I. Project Context

Country Context

Yemen experienced far-reaching political unrest from February to November 2011, impacting an already fragile economic and social landscape. The economy contracted by 10.5 percent from a growth of 7.7 percent in 2010. The turmoil, combined with fuel shortage, and high commodity prices forced many into poverty. The number of people living below the poverty line increased by an estimated 12 percentage points in two years. Even prior to this latest crisis, Yemen was already one of the poorest countries in the world. The country has a GDP per capita of US$1,160 (2010) compared with an average US$2,321 for lower middle-income countries and US$3,597 for the Middle East and North Africa (MENA) region. The population living below the national poverty line was 35 percent in 2005/2006, increasing to 54.5 percent by the end of 2011 with poverty more widespread and persistent in rural areas.

Following a power transfer agreement, President Ali Abdullah Saleh stepped down after 33 years. A transition Government of National Reconciliation (GNR) was formed in early December 2011, elections took place in February 2012, and Abdo Rabbo Mansoor Hadi assumed office as the new President. The GNR is in the process of undertaking constitutional reforms, preparing for the next general election, and working to stabilize the country’s complex security and economic situation.
addition, the GNR has to respond to pressing social demand for better governance, equity, employment, and a more open society.

The transition is confronted with long-standing economic, political, and structural challenges. Currently, around 70 percent of the employed work in the informal sector with low productivity, and most of those formally employed work for the government, or government dependent entities. Economic and fiscal opportunities are foregone because a significant part of Yemen’s industrial assets or economic activities is partially or fully state owned, including power sector assets.

Economic recovery has started, but remains weak. GDP is reported to have registered a slight growth in 2012, inflation decelerated substantially from 23 percent in 2011 to 5.5 percent in 2012, and the current account deficit narrowed in 2012 to about 3 percent of GDP compared to 4 percent in 2011. The Yemeni Riyal (YR) exchange rate came under high pressures in 2011 leading CBY to adopt a number of policies and measures that included the reduction of its foreign reserves in response to the basic commodity import bill. However, since early 2012, the exchange rate has stabilized at around 214 YR/USD.

At the donor conference in Riyadh in September 2012, the international community committed to support Yemen in its recovery. Donor countries and agencies (Kingdom of Saudi Arabia, United States of America, Germany, United Kingdom, Netherlands, Switzerland, France, Spain, Arab Fund, Arab Monetary Fund (AMF), World Bank, European Union (EU), Islamic Development Bank (ISDB), OPEC Fund for International Development (OFID), and International Fund for Agricultural Development (IFAD)) pledged US$6.372 billion towards the priorities of the Transitional Plan for Security and Development (TPSD). The subsequent Mutual Accountability Framework (MAF) committed both the GNR and donors to a set of specific actions towards recovery and growth.

Overall, the macroeconomic outlook during the transitional period 2013–14 will depend on a number of factors. Economic growth is forecasted to be at around 4.4 percent for 2013, given the ongoing political and security uncertainties, and economic growth slowdown. The fiscal outlook for 2013 remains weak as increasing revenue is dependent on the restoration sustainability of hydrocarbon production, and the implementation of various reforms such as the increase in the investment expenditures which is expected to be co-funded from the donor conference pledges.

Visible progress, such as increased accountability and transparency in government, civil society participation, and private sector development, in the next several years will be important to boost the confidence of the people of Yemen. Furthermore, efforts to improve service delivery will be important to empower individuals and communities so that they can take decisive steps for the betterment of their lives. Restoring and improving electricity service delivery features a key consideration in the MAF and GNR’s efforts as it: (i) produces quick wins, where tangible results are felt by the public in the short-term; and (ii) provides a critical venue for private sector investment and growth which is the key to job creation and economic stabilization.

**Sectoral and institutional Context**

Yemen is the least electrified country in MENA. Despite the rapid growth in electricity supply for a decade prior to the 2011 crisis, installed capacity was at about 1,200 MW in 2010, giving only about 50 percent of the population access to electricity (25 percent in rural areas). Per capita
electricity consumption was only 190 kWh in 2009, compared to a MENA average of 1,418 kWh and a world average of 2,751 kWh.

All electricity was generated through the combustion of heavy fuel oil (HFO) and diesel before the first gas-fired Marib I power plant was commissioned in late 2009. In 2010, HFO and diesel fired-power plants accounted for about 70% of grid-connected generation. In addition, there are millions of small diesel units owned by industry, commercial establishments and households to combat the frequent blackouts of and the lack of access to the grid-connected electricity. The key feature of the HFO/diesel dominated power generation system is the associated high electricity cost and heavy pollution. Despite an average consumer tariff of about US 8 cent/kWh, which is higher than the consumer prices in most MENA countries, it covers only about 25% of the economic cost of supply. Therefore, diversification of energy supply and gradually shifting to a less costly generation mix is vital to the long-term sustainable development of the energy sector. Several studies to determine the least cost generation expansion plan were carried out and the generally accepted conclusion is that gas-based Combined Cycle Gas Turbine (CCGT) using locally produced natural gas is the most cost effective option. The government developed a long term vision for the power sector to ensure sustainable sector development in 2008. A key element of the strategy was to implement a gas-to-power policy to significantly lower the cost of electricity generation and thus reduce government fuel subsidy.

However, to determine the scale and time frame of the gas-to-power program, the availability of natural gas both in amount and timing is required. As of 2011, certified gas reserves was reported to be 10.2 trillion cubic feet (tcf), of which about 9.2 tcf has been committed for exports as Liquefied Natural Gas (LNG). The government has allocated 1 tcf of certified gas reserve for power generation. The amount is only sufficient to support the operations of the Marib I power plant at 80% capacity factor for 25 years. While there are other proven gas reserves which have not yet been certified, the total current uncommitted reserves are reported to be only sufficient to support Marib I and II, of which the latter is under construction, for a total capacity of about 1,000 MW for 20 years. They are far from sufficient to meet the required fuel demand for generation expansion. There are other reserves which are yet to be discovered, proven and certified before a firm power generation plan could be developed.

On the other hand, renewable energy can play an important role in resolving the country’s energy supply constraints. Through a GEF grant implemented by the World Bank, the Rural Energy and Renewable Energy Development Project (REREDP) carried out a detailed assessment of the potential of renewable energy resources in Yemen that could be exploited for grid and off-grid electrification. Resources assessed include wind, solar, geothermal, small hydropower and biomass. These resources are found to sustain large-scale commercial power development as well as small-scale decentralized systems to meet the energy needs of rural and remote communities. The studies indicated that almost all renewable technologies have lower dynamic unit cost than diesel power generation. The greatest potential for grid-connected power supply lies with wind power which accounts for about 60% of the total renewable potential. Grid-connected onshore wind power is also the least cost renewable energy option. While solar energy has huge potential, it is currently only economically competitive for off-grid PV installations in remote areas in Yemen.

Prior to the political crisis, the government made some head-way in pursuing gas-based generation. Despite the government’s ambitious wind development program and devoted efforts, achieving results on the ground, as evidenced in most developing and developed countries, is a complex task.
There exists a large number of institutional, regulatory, financial and technical barriers to wind power development, particularly in the initial stages of the process. The development and implementation of the first 60 MW wind power is a complex and a challenging undertaking for Yemen and is unlikely to materialize without extensive support from donors and developers.

The impact of the 2011 crisis was strongly felt in the power sector. Power supplies were cut in half, and the financially frail energy sector was further weakened. Transmission lines were damaged, and a lack of fuel seriously disrupted the operation of most power plants. The decline in service coupled with social instability resulted in a significant increase in electricity theft and a decrease in the collection rate. The conflict put most construction activities on hold. The precarious financial position of the power sector further deteriorated. The disruption also delayed the implementation of ongoing and planned power generation, transmission and distribution projects, impacting the power supply situation over the coming years. Consumers with access will continue to suffer from frequent and long hours of power shedding. New connections would have to be postponed.

The transition government acted quickly to restore electricity supply services by repairing and rehabilitating damaged power generation and delivery facilities. It also resorted to using the fast-track but most expensive option of power supply – small rental diesel units. While increasing reliance on rental diesel units helped increase electricity supply quickly to meet public expectations, it has devastating impacts on the sector’s financial viability and the government’s fiscal sustainability. In 2012, the state-owned Public Electricity Corporation’s (PEC) financial losses more than doubled and the government’s fuel subsidy amounted to about US$3 billion, of which about 50 percent goes to the power sector.

It is therefore paramount that the government refocuses its efforts on the implementation of power projects which are part of the least cost generation mix. Despite the long lead times required for the commissioning of power projects, such a strategy will help the sector move towards securing long-term supply and improving financial sustainability in the longer term. The Mocha Wind Power Project is a project that has benefited from a long gestation period and stands ready for implementation.

II. Proposed Development Objectives
The development objective of the Project is to increase the supply of cost-effective renewable wind electricity.

III. Project Description
Component Name
Physical Investment (US$121 million): The proposed component will support the construction of a wind farm at Mocha of approximately 60 MW generation capacity. The wind farm will be connected to an
Comments (optional)

Component Name
Component 2: Consulting Services, Capacity Building and Market Development (US$7.0 million): The proposed component consists of the following sub-components: (i) an international engineering consult
Comments (optional)
IV. Financing (in USD Million)

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V. Implementation

The MOEE will have the overall responsibility of coordinating and supervising the implementation of the project. For the implementation of Component I and the associated consulting services under component II, a Special Purpose Company (SPC) will be created to undertake the activities. The SPC will own and operate the wind farm according to commercial principles. The precise form and organizational structure of the SPC is being studied and will be agreed during negotiation and the SPC will be created and made operational at least three months before the wind farm is put into commercial operation, which will also be discussed and agreed during negotiation. Before the SPC is legally created and operational, a transitional arrangement has been put in place to implement the project. The MOEE will assume the responsibility for implementation. MOEE has established a PMU to undertake the day-to-day operations of the proposed project. The PMU, which oversees several generation projects under preparation, currently has 30 staff, including a project director, a number of technical specialists, a procurement coordinator and two procurement assistants, a financial specialist and two accountants, an environmental and social specialist, an internal auditor, and other service and support staff. Although the PMU is responsible for four generation projects, currently only the wind power project and Marib power project are active. The PMU director has the overall responsibility for project management and is supported by wind power specialists. Other specialists provide support as needed. The number of staff and their composition will be assessed from time to time based on project progress. Some of the PMU staff closely involved with Mocha Wind Power Project, including the technical specialist, financial specialist and accountant are likely to be transferred to the SPC to be created.

During preparation, international firms were contracted to prepare the feasibility study, the Environmental and Social Impact Assessment (ESIA) report, and the draft bidding documents. The MOEE has also started the process of procuring an international engineering firm to assist in the procurement, construction management and supervision of the Mocha Wind Power Project. The engineering firm is in the final stage of selection and the consulting contract is expected to be awarded well before Board presentation of the project. An experienced international contractor will be procured to Design, Supply and Install the wind farm and will operate and maintain the wind farm for at least 3 years after commissioning. The staff of the PMU or future SPC will be trained on site and will take over the operation and maintenance of the wind farm thereafter. Other independent consultants will be employed to provide independent monitoring and evaluation of the
implementation of the environment management plan and any land acquisition and resettlement work if needed.

For implementation of the studies, consulting services and capacity building activities associated with the national wind policies and programs under Component II, MOEE will have direct responsibility. MOEE will be assisted by specialists in clearly defining the scope of work, preparing terms of reference for consulting services and procuring the consulting services.

The MOEE, through the PMU/SPC, with the help of the implementation consultant, will monitor project progress against the agreed performance indicators listed in Annex 1. Data on actual project outputs and outcomes will be gathered, analyzed and included in quarterly progress reports to be submitted to the World Bank.

The PMU, with the help of the implementation consultant, will monitor the day-to-day project implementation of the physical components and contractor performance, including monitoring the implementation aspects of the ESIA and RPF.

VI. Safeguard Policies (including public consultation)

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Comments (optional)

VII. Contact point

World Bank
Contact: Jianping Zhao
Title: Senior Energy Specialist
Tel: 458-0171
Email: jzhao@worldbank.org

Borrower/Client/Recipient
Name: Ministry of Planning and International Cooperation
Contact:
Title:
Tel: 967-1-250665
Email:

Implementing Agencies
Name: Ministry of Electricity and Energy
Contact: Dr. Saleh Hassan Sumai
Title: Minister
Tel: 967-1-326191
Email:

VIII. For more information contact:
The InfoShop
The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 458-4500
Fax: (202) 522-1500
Web: http://www.worldbank.org/infoshop