 GWh.</p> <p>(g) Optimizing allocation of water resources is measured by: (i) Water is more optimally allocated: <i>Baseline (2013)</i>: 123 million cubic meters (MCM) of surface water used for municipal water use. <i>Target (2017)</i>: 128 MCM of surface water used for municipal water use; and (ii) Volume of treated wastewater used for non-domestic uses: <i>Baseline (2013)</i>: 110 MCM. <i>Target (2017)</i>: 135 MCM.</p>
Overall Risk Rating	Substantial
Climate and disaster risks (required for IDA countries)	<p>(a) Are there short and long term climate and disaster risks relevant to the operation (as identified as part of the SORT environmental and social risk rating)? Yes <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>If yes, (b) summarize briefly these risks in the risk section and what resilience measures may help address them?</p>
Operation ID	P160236

**IBRD PROGRAM DOCUMENT FOR A PROPOSED LOAN  
TO THE HASHEMITE KINGDOM OF JORDAN**

**1. INTRODUCTION AND COUNTRY CONTEXT**

1. **The proposed operation in the amount of US\$250 million—the second in a programmatic series of two development policy operations —aims to support fiscal and policy reform programs undertaken by the Government of Jordan (the Government) in the energy and water sectors.** This operation will support the continued implementation of the energy and water sector reforms planned under the programmatic DPL series to help Jordan achieve sector sustainability and financial viability over the medium term. The operation is fully aligned with Jordan’s 2025 Vision which calls for achieving self-reliance and financial stability by enhancing financial sustainability and productivity across various economic sectors. The operation’s policy program also supports the key objectives of the World Bank Group’s FY2017–2022 Country Partnership Framework for Jordan that focuses on improving the management of the water and energy sectors as key strategic sectors for promoting improved service delivery, economic growth, fiscal discipline, and private sector development, contributing to the World Bank Group’s twin goals of reducing poverty and promoting shared prosperity in a sustainable manner.

2. **The Government faces the challenge of pursuing its reform agenda while also accommodating the influx of Syrian refugees.** An estimated 1.3 million Syrian refugees<sup>1</sup> are currently residing in Jordan – equivalent to over 20 percent of Jordan’s pre-crisis population – placing tremendous pressures on public services and infrastructure, in particular electricity and water services and affecting Jordan’s resilience. Energy and water service delivery – already under great strain before the crisis – has been severely affected, especially in the northern governorates. The rapid growth of the residential population is putting additional pressure on the electricity and water sectors, adding to long-standing structural challenges relating to supply security, financial sustainability and efficiency. Accordingly, Jordan is looking to its international partners to provide the needed budgetary support and incentives to reinforce the fiscal and policy underpinnings of these two key sectors.

3. **The implementation of the overall reforms in the energy sector has been strong and needs to be sustained over the coming years.** Substantial reforms supported by the programmatic DPL series have been implemented by the Government and are already showing positive results as reflected in an improved financial and operational performance of the electricity sector. The electricity tariff of NEPCO reached cost-recovery levels in the last quarter of 2015 due to increases in NEPCO’s revenues and a reduction in the cost of electricity. The increase in revenues was achieved as a result of three tariff adjustments implemented by the Energy and Minerals Regulatory Commission (EMRC) between 2013 and 2015. The cost reduction is the result of the sharp decline in oil prices combined with the successful operation of the Liquefied Natural Gas (LNG) terminal in Aqaba (starting in July 2015) and the recent commissioning of several new renewable energy plants replacing the reliance on more expensive and polluting diesel and heavy fuel oil<sup>2</sup> in power generation. However, remaining challenges include the sustained implementation of energy diversification policies, the sustained cost recovery from electricity tariffs in face of vulnerability to oil price fluctuations, and the management of NEPCO’s accumulated commercial loans and advances from the Ministry of Finance (MoF) of more than JD 4.9 billion.

4. **Implementation of the reforms in the water sector has been on track against an increasingly challenging environment in which the sector is operating.** Jordan, one of the most water-scarce countries, with low annual precipitation, is dependent on transboundary surface water and groundwater. Jordan has faced a steep increase in water demand in recent years as a result of rapid

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<sup>1</sup> As of June 1, 2016, 655,217 Syrians are registered with the United Nations High Commissioner for Refugees. The 2015 census reveals a total of 1.3 million Syrians.

<sup>2</sup> The reliance on more expensive and polluting diesel and heavy fuel oil in power generation was caused by the interruption of Egypt’s gas supply to Jordan in 2010 and beyond.

population growth (the Syrian refugee influx led to an increase in demand by 21 percent throughout the country and a 40 percent increase in demand in the northern governorates), income growth, and urbanization. Also in the longer run, Jordan faces major challenges. Aridity and water scarcity render Jordan environmentally sensitive to climate change. Future climate projections are likely to show an increase in mean annual temperature of about 2°C by 2050 with the country becoming warmer and drier with frequent heat waves and fewer days of frost. Water availability in this scenario is likely to continue to decrease. The Government has made progress in increasing water tariffs and implementing measures to improve the operational efficiency and revenue collection in the water sector in accordance with the Government's Structural Benchmark Plan which aims to achieve operation and maintenance (O&M) cost recovery in the water sector by 2021. However, the increase in demand due to the Syrian refugee influx, the high investment costs in water supply and wastewater treatment, and the drop in budget support in 2015 (and subsequent increase in local borrowing) has jeopardized the water sector's cost recovery targets while increasing the Water Authority of Jordan (WAJ) debt to JD 1.4 billion in 2015.

5. **Jordan's economy slowed down in 2015 for the first time since 2010, mainly due to the effects of security spillovers, requiring the Government to embark on a new program of fiscal consolidation and economic growth.** Jordan grappled with addressing a number of exogenous shocks after the global financial crisis, notably the interruption of gas supply from Egypt and the massive influx of Syrian refugees that resulted in an average annual economic growth rate of 2.7 percent from 2010-2014. However, despite a steady pickup since 2010 of the economic growth rate to 3.1 percent in 2014 and better performance by NEPCO in 2015, a number of regional spillover risks manifested in 2015, dragging down growth to 2.4 percent in 2015 and further widening Jordan's output gap. Consequently, the Government requested—after using the Standby Arrangement (SBA) of the International Monetary Fund (IMF)—the use of IMF's Extended Fund Facility<sup>3</sup> (EFF) for 2016–2019. The IMF EFF program will, among others, support policies for electricity tariff sustainability in line with the policy program supported by the World Bank programmatic DPL series and support measures to manage the debt of NEPCO and WAJ. It is critical for Jordan to continue implementing its broader energy and water policy and structural reforms included under the programmatic DPL series to sustain fiscal stability and economic growth.

6. **The objective of the proposed operation is to improve the financial viability and increase efficiency gains in the energy and water sectors in Jordan.** The proposed operation is built on the two pillars focusing on (a) improving the financial viability of the electricity and water sectors and (b) increasing efficiency gains in the energy and water sectors. The proposed operation also builds on a strong record and ownership by the Government in implementing policy reform programs in the water and energy sectors supported by the programmatic DPL series, while recognizing the increasing challenges faced by Jordan in sustaining these reforms while coping with the impacts of the Syrian refugee crisis. As such, this operation is benefiting from concessional financing approved by a newly established Concessional Financing Facility (CFF) to address the needs of middle-income countries hosting large numbers of refugees (see Box 1). The first of the two pillars of the DPL will support the Government's plan to sustain cost recovery in the electricity sector by adopting a robust pass-through mechanisms to avoid the experience of fuel price shocks during 2011–2014. It will also support the Government's efforts to restore NEPCO's creditworthiness through the implementation of a multiyear debt management plan. The first pillar will ensure sustained implementation of the Government program in the water sector by growing its revenue flows through the increase of the various water tariffs, and an improvement in billing and collection efficiencies in order to improve O&M cost recovery. The second pillar will support policies aimed at sustaining Jordan's successful experience since 2015 in fuel and power generation diversification through the implementation of a medium-term fuel supply strategy to maintain targeted share of gas supply in power generation and institute new regulations for increasing transparency in renewable energy development. The strategy will also strengthen NEPCO's institutional

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<sup>3</sup> This EFF follows the successful completion in August 2015 of the IMF's SBA) which supported a fiscal consolidation program that helped stabilize and improve confidence in Jordan's macroeconomic framework during 2012–2015.



capacity to integrate the large share of renewable energy under development into the grid. The operation's second pillar will support a more optimal use of water resources in the country, by amongst others increasing the quality of wastewater treatment that will allow for reuse of treated wastewater. Scaling up energy efficiency in the water sector is an important measure to reduce the cost of producing and distributing water in Jordan. This DPL provides additional support and incentives to maintain progress on these already challenging agendas so as to avoid trading off future fiscal and sector resiliency against the immediate demands of accommodating the Syrian refugees.

### **Box 1. Concessional Financing Facility**

The Concessional Financing Facility is a partnership sponsored by the World Bank, the UN, and the Islamic Development Bank Group to mobilize the international community to address the financing needs of middle-income countries hosting large numbers of refugees. By combining donor contributions with multilateral bank loans, the CFF enables eligible middle-income countries that are facing refugee crises to borrow at below regular multilateral development bank rates for providing a global public good. The CFF represents a coordinated response by the international community to the Syrian refugee crisis, bridging the gap between humanitarian and development assistance and enhancing the coordination between the UN, donors, multilateral development banks, and benefitting (hosting) countries. The CFF is currently supported by Canada, the European Commission, Germany, Japan, Netherlands, Norway, the United Kingdom, and the United States.

7. **The tariff reforms supported by this DPL will have neutral to modest negative social impacts on residential consumers in the short term and are expected to contribute to an enhanced business environment for job creation in a longer term.** The electricity sector reached cost recovery and, in case oil prices rebound in 2017, there is scope for the regulator to increase tariffs while mitigating the social impacts. In the water sector, the Government has built into the tariff reforms measures to mitigate the impact on the poor and vulnerable by distributing tariff increases across all water consumers and by using cross-subsidies between residential and non-residential consumers. The DPL-supported policies are expected to help improve the efficiency of the energy and water sector services to their customers by reducing their real cost. These policies will also enable significant energy efficiency and renewable energy investments that would reduce air pollution (and hence reduce its impact on public health) and minimize the effect of overexploitation of groundwater. As evidence is emerging that high-energy subsidies are associated with slow economic growth and high unemployment, reducing energy subsidies may hence have a longer-term positive effect on economic growth and employment, which would benefit the poor.<sup>4</sup> This is consistent with an overall priority on increasing private investment as a vehicle for job creation to the benefit of both Jordanians and Syrian refugees.

## **2. MACROECONOMIC POLICY FRAMEWORK**

### **2.1 RECENT ECONOMIC DEVELOPMENTS<sup>5</sup>**

8. **Jordan was initially slow to respond to large external shocks but eventually began to tackle its structural weaknesses.** Over the past few years, Jordan has suffered from two successive external shocks of significant importance: the 2008 global financial crisis and the ensuing global recession and regional turbulences that started in 2011. The impact of the latter manifested itself by the disruption in critical gas supplies from Egypt and the spillover from the neighboring Syria conflict. With the onset of the regional turmoil, the Central Government's fiscal deficit (excluding grants) widened significantly. Domestic revenues shrank from an average of 27 percent of gross domestic product (GDP) during 2000–2008 to 22 percent of GDP in 2015 because of a drop in economic activity and policy measures. On the expenditure side, the Government initially accommodated a number of social demands through larger transfers and wage increases. Capital expenditures were cut in 2012 to control the fiscal deficit. Earmarked grants from the Gulf Cooperation Council (GCC) marked the beginning of an increase in

<sup>4</sup> World Bank. 2014. *MENA Economic Monitor: Corrosive Subsidies*. Washington, DC: World Bank.

<sup>5</sup> Data as of 15 September 2016.

capital spending in 2013 and helped sustain short-term activity while boosting Jordan's medium-term growth prospects. Interruption of Egyptian gas supply resulted in NEPCO running deficits equivalent to 4 percent to 5 percent of GDP per year since 2011 and accumulating commercial loans and advances from MoF totaling JD 4.9 billion. Additionally, low levels of cost recovery in WAJ induced substantial losses, further straining the public purse. By 2015, WAJ's overall annual losses reached JD 305 million. Mostly because the Government transfers dropped significantly in 2015, WAJ debt increased to JD 1.4 billion.

9. **Existing studies on the impact of the Syria crisis point to pressures on output, public finances, and the labor market.** In a 2014 study that predates the Islamic State surge into Iraq, the IMF estimated that the Syria crisis had an overall negative impact on economic activity, with losses to output growth at around 1 percentage point. On the fiscal side, an expenditure study by U.S. Agency for International Development (USAID) in May 2014 estimated the expenditure cost of Syrian refugees on the Central Government budget at 1.8 percent of GDP and 2.4 percent of GDP in 2013 and 2014, respectively. Different studies on the labor market suggest market segmentation. While Syrian labor market activity has increased the informal market and put downward pressure on informal sector wages, formal employment has not been affected by the Syrian refugee influx although perceptions suggest otherwise.

10. **In 2012, the Government began to strengthen its macroeconomic framework, supported in part by a three-year IMF SBA structural adjustment program.** The program included the complete elimination of subsidies on gasoline, diesel, and kerosene in November 2012.<sup>6</sup> To prevent the reoccurrence of subsidies over time, the Government also reinstated the monthly automatic price adjustment mechanism for petroleum products. Apart from generating fiscal space, the removal of petroleum subsidies combined with a means-tested cash transfer program significantly improved the progressivity of public spending. Furthermore, a medium-term energy strategy with electricity tariff increases and energy sources diversification as key elements was announced in October 2013. Since then, three electricity tariff increases were implemented. Progress on energy diversification has reduced Jordan's dependency on more expensive and polluting diesel and fuel oils to which it resorted since the disruptions of natural gas from Egypt in 2011.

11. **A number of risks manifested itself in 2015, dragging down growth for the first time since 2010<sup>7</sup>.** The total closure of land trade routes with Syria and Iraq in April and July 2015, respectively, and other security-related challenges within and around Jordan adversely affected trade, tourism, investment, and construction. Head wind possibly also stemmed from lower government expenditures related to the fiscal consolidation program embarked on with the IMF 2012–2015 SBA though the program may have also improved confidence in the macroeconomic framework. Progressive pickup in subsequent quarters of 2015 was insufficient to offset the break-in-growth momentum observed in the first quarter of 2015.<sup>8</sup> Growth thus slowed to 2.4 percent in 2015 from 3.1 percent in 2014 further widening Jordan's output gap. The economy indicates further signs slowing in 2016 with growth projected at 2.3 percent.

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<sup>6</sup> While subsidies on liquefied petroleum gas cylinders used mainly for cooking were not fully removed, their prices rose by 54 percent.

<sup>7</sup> The main influx of Syrian refugees occurred in 2012 and 2013 such that by end-2013 90 percent of the currently registered refugees had already been relocated to Jordan..

<sup>8</sup> On a year-over-year basis, growth for Q1 2015, Q2 2015, and Q3 2015 registered 2.0, 2.4, and 2.6 percent, respectively.

**Table 1. Key Macroeconomic and Fiscal Indicators 2013-2018.**

	2013	2014	2015	2016	2017	2018
	Act.	Act.	Proj.	Proj.	Proj.	Proj.
<b>Real sector</b>	(annual percentage change, unless otherwise specified)					
Real GDP	2.8	3.1	2.4	2.3	2.6	3.1
Real GDP per Capita	-0.3	0.3	-0.1	0.3	0.9	1.7
Agriculture (share of GDP)	3.1	3.3	3.3	3.3	3.3	3.2
Industry (share of GDP)	25.0	25.2	25.2	25.2	25.2	25.1
Services (share of GDP)	56.0	55.8	56.0	55.7	55.9	56.1
Net taxes (share of GDP)	15.7	15.6	15.8	15.6	15.5	15.3
<b>Money and prices</b>	(annual percentage change, unless otherwise specified)					
CPI Inflation (p.a)	4.8	2.9	-0.9	-0.7	2.8	2.9
Money (M2)	9.7	6.9	8.1	7.3	7.4	8.0
<b>Investment &amp; saving</b>	(percent of GDP, unless otherwise specified)					
Total Investment	28.1	28.0	23.6	23.7	24.2	24.8
Gross National Savings	17.6	20.7	14.6	13.4	15.2	17.6
<b>Government finance</b>	(percent of GDP, unless otherwise specified)					
Total revenues and grants	24.1	28.6	25.5	26.4	26.8	27.0
Domestic Revenue (excluding grants and privatisation)	21.5	23.7	22.2	23.0	23.5	23.8
o/w. tax revenue	15.3	15.9	15.4	15.6	15.9	16.2
Foreign Grants	2.7	4.9	3.3	3.4	3.3	3.2
Total expenditure and net lending	35.7	37.9	29.1	30.0	30.8	30.8
Current <sup>1/</sup>	31.4	33.4	25.0	25.8	26.5	26.5
o/w wages and salaries	5.0	4.9	4.7	4.7	4.5	4.5
o/w interest payment	3.1	3.6	3.4	3.5	3.6	3.7
o/w Transfer to utilities (NEPCO and WAJ)	6.0	7.0	0.1	0.0	0.0	0.0
Capital & Net Lending	4.3	4.5	4.1	4.2	4.3	4.3
Overall balance (deficit (-), excl. grants) <sup>2/</sup>	-14.2	-14.2	-6.9	-7.0	-5.8	-3.6
Overall balance (deficit (-), incl. grants) <sup>2/</sup>	-11.5	-9.3	-3.6	-3.5	-2.5	-0.5
Primary Balance (deficit (-), excl. grants) <sup>2/</sup>	-11.1	-10.5	-3.5	-3.5	-2.2	0.1
Primary Balance (deficit (-), incl. grants) <sup>2/</sup>	-8.4	-5.7	-0.1	-0.1	1.1	3.3
<b>External sector</b>	(percent of GDP, unless otherwise specified)					
Current Account	-10.4	-7.3	-9.0	-10.3	-9.0	-7.2
Net Exports	-29.6	-26.4	-22.5	-23.4	-21.9	-20.3
Export FOB	42.4	43.3	37.6	34.7	36.3	37.8
Import FOB	72.0	69.7	60.1	58.1	58.2	58.1
Net Income and transfers	19.2	19.1	13.5	13.1	12.9	13.1
Net Private Investments (FDI and Portfolio)	10.2	8.6	7.1	7.0	7.1	8.1
Gross Reserves (Months of Imports GNFS <sup>***</sup> )	5.9	6.7	7.5	7.2	7.1	7.2
<b>Total Debt</b>	(in million US\$, unless otherwise specified)					
Total Debt Stock	29,192	31,984	35,126	36,916	38,344	38,921
Debt to GDP Ratio (%) <sup>5/</sup>	86.7	89.0	93.4	94.6	93.9	90.4
<b>Memorandum Items:</b>						
Nominal GDP (Billion JD)	23.9	25.4	26.6	27.6	28.9	30.5
GDP (in million US\$)	33,679	35,917	37,612	39,016	40,831	43,053

Source: Government Data and World Bank Staff Calculation. Projections and data as of 1 September 2016.

<sup>1/</sup> Includes adjustment to other receivables for 2012 (0.4% of GDP) and transfers to NEPCO and WAJ. As of 2015, NEPCO and WAJ reverted to government-guaranteed borrowing from commercial banks. The government transferred 0.1% of GDP to WAJ in 2015.

<sup>2/</sup> Includes fiscal gap of 1.5% of GDP in 2017 and 3.3% of GDP in 2018.

<sup>3/</sup> Reserves exclude bank deposits in foreign currencies.

<sup>4/</sup> GNFS: Goods and Non-Factor Services. Reserves exclude bank deposits in foreign currencies

<sup>5/</sup> Government and guaranteed gross debt. Includes NEPCO and WAJ estimated borrowing for 2016-2018.

**Table 2. Distribution of Budgetary Expenditures of Central Government According to Functional Type.**

JD million	2012	2013	2014	2015
	Actual	Actual	Actual	Actual
General public services	914.9	1,134.9	1,444.5	1,370.9
Defense	885	849	899.2	935.8
Public order and safety	883.1	919	1,005.5	1,043.7
Economic affairs	284.6	407.5	577.6	512.3
Environmental protection	10.4	64.3	40.7	43.8
Housing and community amenities	168.3	279.2	219.6	238.8
Health	668.5	714.8	870.9	876.2
Recreation, culture and religion	119.1	135.3	140.5	155.4
Education	834.4	943.4	1,006.4	1,042.4
Social protection	2,109.9	1,629.7	1,646.2	1,503.6
Total	6,878.2	7,077.1	7,851.1	7,722.9

Source: Ministry of Finance (MoF).

12. **In line with weaker economic growth, structural unemployment has worsened, reaching its highest level since 2007, with high rates for women and youth.** At an average of 14.7 percent for the first half of 2016, the unemployment rate worsened (youth unemployment at 34.9 percent, female unemployment at 23.3 percent, and male unemployment at 12.9 percent). The labor force participation rate remains low at 36.1 percent in the first half of 2016 (compared to 36.7 percent in 2015), with female participation at 12.9 percent against 59.1 percent for males. In comparison, the Syrian refugee labor force participation rate was estimated by the International Labour Organization at 33 percent in 2014.<sup>9</sup> To deal with the high levels of unemployment, the Government has agreed on the Jordan Compact that aims to turn the refugee crisis into a development opportunity by attracting new investments and improve access to the European Union (for more details, see Box 2).

13. **Deflationary pressures, which persisted for most of 2015, continue in 2016.** Due to continued lower oil prices, a weakened euro, a negative output gap, and the disappearance of previous years' supply side constraints, headline inflation recorded a period average of -0.9 percent in 2015. Lower oil prices continue to affect downward pressure on headline inflation. Lower global food prices (about 16 percent of Jordan's imports are food) are also main drivers of increased deflation since November 2015. At its lowest since May 2013, core inflation averaged 3.4 percent in 2015 and 2.0 percent in the first 5 months of 2016 year-on-year. Core inflation (excluding food and fuel) has now leveled given the Jordanian dinar's peg to the US dollar and the Federal Reserve's 2 percent inflation target.

14. **The fiscal deficit in 2015 was smaller due to lower transfers to NEPCO and WAJ amid reduced domestic revenues and grants.** The fiscal deficit reached 3.6 percent of GDP in 2015 compared to 9.1 percent of GDP in 2014. NEPCO resorted to borrowing from commercial banks instead of the Government in 2015, providing a 6.2 percent of GDP relief to the fiscal balance. Transfers to WAJ decreased from 0.8 percent of GDP in 2014 to 0.1 percent of GDP in 2015. Domestic revenues decreased by 1.5 percent of GDP on account of lower tax and nontax revenues. Tax revenues were predominantly driven down by lower general sales tax.<sup>10</sup> Nontax revenues deteriorated due to fewer revenues from selling goods and services and other nontax revenues. Grants were less forthcoming at 3.3 percent of GDP in 2015 compared to 4.9 percent of GDP in 2014. Despite the continuation of the GCC-financed capital expenditure program, capital expenditures also retracted in 2015. The primary balance remains

<sup>9</sup> International Labor Organization and FAFO Institute for Applied International Studies. 2015. *Impact of Syrian Refugees on the Jordan Labour Market*.

<sup>10</sup> Incentive measures that were introduced by the Government in 2015 have been extended and expanded in an effort to boost economic activity and improve service in real estate, tourism, transport, and information, communication and technology.

in deficit at  $-0.1$  percent of GDP (a primary deficit of 3.5 percent of GDP excluding grants). The overall Central Government's fiscal deficit worsened in the first half of 2016.

### **Box 2. The Jordan Compact**

Jordan has committed to the Jordan Compact to address the challenges presented by the Syrian refugee crisis. At the February 4, 2016 'Supporting Syria and the Region' Conference in London, the Hashemite Kingdom of Jordan and the international community agreed to deal with the Syrian refugee crisis. The Jordan Compact supports the 'Jordan Response Plan for 2016–2018', which assesses budgetary needs of US\$8 billion for refugee and resilience response programs across affected sectors, including education, energy, environment, health, justice, livelihoods and food security, local governance and municipal services, shelter, social protection, transport, water, sanitation, and hygiene. The Jordan Compact centers on the following three pillars:

- Turning the Syrian refugee crisis into a development opportunity that attracts new investments and opens up the European Union (EU) market with simplified rules of origin, creating jobs for Jordanians and Syrian refugees while supporting the post-conflict Syrian economy;
- Rebuilding Jordanian host communities by financing (with grants) the Jordan Response Plan 2016–2018, in particular the resilience of host communities;
- Mobilizing sufficient grants and concessional financing to support the macroeconomic framework and address Jordan's financing needs over the next three years, as part of Jordan entering into a new EFF program with the IMF.

Jordan also commits to undertake a series of reforms toward achieving the Jordan Compact. These are related to reforms that improve the business and investment environment, implement administrative procedures allowing Syria refugees to apply for work permits, and allow Syrian refugees to formalize their businesses. The Compact also focuses on the education sector, committing to provide education to each child in Jordan for the 2016/2017 academic year. The plan is estimated to cost US\$1 billion for implementation during 2016–2018 and hinges on financial support from the international community and relaxed rules of origin from the EU.

15. **The fiscal deficit in 2015 was smaller due to lower transfers to NEPCO and WAJ amid reduced domestic revenues and grants.** The fiscal deficit reached 3.6 percent of GDP in 2015 compared to 9.1 percent of GDP in 2014. NEPCO resorted to borrowing from commercial banks instead of the Government in 2015, providing a 6.2 percent of GDP relief to the fiscal balance. Transfers to WAJ decreased from 0.8 percent of GDP in 2014 to 0.1 percent of GDP in 2015. Domestic revenues decreased by 1.5 percent of GDP on account of lower tax and nontax revenues. Tax revenues were predominantly driven down by lower general sales tax.<sup>11</sup> Nontax revenues deteriorated due to fewer revenues from selling goods and services and other nontax revenues. Grants were less forthcoming at 3.3 percent of GDP in 2015 compared to 4.9 percent of GDP in 2014. Despite the continuation of the GCC-financed capital expenditure program, capital expenditures also retracted in 2015. The primary balance remains in deficit at  $-0.1$  percent of GDP (a primary deficit of 3.5 percent of GDP excluding grants). The overall Central Government's fiscal deficit worsened in the first half of 2016.

16. **The gross debt-to-GDP ratio reached a high level.** The fiscal deficit and slowing GDP growth contributed to pushing the gross debt-to-GDP ratio to 93.4 percent by end-2015. NEPCO borrowing in 2015, given operating losses (its debt continues to be government-guaranteed), combined with WAJ borrowing (due to the sharp reduction of government budget support) contributed to this increase. The IMF calculated net borrowing from WAJ at JD 417 million in 2015 compared to JD 47 million in 2014. As such, WAJ borrowing has added to the vulnerability toward debt levels in Jordan given pressures on its cost recovery stemming from higher operating costs providing for Syrian refugees and capital

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<sup>11</sup> Incentive measures that were introduced by the Government in 2015 have been extended and expanded in an effort to boost economic activity and improve service in real estate, tourism, transport, and information, communication and technology.

expenditure. By end-June 2016, gross debt to GDP had further increased to 93.6 percent of adjusted GDP).

17. **The Central Bank of Jordan (CBJ) continued its loose monetary policy stance in 2015 to further stimulate the sluggish economy.** Three key policy rates ended the year 75 basis points lower on average compared to end-2014 owing to rate cuts in February and July. The CBJ began cutting rates in August 2013. The policy rate cuts stimulated lending to the private sector by 6.1 percent in real terms in December 2015 year-over-year compared to 0.6 percent in December 2014 year-over-year and potentially positively affected by NEPCO borrowing. The average interest rates of the interbank and treasury bonds moved in the same direction, becoming lower by 98 bps and 147 bps, respectively, between December 2014 and December 2015 with the Government relying more on external financing sources in 2015 given two Eurobond issuances. Monetary policy action has been unchanged since the last rate cuts in July 2015.

18. **The current account deficit has been widening since 2015 on account of lower public transfers and weaker exports, reflecting the impact of protracted low oil prices on average on Jordan via the GCC.** The current account deficit widened from 7.3 percent of GDP in 2014 to 9.0 percent of GDP in 2015. Exports of goods have been negatively affected by land route closures with Syria and Iraq. The decline in remittances, slower tourism, closed land routes, and pricing pressures on potash exports have been further pressuring the current account in 2016 (with some relief from continued low oil prices compared to 2015). The current account widened by 2.1 percentage points of GDP in Q1 2016 year-on-year. Remittances dropped by 3.6 percent in seven months of 2016 compared to a 1.5 percent increase during the same period in 2015. The decline in remittances could reflect the worsening economic situation in the Gulf because of persistently low oil prices. It could also reflect the holding back of sending remittances by Jordanian nationals in the Gulf given the economic uncertainty in the oil-exporting countries and its potential impact on their employment. While travel receipts have been decreasing compared to 2015, the decline has been slowing down as 2016 progresses. Such pressures have affected the stock of foreign reserves held at the central bank, which has declined to US\$12.7 billion (7.7 months of imported goods) by August 2016.

**Table 3. Jordan: Balance of Payments Financing Requirements and Sources, 2013–2018.**

	2013	2014	2015	2016	2017	2018
	Act.	Act.	Act.	Proj.	Proj.	Proj.
	(in million US\$, unless otherwise specified)					
<b>Financing requirements</b>	<b>(4,222)</b>	<b>(3,666)</b>	<b>(4,441)</b>	<b>(5,998)</b>	<b>(4,469)</b>	<b>(4,037)</b>
Current account deficit	(3,513)	(2,615)	(3,393)	(4,016)	(3,689)	(3,087)
Long term debt amortization (excl. IMF)	(709)	(1,051)	(1,048)	(1,982)	(780)	(950)
<b>Financing Sources</b>	<b>4,222</b>	<b>3,666</b>	<b>4,441</b>	<b>5,998</b>	<b>4,469</b>	<b>4,038</b>
FDI and portfolio investments (net)	3,449	3,096	2,683	2,713	2,907	3,488
Capital grants	65	82	113	-	-	-
Long term debt disbursements (excl. IMF)	1,156	1,218	1,086	2,802	2,219	1,617
Reserves Changes of Monetary Auth. (- = increase)	(4,603)	(1,827)	(1,294)	565	(504)	(895)
IMF credit (net)	647	390	556	(124)	(108)	(199)
Other Capital Flows <sup>1/</sup>	3,352	657	1,140	42	(45)	26
Short term capital inflows	156	50	158	-	-	(0)

Source: Government Data and World Bank Staff Calculations as of 1 September 2016.

<sup>1/</sup> Includes errors and omissions.

## 2.2 MACROECONOMIC OUTLOOK AND DEBT SUSTAINABILITY

19. **Jordan's rising liabilities have structural, cyclical, and temporary elements.** Structural elements are reflected in a persistent Central Government's fiscal deficit and dependence on grants. This has been partly targeted by the fuel subsidy reforms and the energy and water reforms that are included

in this DPL. The cyclical factors are illustrated by falling tax revenues from an average of 27.2 percent of GDP during the pre-crisis period of 2004–2010, to 21.5 percent since 2011, in part due to declining average growth rates. Monetary easing, while reasonable, has only recently reflected a stronger transmission mechanism. Despite mild investor sentiment,<sup>12</sup> commercial banks' lending to the private sector (private sector deposits) witnessed a substantial increase. Temporary elements primarily include the disruption of Egyptian gas supplies, and the subsequent switching to more expensive and cheaper diesel fuel. This effect is tapering off as the fuel mix is becoming more diverse supported by the operation of the LNG terminal, more renewable energy and the impact of energy efficiency measures.

**20. Expansion of medium-term economic reforms in the electricity and water sectors are expected to address public finance weaknesses, helping improve Jordan's macroeconomic framework structurally.** As public finance weaknesses are, to a large extent, driving the external deficit, reforms aimed at structurally improving public finances will strengthen the overall macroeconomic framework. Additionally, administrative measures to strengthen revenue collection are also ongoing. Going forward, the proposed DPL supports reform measures that aim at improving the financial viability and increasing efficiency gains in the electricity and water sectors. Full implementation of the electricity sector reform program supported by the DPL would lead to a marked reduction in NEPCO's deficit in 2016 and 2017. The primary balance is projected to move into surplus in 2017, coinciding with a reversal in the hitherto increasing gross debt-to-GDP ratio.

**21. Growth is projected to rebound slightly, to an average of 2.7 percent over 2016–2018.** A downward revision could be imminent given the potential impact of a higher frequency of security incidents around Jordan on consumer and investor confidence. The main assumption underlying the projection is an unchanged situation regarding the Syria crisis. The projections reflect protracted low oil prices reducing investment, and potentially grants and remittances to Jordan, given the Jordanian working diaspora in the Gulf. The baseline forecast incorporates assumptions behind the IMF EFF leading to fiscal adjustment and lower debt-to-GDP levels. It also assumes: (a) trickling in of grants and concessional financing pledged at the London donor conference in line with the Jordan Compact's attempt to mitigate the pressures of hosting Syrian refugees and (b) enhanced exports related to the Jordan Compact economic opportunities plan, commencing in 2017. Pressures on the external account are expected to subside in 2017 with a pickup in exports and investment because of diversification efforts, the opportunities afforded by the EU's Rules of Origin relaxation, energy supply diversification plans and abatement in the slowdown of remittances and travel income. Large official transfers continue to be needed to meet the large external financing needs.

**22. Jordan's public and external debt positions are sustainable although, given limited space, they could be derailed by unexpected shocks.** While debt is on a sustainable downward trend in the baseline forecast, this is contingent on the implementation of reforms, including those outlined in the IMF EFF<sup>13</sup>. Similarly, while external debt<sup>14</sup> (65.8 percent of GDP in 2015) is on a moderately declining

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<sup>12</sup> As captured by the Jordan Strategy Forum's Jordan Investor Confidence Index.

<sup>13</sup> Permanent measures adopted are amongst others an increase in cigarettes prices; diesel, kerosene and gasoline prices; special sales tax on wines and spirits; removal of 2015 Goods and Services Tax exemptions. Structural benchmarks include amongst others: (i) Under fiscal framework and management: to submit to Parliament a new tax exemptions framework to reduce GST exemptions, a new income tax law, and a draft budget law for 2017 in line with program understandings and projections, an organic budget law; implement new income tax law, rationalize the GST and customs duty systems based on IMF technical assistance; (ii) debt management: publish a public debt management strategy, approve a plan to reorganize the Public Debt Directorate and finalize its reorganization by end-June 2017; (iii) water and energy sectors: adopt an automatic electricity tariff adjustment mechanism with effective implementation on 1 January 2017, submission to Cabinet and publication of an updated action plan on reducing water sector's losses; (iv) financing sector and access to finance: implement a risk-based framework for offsite AML/CFT supervision for banks and money exchange firms, submit to Parliament amendments to the Deposit Insurance Corporate Law, amend and enact the Insolvency Law, enact the Secured Lending Law, amend the Insurance Law; (v) business environment: submit to Parliament a draft Inspection Law, address shortcomings in the Investment-Window procedures by automating and integrating the services provided by the Jordan Investment Commission.

<sup>14</sup> Estimate private and public guaranteed external debt on a residency basis (Refer to Table 4).

trend in the baseline forecast, a current account shock or a combination of shocks would result in unsustainable dynamics.

23. **Downside risks to the outlook are substantial.** Security incidents are materializing around Jordan, exposing vulnerabilities and potentially further reducing consumer and investor confidence. Jordan will need to continue managing repercussions from the regional security and political situation and the challenges of hosting 1.3 million Syrians. Additionally, since Jordan benefits from the GCC for remittances, exports, FDI, and grants—large sources of foreign exchange—persistently low oil prices are a risk for Jordan this year and in the medium term. Weak global demand could depress demand for potash and phosphate. Additionally, the likely impact of Brexit on the EU and global economies and financial markets is, so far, subdued, yet remains uncertain. Jordan’s external position would face further pressure if expected grants and concessional financing do not materialize. A further risk emerges should containment of the fiscal deficit and implementation of the new IMF program not occur on time or in the size envisaged (fiscal adjustment of 4.6 percent of GDP by 2019). On the other hand, a resolution of the Syria crisis could generate a boom for Jordan as the country can be used as a platform for reconstruction in Syria, which would strengthen the investment climate. Counterbalancing the large downside risk would require continued implementation of structural reforms supported under this proposed DPL to improve the financial viability of the energy and water sectors, combined with enhanced external financing during times of duress.

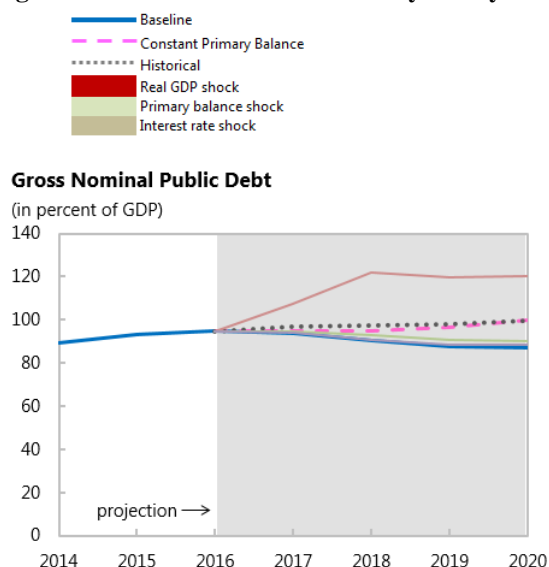
24. **Under continued implementation of the Government’s economic reform programs, Jordan’s macroeconomic policy framework is deemed adequate.** Jordan has implemented reasonably well the programmatic World Bank-funded DPL series that closed in October 2015 (latest Implementation Status and Results Report has a Moderately Satisfactory rating). This DPL’s objective was to improve Jordan’s transparency and accountability, enhance debt management and the efficiency of government spending, and promote private sector-driven growth.<sup>15</sup> Furthermore, the 2012–2015 IMF SBA program provided external financing and motivated structural reforms which, combined with the implementation of the reform programs in the water and energy sectors supported by the proposed DPL, will help Jordan achieve fiscal sustainability over the medium term. The new arrangement under the EFF of the IMF and the proposed DPL series also support measures in the water and energy sectors. Furthermore, the EFF is likely to improve the macroeconomic framework and bring the public debt to more manageable levels. The impact of this operation is expected to improve energy efficiency in both energy and water sectors that are expected to improve Jordan’s long-term growth potential.

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<sup>15</sup> Reforms have continued apace on the second DPL. These include the award of a preliminary credit bureau license and the provision for a Sukuk issuance in the 2015 budget law to finance the deficit.



**Figure 1. Public Debt Sustainability Analysis.<sup>1,2</sup>**

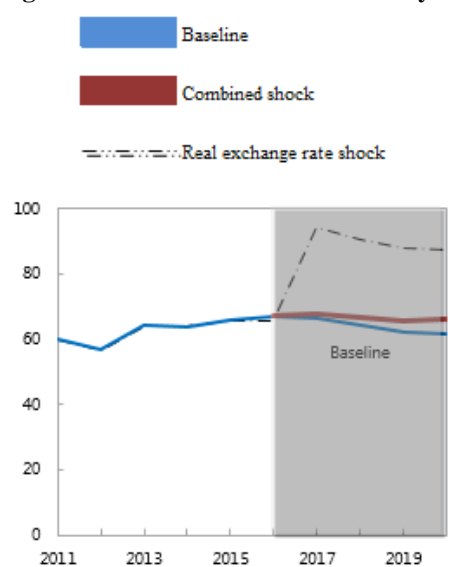


Source: World Bank Staff Projections.

Note: 1. Shaded area represents projected data.

2. Shocks applied to (a) real GDP growth: permanent one standard deviation shock; (b) primary balance: half of fiscal adjustment not implemented; (c) real interest rate: permanent 200 bps shock.

**Figure 2. External Debt Sustainability Analysis.<sup>1,2</sup>**



Source: IMF and World Bank Staff Projections

Note: 1. Shaded area represents projected data.

2. (a) Combined shock represents permanent ¼ standard deviation shock applied to real interest rate, growth rate, and current account balance; (b) exchange rate shock: one-time real depreciation of 30 percent occurs in 2017.

**Table 4. Jordan External Debt Composition 2015.**

	USD billion	Share of GDP
External debt <sup>1/</sup>	24.7	65.8
Of which: Public and Publicly Guaranteed External Debt	13.2	35.2

<sup>1/</sup> Private and public and public guaranteed external debt on residency basis.

Source: IMF Staff calculations

## 2.3 IMF RELATIONS

25. **Following the satisfactory completion of the IMF SBA in 2015, a three-year EFF was approved in August 2016.** The SBA focused on fiscal consolidation efforts to maintain macroeconomic stability and supported policy reforms during a challenging economic and political environment. While the program was concluded successfully and fiscal consolidation continued during 2015, the end-year 2015 fiscal results deviated from those projected by the SBA. The EFF will continue to focus on maintaining macroeconomic stability and fiscal consolidation to reduce debt-to-GDP ratio to a more sustainable 77 percent by 2021. The program is focused on broadening the tax base, addressing tax incentives, income taxation, improving tax administration and monitoring growth in spending. In addition, the EFF provides a broader structural reform agenda that is intended to stimulate inclusive growth particularly as related to boosting the business environment, strengthening the financial sector, improving access to finance, and supporting the water and energy sectors. Most of the program's prior actions and benchmarks were designed in consultation with the World Bank Group. Close engagement of the IMF and the World Bank is expected to continue with the World Bank Group supporting the monitoring of reforms related to projects under its purview. As for the energy and water sectors, the IMF

EFF includes two prior actions on the energy and water sectors: the preparation of detailed financing plans for the next 12 months for NEPCO and WAJ and an announcement of the Government commitment to maintain NEPCO at operational balance and adopt an electricity adjustment mechanism by mid-December 2016 and start implementation of the same by January 1, 2017. Structural benchmarks are linked to: (a) the adoption and implementation of an electricity tariff adjustment mechanism; (b) an updated action plan to reduce the water sector losses in the medium term; and (c) publication of studies on cross-subsidies and options for price adjustments in response to oil price changes.

### 3. THE GOVERNMENT'S PROGRAM

26. **The Government has articulated a long-term vision and a multiyear reform program to enhance the sustainability and resilience of the energy and water sectors despite the increasing costs and challenges resulting from the Syria crisis.** The Government has laid out its program in the strategy document 'Jordan 2025: A National Vision and Strategy', Jordan's Intended Nationally Determined Contribution submitted to the United Nations Framework Convention on Climate Change in September 2015, and the 'Jordan Response Plan for the Syria Crisis 2016–2018'. The program focuses on improving the operational and financial performance of the energy and water sectors through supply diversification, price adjustments, efficiency enhancements, and improvements in demand management.

#### 3.1 THE GOVERNMENT'S ENERGY SECTOR DEVELOPMENT PROGRAM

27. **The Government seeks to enhance its resilience to fuel supply shocks while keeping up with rapidly growing demand.** Securing energy supplies to meet the economy's rapidly growing demand in an affordable manner remains a major development challenge for Jordan. Jordan imports about 97 percent of its energy consumption, primarily in the form of crude oil, oil derivatives, and natural gas, all reaching the country through the port of Aqaba. This makes Jordan one of the most import-dependent countries in the world and highly vulnerable to supply and price shocks. Local energy sources, including domestic oil, gas, and renewable energy, are growing, but from a very small base, and they still cover only 3 percent of primary energy consumption in 2015. At the same time, primary energy and electricity consumption grew rapidly between 2011 and 2015, on average by 4.7 percent and 4.3 percent per year. To mitigate supply risks while keeping up with demand, the Jordan 2025 strategy set targets to (a) increase the share of local energy sources in the energy mix from 2 percent in 2014 to 39 percent by 2025, including 11 percent from renewable energy; (b) reduce the energy intensity of the economy from 208 kg of oil equivalent (kgoe)/US\$1,000 in 2014 to 200 kgoe/US\$1,000 by 2025; and (c) decrease the percentage of electricity transmission and distribution losses from 17.1 percent in 2014 to 11 percent by 2025.

28. **Import of natural gas has been particularly vulnerable to supply shocks in the past, positioning the gas and electricity sectors as the focus of the Government's energy reform efforts.** Jordan's electricity sector relied primarily on natural gas imported from Egypt, which fueled an average of 82 percent of generation between 2008 and 2010. Jordan experienced a major gas supply disruption when natural gas flows from Egypt fell by 93 percent between 2009 and 2014 because of declining domestic gas production in Egypt, the start of the Arab Spring in 2011, and sabotage of the gas pipeline connecting the two countries. As natural gas had to be replaced with costly fuel oil for power generation, and the crisis coincided with a spike in international oil prices, the cost of Jordan's energy consumption soared from 11.3 percent of GDP in 2009 to 21.1 percent in 2013. Most of the fuel cost increase was absorbed by NEPCO as the electricity pricing regime proved inadequate to implement timely and effective tariff adjustments. To restore the operational and financial sustainability of the sector, the Government, under the IMF SBA (2012–2015), set the target to reach cost recovery for NEPCO by 2017. Under Jordan 2025, the Government set the target to restore the share of natural gas in the energy mix from 11 percent in 2014 to 39 percent by 2025.

29. **The Syrian refugee crisis has put additional pressure on the electricity sector by accelerating demand growth and may have contributed to a reduction in collection rates.** The influx of Syrian refugees has accelerated demand growth in the residential and water sectors. Growth in residential electricity consumption and water pumping increased on average by 4.8 percent and 3.8 percent between 2010 and 2015. Electricity consumption in the northern governorates (those mostly affected by the Syria crisis) showed an additional increase of 2.3 percent compared to other governorates in Jordan. The crisis may also be one of the reasons behind the falling collection rates of distribution utilities.

30. **The Government’s reform program aims to lock in the achievements of energy sector reforms over the past five years despite the additional strains of the Syrian refugee crisis, and further strengthen resilience to external shocks of fuel supply interruptions and price volatility.** Key measures under the Government’s multiyear reform program include the following:

- **Restoring the financial sustainability of the electricity sector.** The rising cost of fuels since 2010 created a gross imbalance between costs and revenues for NEPCO. In 2013, under the IMF SBA, the Government developed the ‘National Strategic Plan for Dealing with NEPCO’s Losses’. The main component of the strategy is a five-year (2013–2017) Electricity Tariff Adjustment Plan to restore the adequacy of NEPCO’s revenue base. The tariff increases, in combination with the decline in international oil prices since mid-2014; the switch from oil to cheaper natural gas since mid-2015; and the commissioning of the first large-scale renewable energy plant have allowed NEPCO to reach cost recovery in the final quarter of 2015. The Government is committed to locking in its reform achievements through further tariff reforms with the aim to sustain cost recovery for NEPCO amid volatile energy import prices. Moreover, the Government is working to resolve NEPCO’s accumulated commercial loans and advances from MoF of around JD 4.9 billion to allow the company to operate on a commercial basis again.
- **Diversifying gas import sources.** In response to the shortfall of gas supplies from Egypt, Jordan has made significant efforts to diversify its gas import sources. The most important step was the development of a floating storage and regasification unit at Aqaba. Since commissioning the unit in July 2015, NEPCO has made substantial progress in signing several long-term LNG supply contracts and procuring cargoes on the spot LNG market. As a result, as of mid-2016, about 85 percent of power generation in Jordan is fueled by LNG, replacing more expensive and polluting diesel and heavy fuel oil. To further diversify its supply sources and reduce its exposure to price volatility, the Government is considering longer-term options for gas supply to Jordan, including piped gas from Egypt, Iraq, and the Eastern Mediterranean.
- **Developing domestic energy resources.** Jordan recognizes that the development of domestic energy resources, including renewable energy, is a top priority for the diversification of its energy mix. The most successful element of the Government’s program so far has been the promotion of private sector-owned, large-scale wind and solar power projects. As of August 2016, five utility scale renewable power plants (wind and solar) totaling about 240 MW capacity have been commissioned. By the end of 2016, 400 MW is expected to be operational. A total of 1,374 MW of projects are at various stages of development (740 MW of solar PV and 631 MW of wind). As a result, Jordan has become a regional leader in private sector-owned renewable energy development, and the country strives to become a regional hub for knowledge and service industries related to renewable energy. To enable the integration of new renewable energy into the transmission grid, NEPCO is reinforcing the network in the central Jordan desert area, where most renewable projects are located, under the ‘Green Corridor’ project. Furthermore, NEPCO is strengthening its institutional capacity for renewable energy operation and dispatch through capacity-building programs and twinning arrangements.

- **Promoting energy efficiency.** Energy efficiency has become a priority for Jordan as it contributes to reducing import dependency and mitigating demand growth, in line with the National Energy Efficiency Action Plan (NEEAP). To improve energy end-use efficiency, the Ministry of Energy and Mineral Resources (MEMR) established the Jordan Renewable Energy and Energy Efficiency Fund (JREEEF) at the end of 2014. The JREEEF’s aim is to raise awareness of energy savings potential among industrial, commercial, and household consumers, to provide technical and financial support to overcome existing investment barriers and to promote private investments in energy efficiency and renewable energy projects. To reduce distribution losses on the grid-electricity network, the EMRC is pursuing bilateral performance agreements with the private power distribution companies.

### 3.2 THE GOVERNMENT’S WATER SECTOR DEVELOPMENT PROGRAM

31. **Jordan is one of the most water-stressed countries in the world.** Its per capita annual renewable resources estimated at 105 cubic meters per capita without taking into account the refugee population is already far below the threshold of severe water scarcity of 500 cubic meters per capita per year.<sup>16</sup> Rapid population growth, income growth, urbanization and the sustained presence of refugees, in combination with a fixed supply of total renewable water resources, will further accelerate the decline in available per capita renewable water resources and increase the gap between supply and demand, jeopardizing the sustainable use of these scarce water resources. Limited wastewater treatment capacity, inadequate cost recovery, high O&M costs (among others, the result of the high energy intensity of the water sector), large water losses, and the dependency on transboundary waters further complicate water sector management. Renewable surface and groundwater resources cannot meet water demand, and groundwater is seriously overexploited. The Government has to depend increasingly on more expensive solutions to deal with the growing gap between supply and demand. The latest of these solutions—the Disi-Amman Water Conveyor Project—was completed in 2014. The repayment and the O&M costs for the management of the Disi-Amman conveyor have increased very rapidly to JD 105 million in 2015. Even though the additional water supplies generated by Disi were projected to last several years before the next large water infrastructure project was due, the refugee crisis (and the subsequent additional demand of about 1.3 million Syrian refugees) has resulted in a need to advance the preparation of the next large infrastructure program (Red Sea-Dead Sea desalination project).

32. **Jordan’s record of water sector reforms is under pressure because of extreme external shocks that have resulted in rapidly increasing costs of service delivery.** Since the 1990s, Jordan has made significant progress in reforming its water sector. It has instituted a large set of policies aimed to deal with extreme water scarcity. It established regional water and wastewater utilities, of which Miyahuna and Aqaba are currently able to generate sufficient funds to cover their O&M costs.<sup>17</sup> The increase in electricity costs due to the dismantling of electricity subsidies has resulted in a sharp increase in the cost of service delivery, because of the sector’s high-energy intensity due to geographical and hydrological conditions that give rise to high pumping costs. Since the increase in electricity tariffs starting 2013, the electricity costs of WAJ and JVA has almost doubled from JD 79 million in 2012 to JD 156 million in 2015. The Government’s transfers to the sector were reduced to JD 20 million in 2015 (compared to JD 206 million in 2014) while at the same time capital expenditure increased inter-alia as a result of an increase in water demand due to the Syrian refugee crisis. This resulted in an increase in WAJ borrowing by JD 373 million, and a subsequent rapid increase in WAJ debt.

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<sup>16</sup> The country also depends partly on water sources it shares with other countries. Vision 2025 aims to maximize the use of its shared water resources.

<sup>17</sup> The recently established Yarmouk Utility (covering the northern governorates) was in a weak financial position when it was established, and the influx of Syrian refugees has strained its progress in achieving financial sustainability.

33. **The Syria crisis has put further pressure on the water sector by accelerating demand in an environment where water was already rationed.** The massive influx of Syrian refugees, who are mostly concentrated in the northern governorates, has resulted in a sharp increase in demand (estimated at 20 percent in the country, and about 40 percent in the northern governorates), increasing the cost of supply as the Government depends on expensive supply mechanisms (including water trucks) and groundwater (resulting in an increase in groundwater extraction and overexploitation reaching 160 MCM in 2015).<sup>18</sup> Per capita availability of water in the northern governorates of Irbid, Ajloun, and Jarash has dropped even below 70 liters per capita per day in 2015. It is estimated that about 70 percent of the population was provided less than the national standard of 100 liters per capita per day in 2015. As a result of all these stresses, the Government of Jordan was able to recover only 70 percent of its current water expenditure through its revenues by 2014. As the Government significantly reduced its transfers to the water sector in 2015, WAJ debt increased to 1.4 percent of GDP by 2015.

34. **In response, the Government is implementing a reform program addressing the challenges and vulnerability risks linked to sector resilience and financial sustainability.** The Government recognizes that more fundamental structural reforms are necessary to improve the financial and operational performance of the water sector by addressing the rising cost of water supply and its inputs while remaining focused on the further optimization of the allocation of water resources as a major tool to deal with extreme water scarcity. The Ministry of Water and Irrigation (MoWI) recently prepared a National Water Strategy 2016–2025 that aims to increase the sector’s resilience through improved efficiency and effectiveness of operations and investments. The new strategy is accompanied by a set of new policies and a National Capital Investment Plan to prioritize investments. It focuses on increasing water supplies (even more needed because of the increased demand for water stemming from the Syrian refugee crisis) through optimization of surface water, more widespread reuse of treated wastewater, and the introduction of nonconventional water sources (including desalination) while decreasing the level of groundwater exploitation to meet the growing demand of domestic and industrial water users. Key elements of the Government program in the water sector include the following:

- **Improving the financial sustainability of the water sector.** Under the IMF SBA, the Government developed a medium-term Structural Benchmark Program (2013–2021) that aims to increase sector revenues<sup>19</sup> while reducing the costs of service delivery to improve O&M cost recovery in the water sector by 2021. Since 2013, the Government has implemented a series of tariff increases affecting different types of water users. The MoWI also implemented policies to improve collection efficiencies in water utilities. Preliminary data show that these measures have generated more revenues but have not yet resulted in an increase in O&M cost recovery because of a sharp increase in expenses related to significantly higher electricity costs, and much higher water demand resulting from the Syrian refugee crisis. Another series of tariff and fee increases covering various groups of water consumers are forecasted to take place between 2017 and 2020, whereas the recently negotiated EFF with the IMF includes the adoption and publication of an update of the Structural Benchmark Program. This update is necessary as WAJ—the agency with the largest water sector budget—has seen its debt increase very rapidly in 2015 as a result of the Syria crisis and the subsequent need for additional investment. The IMF estimates that WAJ by 2021 will be able to generate a positive operational margin and reduce its debt to 1.1 percent of

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<sup>18</sup> In a 2013 study that was part of the Structural Benchmark Program on the “Cost of Hosting Syrian Refugees on the Water Sector of Jordan”, the MoWI estimated the direct short-term costs of the refugee crisis (assuming a refugee population of 1.2 million) at JD 270 million per year in short-term costs. The longer-term costs linked to environmental externalities and opportunity costs were estimated at additional JD 250 million per year.

<sup>19</sup> The National Water Strategy 2016–2025 reaffirms the Government’s commitment to rationalize the price structure of water and wastewater services to ensure efficient use of water, improve the use of commercial practices, and reduce subsidies to the sector.

GDP. The Ministry has under the IMF EFF agreed to prepare a WAJ debt strategy by December 15, 2016.

- **Promoting energy efficiency in the water sector.** While the Government aims to increase revenues, it is also working on reducing the chronic inefficiencies in the sector. One of the most important inefficiencies is related to energy use. WAJ is the largest consumer of electricity in the Kingdom, using about 10 percent of total electricity consumption in 2015<sup>20</sup>. As electricity costs are increasing, the Government has realized that energy efficiency is an important tool to improve the sector's operational and financial performance. The MoWI has embarked on a program to increase energy efficiency in the sector while also introducing the use of renewables in the water sector.
- **Optimization of the allocation of water resources.** Optimization of water allocation is a long-standing focus of the Government. As the per capita available renewable water resources are dropping steadily because of population growth, the country still depends disproportionately on groundwater resources, causing overexploitation of these resources. The Government policy in optimizing the allocation of water resources has several dimensions. The first element of this optimization is to reduce groundwater over-abstraction. Although the Syrian refugee crisis has increased the dependence on groundwater, especially in the northern part of the country, the Government has adopted a long-term policy to improve groundwater sustainability. It has increased groundwater tariffs and has embarked on an aggressive anti-water theft campaign and strict groundwater licensing. A second element focuses on the optimization of surface water resources. The Government has adopted several policies, including the surface water utilization policy, a Water Substitution and Reuse Policy, a groundwater sustainability policy, and a water reallocation policy. These policies aim to achieve a more efficient use of existing surface water resources through increasing surface water storage (including at the household level). A third element of this improved allocation is linked to increased reliance on reuse of treated wastewater so that freshwater can increasingly be substituted by treated wastewater for farmers and industry while allocating freshwater for drinking water. Finally, the Structural Benchmark Plan focuses on reducing water losses. The Structural Benchmark Plan includes measures to increase revenues (through better billing and collection), reduce water theft, and focus on investments that can reduce technical water losses.
- **Enhancement of the provision of water services to domestic and agricultural consumers.** Although water and wastewater coverage is high in Jordan (compared to many other countries in the region), the Government aims to further improve access to wastewater collection and treatment and storm water collection. This improved access will increase the quality of life of the population but will also directly assist in optimizing the allocation of water resources, especially because wastewater treatment (through reuse of treated wastewater) and storm water collection (through improved use of surface water) will help maximize the use of water resources.

## 4. THE PROPOSED OPERATION

### 4.1 LINK TO GOVERNMENT PROGRAM AND OPERATION DESCRIPTION

35. **The operation in the amount of US\$250 million is the second and final of a programmatic series of two single-tranche loans that support the implementation of the Government's priority reforms in the challenging context of the Syria crisis.** The programmatic approach reflects the nature

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<sup>20</sup> Due to its specific hydrological and topographical characteristics, the water sector is very energy intensive.

of the Government reform policies, which are expected to achieve the envisaged results and ensure sustainability in the medium term.

36. **The lessons learned from the previous Jordan programmatic DPLs include attention to the realism of the reform agenda, country ownership, and close implementation support.** Structural reform in Jordan is very complicated, and hence realism of the reform agenda in terms of content and risks—especially those linked to Jordan’s high exposure to external shocks—has to be assessed carefully when preparing a DPL. The crucial need for country ownership is to deliver results. Close monitoring and implementation support by the World Bank is critical to ensure a successful engagement with the Government.

37. **The PDO of the DPL is to improve the financial viability and increase efficiency gains in the energy and water sectors in Jordan.** The DPL policy program is, therefore, structured under two main pillars:

- **Pillar A: Improving the Financial Viability of the Electricity and Water Sectors.** This first pillar will support the Government’s plans to set the electricity and water sectors on a path of sustainable cost recovery, including efforts to restore the creditworthiness and financial standing of NEPCO.
- **Pillar B: Increasing Efficiency Gains in the Energy and Water Sectors.** The second pillar will support the Government’s programs that aim to increase efficiency gains both in the supply and demand for energy and water.

38. **The PDO contributes to the national objective articulated in the Jordan 2025 Vision for achieving self-reliance and financial stability and the Jordan Compact by supporting the macroeconomic framework and addressing immediate financing needs.** The substance of the proposed operation remains consistent with the program design presented under the DPL1 and its prior actions link directly to the indicative triggers established under the first operation. The Government has made significant progress in implementing the DPL-supported reform program despite facing increasing challenges in meeting the needs of the Syrian refugee communities and the broader impacts of the Syria crisis.

39. **The prior actions reflect full achievement of the program triggers outlined in the DPL1 program document.** This reflects satisfactory progress on implementation of reforms by the Government, while deepening the achievements recognized in the DPL1. A detailed description of progress on each trigger and formulation of prior actions is provided in Table 5. The Policy and Results Matrix is presented in Annex 1.

**Table 5. Indicative Triggers for DPL2 (as described in the First Programmatic DPL) - Reform Status and Prior Actions for DPL2**

Indicative Triggers for DPL2	Reform Status	Prior Actions for DPL2
<b>Pillar A: Improving the Financial Viability of the Electricity and Water Sectors</b>		
<p><b>Trigger 1:</b> The Cabinet of Ministers approves implementing the annual electricity tariff adjustments planned for 2016 and 2017 to reach cost recovery in accordance with the 2013–2017 Electricity Tariff Adjustment Plan.</p>	<p><b>Trigger met.</b> As a result of the annual tariff increases during 2013-15, the shift to LNG from the new terminal at Aqaba since July 2015, a fall in global oil prices, as well as ramp-up of renewable energy capacity, NEPCO achieved cost recovery in Q4 2015, obviating the need for further tariff adjustment. To sustain cost recovery EMRC has adopted a tariff adjustment mechanism that will allow EMRC to</p>	<p><b>Prior Action 2.1:</b> The Borrower’s Energy and Minerals Regulatory Commission has adopted an electricity tariff adjustment mechanism, to sustain cost recovery taking into consideration consumer affordability.</p> <p><i>(Triggers 1 and 2 merged in Prior Action 2.1)</i></p>

	pass through increases in cost to consumers.	
<b>Trigger 2:</b> The EMRC approves new tariff regulations to sustain cost recovery while taking into consideration consumer's affordability.	<b>Trigger met.</b> On October 5, 2016, EMRC approved the tariff adjustment mechanism to activate the fuel clause in the tariff, which is designed to ensure full cost recovery.	
<b>Trigger 3:</b> The Cabinet of Ministers approves and implements a multiyear Debt Management Plan for NEPCO.	<b>Trigger met.</b> A Debt Management Plan for NEPCO has been prepared, but not yet adopted by the Higher Debt Committee.	<b>Prior Action 2.2:</b> The Borrower's Council of Ministers has approved a multi-year Debt Management Plan for NEPCO.  <i>(No change in substance. Revised wording to reflect that implementation will be an ongoing process.)</i>
<b>Trigger 4:</b> MoWI approves the measures to increase sector revenues to enhance cost recovery <sup>b</sup> in accordance with the 'Structural Benchmark - Action Plan to Reduce Water Sector Losses' dated August 2013.	<b>Trigger met.</b> The Government has implemented the Structural Benchmark Program but even though revenues have increased, the increase in costs has offset the additional revenues. The Government agreed with the IMF to update, adopt, and publish the Structural Benchmark Program to aim at full operation and maintenance cost recovery by 2021.	<b>Prior Action 2.3:</b> The Borrower's Council of Ministers has approved the measures to increase water sector revenues to enhance O&M cost recovery <sup>21</sup> in accordance with the "Structural Benchmark - Action Plan to Reduce Water Sector Losses" dated August 2013.  <i>(No change)</i>
<b>Pillar B: Increasing Efficiency Gains in the Energy and Water Sectors</b>		
<b>Trigger 5:</b> NEPCO develops and implements fuel supply strategy to scale up share of gas supply for power generation.	<b>Trigger met.</b> NEPCO has adopted and started implementing the strategy for diversification of fuel sources. Nearly 85% of electricity is generated from natural gas imported from Aqaba LNG terminal through two long-term contracts and several spot contracts. The share of renewable energy is rapidly increasing.	<b>Prior Action 2.4:</b> NEPCO has adopted a strategy for diversification of fuel sources for power generation with increased reliance on cleaner energy sources.  <i>(No change in substance. Updated wording to reflect that NEPCO's fuel sourcing strategy is aimed not only at scaling-up the share of natural gas, but also at diversifying fuel sources to address supply risks)</i>
<b>Trigger 6:</b> The MEMR issues required regulations for implementation of direct proposal bylaws and establishes a public data room for renewable energy development to improve transparency.	<b>Trigger met.</b> MEMR has issued new regulations (referred to as 'Instructions and Requirements for Proposal Preparation and Submission') for renewable energy procurement under direct proposal bylaws. A public data room has been developed in the form of an energy web portal, which allows users to access a wide range of data on Jordan's energy sector.	<b>Prior Action 2.5:</b> The MEMR has issued 'Instructions and Requirements for Proposal Preparation and Submission' to implement the direct proposal bylaws No.50 of 2015 and has established a public data room for renewable energy development to improve transparency.  <i>(No change in substance. Updated wording to reflect title of regulations)</i>
<b>Trigger 7:</b> NEPCO implements in its Control and Dispatch Center	<b>Trigger met.</b> NEPCO has adopted the said operating procedures for	<b>Prior Action 2.6:</b> NEPCO has adopted standardized operating protocols for

<sup>21</sup> Cost recovery is defined here as operational and maintenance cost recovery as measured by MOWI covering WAJ and Water Companies.



<p>operating procedures for integrating renewable power resources into the transmission grid according to the Control and Dispatch Center Operations Manual.</p>	<p>integrating renewable power into the transmission grid in the National Control Center (NCC). Furthermore, NEPCO has reflected these operating procedures in the standardized ‘Transmission Operating Protocols’ that are signed which each renewable power plant operator as part of the IPP agreements. The wording of the prior action was revised to reflect the agreements with the IPPs as these are more permanent than changes to the NCC manual.</p>	<p>intermittent renewable energy to be integrated into agreements with new renewable power producers.</p> <p><i>(No change in substance. Revised wording to reflect more permanent nature of the agreements with the power producers, as compared to changes in the NCC manual)</i></p>
<p><b>Trigger 8:</b> At least two of the JREEEF’s financing windows are operating with window managers in place, and the JREEEF annual reports are issued.</p>	<p><b>Trigger met.</b> JREEEF has restructured its organization to align with seven ‘programs’ defined by end-user groups such as households, tourism, industry, and others. All programs are operating with program managers in place. The JREEEF annual report is included in the MEMR annual report. Financial information is available in separate, quarterly reports to the ministry.</p>	<p><b>Prior Action 2.7:</b> JREEEF has operationalized two of its financing programs to ensure better access to renewable energy and energy efficiency.</p> <p><i>(No change in substance. Revised wording to reflect the JREEEF’s new organizational structure that is aligned with its ‘financing programs’ (defined by end-user groups) rather than ‘financing windows’ (defined by financing instrument))</i></p>
<p><b>Trigger 9:</b> A multiyear Network Loss Reduction Program agreed upon between the EMRC and the distribution companies is finalized with yearly loss reduction targets and is under implementation.</p>	<p><b>Trigger met.</b> Licenses for distribution companies require that loss reduction targets are finalized by EMRC every two years. Loss reduction targets for 2016 and 2017 were finalized by EMRC and agreed upon with the three distribution companies at the end of 2015. Loss reduction targets for 2018 and 2019 would be agreed at the end of 2017.</p>	<p><b>Prior Action 2.8:</b> The Borrower’s Energy and Minerals Regulatory Commission and selected distribution companies have agreed on a multi-year Network Loss Reduction Plan which includes specific yearly loss reduction targets for 2016 and 2017.</p> <p><i>(No change in substance. The language of the prior action was edited for clarity.)</i></p>
<p><b>Trigger 10:</b> The MoWI has a dedicated budget line provision sufficient to implement its planned energy efficiency activities as laid out in the energy efficiency and renewable energy policy for the water sector.</p>	<p><b>Trigger met.</b> Budget lines provisions for energy efficiency and renewable energy projects have been included in the budget of 2016 and 2017. The trigger was adjusted to show that the Government has started to operationalize its energy efficiency and renewable energy policies, by implementing these measures using performance-based management.</p>	<p><b>Prior Action 2.9:</b> The Borrower’s Ministry of Water and Irrigation has piloted the use of performance-based operations for the implementation of energy efficiency and renewable energy measures.</p> <p><i>(Revised to reflect that the Government is operationalizing its policies)</i></p>
<p><b>Trigger 11:</b> The Minister of Water and Irrigation approves a Water Substitution Policy.</p>	<p><b>Trigger met.</b> The policy was issued by the Minister of Water and Irrigation.</p>	<p><b>Prior Action 2.10:</b> The Borrower’s Ministry of Water and Irrigation has adopted a Water Substitution and Reuse Policy.</p> <p><i>(No change)</i></p>
<p><b>Trigger 12:</b> The MoWI has a dedicated budget line provision</p>	<p><b>Trigger met.</b> The trigger was adjusted to show that the Government has</p>	<p><b>Prior Action 2.11:</b> The Borrower’s Ministry of Water and Irrigation has</p>

sufficient to implement its planned actions to optimize its water resources as laid out in the surface water utilization and water substitution policies for the water sector.	started to operationalize its water substitution and surface water utilization policies, by approving plans to improve the O&M of its wastewater treatment plants, allowing for reuse of wastewater, and using the private sector to implement performance-based operation of wastewater treatment plants.	adopted a Wastewater Treatment Plant National Plan for Operation and Maintenance, which includes the use of performance-based operation of wastewater treatment plants.  <i>(Revised to reflect that the Government is operationalizing its policies)</i>
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40. **The triggers related to the implementation of electricity tariff (Triggers 1 and 2) have been merged into Prior Action 2.1 to account for the Government’s early achievement of the electricity cost recovery target.** When the Electricity Tariff Adjustment Plan (2013–2017) was formulated, NEPCO had to rely on diesel and heavy fuel oil for power generation because of a shortage of natural gas and faced oil import prices that averaged above US\$110 in 2012. However, the decline of international oil prices since mid-2014, the switch from oil to cheaper natural gas since mid-2015, and the commissioning of the first large-scale renewable energy plants, have helped NEPCO achieve cost recovery in the last quarter of 2015, one year ahead of schedule. This has obviated the need for further electricity tariff increases. Further tariff increases would be justified, if and when international oil prices rebound and NEPCO’s costs are no longer covered. Implementing a new tariff adjustment mechanism (according to Trigger 2) will allow for a pass-through of changes in fuel costs to consumers with the objective to sustain NEPCO’s cost recovery. The two triggers have been therefore merged to form Prior Action 2.1, which requires the adoption of an electricity tariff adjustment mechanism, to sustain cost recovery while considering consumer affordability.

41. **The triggers related to the operationalization of the approved water sector policies (Triggers 10 and 12) were reformulated to reflect the progress made in implementing the policies.** The MoWI approved two new policies under DPL1 (that is, Energy Efficiency (EE) and Renewable Energy (RE) in Water Sector Policy and a Surface Water Utilization Policy) and has worked on their implementation. The MoWI has followed up the adoption of these policies with: (a) the increased use of performance-based operation for the implementation of EE and RE measures (Trigger 10), and (b) the adoption of the Wastewater Treatment Plant National Plan for Operation and Maintenance, including the use of performance-based operation of wastewater treatment plants (Trigger 12). Both these follow-up measures will help ensure efficiency gains and reduce the cost of water and wastewater services in the short and medium term.

## 4.2 PRIOR ACTIONS, RESULTS AND ANALYTICAL UNDERPINNINGS

### Pillar A: Improving the Financial Viability of the Electricity and Water Sectors

#### *Achieving Electricity Tariff Cost Recovery*

**Prior Action 2.1: The Borrower’s Energy and Minerals Regulatory Commission has adopted an electricity tariff adjustment mechanism, to sustain cost recovery taking into consideration consumer affordability.**

42. **Rationale.** The Government aims to restore cost recovery for NEPCO after the fuel supply shock in 2010 and operate the electricity sector on a commercial basis. When fuel costs soared from 2010 onwards as a result of the gas supply shortfall from Egypt and high international oil prices, NEPCO’s operating income turned from a net profit of JD 28 million in 2009 to a net loss of around JD 1 billion per year in 2012-14. NEPCO’s accumulated commercial loans and advances from MoF reached JD 4.9 billion in 2015. Due to its role as the transmission system operator, single-buyer and primary counterpart

for private investors in generation, restoring NEPCO's financial sustainability is critical for the sector's overall commercial viability

43. **Substance.** Under the five-year (2013–2017) Electricity Tariff Adjustment Plan, which aimed to restore cost recovery of electricity tariffs, the Government adopted three tariff increases, in August 2013, January 2014, and February 2015 (by an average of 15 percent, 15 percent, and 7.5 percent, respectively). Wholesale tariffs increased from an average of 64 fils per kWh in 2012 to 81 fils per kWh in 2016, raising NEPCO's revenues by about JD 300 million. NEPCO reached cost recovery ahead of schedule in Q4 2015, as higher sales revenues coincided with lower oil prices, the switch from oil to natural gas as main fuel for power generation, and the ramp-up of renewable energy.

44. To ensure that cost recovery is maintained in the electricity sector, EMRC has developed a tariff adjustment mechanism to reflect in the tariffs any future changes in the cost of providing electricity to consumers. The tariff adjustment mechanism was adopted by the EMRC's Council of Commissioners in early October 2016. The Council of Ministers has gazette-notified that the mechanism adopted by the regulator would be applied from January 2017 onwards.

45. The purpose of the tariff adjustment mechanism is to ensure that all costs of the electricity system are recovered by the tariffs. The tariff regulations include a 'fuel clause' for the purpose of cost pass-through since 2010, but EMRC lacked an approved mechanism to determine the required adjustment and thus had kept the fuel clause at zero (despite significant variations in fuel cost). From January 2017 onwards, every month EMRC will review the total cost of the electricity system and adjust the fuel clause, if total system cost differ from total revenues (with zero acting as a floor for the fuel clause value). This fuel clause adjustment is then applied to the wholesale consumers' bills. The mechanism (i) institutionalizes a regular, monthly tariff adjustment and the underlying process to calculate the necessary adjustment; (ii) defines the formula for calculating the required total adjustment, using an exhaustive definition for sector cost; (iii) improves transparency of EMRC's procedures to determine the fuel clause (the mechanism was published on EMRC's website); and (iv) more explicitly separates the technical and regulatory functions of EMRC from political considerations of affordability. The mechanism represents a major improvement compared to the status quo.

46. **Results indicator A1.** Achieving electricity tariff cost recovery is measured by the cost recovery level of the end user electricity tariffs.

- *Baseline (2014):* The electricity tariff cost recovery is 56 percent.
- *Target (2017):* The electricity tariff cost recovery is 100 percent.

#### *Resolving NEPCO's Debt*

#### **Prior Action 2.2: The Borrower's Council of Ministers has approved a multi-year Debt Management Plan for NEPCO.**

47. **Rationale.** NEPCO's accumulated commercial loans and advances from MoF surged from JD 193 million (1.1 percent of GDP) in 2010 to JD 4.9 billion (18.8 percent of GDP) in 2015. This debt limits NEPCO's ability to operate as a commercial entity and – as the debt is guaranteed by the MoF and represents about a quarter of total consolidated public sector debt in Jordan – it also acts as a drag on the economy and limits the Government's ability to borrow.

48. **Substance.** As part of DPL1, the Government tasked its inter-ministerial Higher Ministerial Committee on Public Debt to develop a Debt Management Plan for NEPCO. The Debt Management Plan developed by the Committee is aligned with Jordan's overall public debt management strategy and has four pillars: (a) interest on all outstanding debt would be serviced by NEPCO through electricity revenues; (b) repayment of the MoF advances of JD 2.8 billion would be done over a period of 32 years starting 2018 through annual repayment of JD 90 million; (c) NEPCO's commercial debt would be refinanced through further commercial borrowings with moratorium of 2–3 years and tenures of 5–7

years, to increase the average maturity of the debt; and (d) any available profits would be used by NEPCO to repay the commercial debt rather than refinancing it from commercial sources.

49. **Results indicator A2.** Resolving NEPCO’s debt is measured by the development and implementation of the Debt Management Plan for NEPCO.

- *Baseline (2014):* No specific NEPCO’s Debt Management Plan in place and fuel-related commercial debt at JD 1,884 million.
- *Target (2017):* NEPCO’s Debt Management Plan is approved and fuel-related commercial debt is reduced by JD 84 million by 2017.

#### *Enhancing Cost Recovery in the Water Sector*

**Prior Action 2.3: The Borrower’s Council of Ministers has approved the measures to increase water sector revenues to enhance O&M cost recovery in accordance with the “Structural Benchmark - Action Plan to Reduce Water Sector Losses” dated August 2013.**

50. **Rationale.** The water sector places a significant burden on the fiscal budget as the sector provides substantial subsidies to agricultural and domestic water users. The sharp increase in electricity prices (to set NEPCO on a path of cost recovery) and the large influx of Syrian refugees have increased the urgency to improve the financial viability of the water sector. As the sector’s fiscal gap was expected to increase from JD 275 million in 2013 to a forecasted JD 406 million in 2016, the Government embarked on a Structural Benchmark Program in 2013. This program aims to ensure 100 percent O&M cost recovery and full cost recovery<sup>22</sup> of 74 percent by 2021 through a combination of revenue increases (mostly through tariff and fee increases) and efficiency improvements. The plan foresees increases in water and wastewater tariffs, connection fees, and groundwater charges. The increased groundwater charges in combination with energy price increases may help decrease groundwater overexploitation. Since the adoption of the plan, the MoWI has increased water prices for all water users, including increases in industrial groundwater charges (November 2013), water and wastewater tariffs (July 2014 and December 2015), the charges for irrigation wells in the highlands (January 2016), an increase in wastewater connection fees (July 2014, originally planned for 2015), and the introduction of a treated wastewater reuse charge (January 2016). It has also signed management contracts to improve collection efficiencies in Madaba and Zarqa. As part of the IMF EFF, the Government will update, adopt, and publish the Structural Benchmark Program by December 2016 to ensure that the sector will move toward full O&M cost recovery. As a result of the Benchmark Program, the revenues of the three water companies and WAJ rose by JD 53 million (or 27 percent) between 2013 and 2015. Yet in 2014, due to a combination of the sharp increase in demand for water as a result of the Syrian refugee crisis, more limited access to donor funding, the sharp increase in energy prices, and changes in accounting procedures,<sup>23</sup> the operating and maintenance expenses increased even more rapidly.

51. **Substance.** The importance of using tariffs and charges as an instrument to use water more efficiently has been set out in various Government water strategies and was reconfirmed in Vision 2025 and the National Water Strategy 2016–2025. Tariff increases will raise the level of cost recovery in the sector but will also have secondary benefits as water will be used more efficiently and will be allocated to higher value uses. This process of reallocating water from lower to higher value users with an increasing share of the water being allocated to domestic and industrial use is key in dealing with extreme water scarcity in the country. Therefore, the prior action will have significant climate adaptation co-benefits in the form of enhancing resource efficiency and improving resilience of the water sector. The

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<sup>22</sup> The full cost recovery ratio is defined as the ratio where revenues would cover the sector’s operation and maintenance costs and capital costs.

<sup>23</sup> The payments for Disi, which comprise debt service payments and operation and maintenance, were included before 2014 in the capital investment program; in 2014, all payments were included in the operation and maintenance expenses, while in 2015, they were disaggregated into operation and maintenance expenses, amortization, and interest payments. According to the Government Budget Law, the interest payments are included in the operation and maintenance expenses. Subsequently, the cost recovery indicator was adjusted to reflect these changes.

past and current policies have resulted in an ongoing reallocation of water, and by 2014, the profile of water use in Jordan had changed dramatically since 1992 (Table 6) and differs significantly from most other countries in the region where agriculture (irrigation) uses the bulk of the water.

**Table 6. Source and Use of Water by Sector, in 2014 (MCM).**

Source and Use of Water	Domestic	Industrial	Irrigation	Total
Surface water	104	5	150	259
Groundwater	325	32	231	589
Treated wastewater	0	2	123	125
Total	429	39	505	972
Sector share Jordan - 2014 (%)	44.1	4.0	51.9	100.0
Sector share Jordan - 2005 (%)	31.0	4.1	65.0	100.0
Sector share Jordan - 1992 (%)	21.8	3.4	74.9	100.0

*Source: MoWI, National Water Strategy 2016–2025.*

52. Nevertheless, the demands of the water sector will continue to increase (also because of the larger population in the country as a result of the Syrian refugee crisis, and the sector will have to depend increasingly on alternative expensive water sources. As such, the tariff increases will mainly reduce the fiscal burden and create fiscal space for the new generation of expensive water investments (such as the proposed Red Sea–Dead Sea project), but it is unlikely to eliminate the total fiscal burden of the sector because of the high costs to deal with the extreme water scarce environment. The Structural Benchmark Program that the Government developed shows that with a broad range of measures to improve revenues and increase efficiency of service delivery, the operational cost recovery ratio will increase to 100 percent by 2021 (compared to 56 percent in 2013).

53. **Results indicator A3.** O&M cost recovery level in the water sector:

- *Baseline (2014):* Cost recovery is 70 percent.
- *Target (2017):* Cost recovery is 85 percent.

## **Pillar B: Increasing Efficiency Gains in the Energy and Water Sectors**

*Provision of Cleaner Fuel Supply for Power Generation and Scaling Up Development of Domestic Renewable Energy Resources and Energy Efficiency*

**Prior Action 2.4: NEPCO has adopted a strategy for diversification of fuel sources for power generation with increased reliance on cleaner energy sources.**

54. **Rationale.** Restoring secure supplies of clean fuels for power generation is a national strategic priority for Jordan. Jordan experienced a major fuel supply shock when natural gas deliveries from Egypt, the primary source of fuel for power generation, fell by 92 percent between 2009 and 2014. Jordan had to replace gas with more polluting and more expensive heavy fuel oil and diesel. NEPCO’s losses reached over JD 1 billion p.a. in 2012-14. GHG emissions from the power sector surged by over 60 percent between 2009 and 2012. Jordan has taken a series of measures to restore the security of fuel supplies, with a focus on natural gas and renewable energy. Achieving this objective will help NEPCO sustain cost recovery and will also be critical for achieving Jordan’s commitments under the Paris Agreement.

55. **Substance.** NEPCO has developed a holistic strategy to restore secure supplies of cleaner fuels. Implementation of the strategy began in 2015. The main thrust of the strategy is diversification of supply sources. Natural gas, most of which is imported in liquid form through the LNG terminal in Aqaba, is sourced through two multi-year LNG supply contracts and on the spot market (smaller quantities are produced domestically from the Risha gas field). These contracts allowed NEPCO to provide natural gas for 84 percent of power generation in the four quarters up to Q2 2016. However, all of Jordan’s long-term LNG imports remain linked to the Brent oil price, which makes the country vulnerable to price shocks. Jordan has managed to reduce this dependency by contracting for short-term supplies awarded

on a straight price basis—decoupling this from Brent price indexation to benefit from highly competitive spot LNG pricing. In addition to LNG, Jordan is pursuing longer-term supply options such as piped gas from Egypt, Iraq, and the Eastern Mediterranean, to ensure secure and clean fuel supply to Jordan’s electricity sector in the long term. Renewable energy is procured from independent power producers (IPPs). A total of 30 IPP projects, totaling 1,374 MW, are now at various stages of development. Power purchase agreements for around 1,000 MW of capacity have been signed and around 240 MW are operational. This makes Jordan a leader in private-sector owned renewable energy in the MENA region. The results indicator B1 focuses on natural gas, as the achievements in renewable energy development are captured by the results indicator B2 below.

**56. Results indicator B1:**

B1: The diversification of sources of natural gas imports is measured by the number of natural gas import contracts.

- *Baseline (2014):* One contract.
- *Target (2017):* At least three contracts

**Prior Action 2.5: The MEMR has issued ‘Instructions and Requirements for Proposal Preparation and Submission’ to implement the direct proposal bylaws No. 50 of 2015 and has established a public data room for renewable energy development to improve transparency.**

**Prior Action 2.6: NEPCO has adopted standardized operating protocols for intermittent renewable energy to be integrated into agreements with new renewable power producers.**

**Prior Action 2.7: JREEEF has operationalized two of its financing programs to ensure better access to renewable energy and energy efficiency.**

57. **Rationale.** Renewable energy and energy efficiency are cost effective measures for Jordan to reduce its dependence on energy imports, improve air quality and reduce greenhouse gas emissions. Over the last 2-3 years, Jordan has been very successful in attracting private sector investment in solar and wind power, making renewable energy the fastest growing energy source in Jordan (see Prior Action 2.4 above). Sustaining the pace of progress in renewable energy development hinges on the Government’s ability to: (a) procure new capacity in a cost effective manner to avoid burdening consumers or imposing an additional cost on NEPCO, and (b) effectively integrate renewable plants into the grid once they start generating – especially in view of their variable nature. On the energy efficiency side, the JREEEF is overseeing the NEEAP and is providing the funding necessary to implement measures in renewable energy and energy consumption. Key targeted sectors are small and medium enterprises (SME), tourism, health, households/residential and public buildings/facilities.

58. **Substance.** The three prior actions aim to improve renewable energy and energy efficiency regulations and transparency, enable NEPCO to operate and integrate into the transmission grid, and support the operationalization of JREEEF. The bylaws to the Renewable Energy and Energy Efficiency Law and the accompanying ‘Instructions and Requirements for Proposal Preparation and Submission’ for renewable energy (including solar PV and wind power) further refine the procurement process of private sector-owned capacity. The public data room<sup>24</sup>, which was developed under the EU grant and provides access to an energy data subsystem, a business subsystem, and an energy web portal, enhances transparency and increase investors’ and public confidence in the credibility and reliability of the next phase of renewable energy development in Jordan. To improve grid integration, NEPCO has developed operating protocols for variable renewable energy sources that are integrated into the agreements signed with the IPPs and reflected in NEPCO’s own operating procedures in its National Control Center. The

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<sup>24</sup> Available online at [eis.memr.gov.jo](http://eis.memr.gov.jo).

operationalization of the JREEEF's financing programs will support investments and sector stakeholders to conserve and/or generate energy. It will also improve the availability of financing and cooperation with local and international financial institutions under seven financing programs which are focused respectively on schools, households, government buildings, worship places, SMEs, innovation, and awareness and capacity building.

59. **Results indicator B2.** Share of renewable energy capacity in the capacity mix (in MW).

- *Baseline (2014):* Renewable energy capacity is 0 percent of the capacity mix.
- *Target (2017):* Renewable energy capacity is at least 10 percent of the capacity mix.

#### *Development of Electricity Distribution Networks Loss Reduction Program*

**Prior Action 2.8: The Borrower's Energy and Minerals Regulatory Commission and selected distribution companies have agreed on a multi-year Network Loss Reduction Plan which includes specific yearly loss reduction targets for 2016 and 2017.**

60. **Rationale.** While transmission losses are relatively small in Jordan (1.77 percent in 2015), distribution losses are high compared to international standards, with 14.04 percent in 2015. The focus of the Government is therefore on reducing losses in the distribution networks, which promises substantial cost savings and efficiency increases in the electricity sector.

61. **Substance.** The distribution sector has been privatized in Jordan, and in such a constellation, bilateral performance agreements between the regulator and the distribution companies reflect international best practice to achieve efficiency gains. The prior action, therefore, supports the implementation of Distribution Network Loss Reduction Program agreed upon between the distribution companies and the EMRC. Licenses for distribution companies require that loss reduction targets are finalized by EMRC every two years. Loss reduction targets for 2016 and 2017 were finalized by EMRC and agreed upon with the three distribution companies at the end of 2015. Loss reduction targets for 2018 and 2019 would be agreed upon at the end of 2017.

62. **Results indicator B3.** Reduction in electricity distribution network losses is measured by the following:

- *Baseline (2015):* The distribution sector has losses of 14.04 percent and lacks multi-year loss reduction targets.
- *Target (2017):* Network Loss Reduction Program is under implementation, and 2017 loss reduction target of 13.25 percent is achieved.

#### *Scaling up of Energy Efficiency and Renewable Energy in the Water Sector*

**Prior Action 2.9: The Borrower's Ministry of Water and Irrigation has piloted the use of performance-based operations for the implementation of energy efficiency and renewable energy measures.**

63. The water sector in Jordan is very energy intensive, and its intensity has increased over time. In 2005, the sector used 1.32 kWh per cubic meter of water used, compared to 2.30 kWh per cubic meter in 2013. Water and wastewater production, distribution, and treatment usually require energy, but with water resources being located at a considerable distance of population agglomerations, water needs to be distributed and pumped over often large distances and lifted to overcome altitude differences. As a result, about 15 percent of electricity consumption in the country is used in the water sector amounting to 2,076 GWh in 2013, of which WAJ consumed 1,354 GWh, Jordan Valley Authority (JVA) 70 GWh, and the remainder was used by private well users. The total electricity costs of WAJ and JVA amounted to JD 108 million in 2013; but by 2015 had increased to JD 156 million due to an increase in tariffs and water demand. Due to the sharp decline in oil prices, electricity subsidies to the water sector have been reduced significantly. Because of the dismantling of the energy subsidies in the water sector and the high

dependence on energy due to its hydrological and topographical features, efficiency improvements in electricity use are key in improving the sector's operational and financial performance.

64. Since 2013, the Government has made progress in this area. The Council of Ministers approved the energy efficiency and renewable energy policy as a prior action in DPL1, which aims to reduce overall energy consumption in water facilities by 15 percent by 2025, and increase the share of renewable energy to 10 percent of power consumption. The performance-based management approaches with the private sector are an important tool to generate these energy efficiency gains as mentioned in Vision 2025 as a measure to generate efficiency gains, while also improving the quality of services.

65. **Substance.** The Council of Ministers approved the NEEAP in June 2013. The NEEAP aims to achieve a 20 percent targeted decrease in electricity consumption by 2025. The water sector is expected to reduce its power consumption through a phased approach. The MoWI has identified energy savings for water pumping and other water sector-related activities as a priority which is reflected in the Structural Benchmark Action Plan. The use of performance-based contracting with the private sector is expected to generate energy efficiency improvements, which will also help reduce the carbon footprint by reducing emissions and decrease the impact of volatile energy prices on the financial sustainability of the water sector.

66. **Results indicator B4.** Increase in energy savings<sup>25</sup> in the water sector according to the implementation of the Action Plan accompanying the Energy Efficiency and Renewable Energy Policy:

- *Baseline (2013):* Annual energy savings are 0 GWh.
- *Target (2017):* Annual energy savings are 50 GWh.

#### *Optimizing Allocation of Water Resources*

**Prior Action 2.10: The Borrower's Ministry of Water and Irrigation has adopted a Water Substitution and Reuse Policy.**

**Prior Action 2.11: The Borrower's Ministry of Water and Irrigation has adopted a Wastewater Treatment Plant National Plan for Operation and Maintenance, which includes the use of performance-based operation of wastewater treatment plants.**

67. **Rationale.** The per capita available renewable water resources are dropping steadily because of population growth (for a large part because of increase in the refugee population). As a result, the country still depends disproportionately on groundwater resources causing overexploitation of these resources. In 2014, the overexploitation of groundwater reached 385 MCM.<sup>26</sup> The Government is developing policies to optimize the use of its water resources. To that effect, it has adopted a set of policies: the surface water utilization policy (2015, prior action of DPL1) and a Water Substitution and Reuse Policy (February 2016), complemented by a Groundwater Substitution Policy (February 2016) and a water reallocation policy (February 2016).

68. These policies aim to achieve a more efficient use of the existing water resources by allocating water to its highest value use, by allocating more treated wastewater to agriculture (focused on the Jordan Valley) to free up freshwater to be used for municipal uses. The water reallocation policy of 2016 aims to cap the use of freshwater for agriculture. The surface water utilization policy aims to maximize the use of surface water by optimizing and increasing water storage capacity through improvements storage, more dependence on rainwater harvesting and protection of water sources from pollution by expanding

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<sup>25</sup> Increases in energy efficiency will be measured by the change in the total electricity consumption in the WAJ between 2013 and 2017. Due to the short time span, and the sharp increase in demand for water stemming from the refugee crisis and the subsequent high cost of providing water to meet this extra demand (trucking, groundwater pumping), it is unlikely that the energy intensity between 2013 and 2017 will decline noticeably.

<sup>26</sup> Including 225 MCM that is used for agriculture in the Highlands according to remote sensing information.



wastewater treatment. To maximize the use of existing water resources, the Government also strives to reduce water losses from evaporation, seepage, and distribution losses. The Structural Benchmark Program that the ministry is implementing includes actions to reduce distribution losses, both administrative losses (by improving the billing efficiency) and technical losses (which includes actions that will require improvements to the distribution network).

69. **Substance.** The Government is setting up an investment program that aims to underpin the optimization of water resources that includes a focus on improving groundwater sustainability and improving its capacity to operate and maintain its wastewater treatment operations, with the objective to increase the flows of treated wastewater that can be reused, especially in irrigated agriculture. A major element of using surface water resources more efficiently will include measures that aim to increase the cost of groundwater through a combination of measures that focuses on reducing energy subsidies and increasing groundwater abstraction charges, a process that is currently under way in the sector (as part of the Structural Benchmark Plan for the water sector). The MoWI has been following an aggressive policy to reduce illegal water use by monitoring the existence of illegal wells. It closed 562 illegal wells in 2014, increased the fines for the use of illegal groundwater, and increased groundwater tariffs. The campaign to reduce water theft also extends to those using piped water illegally (which helps to reduce distribution losses). The Government is also establishing groundwater user associations in the Highlands (where groundwater is depleted most rapidly) to monitor and manage groundwater, the use of treated wastewater, and the phasing of blended water. However, improving groundwater sustainability is seriously hampered by the sharp increase in demand for water (as a result of the large influx of refugees) and it will take time before groundwater mining will be reduced significantly. To increase its dependence on other than groundwater sources, the Government has—among others—been increasing its dependence on treated wastewater as a nonconventional source of water. The Government’s Wastewater Management Policy mainly focuses on the reuse of treated wastewater for irrigation but also considers the use of such water for recycling, cooling, and power generation. Currently, reused treated wastewater is blended with surface water and is being used in the Jordan Valley. It invests heavily in wastewater improvements such as setting up wastewater collection and treatment infrastructure and investments to reuse this treated wastewater. At the same time, the Government aims to use water sources more efficiently through a set of measures designed to increase rainwater harvesting, land-use measures to protect groundwater infiltration, and improvements in stormwater management

70. The Government has adopted a Wastewater Treatment Plant National Plan for O&M. This plan aims to improve the operation and management of the 33 wastewater treatment plants in Jordan, as they are key in the reuse policy, but also will help improve energy efficiency, reduce the O&M costs of such facilities, and improve the water quality. The Government has several approaches to improving O&M including performance-based operation of wastewater treatment plants by the private sector. In 2016, the Government expanded performance-based operation with two wastewater treatment plants in South Amman and the Zaatari refugee camp. These additional two wastewater treatment plants bring the total wastewater treatment capacity managed under performance-based operation to 95 percent in 2016. In parallel, the Government is working on amending current wastewater specifications and standards to ensure that they match World Health Organization provisions for environmental and health safety standards.

71. **Results indicators B5 and B6.** Optimizing allocation of water resources is measured by:

B5: Water is more optimally allocated:

- *Baseline (2013):* 123 MCM of surface water used for municipal water use.
- *Target (2017):* 128 MCM of surface water used for municipal water use;

B6: Volume of treated wastewater used for non-domestic uses:

- *Baseline (2013):* 110 MCM.
- *Target (2017):* 135 MCM.

72. The proposed DPL is underpinned by government strategies and a series of analytical and advisory tasks, programmatic technical assistance, and projects. The proposed policy actions are founded on the continuous engagement of the World Bank and donors supporting the development of the energy and water sectors in Jordan and on sector assessments and development plans developed by the Government and summarized in Annex 4.

#### **4.3 LINK TO COUNTRY PARTNERSHIP FRAMEWORK (CPF) AND OTHER BANK OPERATIONS**

73. **The Country Partnership Framework 2017–2022 focuses on mitigating the immediate impact of the regional crisis while at the same time supporting long-term development objectives and structural reforms**, to improve the equity and quality of public service delivery including for water and energy services. The DPL contributes to Pillar I of the CPF through improving economic growth as it aims to increase the financial viability of the energy and water sectors and hence reduce the fiscal impact of these sectors on the Government budget and debt while increasing efficiency gains that can contribute to generating stronger private sector-led economic growth in the medium term. The program also contributes to the Middle East and North Africa Regional Strategy, especially with regard to the pillars related to: (i) the renewal of the social contract (that includes inclusive and accountable service delivery, stronger environment for private sector, and more emphasis on performance-based government); (ii) building resilience to deal with the large influx of refugees and the effects of extreme water scarcity and dependence on energy imports, and (iii) regional cooperation in the water and energy sectors (especially for import of natural gas from neighboring countries), and includes a special focus on the use of tariffs for water and energy efficiency and more sustainable urban water management.

74. **Policies supported by the proposed DPL will contribute to the twin goals of reducing poverty and promoting shared prosperity in a sustainable manner.** Reducing the fiscal burden of electricity and water subsidies will allow the Government to achieve greater fiscal sustainability and therefore provide the Government with the space to invest in pro-poor programs and in the more inclusive and productive economic and social sectors to improve the standard of living of the population in Jordan.

75. **The proposed DPL operation focusing on improving the financial performance of the water and energy sectors complements ongoing World Bank Group support.** The International Finance Corporation is among the financiers for the 117 MW Tafila Wind Independent Power Producer (Jordan's first renewable energy producer which became operational in September 2015) and seven solar PVs projects with a total capacity of 102 MW (expected to be operational in 2016). The Bank support also includes a proposed Partial Risk Guarantee to the water desalination plant under the Red Sea-Dead Sea Water Conveyance Program.

#### **4.4 CONSULTATIONS AND COLLABORATION WITH DEVELOPMENT PARTNERS**

76. **The Government developed its development strategy through public and parliamentary consultations.** The Government's development programs in the water and energy sectors are guided by the diversification objectives of the following two strategies: the updated Energy Sector Strategy developed in 2015 and the recently updated National Water Strategy, which were both developed following public consultations. The Jordan 2025 Vision has also been widely consulted with civil society organizations, political parties and business associations. The new electricity tariff regulations adopted in 2015, which include the 'fuel clause' that provides the regulatory basis for the tariff adjustment mechanism (prior action 2.1), underwent significant public and parliamentary debate and represents an understanding reached between the Government and the finance and energy committees of the parliament. The tariff adjustment mechanism adopted by EMRC in October 2016 to activate the fuel clause will be published on EMRC's website to further enhance transparency in pricing regulations. During the preparation of tariff adjustment mechanism, the Government issued a Cabinet decree communicating the broad principles and the timeline of implementation of the mechanism to the public.

Before the tariff adjustment is implemented, the Government is planning a communication campaign to inform consumers about the mechanism and its objectives. Throughout implementation of the tariff regulations, consumers can submit complaints and suggestions to the Customer Service Center operated by EMRC. When the MoWI raises its water tariffs, it consults with Parliament and key stakeholder groups during the preparation of the tariff increase. MoWI and the water companies also operate Customer Service Centers where consumers can submit complaints and suggestions. During the implementation of the second DPL, the World Bank will provide the Government with advisory support on best international practices for developing communication strategies to help generate and sustain broader political and public support throughout the tariff reform process.

77. **The energy and water strategy supported by the DPL builds on programs of the development partners in Jordan.** The Government has broad cooperation with international financial institutions and governmental agencies. Development partners, including the World Bank Group, are particularly active in the energy and water sectors in Jordan through investment financing, capacity building, and technical assistance. *USAID* has established the Energy Sector Capacity Building Program to coordinate its efforts in the power sector. The program promotes the electricity sector management, renewables, and energy efficiency in Jordan. The *Agence Française de Développement (AFD)* has been pursuing its efforts to promote ‘green credit lines’ extended to local banks and is financing the Green Transmission Corridor with the *European Investment Bank*. *Japan International Cooperation Agency’s* multisector policy-based loan approved in May 2015 included energy and water sector policy actions, and the agency is preparing – in close collaboration with the World Bank – a new multisector policy loan that will also focus on the energy and water sectors. *Kreditanstalt für Wiederaufbau (KfW)* is currently reviewing to engage in multisector policy-based lending that is likely to contain reform measures linked to the energy and water sector. Development partners have supported the water sector in its efforts to reduce the fiscal burden it poses. *USAID* supports capital investments to reduce nonrevenue water. It also focuses on improving groundwater management and more efficient water use. The *AFD* helps in improving Jordan’s performance in the water sector and provide investments to support surface water and water substitution efforts aimed at maximizing the reuse of treated wastewater for irrigation purposes. It also recently embarked on budget support to the water sector, focusing on policy reform and investment support aimed to improve energy efficiency, reduce nonrevenue water, increase the financial sustainability of the sector through enhanced cost recovery, and look into improving the management of the WAJ debt. *KfW* provides funding for drinking water and sanitation with a specific focus on nonrevenue water loss reduction and institutional restructuring of the water utilities, water supply network extension, and the use of treated wastewater in agriculture. The *Millennium Challenge Corporation* has financed an extension of the As-Samra Wastewater Treatment Plant, whereas the *GIZ*, *KfW*, and *Kuwait* provide support for energy efficiency and renewable energy interventions.

## 5 OTHER DESIGN AND APPRAISAL ISSUES

### 5.1 POVERTY AND SOCIAL IMPACT

78. **Evidence is mounting that energy and water subsidies are associated with slow economic growth and high unemployment in the MENA region as they shift investment from labor-intensive to resource-intensive sectors.** The World Bank expects that the reform program aimed at financial sustainability of Jordan’s energy and water sectors and supported by the two-year DPL series would have a positive effect on economic growth and employment and would have a net positive impact on the poor and the bottom 40 percent.<sup>27</sup> The reforms would also reduce air pollution (and hence reduce its impact on public health) and minimize the effect of overexploitation of groundwater, thus contributing to achieving the World Bank Group’s twin goals in a sustainable manner.

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<sup>27</sup> World Bank. 2014. *MENA Economic Monitor: Corrosive Subsidies*. Washington, DC: World Bank.

79. **The expected short-term welfare impacts on households of the electricity and water tariff reforms are neutral to modest negative** (Annexes 5 and 6). The electricity sector reached full cost recovery in the fourth quarter of 2015, thus catching up to the petroleum sector, which achieved cost recovery (with the exception of LPG) after the pricing reforms in 2012. The reforms supported in this second operation of the DPL series aim to lock in the progress in electricity sector reforms and reduce the vulnerability to oil price shocks by scaling up renewable energy and energy efficiency, diversifying energy import sources, and introducing a more robust pricing mechanism that allows electricity tariffs to follow sector cost. In the absence of a major oil price shock, these reforms will ensure that no significant price increases will be necessary over the program period. The results of the analysis presented below suggest that even if oil prices rebound, the impact on households would be neutral to modest negative, as households spend only a small share of their budget on electricity (1.5 percent on average<sup>28</sup>). In the water sector, further tariff increases are needed (see below) but the expected impacts are small as water expenditures as a percentage of household budgets are also small (0.8-1.4 percent).

80. **Cost recovery in electricity was achieved without significant poverty impact because almost all household electricity consumption was exempt from tariff increases, but cross-subsidies between consumer groups have reached a limit because of this policy.** Electricity tariffs were increased three times between 2010 and 2015. The World Bank simulated the effect of these tariff increases on households using the SUBSIM (subsidy simulation) model.<sup>29</sup> The results show that the direct welfare impact on residential consumers, including the poor and vulnerable, was negligible (see Table 7). This is because 91 percent of households and 99.5 percent of the bottom 40 percent experienced a real decline in electricity cost as their consumption falls into the tariff blocks up to 600 kWh per month, which have remained unchanged in nominal terms since 2010 (see Figure 3). The indirect welfare losses, which capture the impact of price inflation due to tariff hikes for the industrial and commercial sectors, are estimated at 0.42-0.45 percent of household expenditures (assuming that higher tariffs in these sectors were fully passed on to customers). Although variations across the income distribution are estimated to be small, the results show that the tariff reforms in 2010-2015 affected the rich more than the poor (see Table 7, last column). This comes from mildly progressive direct impacts; the indirect welfare impacts do not differ much across consumption quintiles. These results are in line with the simulation done by Atamanov, Jellema, and Serajuddin<sup>30</sup> (2015), which showed that the 2010-2015 electricity tariff reforms had little impact on the per capita welfare of households. However, going forward the Government is looking to reduce cross-subsidies between consumers groups, although the exact distribution of future tariff increases is yet to be determined. This is because tariffs for large households or large commercial consumers, which pay up to 2.5 times the average cost and nine times as much per kWh as the smallest consumers, have risen to levels where it is more economical to produce their own electricity, a scenario that would deprive the sector of its largest revenue base. For more details, including combined effects of energy and water tariff increases, reference is made to Annex 6.

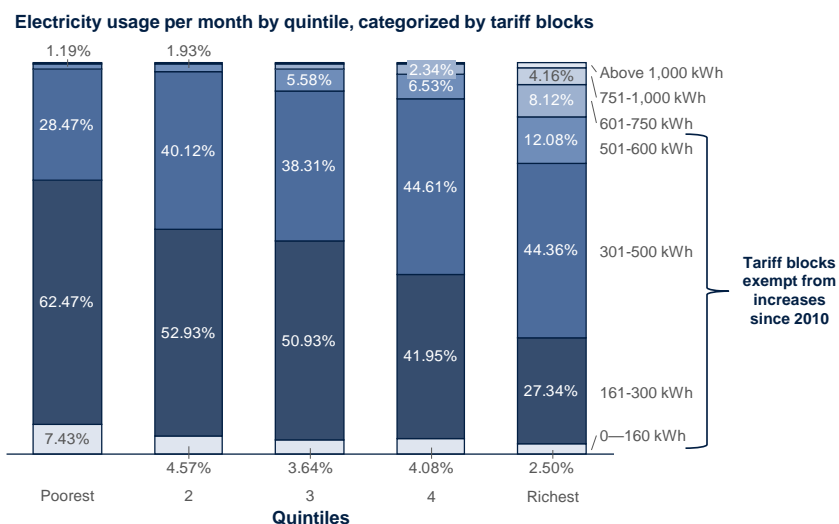
**Figure 3: Household electricity consumption by quintile mapped onto tariff block structure, indicating households exempt from tariff increases 2010-2016 (data: 2010 Household Income and Expenditure Survey).**

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<sup>28</sup> These and other household budget data cited here are taken from the 2010 Jordan Household Income and Expenditure Survey.

<sup>29</sup> Welfare impacts are approximated by the change in household expenditures. The direct welfare effects were calculated by applying the revised tariff schedule to household expenditures on electricity. The indirect welfare effects were calculated through the households' entire consumption basket. To generate the indirect welfare impacts, a Jordanian input-output table was used to estimate the price changes in all production sectors that use electricity and water as an input either directly or indirectly. The estimate was made under 'cost push' assumptions within a price-shifting model: producers pass on any increase in input prices by raising sales prices by a proportional amount. The Household Income and Expenditure Survey was then used to link household consumption expenditures to these production sectors and program, for consumption taking place in each sector, and for determining how much the price of that consumption block is likely to rise when electricity and subsidies are reduced.

<sup>30</sup> Atamanov, Aziz, Jon Robbert Jellema, Umar Serajuddin. 2015. "Energy Subsidies Reform in Jordan: Welfare Implications of Different Scenarios." Policy Research Working Paper WPS 7313. World Bank, Washington, DC.



**Table 7. Cumulative welfare losses (per capita) from electricity tariff increases between 2010 and 2016 (Source: World Bank estimates).**

	Indirect		Direct		Total	
	2013 (JD)	% of pre-reform welfare	2013 (JD)	% of pre-reform welfare	2013 (JD)	% of pre-reform welfare
Quintile 1 (poorest)	3.7	0.44%	0.00	0.00%	4	0.44%
Quintile 2	5.6	0.45%	0.01	0.00%	6	0.45%
Quintile 3	7.4	0.45%	0.03	0.00%	7	0.45%
Quintile 4	10	0.44%	0.17	0.01%	10	0.45%
Quintile 5 (richest)	18	0.42%	3.33	0.08%	18	0.50%

81. **If oil prices rebound in 2017, there is scope for the regulator to increase tariffs while reducing cross-subsidies and mitigating social impacts.** Tariffs were not increased in 2016 because revenues were sufficient at the end of 2015 to cover the sector's full cost. However, the sector remains exposed to fuel price fluctuations for at least the coming 2-3 years due to the pricing structure of NEPCO's LNG supply contracts. The Government currently estimates that NEPCO breaks even if oil prices average US\$55/bbl in 2017. The World Bank estimates that each US\$10/bbl<sup>31</sup> increase in the Brent oil price above NEPCO's break-even point raises the sector deficit by JD 162.3 million. If passed on fully to consumers under the new tariff adjustment mechanism, such an increase in the oil price (or an equivalent increase in other cost items) would raise the fuel clause by 11.34 fils/kWh if, as currently envisioned, the clause is not differentiated by consumer category (Scenario 1). This value would rise to 14.46 fils/kWh if the Government chooses to reduce cross-subsidies and effectively applies the tariff increase only to the lowest three (<500 kWh/month) tariff blocks (Scenario 2). Table 8 shows that the tariff adjustment mechanism is mildly regressive in relative terms in both scenarios: The poorest quintile would see an aggregate welfare impact of 0.67 percent and 0.84 percent in Scenario 1 and 2, respectively, compared to 0.41 percent and 0.45 percent for the richest. While the overall impacts are

<sup>31</sup> We estimate here the welfare effect of a hypothetical oil price increase by US\$10/bbl beyond NEPCO's break-even price of oil in 2017, which the Government currently estimates at US\$55/bbl. The welfare effect would be the same if other cost items – such as interest payments, capacity charges for generators, or renewable energy payments – increase by an equivalent amount (JD 162.3 million p.a.) compared to the baseline.

neutral to modest negative (<1 percent), the results indicate that the reduction of cross-subsidies must be designed and monitored carefully to ensure that the benefits of the reduced cross subsidies, specifically improvements in the business climate and employment (which are not captured by the results presented here), outweigh the impact on the poor.

**Table 8. Welfare losses (per capita) from the electricity tariff increase needed to cover a (hypothetical) US\$10/bbl oil price increase in 2017 under two scenarios (Source: World Bank estimates).**

	Indirect		Direct				Total			
			Scenario 1: Applied to all consumers		Scenario 2: Applied only to <500 kWh/month		Scenario 1		Scenario 2	
	2013 (JD)	% of pre- reform welfare	JD	%	JD	%	JD	%	JD	%
Quintile 1 (poorest)	1.14	0.14%	4.46	0.53%	5.91	0.70%	5.60	0.67%	7.05	0.84%
Quintile 2	1.70	0.14%	5.47	0.44%	7.24	0.58%	7.17	0.58%	8.93	0.72%
Quintile 3	2.24	0.14%	6.39	0.39%	8.29	0.51%	8.63	0.53%	10.53	0.65%
Quintile 4	2.98	0.14%	7.72	0.35%	9.90	0.45%	10.70	0.49%	12.87	0.59%
Quintile 5 (richest)	5.60	0.13%	12.04	0.28%	13.95	0.32%	17.64	0.41%	19.55	0.45%

82. **The Government has built into the water tariff reforms measures to mitigate the impact on the poor and vulnerable by distributing tariff increases across all water consumers and by using cross-subsidies between residential and non-residential consumers.** Since 2011, the Government is reforming water tariffs for residential and nonresidential water and wastewater users and also for agricultural and industrial groundwater users through a combination of changes in tariffs and fee structures. These have affected all consumers because unlike in the electricity sector, water consumption is not very sensitive to income (see Figure 4)<sup>32</sup>. Furthermore, the 2015 tariff that increased the fixed charge has affected the lower income quintiles more. However, the cumulative impact of the reforms since 2011 has been neutral to modest. The same is true for the marginal impacts of the 2016 reforms, which focused on non-residential users, and the planned reforms in 2017. SUBSIM simulations (following the same methodology as for electricity, see above) of the estimated increase in residential water tariffs in 2010-2017 found a direct welfare impact of 0.06 percent for the bottom quintile, declining to 0.02 percent for the top quintile (see Table 9). This reflects modest real tariff increases, the smaller size of the proposed water tariff increases for households compared to nonresidential consumers and the smaller share of water expenses in the total household expenditure as compared to electricity. The indirect welfare losses due to higher water tariffs for groundwater use by industry<sup>33</sup> are estimated at about 0.27 percent of household expenditures and are uniform across consumption quintiles (Annex 6 presents two different scenarios for the indirect effects, of which this is the more impactful one). The combined direct and indirect impacts of the water tariff increases in 2010-2017 on household welfare are estimated to be small but mildly regressive, at 0.29-0.34 percent. For more details, including combined effects of energy and water tariff increases, refer to Annex 6.

**Figure 4: Household water consumption by quintile mapped onto tariff block structure (data: 2010 Household Income and Expenditure Survey).**

<sup>32</sup> See also Kristin Komives, Vivien Foster, Jonathan Halpern, and Quentin Wodon with support from Roohi Abdullah, 2005. Water, Electricity, and the Poor: Who Benefits from Utility Subsidies? World Bank, Washington D.C

<sup>33</sup> It is assumed that the water tariff increases are the same across sectors. In case the Government pursues cross-subsidy policies, the indirect effects may be larger. Price elasticity effects in the water sector tend to be relatively low and hence have not been considered here.

Water usage per month by quintile, categorized by tariff blocks

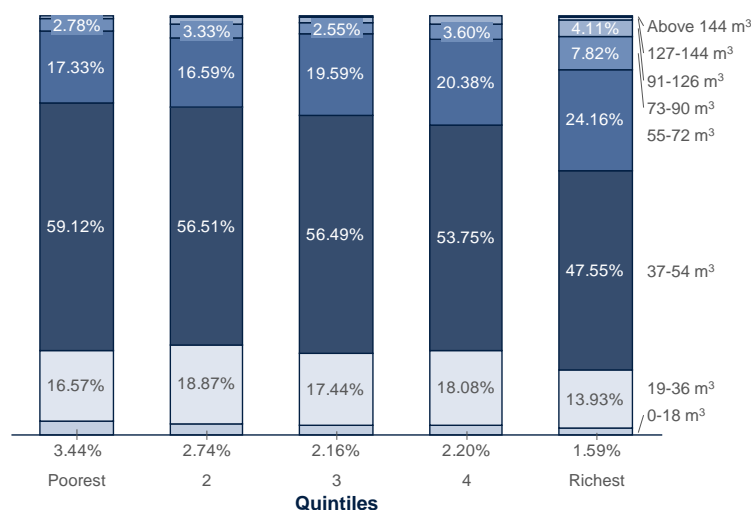


Table 9. Welfare Losses (per capita) from cumulative water tariff increases between 2010 and 2017.

	Indirect		Direct		Total	
	2013 (JD)	% of pre-reform welfare	2013 (JD)	% of pre-reform welfare	2013 (JD)	% of pre-reform welfare
Quintile 1 (poorest)	2.3	0.27	0.60	0.06	2.9	0.34
Quintile 2	3.4	0.27	0.78	0.05	4.2	0.33
Quintile 3	4.5	0.27	0.80	0.04	5.3	0.32
Quintile 4	6.0	0.27	0.98	0.03	7.0	0.31
Quintile 5 (richest)	11.0	0.25	1.67	0.02	13.0	0.29

83. **The implementation of the reform program will be supported by additional analytic work to determine the impact of energy and water tariff increases on the poor.** The World Bank would undertake more policy simulations during the implementation of DPL2 once the 2016 Household Income and Expenditure Surveys become available. The analyses would focus on: (a) estimating ex-post the impacts of past tariff increases to validate the results shown above so that the lessons-learned can be incorporated into the implementation of future tariff reforms; (b) analyzing how the changes in household income and expenditure compositions between 2010 and 2016 have affected the capacity of poor and vulnerable consumers to deal with the electricity and water tariff reforms; and (c) advising the Government on choices between alternative options to reduce (cross-)subsidies on affordability and financial sustainability proposed in the context of the budget support of the AFD and the IMF EFF.

84. **Jordan has a social safety net in place and the experience with the cash compensation scheme in the context of the fuel price reforms in 2012<sup>34</sup> shows that Jordan can mobilize broad, cash-based compensation of households relatively quickly if need be.** A more targeted mechanism is the National Aid Fund (NAF), the permanent safety net program of the Government, which provides various services to poor households including means-tested to the poor depending on income, assets and family circumstances. However, the NAF program covers only about 90,000 households, which means that close to half of the poor are not covered. The Bank's National Unified Registry and Outreach project is currently being restructured to establish an integrated and automated data-exchange system (as the

<sup>34</sup> The fuel cash compensation transfer program that was set up as an ad-hoc mechanism in 2012 to alleviate the effect of the subsidy reform for petroleum products. This temporary compensation scheme covered 70 percent of Jordanian households, but became inactive in December 2014.

National Unified Registry system) connecting the NAF with key participating institutions and data provider agencies. This mechanism will enable more accurate decisions on eligibility for targeted cash transfer programs (existing or new programs). In the absence of a compensation mechanism that is defined ex-ante, continued support provided by the Bank and other development partners through technical assistance and other activities. These activities would include amongst others efforts to identify which consumers are going to be affected and how they can be compensated and which means will be most effective.

85. **Citizen engagement.** During the implementation of the second DPL, the World Bank will continue to provide the Government with advisory support on best international experiences for developing and implementing a communication strategy to help generate and sustain broader political and public support throughout the reform process and raise awareness about energy efficiency and small-scale renewable energy programs. Communication and awareness raising efforts are conducted in a gender-sensitive manner, meaning that such activities will consider distinct social circles and interests of women, conduct these activities at places and times convenient for women, utilize communication channels women often use, and tailor messages in a way that is more accessible to women.

86. **Gender analysis and M&E.** Gender-differentiated impacts of tariff reforms for water and electricity occur even though access to both services is close to universal in Jordan. Using the earlier mentioned, SUBSIM model, we found that about 13 percent of the surveyed population consisted of female-headed households. Poverty headcount rates were lower for female-headed households, reflecting that these include many households that receive remittances from abroad. Yet female-headed households may be disproportionately affected by tariff increases, as expenditure on energy and water are often higher. The analysis found that among poor households, water expenditures did not significantly differ between male and female-headed households, but electricity expenditures were higher (at the 10 percent significance level). Among non-poor households, water and electricity expenditures for non-poor female headed households were consistently higher than for male-headed households. Independent of the head of the household, a 2012 assessment of gender issues in energy and water in Jordan<sup>35</sup> found that within the typical family, women are largely responsible for family electricity and water usage inside the house, and in neighborhoods where water is only available during certain days or times, women must be at home during those periods in order to complete their household chores. This is particularly true for many Syrian refugees in Jordan, which have more irregular access to water<sup>36</sup>. Therefore, policies that affect water and energy affordability can have a disproportionate impact on women. Women are differently impacted by strategies used in the household to cope with increasing tariffs such as reducing energy use and performing household chores manually. Women are also more likely to sacrifice their needs first to manage household budget to afford higher energy costs.<sup>37</sup> Mitigating negative impacts of higher energy and water costs and improving access to reliable energy and water services are important to contribute closing of gender gaps such as age and occupational gaps as identified in the Jordan Systematic Country Diagnostic.<sup>38</sup> By ensuring women's access to affordable and reliable energy and water services, the time women can spend on income generating and educational activities could be increased. Women-led small businesses could also be supported in accessing affordable energy and water services. Women also have strong incentives toward greater energy efficiency and they are well suited to explore and promote energy efficiency. However, women often lack access to information about energy efficiency, while young

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<sup>35</sup> USAID/Jordan: Gender Analysis and Assessment, Report No. 11-01-596, March 2012.

<sup>36</sup> Women's Refugee Commission: Unpacking Gender – The Humanitarian Response to the Syrian Refugee Crisis in Jordan, March 2014.

<sup>37</sup> Rebosio Calderon, P. Michelle, and Sophia V. Georgieva. 2015. Toward Gender-informed Energy Subsidy Reforms: Findings from Qualitative Studies in Europe and Central Asia. Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/834451468189851792/Toward-gender-informed-energy-subsidy-reforms-findings-from-qualitative-studies-in-Europe-and-Central-Asia>

<sup>38</sup> World Bank. 2016. Jordan - Promoting poverty reduction and shared prosperity : systematic country diagnostic. Washington, D.C. World Bank Group.



Jordanian men know more about energy saving methods and therefore are more concerned with energy conservation.<sup>39</sup> Improving women's understanding of and rationale for conservation thus has the potential to lead to positive behavior change around resource use. These findings are in line with global experience by the World Bank, and would be reflected in the support provided on communications discussed above.<sup>40</sup> The Bank will use the Household Budget Survey of 2016 complemented by qualitative study of energy and water reforms to undertake more analysis on the gender-differentiated impact of tariff reform, and the factors that explain household's vulnerability and factors that shape social acceptance of reforms.<sup>41</sup> This will ensure that relevant indicators of gender-differentiated impacts of the reforms (as well as poverty-differentiated impacts and those to special groups such as the Syrian refugees) will be tracked throughout the program's implementation, and during the final evaluation of the DPL series. The results would feed into the policy dialogue on further tariff reforms and the implementation support on communication.

## 5.2 ENVIRONMENTAL ASPECTS

87. **The implementation of the policy actions supported by the proposed DPL is likely to have a positive impact on the environment, forests, and natural resources.** Over the last 15 years, the Government has made great strides in mainstreaming environmental sustainability in projects, starting first with the Environmental Protection Law (EPL) 1 of 2003 and then the Environmental Impact Assessment (EIA) regulations of 2005. The EIA Regulations No. 37 approved in 2005 clearly defined the process and requirements for the EIAs and created screening, review, and oversight structures for implementation; under the overall supervision of the EIA Directorate in the Ministry of Environment. Jordan is leading the Mashreq in EIA capacity and performance. Large-scale private sector energy and water infrastructure development projects have an excellent record of compliance with national environmental and social impact assessment requirements. In smaller, municipal-level or donor-funded projects, compliance is in general good and improving. The comprehensiveness and quality of EIA preparation and implementation improve whenever the project is co-financed with international organizations or concerns large Government-funded infrastructure projects.

88. **The Environment Protection Law, under which the Ministry of Environment operates, is considered as a strong law because it grants the ministry the necessary powers to perform its duties and tasks.** The Ministry of Environment started in 1980 as a small department at the Ministry of Municipal, Rural and Environmental Affairs. In 1996, the General Organization for Environmental Protection was established and given responsibility for protecting the environment in Jordan. In 2003, the Ministry of Environment was created, according to the temporary EPL 1; this was then approved as EPL 52 in 2006. The EIA Directorate can follow up on mitigation and monitoring measures of potential environmental impacts of development projects. In addition to the National EIA system, a different system is in place for the Aqaba Special Economic Zone which has a different governing body called the Aqaba Special Economic Zone Authority (ASEZA) created under the ASEZA Law 32 of 2000.

89. **Many features of the Jordanian Environmental Assessment (EA) system are compatible with the World Bank EA Policy (OP 4.01) as well as with the European Commission EIA Regulations No. 97/11.** These features are (a) screening, (b) scoping, (c) EIA report content, (d) content of the Environment Management Plan, (d) provisions for appeal, and (e) requirements for monitoring and evaluation. According to the EIA regulation No. 37/2005, the Technical Review Committee consists of the representatives of the following agencies: Ministries of Environment, Planning and International

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<sup>39</sup> KAP Survey Finding of Young People's Knowledge Attitudes & Behaviors: Gaps in Environmental Education Curricula and Teacher's Competence, 2010.

<sup>40</sup> The World Bank. 2015. *Tools to Understand Social Issues in Energy Tariff and Subsidy Reforms*. Washington, DC

<sup>41</sup> Rebosio Calderon, P. Michelle, and Sophia V. Georgieva. 2015. *Toward Gender-informed Energy Subsidy Reforms: Findings from Qualitative Studies in Europe and Central Asia*. Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/834451468189851792/Toward-gender-informed-energy-subsidy-reforms-findings-from-qualitative-studies-in-Europe-and-Central-Asia>

Cooperation, Municipal Affairs, Health, Agriculture, Industry and Trade, Energy and Mineral Resources, Water and Irrigation, Tourism and Antiquities, and Public Works and Housing, in addition to representatives from nongovernmental organizations and academia. An Inter-ministerial Central Licensing Committee classifies projects into the following categories based on location, magnitude, irreversibility, and severity of impacts: Category 1 (full EIA required); Category 2 (initial EIA is required); and Category 3 (no environmental analysis is required). Public participation is required at the scoping stage, and the Ministry of Environment/ASEZA is responsible for regular monitoring of the Environmental Management Plan and reporting. Many features of the Jordanian EA system are compatible with the World Bank EA Policy (OP 4.01) as well as with the European Commission EIA Regulations No. 97/11.

90. **According to OP 8.60, the World Bank assessed whether specific country policies supported by the DPL series were likely to cause significant effects on the country's environment, forests, and other natural resources.** The assessment concluded that the policies supported by the proposed DPL are not likely to have adverse impacts on the country's natural assets. The tariff reform programs supported under Pillar A that aim to improve the financial viability of the electricity and water sectors can also help curb the growth in energy and water demand, resulting in less environmental degradation. Similarly, efficiency gains programs under Pillar B promoting growth in renewable energy and energy efficiency development and deeper utilization of natural gas in power generation instead of the more polluting fuel oil and diesel will noticeably improve air quality by reducing energy-related emissions, thus reducing air pollution and the related impacts on human health.

91. **The DPL-supported reform program is closely aligned to the Intended Nationally Determined Contribution (INDC) that Jordan submitted to the United Nations Framework Convention on Climate Change in 2015.** Under the INDC, Jordan expressed its intention to climate mitigation in the energy sector, by (1) diversifying the sources and kinds of energy and diversifying sources of natural gas imports; (2) expanding the development of renewable energy projects; (3) activating JREEEF to attract private sector investments in the energy sector; and (4) rationalizing energy consumption in all sectors and improving their efficiency<sup>42</sup>. Prior actions 2.1 and 2.3-2.9 contribute to these mitigation actions. To adapt to climate change, Jordan stated its intention to: (1) reform water pricing; (2) use groundwater more efficiently; (3) improve wastewater treatment plants; and (4) recycle wastewater. Prior actions 2.3 and 2.10-11 are resilience actions to address climate-related risks, and contribute to Jordan's INDC adaptation commitments. Achieving the planned program results will have a significant impact on greenhouse gas emissions from the power sector. Cumulatively over the period 2016-2030, each percent increase in the share of natural gas in fossil-fueled power generation (results indicator B1) reduces CO<sub>2</sub> emission by an estimated 660,000 tons; each MW of additional renewable energy capacity (results indicator B2) reduces CO<sub>2</sub> emissions by an estimated 21.88 tons; and each 0.1 percent reduction in distribution losses would save an estimated 179,600 tons of CO<sub>2</sub> (results indicator B3). Climate benefits will be monitored under the DPL.

### **5.3 PUBLIC FINANCIAL MANAGEMENT, DISBURSEMENT AND AUDITING ASPECTS**

92. **Public financial management (PFM):** PFM reforms are at the heart of the priorities of the Government of Jordan. In recent years, Jordan has made significant progress in PFM reforms. Among the key reforms with importance in the fiduciary context, notable progress has been achieved in particular, with regard to the following:

- (a) Implementation of Treasury Single Account;

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<sup>42</sup> See Annex 5.

- (b) Adoption of an early budget preparation calendar (starts in January of each year) that allows more time for budget policy and strategy analysis and development. The calendar comprises four distinct phases covering (i) initial strategic review and planning, (ii) medium-term budget preparation, (iii) draft budget finalization, and (iv) budget approval. This would include preparation and discussion of (i) budget policy and priorities paper which contains an updated macro-fiscal outlook and sets out the underlying policy stance and spending priorities to be addressed in the preparation of the budget, and (ii) Medium Term Expenditure Framework.
- (c) Adoption of a robust budget classification system which includes the most important classifications and is broadly consistent with GFSM<sup>43</sup> 2001, including administrative, economic, functional, geographical, and program classifications.
- (d) Maintenance of a robust system for monitoring progress of line ministries toward achieving their strategic objectives as per the published budget law using specific key performance indicators. All line ministries and government units annually publish—on the General Budget Department website—their strategic objectives, key performance indicators, and outputs of the preceding two years and projections for the ensuing three years. This allows a sufficient basis of tracking and evaluating service delivery by ministries and public entities.
- (e) Transparent and comprehensive budget documentation, as well as a defined budget process with both executive and legislative branches adhering to the schedule, and a budget classification which complies with international standards, after which the annual budget and final accounts are published on the MoF website.
- (f) Completion of the rollout of the Government Financial Management Information System (GFMIS) for budget preparation and execution to all 53 budget units (ministries, departments, and regional financial centers). Next, the GFMIS will be rolled out to independent units. The MoF is considering the adoption of accrual accounting to replace the existing cash accounting approach. The GFMIS will provide a valuable tool for implementing such a reform.
- (g) Establishment of mechanisms designed to facilitate regular monitoring of arrears and introduction of a more effective commitment control system to prevent arrears accumulation. This monitoring has entailed a team designated from the MoF to track and monitor arrears and to introduce annual and quarterly commitment requests and financial plans, which together with the GFMIS monthly financial position reports show uncommitted balances.
- (h) Establishment of a unified Financial Controls Bylaw that is applied to all government institutions, including independent institutions aiming to address the redundancies and multiplicity of controls.

93. Looking forward, the Government aims at sustaining implementation progress in the PFM reforms agenda. While many PFM reforms have been progressing, addressing the following issues would help fully realize the benefits of the above reforms and help the Government restore fiscal sustainability:

- (a) The initial strategic planning phase of budget preparation is not sufficiently developed, and the subsequent budget preparation phase is characterized by spending plans and budget requests that greatly exceed the eventual budget settlement.<sup>44</sup> The macro-fiscal framework should be strengthened, sector strategy review and planning should be effectively integrated into the budget process, and a stronger commitment to MTEF indicative allocations.

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<sup>43</sup> Government Finance Statistics Manual - IMF.

<sup>44</sup> The World Bank is providing a substantial technical assistance that aims to improve Jordan Public Investment Management System, which will address weaknesses in investment planning and budget preparation and execution.

- (b) Public sector expenditure arrears continue to be a problem. The GFMIS does not allow multiple quarter and multiyear commitment entries and capturing and populating the outstanding commitments and outstanding invoices for arrear monitoring. As a result, the Government has not fully benefited from the GFMIS to monitor the problem.
- (c) While the unified Financial Controls Bylaw has some positive elements (for instance; regulating the internal controls and internal audit functions, setting national standard procedures, and requiring regular planning and reporting), however; the bylaw has done little to dispel the confusion over the definitions and functions of the various parties responsible for internal control and internal audit. A revised Financial Controls Bylaw (No. 114 of 2015) was issued, which includes positive elements such as establishing the internal audit function within the existing internal control units, defining broadly the role of internal audit and internal control functions with separation of responsibilities and duties, and having new members from academia and Jordan Association of Public Accountants to the Central Committee for internal financial controls responsible for reforming and developing the internal financial controls function in the public sector. Despite the issuance of the revised Financial Controls Bylaw of 2015, it has not yet actually adopted the byline ministries.
- (d) Jordan Supreme Audit Institution (Audit Bureau) needs to strengthen its financial and administrative independence and reduce undertaking the comprehensive pre-audit checks at line ministries, by which it gets involved in the decision-making process of line ministries, interfering with its function as an external auditor. Improving the Audit Bureau's independence and strengthening internal controls at the same time at line ministries would substantially improve the quality of external audits, leading to more effective assurance over the use of public funds. A new Audit Bureau Law should be developed and adopted that would addresses largely the latter reported issues. Realizing the disadvantages of ex-ante controls performed by the Audit Bureau that undermines its independence and objective, the Audit Bureau and MoF have agreed on a three-year withdrawal plan. This plan is monitored and coordinated by the MoF. Furthermore, the World Bank has been supporting the Audit Bureau in enhancing its capacity in performing quality audit of PPPs and financial audit of State-Owned Enterprises.

94. **Foreign exchange.** The foreign exchange control environment is assessed to be generally satisfactory. The CBJ was subject to the IMF safeguards assessment in June 2003, which was updated in January 2013. The IMF updated safeguard assessment of 2013 reflected on the CBJ's progress in strengthening its safeguards as the majority of measures recommended in the June 2003 were either partially or entirely completed. The assessment proposed a set of measures to strengthen CBJ governance and include external auditing and financial reporting, which are a work in progress.

95. **The CBJ financial statements are annually audited by a private independent auditor.** The auditor issued a qualified opinion on the CBJ's financial statements for the year ended December 31, 2015. The main qualifications are the same as that of 2011, 2012, 2013, and 2014, and (a) there is no provision in the financial statements for doubtful debts and (b) non-interest-bearing financial instruments, long-term deposits, and debt bonds are stated based on their nominal values instead of stating them at their net present values. No material internal control issues that could affect the disbursement from the proposed development policy operation were reported. The audit report and financial statements of the CBJ are available on its website. Considering the status of the assessments mentioned and the review of the CBJ audit report of the year 2015, the foreign exchange control environment is assessed to be generally satisfactory.

96. **Disbursement arrangements.** The proposed loan will follow the World Bank's disbursement procedures for Development Policy Operation and will be disbursed in a single installment. Once the loan is approved by the World Bank's Board and becomes effective, the proceeds of the loan will be disbursed in compliance with the stipulated release conditions and will be transferred by IBRD directly

to the Government Treasury account at CBJ. The amount will be transferred by IBRD in US Dollars and an equivalent amount in Jordanian Dinar will be credited to the treasury current account by CBJ. The MoF will furnish to the World Bank, within 30 days, a confirmation of this transfer, advising that the total sum of the loan has been received. The administration of this loan will be the responsibility of the MoF. If the World Bank determines at any time that an amount of the loan was used to make payment for excluded expenditure, the borrower shall refund an equal amount of such payment to the World Bank and such amount repaid to the World Bank shall be canceled from the loan.

#### **5.4. MONITORING AND EVALUATION AND ACCOUNTABILITY**

97. **The overall responsibility for monitoring implementation of the DPL program rests with the MoPIC.** The ministry will be responsible for coordinating, and reporting to the World Bank on the progress of implementing the DPL policy programs with the Government authorities responsible for the program implementation, including the MEMR, NEPCO, EMRC, MoWI and the Cabinet of Ministers. Throughout implementation, the World Bank multisector team will undertake intensive supervision missions and provide technical assistance<sup>45</sup> and policy advice to support the implementation and monitor the DPL-supported program. The proposed results indicators will be monitored to evaluate the impact of the DPL policy program in improving the financial and operational performance of the energy and water sector. Monitoring and evaluation of the results indicators will be based on data that will be available with the Government implementing authorities and verified by the World Bank through the DPL supervision.

98. **Grievance Redress.** Communities and individuals who believe that they are adversely affected by specific country policies supported as prior actions or tranche release conditions under a World Bank Development Policy Operation may submit complaints to the responsible country authorities, appropriate local/national grievance redress mechanisms, or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address pertinent concerns. Affected communities and individuals may submit their complaint to the WB's independent Inspection Panel, which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit <http://www.worldbank.org/GRS>. For information on how to submit complaints to the World Bank Inspection Panel, please visit [www.inspectionpanel.org](http://www.inspectionpanel.org).

## **6 SUMMARY OF RISKS AND MITIGATION**

99. **The overall risk rating is assessed to be Substantial.** Continued performance by the Government on its reform agenda in the energy and water sectors and the achievement of the proposed program's outcomes are subject to geopolitical and macroeconomic risks as well as financial sustainability risks related to the water and electricity sectors.

- **Macroeconomic risk is Substantial.** The balance of risks to growth is on the downside. Economic growth has been slowing down as a result of many shocks. Nevertheless, the Government has demonstrated an ability to manage these shocks. The macroeconomic stability objective is supported by several programs and donors, including a US\$723 million extended arrangement under the Extended Fund Facility approved by the IMF Executive Board in August 2016.

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<sup>45</sup> A new technical assistance financed by the Energy Sector Management Assistant Program is mobilized to assist the Government of Jordan's reforms in the energy sector, by developing the capacity of the NEPCO in organization restructuring, procurement procedures, and fuel and power system planning.

- Sector strategy and policies risk is Substantial.** The most significant risk is linked to political support for the proposed policy reforms, especially tariff reforms. So far, the Government has been able to mitigate these risks through reducing the impact of tariff reform on large groups of residential users by using cross-subsidies between different groups of consumers. Moreover, in its Vision 2025, the Government assigns an important role to improve awareness among water and energy consumers to use these resources more efficiently. In the energy sector, a major risk is linked to the fluctuation of the oil price, especially in the short term (2-3 years). In the medium to long term, the Government's efforts to diversify its fuel import sources, delink some of its imports from oil price fluctuations, and develop domestic energy sources will mitigate this risk. In the water sector, a major risk factor is linked to the sharp increase in the debt of WAJ, which is a risk to the sector and the country as the current financing of this debt through relatively high-cost and short-term financing instruments is likely to result in high debt service payments. Although the reduction of water subsidies is politically sensitive, households are, according to opinion polls, more willing to consider a reduction in water subsidies, possibly the result of previous awareness campaigns. The IMF EFF focuses on extending the average maturity of public debt, in combination with the AFD's studies on WAJ debt, which will reduce the risk associated with the WAJ debt, whereas the IMF EFF also includes an update of the Structural Benchmark Plan, which may result in additional revenue enhancing measures. These risks will be further mitigated by technical assistance provided by development partners.
- Geopolitical and regional risk is High.** The volatility of the region and Jordan's high degree of integration with its neighbors remain a significant risk to the DPL as the rapid population growth fueled by the Syrian refugee crisis has major impacts on the energy and water sectors. These risks will be mitigated by grant support and the trade deal with the EU. Yet, a reduction in grant support is likely going to affect the cost of electricity and even more so the costs of water services, and could adversely affect the financial viability of the sectors.

**Table 7. Summary Risk Ratings.**

<b>Risk Categories</b>	<b>Rating</b>
Political and governance	Moderate
Macroeconomic	Substantial
Sector strategies and policies	Substantial
Technical design of program	Moderate
Institutional capacity for implementation and sustainability	Moderate
Fiduciary	Moderate
Environment and social	Moderate
Stakeholders	Moderate
Other: geopolitical and regional	High
<b>Overall</b>	Substantial

## ANNEX 1: ORIGINAL AND REVISED POLICY AND RESULTS MATRIX

### Hashemite Kingdom of Jordan - Energy and Water Sector Reforms DPL - Policy Matrix

Prior Actions and Triggers: DPL1 (Original)		Prior Actions: DPL2 (Revised)	Results
Prior Actions for DPL1	Triggers for DPL2		
<b><i>Pillar A: Improving the Financial Viability of the Electricity and Water Sectors</i></b>			
<p><b><i>Prior Action #1:</i></b> The Cabinet of Ministers approves implementing the annual electricity tariff adjustment planned for 2015 in accordance with the 2013-2017 Electricity Tariff Adjustment Plan.</p>	<p><b><i>Trigger #1:</i></b> The Cabinet of Ministers approves implementing the annual electricity tariff adjustments planned for 2016 and 2017 to reach cost recovery in accordance with the 2013-2017 Electricity Tariff Adjustment Plan.</p> <p><b><i>Trigger #2:</i></b> The Energy and Minerals Regulatory Commission (EMRC) approves new tariff regulations to sustain cost recovery while taking into consideration consumer's affordability.</p>	<p><b><i>Prior Action #2.1:</i></b> The Borrower's Energy and Minerals Regulatory Commission has adopted an electricity tariff adjustment mechanism, to sustain cost recovery<sup>46</sup> taking into consideration consumer affordability.</p>	<p><b><i>Result Indicator A1:</i></b> Cost recovery of the end user electricity tariffs</p> <ul style="list-style-type: none"> <li>▪ <i>Baseline (2014):</i> 56 percent</li> <li>▪ <i>Target (2017):</i> 100 percent</li> </ul>
<p><b><i>Prior Action #2:</i></b> The Cabinet of Ministers issues a circular tasking the inter-ministerial debt committee with developing a Debt Management Plan for the National Electric Power Company (NEPCO).</p>	<p><b><i>Trigger #3:</i></b> The Cabinet of Ministers approves and implements a multi-year Debt Management Plan for NEPCO.</p>	<p><b><i>Prior Action #2.2:</i></b> The Borrower's Council of Ministers has approved a multi-year Debt Management Plan for NEPCO.</p>	<p><b><i>Result Indicator A2:</i></b> NEPCO's Debt Management Plan is under implementation and fuel-related commercial debt is reduced</p> <ul style="list-style-type: none"> <li>▪ <i>Baseline (2014):</i> No specific NEPCO's Debt Management Plan in place and fuel-related commercial debt at JD 1,884 million.</li> <li>▪ <i>Target (2017):</i> NEPCO's Debt Management Plan is approved and fuel-</li> </ul>

<sup>46</sup> Cost recovery is defined here as wholesale cost recovery and as including operating and maintenance costs, fuel costs, depreciation costs of the sector, as well as interest on NEPCO's debt.

Prior Actions and Triggers: DPL1 (Original)		Prior Actions: DPL2 (Revised)	Results
Prior Actions for DPL1	Triggers for DPL2		
			related commercial debt is reduced by JD 84 million by 2017.
<b>Prior Action #3:</b> The Cabinet of Ministers approves adjustments to the tariffs for Production Wells in accordance with the “Structural Benchmark - Government Action Plan to Reduce Water Sector Losses” dated August 2013.	<b>Trigger #4:</b> The Minister of Water and Irrigation approves the measures to increase sector revenues to enhance cost recovery in accordance with the “Structural Benchmark - Action Plan to Reduce Water Sector Losses” dated August 2013.	<b>Prior Action #2.3:</b> The Borrower’s Council of Ministers has approved the measures to increase water sector revenues to enhance O&M cost recovery <sup>47</sup> in accordance with the “Structural Benchmark - Action Plan to Reduce Water Sector Losses” dated August 2013.	<b>Result Indicator A3:</b> O&M cost recovery level in the water sector <ul style="list-style-type: none"> <li>▪ <i>Baseline (2014):</i> 70 percent</li> <li>▪ <i>Target (2017):</i> 85 percent</li> </ul>
<b>Pillar B: Increasing Efficiency Gains in the Energy and Water Sectors</b>			
<b>Prior Action #4:</b> NEPCO assigns adequate number of staff and implements capacity building program for assigned staff to manage LNG supply for power generation.	<b>Trigger #5:</b> NEPCO develops and implements fuel supply strategy to scale up share of gas supply for power generation.	<b>Prior Action #2.4:</b> NEPCO has adopted a strategy for diversification of fuel sources for power generation with increased reliance on cleaner energy sources.	<b>Result Indicator B1:</b> Number of natural gas import contracts. <i>Baseline (2014):</i> One contract. <i>Target (2017):</i> At least three contracts.
<b>Prior Action #5:</b> The Cabinet of Ministers approves bylaws for Renewable Energy Direct Proposals.	<b>Trigger #6:</b> The Ministry of Energy and Mineral Resources (MEMR) issues required regulations for implementation of Direct Proposal-bylaws and establishes a Public Data Room for Renewable Energy Development to improve transparency.	<b>Prior Action #2.5:</b> The MEMR has issued ‘Instructions and Requirements for Proposal Preparation and Submission’ to implement the direct proposal bylaws No. 50 of 2015 and has established a public data room for renewable energy	<b>Result Indicator B2:</b> Share of renewable energy capacity in the capacity mix (in MW). <ul style="list-style-type: none"> <li>▪ <i>Baseline (2014):</i> 0 percent</li> <li>▪ <i>Target (2017):</i> At least 10 percent</li> </ul>

<sup>47</sup> Cost recovery is defined here as operational and maintenance cost recovery as measured by MOWI covering WAJ and Water Companies.



Prior Actions and Triggers: DPL1 (Original)		Prior Actions: DPL2 (Revised)	Results
Prior Actions for DPL1	Triggers for DPL2		
		development to improve transparency.	
	<b>Trigger #7:</b> NEPCO implements in its Control and Dispatch Center operating procedures for integrating renewable power resources into the transmission grid according to the Control and Dispatch Center Operations Manual.	<b>Prior Action #2.6:</b> NEPCO has adopted standardized operating protocols for intermittent renewable energy to be integrated into agreements with new renewable power producers.	
<b>Prior Action #6:</b> The Cabinet of Ministers approves the Jordan Renewable Energy and Energy Efficiency Fund (JREEEF) bylaws, JREEEF Board of Directors approves the Business Plan for JREEEF and financing is secured for JREEEF startup operation.	<b>Trigger #8:</b> At least two of JREEEF's Financing Windows are operating with Window Managers in place, and JREEEF annual reports are issued.	<b>Prior Action #2.7:</b> JREEEF has operationalized two of its financing programs to ensure better access to renewable energy and energy efficiency.	
	<b>Trigger #9:</b> A multi-year Network Loss Reduction Program agreed upon between EMRC, and the distribution companies is finalized with yearly loss reduction targets and is under implementation.	<b>Prior Action #2.8:</b> The Borrower's Energy and Minerals Regulatory Commission and selected distribution companies have agreed on a multi-year Network Loss Reduction Plan which includes specific yearly loss reduction targets for 2016 and 2017.	<b>Result Indicator B3:</b> Reduction in electricity distribution network losses <ul style="list-style-type: none"> <li>▪ <i>Baseline (2015):</i> The distribution sector has losses of 14.04 percent and lacks multi-year loss reduction targets.</li> <li>▪ <i>Target (2017):</i> Network Loss Reduction Program is under implementation, and 2017 loss reduction target of 13.25 percent is achieved.</li> </ul>
<b>Prior Action #7:</b> The Minister of Water and Irrigation	<b>Trigger #10:</b> The Ministry of Water and Irrigation has a dedicated	<b>Prior Action #2.9:</b> The Borrower's Ministry of Water	<b>Result Indicator B4:</b> Increase in energy savings in the water sector as per the

Prior Actions and Triggers: DPL1 (Original)		Prior Actions: DPL2 (Revised)	Results
Prior Actions for DPL1	Triggers for DPL2		
approves an energy efficiency and renewable energy policy for the water sector.	budget line provision sufficient to implement its planned energy efficiency activities as laid out in the energy efficiency and renewable energy policy for the water sector.	and Irrigation has piloted the use of performance-based operations for the implementation of energy efficiency and renewable energy measures.	implementation of the Action Plan accompanying the Energy Efficiency and Renewable Energy Policy <ul style="list-style-type: none"> <li>▪ <i>Baseline (2013)</i>: Annual energy savings are 0 GWh per year</li> <li>▪ <i>Target (2017)</i>: Annual energy savings are 50 GWh per year</li> </ul>
<b>Prior Action #8:</b> The Minister of Water and Irrigation approves a Surface Water Utilization Policy.	<b>Trigger #11:</b> The Minister of Water and Irrigation approves a Water Substitution and Reuse Policy.	<b>Prior Action #2.10:</b> The Borrower's Ministry of Water and Irrigation has adopted a Water Substitution and Reuse Policy.	<b>Result Indicator B5:</b> Water is more optimally allocated <ul style="list-style-type: none"> <li>▪ <i>Baseline (2013)</i>: 123 MCM of surface water used for municipal water use</li> <li>▪ <i>Target (2017)</i>: 128 MCM of surface water used for municipal water use</li> </ul> <b>Result Indicator B6:</b> Volume of treated wastewater used for non-domestic uses <ul style="list-style-type: none"> <li>▪ <i>Baseline (2013)</i>: 110 MCM of treated wastewater used for non-domestic uses</li> <li>▪ <i>Target (2017)</i>: 135 MCM of treated wastewater used for non-domestic uses</li> </ul>
	<b>Trigger #12:</b> The Ministry of Water and Irrigation has a dedicated budget line provision sufficient to implement its planned actions to optimize its water resources as laid out in the surface water utilization and water substitution policies for the water sector.	<b>Prior Action #2.11:</b> The Borrower's Ministry of Water and Irrigation has adopted a Wastewater Treatment Plant National Plan for Operation and Maintenance, which includes the use of performance-based operation of wastewater treatment plants.	

## ANNEX 2: LETTER OF DEVELOPMENT POLICY



MINISTRY OF PLANNING AND INTERNATIONAL COOPERATION



Ref. No: 5/9/1/10876

Date : 6/11/2016

**Dr. Jim Yong Kim**  
**President of the World Bank Group**  
**The World Bank**  
**Washington D.C., USA**

**Subject: Letter of Development Policy for the  
Second Programmatic Energy and Water Sector Reforms Development Policy Loan**

**Dear Dr. Kim,**

Jordan, after a period of strong economic performance during the years 2000-2008, has suffered from two successive external shocks of significant importance; the global financial crisis of 2008 and the ensuing global recession, and regional turbulences that started in early 2011 with the onset of the Arab Spring events.

Conflicts in Syria and Iraq have led to a massive influx of refugees, putting enormous pressure on Jordan's limited and already stretched resources, and to disruptions in trade routes, less tourism and a hesitant investment outlook. At the same time, the near complete halt of gas flows from Egypt required imports of expensive fuel for electricity generation, contributing to large losses at the National Electric Power Company (NEPCO) and adding to the already high public debt. Economic performance remains well below potential (*with sluggish growth rates compared to an average of about 6 percent during the years 2000-2008*) and the hosting of Syrian refugees weighs on the economy and public finances.

Domestic revenues shrank from an average of 27 percent of GDP during 2000-2008 to an estimated 22 percent of GDP in 2015. Government expenditures increased to about 31 percent of GDP in 2014 (*although this started to decline to 29 percent by 2015*) to accommodate social demands through larger transfers and wage increases. This in addition to the government-guaranteed borrowing for NEPCO and the Water Authority of Jordan (WAJ) increased gross public debt to 93.4 percent of GDP by end-2015; the servicing of which exacerbates fiscal pressures.

Jordan has managed to stay resilient amidst a difficult external environment including the hosting of a large number of Syrian refugees. Macroeconomic stability has been maintained due to serious significant policy adjustment and reform measures undertaken by the Government of Jordan under the successfully completed IMF Stand-by-Arrangement (2012-2015).

In spite of continued spillover of regional conflicts, the Government is continuing with a major program of fiscal consolidation to preserve macroeconomic and fiscal stability and lower public debt while pursuing broad structural reforms to enhance the conditions for more inclusive growth. Our reform program is supported by a new IMF program Extended Fund Facility (EFF) for 2016-2019 approved in August 2016, which builds on the completed IMF Stand-by-Arrangement. The EFF aims at gradual fiscal consolidation to lower public debt to about 77 percent of GDP by 2021, while providing room for capital spending and preserving social spending. Key measures include revenue-enhancing reforms to the tax system, such as reforming the tax exemptions framework and broadening the tax base.

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Moreover, structural reforms will be implemented in several areas to enhance competitiveness, job prospects, and foster equity, fairness, and good governance. Monetary and financial policies will remain focused on maintaining adequate reserves to anchor the exchange rate. Ensuring sustainability in the energy and water sectors is a core element of the Government's reform program and the IMF EFF.

The events in the region since 2011 have severely impacted the energy and water sectors. Critical natural gas supplies from Egypt, which fueled over 90 percent of power generation, were disrupted and eventually came to a complete halt and with majority of supplies continuing to halt. The interruptions of gas supply caused NEPCO to run deficits equivalent to 4-5 percent of GDP per year since 2011, and accumulating commercial loans and advances from the Ministry of Finance (MOF) of about JD 4.9 billion by 2015.

The Syrian refugee influx in particular is putting additional pressures on energy and water service delivery in Jordan. Six years into the crisis, the prospects for a prompt return of the millions of Syrian refugees to their home country are remote. Even in the unlikely event of a solution to the crisis, it will take more than a decade to rebuild Syria. While some Syrian refugees will return and others may attempt to relocate to third countries, the majority are expected to remain in the country for years to come.

For Jordan, the magnitude and longevity of the crisis will likely translate into mounting costs and ever-increasing challenges. Jordan continues to uphold its moral obligations, carrying more than its fair share of the response and providing a global public good on behalf of the region and the international community. Today, Jordan is hosting about 1.3 million Syrians have sought refuge within its borders, growing Jordan's population by almost 19 percent. More than 89 percent of the Syrians are currently residing in host communities, while the rest 11 percent reside within camps. The majority of refugees are concentrated in northern governorates and cities, mainly in Mafraq and Irbid. Funding shortfalls have contributed to increased pressure on national services and infrastructure, thereby affecting Jordan's resilience in addition to impacting Jordan's hard-earned development gains and the country's sustainable development path. This has also put further pressure on the economy and stretched social cohesion in Jordanians host communities.

Energy and water service delivery (*already under great strain before the crisis*) has been severely affected especially in the northern governorates. Jordan was already one of the world's most energy-insecure countries before the crisis, relying on imports for 97 percent of its energy needs. The rapid growth of the residential population is putting additional pressure on the sector, adding to long-standing structural challenges relating to supply security, financial sustainability and efficiency. Electricity consumption in the residential sector and water pumping grew by an average of 4.8 percent and 3.8 percent, respectively, between 2010 and 2015, significantly outpacing demand in the commercial (1.7 percent) and industrial (3.0 percent) sectors. In total, residential electricity consumption has grown by 26 percent since 2010. The rate of distribution losses has grown by a sixth from 12 percent in 2010 to 14 percent 2015, reflecting higher strain on the distribution networks. Electricity consumption in the northern governorates (*those mostly affected by the Syria crisis*) showed

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an additional increase of 2.3 percent compared to other governorates in Jordan. From 2009 to 2014, Jordan has further seen a 33 percent increase in consumption of liquefied petroleum gas (LPG).

Jordan is already one of the most water scarce countries in the world, a situation aggravated dramatically by the influx of Syrian refugees. Before the refugee crisis, the severe water scarcity and the subsequent lack of capacity in combination with an aging infrastructure and inefficiencies in operation and maintenance resulted in a deficiency of water services for a growing population. Since the beginning of the Syrian refugee crisis, Jordan has seen a 21 percent increase in water demand across the country and a 40 percent increase in the north.

Due to insufficient water availability, the per capita daily consumption has decreased by 27 percent in the northern governorates since 2011. About 70 percent of the population (Jordanians and Syrian refugees) now suffer from inadequate water supply below the national standard of 100 liters per person per day. All in all, the annual direct short term cost of hosting Syrians on Water and Wastewater Sector is around JD 458.66 million, while other annual environmental and loss of opportunity costs are estimated at JD276.9 million.

**Program Overview**

The reform program supported by the DPL series is structured around two key policy areas (i) improving the financial viability of the electricity and water sectors; and (ii) increasing efficiency gains in the energy and water sectors. Key measures of the reform program focus on the restoration of the financial viability of sector utilities, in particular NEPCO – the backbone of the electricity sector – and on improving the operational performance of the energy and water sectors through efficiency gains. These policy areas are aligned with the Government’s objectives, and support achievement of the medium term targets of the “Jordan 2025: A National Vision and Strategy” which seeks to achieve self-reliance and stability based on financial sustainability, enhanced productivity, increased competitiveness and the gradual removal of indiscriminate subsidies.

Reducing the fiscal burden of the electricity and water subsidies will also provide the Government with the fiscal space to invest in pro-poor programs and more inclusive and productive economic and social sectors to improve the standard of living of the population in Jordan. The reform program supported by the DPL series is aligned with the Jordan Compact, under which Jordan in cooperation with the international community sets a paradigm shift in dealing with the Syrian refugee crisis. The Jordan Response Plan 2016-2018 assesses budgetary needs of US\$8 billion for refugee and resilience response programs across impacted sectors including energy and water, sanitation and hygiene (WASH).

The second DPL will build on and sustain the substantial reforms supported by the First Programmatic Energy and Water Sector Reforms DPL that have taken place since 2015. These reforms are already showing results for Jordan, especially with regard to improved financial and operational performance of the electricity and water sectors. The reforms supported by DPL-II aim to lock-in the gains from these reforms and further strengthen the financial viability and increase efficiency in the

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electricity and water sectors in the increasingly challenging context resulting from the Syrian refugee crisis.

## 1. Improving the Financial Viability of the Electricity and Water Sectors

### Achieving Electricity Tariff Cost Recovery

As a result of a series of electricity tariff increase between 2013 and 2015, the switch from oil to cheaper natural gas since mid-2015, the commissioning of the first large-scale renewable energy plants, and the sharp decline in international oil prices since mid-2014, full cost recovery of electricity tariffs was reached at the end of 2015 and sustained over the first half of 2016. This is a major achievement and marks the end of a five-year period during which NEPCO accumulated JD4.9 billion of commercial loans and advances from MOF. Cost recovery for the whole of 2015 reached 86 percent, up from 56 percent in 2014 and on track to reach the target of 100 percent in 2017. The Government is committed to locking-in its reform achievements through further tariff reforms with the aim to sustain cost recovery for NEPCO amid volatile energy import prices. To this end, the Government announced on 21 July 2016 that a mechanism for automatic adjustment of the electricity tariff will be adopted. **The Energy and Minerals Regulatory Commission (ERMC) has adopted on 5 October 2016 an electricity tariff adjustment mechanism to sustain cost recovery taking into account consumer affordability.**

While working to sustain cost recovery in the power sector, the Government is taking measures to manage and eventually repay NEPCO's accumulated debt. NEPCO's accumulated commercial loans and advances from MOF surged from JD193 million (1.1 percent of GDP) in 2010 to JD4.9 billion (18.8 percent of GDP) in 2015. The Government acknowledges that the financial viability of NEPCO needs to be restored in order to enable the company to maintain its assets and invest in the expansion of its transmission network. Therefore, **the Council of Ministers approved a multi-year Debt Management Plan for NEPCO for the period 2017-2023 on 2 November 2016.**

Under the Debt Management Plan, NEPCO will rely on domestic borrowing to refinance most of NEPCO's debt principal obligations in 2017-2023, while gradually reducing the stock of debt using the net profits guaranteed by the automatic adjustment of the electricity tariff according to changes in international oil prices. The Debt Management Plan aims to reduce the stock of fuel-related commercial debt by JD 84 million by 2017.

### Enhancing Cost Recovery in the Water Sector

The recently adopted National Water Strategy 2016-2025 reconfirms the Government commitment to rationalize the price structure of water and wastewater services to ensure efficient use of water, while improving the use of commercial practices and reduce subsidies to the sector. The water sector puts a significant burden on the budget due to the combination of high cost of supplying water resulting from Jordan's extreme water scarcity and low revenues from the various water users, especially from agricultural and domestic water users who receive subsequently large water subsidies. The increase in electricity prices (aimed at putting NEPCO on a path of cost recovery) and the large influx of Syrian refugees have imposed an additional financial burden on the water sector,

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underscoring the urgency to improve the financial viability of the sector. **The Ministry of Water and Irrigation has adopted the measures to increase water sector revenues to enhance operation and maintenance cost recovery in accordance with the Structural Benchmark Action Plan to Reduce Water losses dated August 2013 (2013-2021)** developed under the IMF SBA (2012-2015), which has been updated under the IMF EFF.

In accordance with the Structural Benchmark Program, the Government has since 2013 increased water prices for all water users, including increases in industrial groundwater charges (November 2013), water and wastewater tariffs (July 2014, and December 2015), charges for irrigation wells in the highlands (January 2016), wastewater connection fees (July 2014, originally planned for 2015) and treated wastewater reuse charge (January 2016). It has also signed management contracts to improve collection efficiencies in Madaba and Zarqa. As a result, the revenues of the three water companies and WAJ rose by JD 53 million (or 27 percent) between 2013 and 2015.

## 2. Increasing Efficiency Gains in the Energy and Water Sectors

In parallel with reforms aimed at restoring cost recovery, the Government is implementing measures to improve efficiency of supply and demand for energy and water. These measures will further improve operational and financial performance and lay the groundwork for achieving medium term efficiency gains to promote the long-term sustainability of these sectors.

### *Provision of cleaner fuel supply for power generation and scaling up development of domestic renewable energy resources and energy efficiency*

Since the disruption of gas supplies from Egypt, the Government of Jordan has been making great efforts to diversify its fuel supply sources for power generation. The Government has completed the development of an LNG floating terminal at the port of Aqaba, which started operation in July 2015. With support from the World Bank, NEPCO has developed its institutional capacity to procure LNG and manage the gas supplies. As a result, since commissioning the terminal in July 2015, NEPCO has embarked upon diversification of natural gas supplies across medium-term LNG supply contracts and cargoes on the spot LNG market. More than 85 percent of power generation in Jordan is now fueled by natural gas, up from 7 percent in 2014 and already beyond the 70 percent target for 2017. The cleaner natural gas has replaced the more expensive and polluting diesel and heavy fuel oil. In order to further diversify its supply sources and reduce its exposure to price volatility, **NEPCO has adopted a strategy for diversification of fuel sources for power generation with increased reliance on cleaner energy sources on 1 September 2016.**

The Government also recognizes that the development of renewable energy is a key priority for diversification of its energy mix from domestic resources. The Renewable Energy and Energy Efficiency (REEE) Law was adopted in 2012, creating a regulatory and financial framework for renewable energy and energy efficiency and mandating the establishment of the Jordan Renewable Energy and Energy Efficiency Fund (JREEEF). A comprehensive regulatory and pricing framework has since been established by the Government, including indicative pricing schemes for various renewable technologies, a competitive and fair capacity procurement process, transparent grid

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interconnection procedures, a technically sound grid code for renewable generators, and a workable operation protocol for project operators. Thanks to this regulatory and pricing framework Jordan has become a regional leader in private-sector owned renewable energy development and strives to become a regional hub for knowledge and service industries related to renewable energy.

The Ministry of Energy and Mineral Resources signed power purchasing agreements with private sector developers for over 900 MW of renewable energy projects and another 450 MW are in earlier stages of development. The share of MW renewable power in the generation mix increased to 4.7 percent as of May 2016, up from 0 percent in 2014, and the development of the various projects is on track to ensure that renewable energy makes up 10 percent of the power generation mix in 2017, as targeted in the Jordan 2025 National Vision and Strategy. The Government of Jordan also continues to improve the renewable energy regulatory framework. **On 29 September 2016, the Ministry of Energy and Mineral Resources has sent to Cabinet the “Instructions and Requirements for Proposal Preparation and Submission” regulations for the implementation of the direct proposals bylaws No. 50 of 2015**, which streamline the investment procedures for renewable energy projects and were published in the Official Gazette on 16 October 2016.

**The Ministry of Energy and Mineral Resources has also established a Public Data Room within the Energy Information System (eis.memr.gov.jo) on 28 September 2016 for renewable energy development to improve transparency** and increase investors and public confidence in the future renewable energy development in Jordan. Moreover, NEPCO is strengthening its institutional capacity in renewable energy operations. **NEPCO has adopted standardized operating protocols for intermittent renewable energy to be integrated into agreements with new renewable power producers.** In parallel, with support from other donors and IFIs, NEPCO is reinforcing the network in the central Jordan desert area, where most renewable projects are located, under the ‘Green Corridor’ project and is strengthening its institutional capacity for renewable energy operation and dispatch through capacity building programs and twinning arrangements.

Energy efficiency is a core pillar of the Government’s reform program. The establishment of JREEEF in 2014 was a key step to raise awareness of potential energy savings among industry, commercial and household consumers, to provide technical and financial support to overcome existing investment barriers and to promote private investments for energy efficiency and renewable energy projects. The bylaws for JREEEF, adopted on 3 May 2015, were developed through extensive consultation with energy sector stakeholders and are designed to build the credibility of JREEEF by ensuring the effective and transparent management of the Fund. Since 2015, the Government and JREEEF have taken decisive steps to make the Fund fully operational. The board approved JREEEF’s Strategic and Operational Plan for 2015 - 2018. **Since 1 August 2016, JREEEF has operationalized two of its Financing Programs to ensure better access to renewable energy and energy efficiency.**

The fund hired seven additional staff on 1 August 2016 reaching a total of 12 staff to manage its 7 programs that are aimed to promote energy efficiency and the use of renewable energy. These programs focus on schools, households, government buildings, worship places, SME’s, innovation,

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and awareness and capacity building. MOUs have been signed with a number of participating commercial banks and requests for proposals have been launched for several of the Fund's programs.

#### **Development of Electricity Distribution Networks Loss Reduction Program**

The Government's program to improve overall operational efficiency in the electricity sector includes reducing losses in the distribution networks. Distribution losses have increased from 12 percent to 14 percent between 2010 and 2015, in part due to the Syrian Refugee crisis. **To reduce losses in the electricity sector, EMRC and the distribution companies have agreed on a multi-year Network Loss Reduction Plan which includes specific yearly loss reduction targets for 2016 and 2017.** EMRC finalized bilateral performance agreements with the three private distribution companies (DISCOMs) as part of the biannual budget review exercise, with specific loss reduction targets for 2016 and 2017 agreed upon between the EMRC and each company. The targets will be reviewed in 2017 and new targets would be set for 2018 and 2019 under the next budget review exercise. A rolling two-year budget review exercise that provides loss reduction targets for the DISCOMs along with the related investment plan and action plan is expected to achieve loss minimization over the medium term.

#### **Scaling Up Of Energy Efficiency and Renewable Energy in the Water Sector**

The dismantling of electricity subsidies has had a significant impact on the financial viability of the water sector. Due to its water scarce environment and with water resources being located at considerable distance of population agglomerations, water needs to increasingly be distributed and pumped over often large distances and lifted to overcome altitude differences. As a result, about 14 percent of the electricity consumption in the country is currently used in the water sector, making the sector the largest user of electricity in the country. Hence, the Government recognizes that more efficient electricity consumption is essential to improve the operational and financial performance of the water sector. To generate energy savings in the water sector, the Cabinet of Ministers approved on 2 June 2015 an Energy Efficiency and Renewable Energy Policy for the water sector prepared by the Ministry of Water and Irrigation. **The Ministry of Water and Irrigation has piloted the use of performance-based operation for the implementation of energy efficiency and renewable energy measures.** Already renewable energy projects to support water sector electricity needs are underway.

#### **Optimizing the Allocation of Water Resources**

The per capita available renewable water resources are dropping steadily in the country due to population growth. In 2013, the surface water annual yield was about 362 million cubic meter (MCM), which is about 40 percent of the total water annual yield. As a result, Jordan still depends disproportionately on groundwater resources causing that resource to be over-exploited. The Government is developing policies to achieve a more efficient use of the existing surface water resources and increase reliance on treated wastewater. The Government is also implementing measures to use fresh water for the activities that generate the highest value and aims to reduce the volume of fresh water to the agricultural sector in the long-run by increasingly substituting fresh water with treated wastewater to supply farmers and industry. At the same time, the Government aims to

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increase the cost of groundwater as a tool to reduce over-pumping. This process was initiated with the increase of groundwater tariffs as per the Structural Benchmark Plan.

In 2015, the Ministry of Water and Irrigation approved a Surface Water Utilization policy that aims amongst others to use surface water resources more efficiently through a set of measures to increase water harvesting, land use measures and improvements in storm water management. Furthermore, **the Ministry of Water and Irrigation has adopted on 8 November 2015 the Water Substitution and Reuse Policy. The MOWI adopted the National Wastewater Treatment National Plan for Operation and Maintenance on 30 September 2015, which includes the use of performance-based operation of wastewater treatment plants.**

In conclusion, allow me to express my sincere gratitude to the World Bank for its tireless efforts and invaluable support. We would like to express again our strong commitment to the energy and water sectors reform programs outlined in this letter and whose execution in the difficult regional context will require significant mobilization of resources from our development partners, including the World Bank. For this purpose, the Government of Jordan requests the World Bank support for our programs, as a critical partner for Jordan's development agenda.

We therefore look forward to our continued collaboration in developing the energy and water sectors in Jordan. Additionally, we hope that DPL will be provided on maximum concessionality given the burdens Jordan is carrying and commitment to comprehensive reforms especially that Global Concessional Financing Facility is a great success for fair burden sharing, and came to existence based on a call made by Jordan, yet unfortunately came in five years late.

Please accept my high esteem and consideration.

Sincerely,

**Imad Najib Fakhoury**  
**Minister of Planning and**  
**International Cooperation**

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### ANNEX 3: FUND RELATIONS NOTE

#### **IMF Executive Board Approves US\$723 million Extended Arrangement under the EFF for Jordan**

Press Release no. 16/381  
August 25, 2016

- IMF approves US\$723 million for Jordan under the EFF.
- With approval, about US\$72.3 million are available for immediate disbursement.
- Jordan's economic program aims at reducing public debt and help boost inclusive growth.

On August 24, 2016 the Executive Board of the IMF approved a three-year extended arrangement under the EFF for Jordan for an amount equivalent to SDR 514.65 million (about US\$723 million, or 150 percent of Jordan's quota) to support the country's economic and financial reform program. This program aims at advancing fiscal consolidation to lower public debt and broad structural reforms to enhance the conditions for more inclusive growth.

Following the Board's decision, an amount equivalent to SDR 51.465 million (about US\$72.3 million) is made available for immediate disbursement, the remaining amount will be phased in over the duration of the program, subject to six reviews.

Following the Executive Board discussion on Jordan, Mr. David Lipton, First Deputy Managing Director, and Acting Chair, said:

“The Jordanian economy has performed favorably under a difficult external environment, including the hosting of a large number of Syrian refugees. Macroeconomic stability has been maintained thanks to significant policy adjustment and reforms. However, economic performance remains below potential and the hosting of Syrian refugees weighs on the economy and public finances.

“The authorities have developed a comprehensive economic reform program to enhance the conditions for more inclusive growth and preserve macroeconomic stability. Early and decisive actions are expected to provide new economic opportunities, job creation, and bolster confidence under a difficult environment. While the domestic and regional conditions are challenging, the authorities' strong commitment and their ownership of the program is welcomed. Continued donor support through sufficient grants and concessional financing as stated in the Jordan Compact, will also be important to support program goals.

“Public debt needs to be put on a downward path through gradual fiscal consolidation over the medium term while preserving essential social spending. To this end, it is critical to reduce the general sales tax and customs duty exemptions and to amend the income tax law. The electricity company NEPCO needs to reach operational cost recovery and Water Authority of Jordan's finances should be consolidated. Public financial management should be strengthened to enhance fiscal transparency and reduce fiscal risks.

“Monetary policy has been skillfully managed, and will continue to be anchored by the exchange rate peg and focus primarily on preserving an adequate level of reserves. To further strengthen the regulatory framework, adoption of the amendments to the central bank law is a step in the right direction, and those for commercial banking law and of the secured lending and insolvency laws should be expedited.

“A swift implementation of the structural reform agenda would enhance the resilience and depth of the financial sector, the business environment, and help tackle challenges facing SMEs in terms of access

to finance. Labor market reforms are needed to boost youth and female employment and lessen informality.”

### **Recent Economic Developments**

With the implementation of a program supported by SBA that expired in August 2015, Jordan managed to maintain macroeconomic stability and undertook significant policy reforms amid a difficult external environment, high vulnerabilities, and hosting a large number of Syrian refugees. However, important challenges remain: economic growth remains below potential, unemployment remains high especially among the young and women, gross public debt has risen to 93 percent of GDP, the refugee crisis is weighing on the economy and public finances, and the current account deficit is high.

To tackle these challenges, the authorities have formulated an economic and financial reform program that is underpinned by Jordan’s ten-year framework for economic and social policies - Vision 2025. This program aims at advancing fiscal consolidation and broad structural reforms to enhance the conditions for more inclusive growth.

### **Program Summary**

The new program is designed in a flexible manner by pursuing gradual and steady fiscal consolidation to bring the debt down to safer levels while protecting the poor and by advancing comprehensive reforms to enhance the conditions for more inclusive growth, particularly in light of the challenges posed by the regional conflicts on exports, investment, and the labor market.

**Gradual and steady fiscal consolidation.** The authorities’ program aims at gradual fiscal consolidation to lower public debt to about 77 percent of GDP by 2021, while providing room for capital spending and preserving social spending. Key measures include revenue-enhancing reforms to the tax system, such as reforming the tax exemptions framework and broadening the tax base.

**Structural policies to promote growth and jobs.** Structural reforms will be implemented in several areas to enhance competitiveness, job prospects, and foster equity, fairness, and good governance. Such measures will aim at increasing labor force participation, particularly for women and youth, reducing informality, enhancing the business environment, ensuring sustainability in the energy and water sectors, preserving social spending, and improving public accountability and good governance.

**Monetary and financial policies will remain focused on maintaining adequate reserves to anchor the exchange rate.** Furthermore, the authorities plan to advance several reforms to enhance the resilience and depth of the financial system, including to strengthen the regulatory framework, enhance the Anti-Money laundering/Combating the Financing of Terrorism regime, and promote better supervision of the insurance and microfinance sectors.

**Table 3.1. Jordan: Selected Economic Indicators and Macroeconomic Outlook, 2014–2021**

Year	SBA			Projections					
	2014	2015	2015	2016	2017	2018	2019	2020	2021
<b>Output and prices</b>	<b>(Percentage change, unless otherwise indicated)</b>								
Real GDP at market prices	3.1	2.9	2.4	2.8	3.3	3.8	4.0	4.0	4.0
GDP deflator at market prices	3.4	3.5	2.3	2.2	2.3	2.5	2.5	2.5	2.5
Nominal GDP at market prices	6.6	6.5	4.7	5.0	5.7	6.3	6.6	6.6	6.6
Nominal GDP at market prices (JD, millions)	25,437	27,091	26,637	27,972	29,560	31,435	33,510	35,721	38,079
Nominal GDP at market prices (US\$, millions)	35,878	38,210	37,570	39,453	41,692	44,337	47,263	50,383	53,708
Consumer price inflation (annual average)	2.9	0.2	-0.9	-0.5	2.3	2.5	2.5	2.5	2.5
Consumer price inflation (end of period)	1.7	1.9	-1.6	1.2	2.5	2.5	2.5	2.5	2.5
Unemployment rate (period average, percent)	11.9	—	13.1	—	—	—	—	—	—
<b>National accounts <sup>1/</sup></b>	<b>(In percent of GDP, unless otherwise indicated)</b>								
Consumption	106.5	103.3	104.9	103.0	101.1	98.7	96.3	95.2	94.6
Government	16.0	15.2	15.5	15.8	14.2	12.3	10.7	10.7	10.7
Other	90.6	88.1	89.3	87.2	87.0	86.4	85.6	84.5	83.8
Gross domestic investment	21.2	20.3	19.2	19.5	20.1	20.8	21.7	21.8	21.8
Government	4.5	4.0	4.2	4.3	4.5	4.8	5.0	5.0	5.0
Other	16.8	16.3	15.1	15.2	15.6	16.1	16.7	16.8	16.8
Gross national savings	14.4	12.9	10.2	10.4	11.2	13.4	15.5	15.6	15.6
Government	-3.5	-0.4	-2.0	0.5	1.9	3.7	5.5	5.5	5.5
Other	17.9	13.4	12.3	10.0	9.2	9.6	10.0	10.2	10.1
Savings-investment balance	-6.8	-7.4	-9.0	-9.0	-8.9	-7.5	-6.2	-6.2	-6.2
Government	-8.0	-4.4	-6.2	-3.8	-2.6	-1.0	0.5	0.5	0.5
Other	1.2	-3.0	-2.8	-5.3	-6.4	-6.4	-6.7	-6.6	-6.7
<b>Fiscal operations</b>									
Revenue and grants	27.9	26.1	25.0	25.8	26.3	26.2	25.9	25.6	25.7
Of which: grants	4.9	2.8	3.3	3.2	3.2	3.1	2.8	2.5	2.5
Expenditure <sup>2/</sup>	38.0	29.1	30.1	29.6	30.3	30.4	29.9	29.7	29.8
Fiscal gap	0.0	0.0	0.0	0.0	1.5	3.2	4.6	4.6	4.6
Overall fiscal balance	-10.3	-3.0	-5.4	-3.8	-2.6	-1.0	0.5	0.5	0.4
Primary government balance, excl. grants, NEPCO, and WAJ	-4.5	-2.1	-5.2	-3.7	-2.5	-0.9	0.9	1.1	1.2
NEPCO operating balance	-4.6	-1.4	-0.9	0.0	0.0	0.0	0.0	0.0	0.0
WAJ overall balance	-1.0	—	-1.1	-1.3	-1.3	-1.2	-1.2	-1.1	-1.1
Combined public sector balance <sup>3/</sup>	-10.2	—	-7.2	-5.0	-3.8	-2.0	-0.3	0.0	0.1
Government and government-guaranteed gross debt <sup>4/</sup>	89.0	90.0	93.4	94.4	94.0	91.0	86.3	81.7	77.3
Of which: external debt	31.2	34.5	35.2	36.9	36.9	37.5	37.6	37.3	37.0
<b>External sector</b>									
Current account balance (including grants), of which:	-6.8	-7.4	-9.0	-9.0	-8.9	-7.5	-6.2	-6.2	-6.2
Exports of goods, free on board (US\$, billions)	8.4	8.1	7.8	7.5	7.9	8.5	9.1	9.7	10.3
Imports of goods, free on board (US\$, billions)	20.2	18.2	18.1	17.7	18.2	18.7	19.4	20.2	21.3
Oil and oil products (US\$, billions)	5.5	3.6	3.3	2.7	2.9	3.0	3.2	3.3	3.6
Current account balance (excluding grants)	-12.1	-10.9	-12.0	-12.5	-11.8	-10.2	-9.0	-8.8	-8.8
Private capital inflows (net)	5.3	4.3	3.7	4.2	4.3	4.9	5.5	5.7	5.6
<b>Monetary sector</b>	<b>(Percentage change)</b>								
Broad money	6.9	8.2	8.1	7.6	6.9	—	—	—	—
Net foreign assets	15.4	7.4	3.5	5.5	4.3	—	—	—	—
Net domestic assets	4.0	8.5	9.8	8.3	7.8	—	—	—	—
Credit to private sector	3.7	6.0	4.8	10.2	8.5	—	—	—	—
Credit to Central Government	2.3	-1.6	-1.8	1.7	1.5	—	—	—	—
<b>Memorandum items</b>									



Year	SBA			Projections					
	2014	2015	2015	2016	2017	2018	2019	2020	2021
Gross usable international reserves (US\$, millions)	14,973	15,367	15,678	15,888	15,829	16,854	18,038	19,160	20,202
In months of prospective imports	8.0	7.9	8.5	8.4	8.1	8.3	8.5	8.6	8.6
In percent of reserve adequacy metric	135.3	142.3	135.8	130.0	122.4	123.0	123.6	124.8	126.2
Net international reserves (US\$, millions)	13,374	14,091	13,589	13,894	14,040	15,360	16,867	18,188	19,303
Population (millions) <sup>5/</sup>	7.42	—	7.59	7.75	7.88	7.99	8.08	8.17	8.25
Nominal per capita GDP (US\$)	4,838	—	4,947	5,092	5,293	5,553	5,849	6,169	6,513
Real effective exchange rate (end of period, 2010=100) <sup>6/</sup>	112.8	—	118.1	—	—	—	—	—	—
Percent change (+=appreciation; end of period)	6.9	—	4.7	—	—	—	—	—	—

Sources: Jordanian authorities; and Fund staff estimates and projections as released 25 August 2016.

1/ Government includes the Central Government and operating losses of NEPCO and WAJ.

2/ Includes net lending, transfers to NEPCO and WAJ, and other use of cash.

3/ Defined as the sum of the primary Central Government balance (excluding grants and transfers to NEPCO and WAJ), NEPCO operating balance, and WAJ overall balance.

4/ Includes NEPCO and WAJ debt.

5/ Data from United Nations population division.

6/ INS data. CBJ staff's estimates, based on updated trade weights, shows a more moderate pace of real appreciation over the past few years.

#### ANNEX 4: ANALYTICAL ACTIVITIES UNDERPINNING THE DPL

Prior Actions	Analytical Underpinnings
<b>Operation Pillar A: Improving the Financial Viability of the Electricity and Water Sectors</b>	
<p><b>Prior Action 2.1:</b> The Borrower’s EMRC has adopted an electricity tariff adjustment mechanism, to sustain cost recovery taking into consideration consumer affordability.</p>	<p><i>National Strategic Plan for Dealing with NEPCO’s Losses.</i> Government policy paper. 2013;  <i>An Assessment of the Jordan 2012 Petroleum Subsidies Reform and Cash Compensation Program.</i> World Bank note. 2013;  <i>An Analysis of Consumption Subsidies.</i> World Bank draft note. 2011;            World Bank. 2011. “Electricity Subsidies and Household Welfare in Jordan: Can Households Afford to Pay for the Budget Crisis?”            IMF Jordan Staff Reports for Article IV. IMF. 2013–2015            Atamanov, Aziz, Jon Robbert Jellema, Umar Serajuddin. 2015. “Energy Subsidies Reform in Jordan: Welfare Implications of Different Scenarios.” Policy Research Working Paper WPS 7313. World Bank, Washington, DC.  <i>Restructuring Retail Electricity Tariff in Jordan.</i> AFD technical assistance to EMRC - to be launched</p>
<p><b>Prior Action 2.2:</b> The Borrower’s Council of Ministers has approved a multi-year Debt Management Plan for NEPCO.</p>	<p>Cabinet of Ministers circular issued on [DATE] tasking the inter-ministerial debt committee with development a Debt Management Plan for NEPCO</p> <p>IMF Jordan Staff Reports for Article IV. IMF 2013-2015</p>
<p><b>Prior Action 2.3:</b> The Borrower’s Council of Ministers has approved the measures to increase water sector revenues to enhance O&amp;M cost recovery in accordance with the “Structural Benchmark - Action Plan to Reduce Water Sector Losses” dated August 2013.</p>	<p>Water for Life Strategy: Government Document. 2009;            The Structural Benchmark - Government Action Plan to Reduce Water Sector Losses. Government Document. 2013;            The Water Public Expenditure Perspectives, USAID. 2011;            Charge a Fair Price for Water, USAID, 2011;            Improve the Targeting of Domestic Water Subsidies, USAID, 2011;            IMF Jordan Staff Reports for Article IV. IMF. 2013–2015;            The Cost of Irrigation Water in the Jordan Valley, World Bank, 2015;            National Water Strategy 2016–2025. Government Document, 2016.</p>
<b>Operation Pillar B: Increasing Efficiency Gains in the Energy and Water sectors</b>	
<p><b>Prior Action 2.4:</b> NEPCO has adopted a strategy for diversification of fuel sources for power generation with increased reliance on cleaner energy sources.</p>	<p>NEPCO’s staffing assessment and assignment;            NEPCO’s Training Program on LNG Supply and Facility Operation.</p>
<p><b>Prior Action 2.5:</b> The MEMR has issued ‘Instructions and Requirements for Proposal Preparation and Submission’ to implement the direct proposal bylaws No.50 of 2015 and has established a public data room for renewable energy development to improve transparency.</p>	<p>Renewable Energy Technical Assistance Support - Financed by the World Bank managed GEF for the Promotion of A Wind Power Market. 2010–2012;            Development of Institutional and Operating Arrangements for the Jordan Renewable Energy and Energy Efficiency Fund. Government Document. 2007;            JREEEF Business Plan: 2015.</p>
<p><b>Prior Action 2.6:</b> NEPCO has adopted standardized operating protocols for intermittent renewable energy to be integrated into agreements with new renewable power producers.</p>	

Prior Actions	Analytical Underpinnings
<p><b>Prior Action 2.7:</b> JREEEF has operationalized two of its Financing Programs to ensure better access to renewable energy and energy efficiency.</p>	
<p><b>Prior Action 2.8:</b> The Borrower’s EMRC and selected distribution companies have agreed on a multi-year Network Loss Reduction Plan which includes specific yearly loss reduction targets for 2016 and 2017.</p>	<p>EMRC. Annual Report 2014, Electricity and Minerals Regulatory Commission (EMRC), Amman, Jordan;</p> <p>NEPCO. Annual Report 2014, National Electric Power Company (NEPCO), Amman, Jordan</p>
<p><b>Prior Action 2.9:</b> The Borrower’s Ministry of Water and Irrigation has piloted the use of performance-based operations for the implementation of energy efficiency and renewable energy measures.</p>	<p>Improvement of Energy Efficiency of the WAJ. GIZ technical assistance to WAJ. 2008–2014;</p> <p>Efficiency and Renewable Energy Policy in the Water Sector. Government Document. 2015</p>
<p><b>Prior Action 2.10:</b> The Borrower’s Ministry of Water and Irrigation has approved a Water Substitution and Reuse policy.</p> <p><b>Prior Action 2.11:</b> The Borrower’s Ministry of Water and Irrigation has adopted a Wastewater Treatment Plant National Plan for O&amp;M, which includes the use of performance-based operation of wastewater treatment plants.</p>	<p>Jordan’s Water Strategy 2008–2022. Government Document. 2009;</p> <p>National Water Strategy 2016–2025. Government Document, 2016;</p> <p>Non- Revenue Water Reduction Programs, USAID, 2011;</p> <p>Towards the Safe Use of Treated Wastewater, GIZ, 2011;</p> <p>Surface Water Utilization Policy. Government Document. 2015;</p> <p>Water Reallocation Policy. Government Document. 2015</p> <p>Water Substitution Policy. Government Document, 2016</p> <p>Possibilities of Reuse of Treated Wastewater for Irrigation Purposes in the Northern Jordan Valley in Environment Protection Engineering, June 2014</p> <p>Wastewater Treatment Plant National Plan for Operation and Maintenance</p>



## ANNEX 5: ENVIRONMENT AND POVERTY/SOCIAL ANALYSIS TABLE

Prior Actions	Significant positive or negative environment effects (yes/no/to be determined)	Significant poverty, social or distributional effects positive or negative (yes/no/to be determined)
<b><i>Pillar A: Improving the financial viability of the electricity and water sectors</i></b>		
<b>Prior Action #2.1:</b> The Borrower’s EMRC has adopted an electricity tariff adjustment mechanism, to sustain cost recovery taking into consideration consumer affordability.	Positive environmental effects expected. Tariff adjustments (increases) will have through the price elasticity mechanism a negative impact on demand, which will result in positive environmental effects through lower GHG emissions.	Neutral to modest negative social effects. Tariff adjustments will increase the bills households will have to pay for energy. The use of cross subsidies and the use of direct subsidies would help reduce the distributional impacts for the poor.
<b>Prior Action #2.2:</b> The Borrower’s Council of Ministers has approved a multi-year Debt Management Plan for NEPCO.	Positive environmental impact expected. In order to invest in planned transmission systems for supporting renewable energy development, NEPCO needs to have a strong commercial standing – for which effective debt management is important.	Neutral to modest negative social impact. Repayment of debt would be primarily done through higher revenues collected from electricity consumers. Thus, it would result in higher cost of electricity for consumers. However, tariff adjustments would be made to reflect progressive tariff increases that do not burden the lowest consumption brackets.
<b>Prior Action #2.3:</b> The Borrower’s Council of Ministers has approved the measures to increase water sector revenues to enhance O&M cost recovery in accordance with the “Structural Benchmark - Action Plan to Reduce Water Sector Losses” dated August 2013.	Positive environmental effects expected. Tariff adjustments (increases) will have through the price elasticity mechanism a negative impact on demand, resulting in lower demand for water (and in the case of Jordan due to the high energy intensity of water, also in a lower demand for energy), which results in a reduction of the supply demand gap in water but also in lower energy use and emissions.	Positive social effects, but there is the possibility of modest negative distributional impacts. The social impacts of tariff increases would be positive as scarce water resources will be used more efficiently. In general, the distributional impacts on vulnerable water users can be largely mitigated by the use of direct subsidies. However, the PSIA showed that the impact on household’s budgets has been relatively small.
<b><i>Pillar B: Increasing efficiency gains in the energy and water sectors</i></b>		
<b>Prior Action #2.4:</b> NEPCO has adopted a strategy for diversification of fuel sources for power generation with increased reliance on cleaner energy sources.	Positive environmental impact expected. With diversification of fuel sources, and increased reliance on cleaner natural gas and renewable energy sources, the risk of dependence on liquid fossil fuels would reduce significantly, leading to lower emissions from power generation.	Positive social impact. Generation from cheaper natural gas and renewable energy sources would reduce the electricity prices faced by the consumers as compared to generation from liquid fossil fuels (diesel and HFO).

<b>Prior Actions</b>	<b>Significant positive or negative environment effects (yes/no/to be determined)</b>	<b>Significant poverty, social or distributional effects positive or negative (yes/no/to be determined)</b>
<b>Prior Action #2.5:</b> The MEMR has issued 'Instructions and Requirements for Proposal Preparation and Submission' to implement the direct proposal bylaws No.50 of 2015 and has established a public data room for renewable energy development to improve transparency.	Positive environmental effects expected. Faster development of renewable energy will have a positive environmental effect from lower GHG emissions.	Generation from cheaper renewable energy sources would reduce the electricity prices faced by the consumers as compared to generation from liquid fossil fuels (diesel and HFO).
<b>Prior Action #2.6:</b> NEPCO has adopted standardized operating protocols for intermittent renewable energy to be integrated into agreements with new renewable power producers.	Positive environmental effects expected. Faster development of grid-integrated renewable energy will have a positive environmental effect from lower GHG emissions.	Positive social impact. Generation from cheaper renewable energy sources would reduce the electricity prices faced by the consumers as compared to generation from liquid fossil fuels (diesel and HFO).
<b>Prior Action #2.7:</b> JREEEF has operationalized two of its Financing Programs to ensure better access to renewable energy and energy efficiency.	Positive environmental effects expected. Increased energy efficiency and renewable energy would lessen the overall demand for electricity and thus require less generation from fossil fuel sources, leading to lower GHG emissions.	Positive social impact.  Energy efficiency programs would help reduce the expenditure on energy through reduced consumption.
<b>Prior Action #2.8:</b> The Borrower's EMRC and selected distribution companies have agreed on a multi-year Network Loss Reduction Plan which includes specific yearly loss reduction targets for 2016 and 2017.	Positive environmental effects expected. Network loss reduction would lessen the demand for electricity and thus require less generation, leading to lower GHG emissions.	Positive social impact Reduction in losses would enable lower tariffs, as well as enable investments in a healthier sector, leading to improved services.
<b>Prior Action #2.9:</b> The Borrower's Ministry of Water and Irrigation has piloted the use of performance-based operations for the implementation of energy efficiency and renewable energy measures.	Positive environmental effects expected. Improving energy efficiency will have a positive environmental effect resulting in lower energy consumption and subsequent lower emissions. Higher dependence on renewable energy will also have a positive impact with less GHG emissions.	Positive social effects expected. Potential welfare effects expected as improving energy efficiency will reduce the operation and maintenance costs of the water providers and hence will reduce the size of the tariff increases.
<b>Prior Action #2.10:</b> The Minister of Water and Irrigation has adopted a Water Substitution and Reuse Policy.	Positive environmental effects expected. The substitution of water from groundwater to surface water and non-conventional water sources (reuse of treated wastewater) will help to reduce the levels of groundwater mining.	Neutral to positive effect. Water substitution and re-use is aiming to ensure that fresh water is increasingly used for higher value uses (including domestic water use), while lower value uses will increasingly use water blended with treated wastewater. This re-allocation takes place at the raw water level, and hence water of higher quality is being used for higher value uses.

<b>Prior Actions</b>	<b>Significant positive or negative environment effects (yes/no/to be determined)</b>	<b>Significant poverty, social or distributional effects positive or negative (yes/no/to be determined)</b>
<p><b>Prior Action #2.11:</b> The Borrower's Ministry of Water and Irrigation has adopted a Wastewater Treatment Plant National Plan for O&amp;M, which includes the use of performance-based operation of wastewater treatment plants.</p>	<p>Positive environmental effects expected. Improved management of wastewater treatment plants will reduce energy consumption, increase water quality, promote the reuse of wastewater and the subsequent reallocation of water sources, and reduce dependence on ground water</p>	<p>Positive social effects expected. Potential welfare effects expected as improving energy efficiency will reduce the operation and maintenance costs of the water providers and hence will reduce the size of the tariff increases. Distributional effects between the different water sectors will help to reallocate water from lower to higher value uses.</p>

## ANNEX 6: POVERTY AND SOCIAL IMPACT ANALYSIS

### Methodology

1. The estimation of the poverty impacts of the proposed DPL prior actions are calculating the direct and indirect welfare effects of the proposed tariff increases between 2010 and 2017. The effect of the different policy measures was simulated using the World Bank SUBSIM model.
2. To calculate the direct effect on household welfare of real tariff increases in the households tariffs, each household's total expenditure and marginal tariff block (in 2010)—or the most expensive tariff block applicable to their consumption level—was determined by deducing consumption volumes from recorded consumption expenditures and by using the statutory schedule of fixed charges; tariffs (per kilowatt hour or per cubic meter charges); and surcharges (for example, for rural electrification). In the next step, the real cumulative increase<sup>48</sup> in total costs from 2010 to 2017 (2016 in the case of electricity)<sup>49</sup> for each tariff block was calculated. For electricity tariff increases in 2017, two scenarios were explored: a 11.25 fils per kWh increase for all tariff blocks (Scenario 1) and a 14.56 fils/kWh increase for tariff blocks below 500 kWh (Scenario 2). Both scenarios reflect the full pass-through of a (hypothetical) US\$10 per barrel increase in the oil price in 2017 beyond NEPCO's break-even point<sup>50</sup>, but assume different ways of distributing the additional cost across consumers. In the next step, those real total cost increases in total cost (by tariff block) were applied to household expenditures (based on their marginal tariff block assignment). The difference between a household's total water/electricity spending in 2010 and 2017 is equal to the measure of 'direct welfare losses' brought about by the tariff increases.
3. To estimate the indirect impact on household incomes of real increases in the electricity or water tariffs applicable to industrial, commercial, and non-household consumption, the following steps were used: (a) using the Jordanian input/output matrix and a 'price shifting model' of producer price determination, the increase in real prices (of all other goods and services produced by the Jordanian economy) conditional upon a cumulative real increase in total costs of water or electricity for industry from 2010 to 2017 was estimated, and (b) the team then determined (using the estimates described in the first step) the real price increases for all goods and services (excluding water and electricity) in each household's consumption basket. The difference between a household's expenditure on its consumption basket (excluding water or electricity) in 2010 and 2017 is equal to our measure of 'indirect welfare losses' brought about by the tariff increase.

### Results of the Simulations

#### Energy

4. The cumulative increase in real total electricity costs (for households) by tariff block is listed in Table A5.1. When cumulative inflation is greater than the nominal increase in total electricity costs, the real increase is capped at zero. As the table indicates, the only tariff blocks experiencing real increases from 2010 to 2016 are the blocks for the most intensive users. Total electricity costs for industrial users are estimated to have risen 67 percent in real terms (after inflation) from 2010 to 2016.

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<sup>48</sup> The cumulative nominal increase minus cumulative inflation according to Jordanian Consumer Price Index.

<sup>49</sup> The 2017 increases (from the current tariff schedules) are forecasts.

<sup>50</sup> We estimate here the welfare effect of a hypothetical oil price increase by US\$10/bbl beyond NEPCO's break-even price of oil in 2017, which the Government currently (as of October 2016) estimates at US\$55/bbl. The welfare effect would be the same if other cost items – such as interest payments, capacity charges for generators, or renewable energy payments – increase by an equivalent amount (JD 162.3 million p.a.) compared to the baseline.

**Table A5.1. Cumulative Real Total Cost Increase for Household/Domestic Electricity Consumption**

<b>Block</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
Percentage increase in tariff	0	0	0	0	0.8	20.0	49.0

5. Table A5.2 lists the mode marginal electricity tariff block by 2010 per capita income quintile. It also lists the mean expenditure on electricity (as a share of total expenditure) by 2010 per capita income quintile. Table A5.2 indicates that the electricity share decreases with income even while the marginal tariff block increases.

**Table A5.2. Household Size, Tariff Block, and Mean Electricity Share**

<b>Income Quintile</b>	<b>Median Household Size</b>	<b>% in Block 2</b>	<b>% in Block 3</b>	<b>Electricity Share</b>
1 (poorest)	7	62	28	1.7
2	6	53	40	1.5
3	6	51	38	1.5
4	5	42	45	1.3
5 (richest)	3.75	27	44	1.3

6. Table A5. provides estimates of the direct and indirect impacts of these cumulative (2010–2016) real electricity cost increases. Table A5. indicates that the indirect effect of real increases in the industrial cost of electricity on household welfare are much more significant than the direct effects. As shown earlier, for most households electricity makes up only a small share of their total budget. Most households (regardless of income level) consume electricity volumes that correspond to tariff blocks that have not seen any real increase. Table A5. also shows that while the total impact (direct and indirect) of electricity price increases is small, it is marginally larger (relative to income) for richer individuals.

**Table A5.3. Cumulative welfare losses (per capita) from electricity tariff increases between 2010 and 2016 (Source: World Bank estimates).**

	<b>Indirect</b>		<b>Direct</b>		<b>Total</b>	
	<b>2013 (JD)</b>	<b>% of pre-reform welfare</b>	<b>2013 (JD)</b>	<b>% of pre-reform welfare</b>	<b>2013 (JD)</b>	<b>% of pre-reform welfare</b>
Quintile 1 (poorest)	3.7	0.44%	0.00	0.00%	4	0.44%
Quintile 2	5.6	0.45%	0.01	0.00%	6	0.45%
Quintile 3	7.4	0.45%	0.03	0.00%	7	0.45%
Quintile 4	10	0.44%	0.17	0.01%	10	0.45%
Quintile 5 (richest)	18	0.42%	3.33	0.08%	18	0.50%

7. Table A5.4 provides estimates of the marginal direct and indirect impacts of a (hypothetical) electricity cost increase in 2017 under two different scenarios. Both scenarios capture tariff increases in response to escalating sector cost, assuming a cost increase equivalent to a US\$10/bbl increase in the Brent oil price, beyond NEPCO's break-even point (e.g., from US\$55/bbl to US\$65/bbl). This hypothetical cost increase, which corresponds to a total cost increase by JD 162.3 million, could come from rising natural gas prices or from other cost items such as interest payments, capacity charges, etc.

8. Table A5.4 indicates that the direct effect of real increases are more significant than the indirect effects from the additional industrial cost of electricity on household welfare. Table A5.4 also shows that

while the total impact (direct plus indirect) of electricity price increases is small, it is larger (relative to income) for smaller households.

**Table A5.3. Welfare losses (per capita) from the electricity tariff increase needed to cover a (hypothetical) US\$10/bbl oil price increase in 2017 under two scenarios (Source: World Bank estimates).**

	Indirect		Direct				Total			
			Scenario 1: Applied to all consumers		Scenario 2: Applied only to <500 kWh/month		Scenario 1		Scenario 2	
	2013 (JD)	% of pre- reform welfare	JD	%	JD	%	JD	%	JD	%
Quintile 1 (poorest)	1.14	0.14%	4.46	0.53%	5.91	0.70%	5.60	0.67%	7.05	0.84%
Quintile 2	1.70	0.14%	5.47	0.44%	7.24	0.58%	7.17	0.58%	8.93	0.72%
Quintile 3	2.24	0.14%	6.39	0.39%	8.29	0.51%	8.63	0.53%	10.53	0.65%
Quintile 4	2.98	0.14%	7.72	0.35%	9.90	0.45%	10.70	0.49%	12.87	0.59%
Quintile 5 (richest)	5.60	0.13%	12.04	0.28%	13.95	0.32%	17.64	0.41%	19.55	0.45%

## Water

9. The cumulative increase in real total water costs by tariff block (for households) is listed in Table A5.4. For households, there are real cumulative cost increases for each block. The real total cost increases for households served by the water companies have been slightly lower than those for households whose water and wastewater services are provided by WAJ.

**Table A5.4. Cumulative Real Total Cost Increase for Household/Domestic Water Consumption between 2010 and 2017.**

Block	1	2	3	4	5	6	7	8
Percentage increase in tariff WAJ	28.0	36.0	6.6	3.7	8.1	7.1	8.6	10.0
Percentage increase in tariff water companies	22.0	23.0	2.2	1.7	6.6	6.4	7.6	9.2

10. Table A5.6 lists the mode marginal water tariff block by 2010 per capita income quintile. It also lists the mean expenditure on water (as a share of total expenditure) by 2010 per capita income quintile. Table A5.6 indicates that while the share of water expenditure decreases with income, the most frequent tariff block (the third block) stays constant from the first to the fifth income quintile, which is likely the result of severe water scarcity in the country and the common occurrence of rationing (many households only receive water service once a week). While richer users consume enough water that they are exposed to higher tariffs in higher blocks, the bulk of richer water consumers are concentrated in the second through third blocks. Total water costs for industrial users are estimated to have risen 48 percent in real terms (after inflation) from 2010 to 2017 if groundwater is included (for industrial use) tariff increases (Scenario A). If groundwater (for industry) tariff increases are not included, total water costs for industrial users have not risen in real terms between 2010 and 2017 and estimated indirect effects on household welfare are therefore negligible (Scenario B).

**Table A5.5. Median Marginal Tariff Block and Mean Water Share in Budget**

Quintile	Median Household Size	% in Block 3	% in Block 2 or 4	Water Share in Budget
1	7.00	59	34	1.4
2	6.00	57	36	1.2
3	6.00	56	37	1.0
4	5.00	54	38	0.9
5	3.75	48	38	0.8

11. **Water Scenario A:** Table A5.7 provides estimates of the direct and indirect impacts of these real water cost increases (both groundwater and piped water). Table A5.7 indicates that the indirect effects of real increases in the industrial cost of water on household welfare are more significant than the direct effects. Table A5.7 shows that water accounts for a small budget share and also that most households (regardless of income level) consume water volumes corresponding to tariff blocks that have not seen moderate real increases in total costs. Table A5.7 also shows that while the total impact (direct plus indirect) of water price increases are small, they are larger (relative to income) for poorer individuals.

**Table A5.6. Welfare Losses (per capita) from Cumulative Water Tariff Increases between 2010 and 2017 (Scenario A)**

	Indirect		Direct		Total	
	2013 JD	% of Pre-reform Welfare	2013 JD	% of Pre-reform Welfare	2013 JD	% of Pre-reform Welfare
Quintile 1 (poorest)	2.3	0.27	0.60	0.06	2.9	0.34
Quintile 2	3.4	0.27	0.78	0.05	4.2	0.33
Quintile 3	4.5	0.27	0.80	0.04	5.3	0.32
Quintile 4	6.0	0.27	0.98	0.03	7.0	0.31
Quintile 5 (richest)	11	0.25	1.67	0.02	13	0.29

12. **Water Scenario B:** Table A5.8 provides estimates of the direct and indirect impacts of water cost increases under the assumption that the increases in real piped water costs for industry were in fact negative (that is, the cumulative nominal increase in total piped water costs over the period from 2010 to 2017 was less than inflation over the same period, leading to a real decrease in the water costs for industry). Table A5.8 indicates that the indirect effect of real decreases in the industrial cost of water on household welfare are similar in magnitude (though of the opposite sign) to the direct effects. Table A5.8 also shows that the total impact (direct plus indirect) of piped water price increases are near zero for every household.

**Table A5.7. Welfare Losses (per capita) from Cumulative Water Tariff Increases between 2010 and 2017 (Scenario B)**

	Indirect		Direct		Total	
	2013 JD	% of Pre-reform Welfare	2013 JD	% of Pre-reform Welfare	2013 JD	% of Pre-reform Welfare
Quintile 1 (poorest)	-0.50	-0.059	0.60	0.06	0.10	0.01
Quintile 2	-0.73	-0.059	0.78	0.05	0.04	0.00
Quintile 3	-0.96	-0.059	0.80	0.04	-0.16	-0.01
Quintile 4	-1.29	-0.058	0.98	0.03	-0.31	-0.01
Quintile 5 (richest)	-2.41	-0.055	1.67	0.02	-0.74	-0.02

### Combined effects

13. Table A5.9 provides estimates of the joint direct and indirect impacts of water and electricity tariff increases in 2010-2017, assuming real water cost increases in 2010-2017. Results are shown for four different scenarios for the total effects (A1, A2, B1 and B2). A1 and A2 combine Scenario A for the indirect effects of water tariffs for industry with Scenarios 1 and 2, respectively, for the 2017 electricity tariff increases. B1 and B2 combine Scenario B for the indirect effects of water tariffs for industry with Scenarios 1 and 2, respectively, for the 2017 electricity tariff increases. See sections above for a discussion of the individual scenarios for water and electricity. The joint consumption effect of energy and water tariff increases are assumed to be additively linear.<sup>51</sup>

**Table A5.9. Welfare Losses (per capita) from water and electricity tariff increase in 2010–2017.**

Quintile	Indirect		Direct		Total			
	Water Scenario A	Water Scenario B	Electr. Scenario 1	Electr. Scenario 2	Scenario A1	Scenario A2	Scenario B1	Scenario B2
	JD / %	JD / %	JD / %	JD / %	JD / %	JD / %	JD / %	JD / %
1 (poorest)	7.7 / 0.91%	4.93 / 0.58%	0.7 / 0.08%	1.4 / 0.16%	8.4 / 1.00%	9.1 / 1.08%	5.6 / 0.67%	6.3 / 0.75%
2	11.5 / 0.92%	7.36 / 0.59%	0.9 / 0.07%	1.6 / 0.13%	12.4 / 1.00%	13.1 / 1.05%	8.2 / 0.67%	9.0 / 0.72%
3	15.2 / 0.93%	9.70 / 0.60%	1.0 / 0.06%	1.7 / 0.10%	16.1 / 0.99%	16.9 / 1.03%	10.7 / 0.66%	11.4 / 0.70%
4	20 / 0.91%	12.89 / 0.59%	1.4 / 0.06%	2.1 / 0.09%	21.6 / 0.98%	22.3 / 1.01%	14.3 / 0.65%	14.9 / 0.68%
5 (richest)	38 / 0.87%	24.29 / 0.56%	7.1 / 0.16%	6.7 / 0.16%	45.1 / 1.03%	44.7 / 1.03%	31.4 / 0.72%	31.0 / 0.72%

<sup>51</sup> The solution to the price-shifting model at the heart of the estimation of the indirect impacts from water and electricity tariff increases requires information on the structure of production in all sectors of the economy. We are using an Input-Output matrix for the Jordanian economy (circa 2010) to summarize this production. An Input-Output matrix is a numerical description of the uses (as inputs into production) and destinations of each sector's outputs and as such is an additively-linear, "double accounting" description of the productive sectors. So, though the price-shifting model that we are using as a framework to estimate indirect impacts need is not inherently linear, the empirical information we are using to generate a solution is effectively linear.



## Conclusions

14. Household and industrial consumers have experienced (or are expected to experience) real increases in the cost of water and electricity between 2010 and 2017, with the exception of industrial users using piped water. Cumulative welfare effects on households are estimated at approximately 0.66 to 1.08 percent, depending on the scenario. With respect to both electricity and water tariffs, richer households have experienced greater absolute welfare losses. However, as a share of income, total (direct plus indirect) welfare losses from electricity cost increases are relatively uniform across the income distribution. Therefore, while the overall impacts are modest as a share of total expenditures, the results indicate that the reduction of (cross-)subsidies in electricity and water must be designed and monitored carefully to ensure that the benefits, specifically improvements in the business climate and employment (which are not captured by the results presented here), outweigh the impact on the poor.