WORLD BANK DEVELOPMENT POLICY FINANCE AND CLIMATE CHANGE:

Is the Bank providing the Right Incentives for Low-Carbon Development in Egypt?

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World Bank Development Policy Finance and Climate Change:
Is the Bank providing the Right Incentives for Low-Carbon Development in Egypt?

The World Bank acknowledges that "all development is now taking place in a world shaped by climate" and that the poor are the hardest hit by climate change impacts.[1] As such, the Bank states that it is committed to help countries avoid exceeding a 2°C warmer world[2] – the globally agreed limit – and assist them onto a low-carbon development path. Moreover, the Bank maintains that meeting this challenge requires nothing less than "economic transformations and net-zero emissions" and that "creating the right incentives" for this economic transformation is the key. Towards this end, the World Bank has specifically pledged to assist countries to end fossil fuel subsidies.[3]

The World Bank creates "the right incentives" mainly through Development Policy Finance or DPFs. Through DPFs, the World Bank influences government policies and institutions. The reforms implemented under DPFs are often aimed at increasing investments in a country. As such, DPFs can influence investment decisions towards either carbon-intensive development or low-carbon development. For example, DPF reforms sometimes include tax breaks or incentives for fossil fuel development. On the other hand, a DPF may include a new legal framework to support the entry of renewables into the market. Reforms implemented under DPFs can drive development trends for many years after the World Bank formal operation has ended. For all of these reasons, **it is critical that DPFs are carefully assessed for climate change risks and designed to specifically support policies that provide the right incentives to prioritize low-carbon development**.[4]

This paper reviews the current billion dollar World Bank Sustainable Energy and Competitiveness DPF operation in Egypt. Egypt is highly vulnerable to climate change impacts and is rapidly increasing its greenhouse gas (GHG) emissions. Rising sea-levels have already begun to impact the Nile Delta and in the near future could displace over 2 million people and destroy significant agricultural production. Thus, **it is critical that the investment incentives embodied in the World Bank DPF program in Egypt specifically prioritize low-carbon development**. Simply put, does the World Bank DPF support effective policies to bring about a low-carbon shift in the rapidly increasing GHG emissions in Egypt or does it support policies that further exacerbate the problem?

Summary of Findings

The climate crisis and the goal of limiting temperature increase to no more than 2 degrees require both the promotion of renewable energy and the significant reduction in fossil fuel usage. Given Egypt's significant climate change vulnerabilities and that the country already exceeds the per capita emissions limit for staying under 2 degrees warming, **any further expansion of fossil fuel burning potentially adds to increasing the severity of climate change impacts to Egypt and the poor**. Public money simply cannot be used to subsidize and accelerate the expansion of fossil fuels.

The World Bank's current Energy DPF program is attempting to help Egypt meet its energy needs at an affordable price, which is necessary for development and poverty reduction goals. However, by providing incentives to both fossil fuels and renewable energy, the DPF does not adequately prioritize low-carbon options and further accelerates fossil fuel expansion. Egypt has tremendous renewable energy resources with vast investor interest. With the right incentives and proper governance backing, these clean renewable resources could go a long way towards meeting Egypt's energy needs and climate change mitigation goals. Unfortunately, the Energy DPF program in Egypt includes several significant climate risks:

- **Introduction of New Fossil Fuel Subsidies** The new Investment Law Amendments supported by the DPF program introduce new subsidies, including, *inter alia*: free or low cost land, reduced customs duties, and extension of infrastructure (e.g., power lines). The government is promoting more than a dozen oil and gas projects targeted to receive these new subsidies. Especially worrisome are:

- **New Coal Subsidies** The incentives/subsidies provided in the new Investment Law apply to all electricity generation. Thus, such subsidies apply to the government's planned 12.5 GW of new coal power plants. In 2013, 27 leading climate and energy scientists from 15 countries determined that in order to remain below 2°C warming the world cannot build any "new unabated coal power plants, even highly efficient ones, given their long lifetimes."[5] The new subsidized coal-fired power plants will lock Egypt into carbon-intensive infrastructure for decades.

- **New Electricity Subsidies** The new Investment Law Amendments include subsidized electricity. The subsidized electricity for new investments directly contradicts the DPF's reforms to decrease electricity price subsidies. Moreover, the Bank transfers one type of subsidy from one set of consumers, including small household consumers, to large industrial consumers, including fossil fuel producers. This enhances the concerns of CSOs in Egypt that the World Bank is motivated in its subsidy reforms by austerity and budget deficits rather than actually reducing fossil fuel subsidies for social and environmental considerations.

- **Inadequate Renewable Energy Support** The tenders for renewable energy projects demonstrated enormous interest from the private sector. Although the DPF clearly supports the new Renewable Energy Law and its initial implementation, it is unclear why the DPF program did not go beyond this first step and provide support for subsequent steps necessary to prioritize and ensure the renewable energy sector reaches its full potential in Egypt**.**

- **No Mitigation of Coal Developments** The next couple of years covered by the DPF's funding are critical in determining whether Egypt will be locking itself into carbon intensive infrastructure for the next 20 to 40 years. The DPF Prior Actions should have specifically addressed the biggest climate risk in Egypt, i.e., coal developments. Plans to build coal power plants and cement sector plans for fuel switching from natural gas to coal were both known by the World Bank in early 2014 as the Bank designed the DPFs Prior Actions. Yet, the billion dollar Sustainable Energy DPF program was completely silent on coal. The DPF should have exempted coal from new investment subsidies for power generation. It should have ensured policy measures to address the cement industries' energy shortages through the usage of waste and clean renewable energy. Instead, the DPF operation does not displace any planned coal – it enables coal to be subsidized.

- **Inadequate Climate Change Risk Assessment** The Bank's environmental assessment of the DPF operation was very selective – only considering potentially positive measures. It failed to recognize and, thus, mitigate climate risks associated with, *inter alia*: new electricity subsidies contradicting DPF's actions to reduce such subsidies; new subsidies for fossil fuels, including coal; and planned fossil fuel projects to benefit from DPF incentives.

Recommendations

World Bank development policy finance represents a crucial opportunity to re-orient countries onto a low-carbon development path and better protect climate vulnerable poor communities. Given Egypt is one of the most climate-vulnerable countries in the world; the Bank must heed its own advice on confronting climate change by providing the right incentives for a clear pathway to low-carbon development for Egypt. To this end, the World Bank should adopt:

1. **Robust Climate Change Assessment for DPFs – Does it pass the 2 degree test**?
The Egyptian case demonstrates how critical it is to fully assess and adequately address the climate risks associated with reforms contained in Development Policy Finance. Such operations

reach far beyond the impacts of project investments and yet they are not adequately assessed by any Bank operational policy. The Bank should revise Operational Policy 8.60 on Development Policy Lending to ensure adequate assessment and mitigation of climate risks.[6] Overall, the DPF operation must be assessed against the World Bank's commitment to the globally-agreed goal of limiting temperature rise to 2°C. (For more details, please see the Recommendations section at the end of the document.)

2. Improved DPF Transparency

It is very difficult to understand the specific reforms and government actions supported by the World Bank's DPF operations, especially if one only reads the Bank's program documents. In order for community stakeholders to understand exactly what these operations are supporting and the potential social and environmental risks of these DPF operations, the DPF program document must disclose:

- All measures contained in DPF-supported laws, policies and investment frameworks.
- All current and planned investment projects related to the DPF operation.

3. Sufficient Low-Carbon Incentives

DPFs must be specifically designed to promote incentives that prioritize low-carbon development over carbon-intensive options. DPF operations should be assessed to determine if all possible low-carbon alternatives have been adequately supported before any other options are considered. For Egypt-specific suggestions, please see the Recommendations section at the document's end.

4. Comprehensive End to Fossil Fuel Subsidies

The World Bank's Climate Action Plan states that "the WBG will scale up country-level support and global advocacy to "get prices right" by reducing damaging fossil fuel subsidies..." The Bank often does not recognize its own promotion and creation of new fossil fuel subsidies largely to producers through support for government guarantees, infrastructure investment incentives, and Public-Private Partnerships. Producer subsidies are the drivers of investment and, in the case of those provided to fossil fuels, a significant barrier to low-carbon development.

5. Elimination of Incentives Supporting Fossil Fuel Exploration

Scientists have determined that at least two-thirds of the world's current, proven reserves of oil, gas, and coal must not be burned if we are to avoid raising global temperatures above 2 degrees Celsius. Thus, any DPF measures supporting fossil fuel exploration are directly incompatible with preventing the worst impacts of climate change. It is worth noting that the Asian Development Bank already excludes finance for oil and gas exploration.

6. Strengthened Governance – DPF Reforms Must Not Undermine Governance.

DPFs need to ensure that countries have adequate governance capacity to develop and enforce proper regulations and incentives (e.g., GHG emissions limits, reorientation towards renewables and forest protection) to transition the country onto a low-carbon development path. The World Bank specifically needs to ensure that DPFs do not introduce policy reforms that undermine such governance, such as expedited licensing approval and reduced environmental agency oversight.

Egypt and Climate Change

Egypt is highly vulnerable to climate change. Declining precipitation levels, changing weather patterns, and rising sea levels in the Nile Delta are steadily making an already difficult situation even worse. Expected sea-level rise and increased water scarcity would impose significant negative impacts in Egypt to public health, agriculture, tourism, fisheries and the energy sector.[7]

Egypt is particularly susceptible to sea-level rise due to its low-altitude Nile Delta. The Nile Delta is home to approximately half of Egypt's 90 million plus population. According to a UN report, within the next 20 years more than two million Egyptians could lose their homes as a result of rising sea levels caused by climate change.[8] A result that is more certain to take place if the world exceeds 2 degrees warming. A 50 cm rise in seawater levels will flood large swaths of low lands in the Delta, where half of all agriculture is located, and many coastal cities that have large populations, such as Alexandria and Port Said.[9] These two cities also house a large portion of Egypt's industry. Rising sea levels would also threaten power plants and electric transportation networks located near the coasts.

According to the Climate Investment Fund's website, Egypt is among the 11 fastest growing greenhouse gas (GHG) emitting countries in the world.[10] The website warns of a 300% increase in GHG emissions in Egypt by 2017. The website further indicates, based on World Bank data, Egypt's CO_2 emissions from fossil fuel burning and cement production in 2011 stood at 2.6 metric tons (t) per capita. Thus in 2011, Eqypt was already above 2 tCO_2 per capita – the level that is associated with keeping the global average temperature rise to less than 2°C.[11]

The power generation sector accounts for 42% of Egypt's total GHG emissions.[12] Egypt currently relies on oil and natural gas for 96 percent of its energy.[13] Thus, development plans and investment incentives surrounding the power generation sector is of the utmost importance. How the World Bank's current Energy and Competiveness DPF program addresses power generation and associated investment incentives is critical. Does the World Bank support effective policies to bring about a low-carbon shift in the rapidly increasing GHG emissions for Egypt or does it support policies and incentives that further exacerbate the problem?

The World Bank's Development Policy Financing in Egypt

In December 2015, the World Bank approved a US **$1 billion loan for Egypt** entitled "First Fiscal Consolidation, Sustainable Energy and Competitiveness Programmatic Development Policy Financing Program." This billion dollar DPF operation is the first in a series of three annual DPF loans. This DPF series is intended to provide support for Egypt's reform agenda from 2015-2017.

The DPF program is structured under three development objectives with corresponding pillars:

> Pillar 1 – advance fiscal consolidation through higher revenue collection and debt management;
> Pillar 2 – ensure sustainable energy supply through private sector engagement; and
> Pillar 3 – enhance the business environment through investment laws, industrial license requirements and enhancing competition.

This document focuses on Pillars 2 and 3 as they are most relevant to climate change. Pillars 2 and 3 are largely aimed at enhancing the private sector's participation and investment in Egypt, specifically in large industrial projects and the energy sector.

It is difficult to understand the specific government actions involved in the World Bank's DPF, especially if one only reads the Bank DPF program documents. In order to understand exactly what these operations are supporting and the climate risks associated with these DPF operations, as well as many other social and environmental risks, it is critical to understand:

1. **Incentives embodied in new legislation supported by the DPF;**
2. **Egypt's energy sector development strategy and planned projects; and**
3. **Recently issued regulations and measures related to the DPF.**

DPF-supported Legislation and Investment Incentives

This paper focuses on investment incentives contained within the World Bank's policy reforms supported by the DPF program. Required policy reforms, such as new laws pertaining to investments, are determined by the DPF's Prior Actions. According to the World Bank:[14]

> Prior actions are a set of mutually agreed policy and institutional actions that are deemed critical to achieving the objectives of the program supported by a development policy operation and that a country agrees to take before the Board approves a loan (credit or grant). Prior actions are legal conditions for disbursement.

Energy Subsidy Reforms

The Bank's DPF Program Document discloses that in July 2014, Egypt increased prices of electricity by an average 31 percent and on fuels (natural gas, fuel oil, and gasoline) by 40%-78%, and laid out its plans to reform subsidies in the next five years through periodic increases of fuel and electricity prices.[15] Another increase of electricity tariffs by 19% was implemented in July 2015.

There is evidence of significant fuel switching from costlier natural gas to cheaper coal. Such fuel switching may help to address natural gas supply shortages, but comes with negative climate change and public health impacts.

The government's 2015 second electricity tariff increase was specified as a prior action for the current DPF. Triggers for the second and third DPFs stipulate implementation of further electricity tariff increases according to the government's 5-year plan.[16] In August 2016, another tariff increase took place across consumption categories at varying rates.[17]

So far, the Bank reports that the combination of price reforms and a steep decline in international oil prices brought down subsidies as a percentage of GDP from 6.6% in FY14 to a projected 3.3% in FY16.[18]

While it appears evident that the energy price subsidy reforms are having a positive impact on the budget deficit, it is less clear how well these reforms will reduce GHG emissions. While, the higher cost electricity and fuel potentially will serve as an incentive for reductions in energy consumption, shortages of natural gas supply coupled with increasing gas tariffs have also brought about fuel switching. There is evidence of significant fuel switching from costlier natural gas to cheaper coal (See New Coal Regulations section below). Such fuel switching may help to address natural gas supply shortages, but comes with negative climate change and public health impacts.

The World Bank contends that the DPF's prior actions did not stipulate fuel price increases (only electricity tariff increases) and thus, the DPF is not associated with outcomes linked to these subsidy reductions (see Annex of World Bank Comments on Egypt). While the DPF's prior actions did not specify fuel price increases, the DPF Program Document Results Indicators under Pillar 2 include: "Reduced energy subsidies as a percentage of GDP from 6.6% in FY14 to 3.3% in FY16, and further by FY18." The DPF program does support the fuel subsidy reductions because the FY16 target could only be reached by the planned reductions in both electricity and fuel subsidies.

It should also be noted that the government took several measures towards mitigating the impact on the poor of subsidy removals, including: accelerating residential connections to natural gas; allocating savings to boost social spending; and excluding liquefied petroleum gas (LPG) from reforms.[19]

New Investment Law Amendments and Subsidies

DPF Pillar 3 Enhancing the Business Environment, focuses on the government's investment framework and industrial licensing regime. Prior Action 8 of the DPF stipulates the issuance of Decree No. 17 of 2015 and Decree No. 18 of 2015, which involve the introduction and implementation of amendments to the Investment Guarantees and Incentives Law or simply the Investment Law.[20, 21] The Bank's DPF Program Document highlights amendments that strengthen the functioning of Egypt's investment authority, GAFI. However, the DPF-supported Decree No. 17 also introduces new investment incentives/subsidies not highlighted in the Bank's DPF Program Document, including[22]:

- **Free or low cost land for projects (April 2015 to April 2020)**
- **Subsidized electricity**
- **Refund of expenses paid to extend infrastructure facilities to the project's land (e.g. power transmission lines)**
- **Subsidized training programs and social insurance for employees**
- **Cut sales tax to 5% from as high as 10%[23], and**
- **Lower customs duties on equipment used for production to 2%.**

The new amendments stipulate that these investment benefits may be granted to any projects satisfying one or more of the following conditions:[24]

1. Investment in **electricity production**, transport, or distribution
2. Intensive labor requirement
3. Reinforcement of local components used in product production
4. Improves transport and logistics' capacities
5. Projects that develop internal trade
6. Agricultural projects (reclamation and cultivation)
7. Road, maritime, and railway transport; or
8. Investment in specific areas that have been targeted for development by the government, which are:
    - Upper Egypt (Southern Egypt)
    - Sinai (includes Suez Canal area and Port Said)
    - Matrouh (in the Western Desert)
    - Nubia areas

If the proposed coal power targets are achieved, it would represent a significant increase in GHG emissions for Egypt and a significant risk to the 2°C goal.

Introduction of New Coal Subsidies

The new investment incentives/subsidies are targeted at electricity projects whether they are renewable energy or fossil fuels. Egypt currently has no coal-fired power plants but now plans to rapidly ramp up development of coal power plants so that coal will be 27 percent of power supply by 2030.[25] **Egypt has announced plans to install approximately 12.5 GW of coal-fired power stations by 2022.[26] These new coal plants will be subsidized using the new investment incentives of the World Bank DPF-supported Investment Law Amendments as these incentives apply to all electricity investments.**

The Egyptian government has already signed memoranda of understanding with companies for more than 6,000 MW and has announced plans to sign

Box 1. Oil and Gas Prospects in Targeted Lands for Investor Incentives
(Note: Targeted areas are in bold text.)

- **Oil** in Egypt comes from seven main areas: the **Western Desert** (51%), **Sinai and the Gulf of Suez** (30%), the Eastern Desert (12%), the Mediterranean Sea (5%), the Nile Delta (1%) and **Upper Egypt** (less than 1%).[30]
- The **Western Desert** has shown very significant hydrocarbon potential, given that it has been underexplored and offers comparatively low-cost onshore development opportunities.[31]
- In May 2016, the government announced a new bid round for 28 oil and gas exploration blocks located in the Red Sea, **Gulf of Suez**, Eastern Desert, **Western Desert**, and Mediterranean Desert.[32]
- Ongoing project investments in expanding and upgrading oil and gas refineries amount to US$ 5.9 billion, while the **planned project investments are US$ 3.5 billion**. [33] The refinery projects are located in **Suez, Assiut (Upper Egypt)**, Cairo, and Alexandria.
- The government has also targeted **Upper Egypt** for petrochemicals and natural gas development.[34]

seven agreements with Chinese coal-power generation companies.[27] In September 2016, the government of Egypt signed a contract with Shanghai Electric (China) for one of these coal power plants with a capacity of 2,640 MW located in Hamrawien at a cost of $3 billion.[28] The final contracts are still pending for other MOUs.

If the proposed coal power targets are achieved, it would represent a significant increase in GHG emissions for Egypt and a significant risk to the 2°C goal. In 2013, 27 leading climate and energy scientists from 15 countries determined that in order to remain below 2°C warming the world cannot build any "new unabated coal power plants, even highly efficient ones, given their long lifetimes."[29]

Subsidies Targeting Oil and Gas Developments

In addition to electricity generation projects, the geographical areas targeted by the government to receive new incentives match areas slated for oil and gas developments. Box 1 provides a list of the potential oil and gas developments in Egypt, which are largely located in locations targeted to receive subsidies allocated under the new Investment Law Amendments supported by the current DPF program.

In addition to the oil and gas prospects of targeted areas, Box 2 provides specific projects actively being promoted by GAFI's (Egypt's investment authority) website. GAFI is also in charge of allocating free and low cost government land to projects. As Box 2 demonstrates, **GAFI is promoting more than a dozen oil and gas projects targeted to receive DPF-supported subsidies.** In contrast**,** GAFI's website states that renewable energy is a targeted sector but lists no project opportunities for renewable energy projects.

The World Bank contends that the DPF operation does not promote fossil fuel subsidies because the investment incentives apply to all kinds of electricity generation (see Annex of World Bank comments for Egypt). This paper argues that the Bank's approach to investment incentives must ensure it does not introduce new subsidies, including through general investment frameworks, to fossil fuels. Such subsidies contradict the Bank's pledge to phase out fossil fuel subsidies and are a barrier to renewable energy investments and, thus, to a low-carbon transition. Additionally, any subsidies for coal power plants or fossil fuel exploration directly conflict with remaining below 2°C warming.

New Natural Gas Law

The current DPF stipulates a prior action for government endorsement of a draft new natural gas law that provides open access to the gas infrastructure and the establishment of an independent gas sector regulator. In addition, indicative triggers for further DPF funding include the approval and implementation of this law, including associated regulations.[36] The new law and its regulations are expected before the end of 2016.

According to the Bank's DPF Program Document, the new law will pave the way for and promote private sector investment into the natural gas sector and speed up the pace of natural gas developments in Egypt. It is meant to address Egypt's domestic natural gas shortages and growing demand but the Bank does not provide evidence that prioritizing this complicated restructuring and promotion of private sector investment is necessary, especially given measures the government has already taken to address the issue.

First, Egypt's domestic gas supply problem is as much the consequence of decade-long management and policy deficiencies as it is the short-term consequence of political turmoil. The turmoil following Egypt's 2011 revolution considerably hindered gas developments, directly through temporary shut-downs in production, but more structurally by depriving the Egyptian government of essential fiscal resources to meet various contract commitments towards international companies.[37] By 2014, Egypt owed foreign gas operators substantial debt. As a result, some companies delayed project investments.[38]

Existing long-term deficiencies hindering the gas sector included: conflicting requirements of Egypt's rising domestic energy demand and already existing export contracts[39]; low domestic energy prices making projects economically unviable; low levels of industrial energy efficiency and associated wasteful energy consumption.[40]

After the last presidential elections in 2014, political stability greatly improved and the government took many measures to increase natural gas supply and investment including: 1. paying down arrears to international oil and gas companies; 2. accelerating existing gas field development through price revisions for new gas from old fields[41]; 3. securing LNG import contracts until 2020; 4. signing a 5-year regasification unit contract; and 5. reducing energy subsidies.[42]

The World Bank's DPF Program Document reported that due to these prior government measures upstream gas sector private investment had been reinvigorated resulting in the signature of 62 new agreements with investment commitments of more than US$ 15 billion for exploration (with another 12 agreements in the pipeline).[43] This has already led to the discovery of the largest gas field in the Mediterranean – the Zohr gas field – with up to 30 trillion cubic feet of gas, worth well over US$ 100 billion at current prices.[44] In March 2015, BP finalized agreements to develop Zohr for $12 billion.[45] Egypt's expected upstream gas FDI is expected to reach US$ 22 billion during FY16-18.[46]

Thus, prior to the DPF's approval, Egypt had already taken at least five measures, including some DPF prior actions, that were addressing gas shortages and significant investments in future gas supply were already in the works. Given Egypt's significant climate change vulnerabilities and that it already exceeds the per capita emissions limit for staying under 2 degrees warming, the Bank should have held off pushing forward on a new gas law with incentives to further expand and accelerate gas development.

Box 2. Oil and Gas Projects Promoted by GAFI in Targeted Areas[35]

- Gases Recovery Unit Project **Suez** Petroleum Manufacturing Co.
- Heavy distillations refinery (Medium distillates and gasoline) Sokhna Refining Petrochemical Company (**Suez**)
- Hydro-cracking of Diesel Project Gas recovery unit Naphtha Catalytic Reforming Project (Assiut refinery company) **Upper Egypt**
- Liquid Bulk Terminal Ain Sokhna Sonker Supply Ships Company, **Suez**
- Menya/Assiut Fuel oil Pipeline (16inch - 140km) Oil Pipelines (Products transportation) **Upper Egypt part of South Valley pipeline projects, the largest gas pipeline in Egypt.**
- Sohag/Aswan Products Pipeline (14inch - 500km) Oil Pipelines (Products transportation) Company **Upper Egypt part of South Valley pipeline projects, the largest gas pipeline in Egypt.**
- **Upper Egypt Oil and Gas Exploration**: many projects across multiple governorates of Upper Egypt
- Multiple gas pipeline projects in **Upper Egypt and Suez.**

Source: GAFI website

New Renewable Energy Law

The DPF's prior action #7 is the passage of the new renewable energy law and the issuance of interim licenses to ten (10) private developers.[47] The new law issued in September 2014 provides incentives for private investments through feed-in-tariff regulations[48] as well as a regulatory framework for competitive bidding mechanisms for Independent Power Producers (IPPs). The DPF trigger for the third tranche of funding stipulates a completed competitive bidding process for the renewable energy program.[49]

The Bank's stated expected result of its DPF-supported measures for renewable energy is an "increase in fully commissioned private sector-owned wind and solar energy projects from 0 MW (October 2015) to 1,500 MW at the end of FY18."[50] The government itself has set a more ambitious goal to install 4.3 GW of wind and solar power by 2017, including 2.3 GW of solar and 2 GW of wind.[51]

The potential for renewable energy in Egypt is enormous. The wind conditions in Egypt are among the best in the world with almost 90% of its land suitable for setting up wind turbines.[52] Egypt also has high intensity direct solar radiation throughout its territory. These two facts coupled with the new law have resulted in tremendous interest by private renewable energy companies.

For the first large-scale solar capacity tender, a stunning 178 project proposals were submitted for more than double the announced capacity of 2 GW.[53] The first wind tender under the new law also attracted massive interest from both international and local players but nevertheless fell short of the 2 GW wind target, according to Apricum.[54]

It is unclear why the DPF program did not go beyond the first step to provide support for steps necessary to prioritize and ensure the renewable energy sector reaches its full potential in Egypt.

According to industry experts, with 69 large-scale solar projects of more than 20 MW achieving qualification, the key step now for the government is to provide a bankable framework to potential debt providers so that developers can reach financial close.[55]

Egypt has set an overall installed capacity share target of 20% renewables by 2022, which would correlate to an estimated installation of 12 GW of new renewable capacity in the next seven years.[56] Thus, Egypt still has a long way to go to meet the 20% target. The new renewable law was the first step in building up Egypt's renewable energy sector. However, there are several important next steps that Egypt will need to take towards meeting the renewable energy target, including:

- well-managed implementation requiring strengthened government capacity[57];
- a bankable renewable project finance framework;
- upgrades to the electricity grid to be able to fully utilize fluctuating renewable power;
- investment incentives targeted at Integrated Solar Combined Cycle Power Plants (ISCC); and
- grid operation policies to prioritize the dispatch of renewable power.

Although the DPF clearly supports the first step, i.e., the new law, and initial implementation, i.e., completion of a bidding process, it is unclear why the DPF program did not go beyond the first step to provide support for steps necessary to prioritize and ensure the renewable energy sector reaches its full potential in Egypt. The last trigger for DPF3 still only stipulates a competitive bidding process.

The Solutions Project, headed by Stanford University Professor Marc Jacobs, maintains Egypt could meet all of its power needs through renewable energy by 2050.[58] The World Bank should take a serious look at this suggested energy development pathway to see how its policy lending can support such a path.

Supporting Both Renewable Energy and Fossil Fuel Incentives Results in Increased GHG Emissions

The World Bank contends that the DPF is supporting the Egypt's climate change mitigation agenda through incentives to increase renewable energy and improving energy efficiency (see Annex of World Bank Comments on Egypt). This paper argues that simply because the Bank is supporting some incentives for renewable energy and energy efficiency in line with the countries' climate change agenda does not mean the Bank is supporting an actual transition to low-carbon development.

The IPCC's 5th Assessment found that even though renewable energy growth was stronger than anticipated – the climate benefits were negated by the tremendous growth in GHG emissions from fossil fuels. The Bank's DPF approach to infrastructure investment incentives perpetuates the same outcome. The DPFs are introducing new subsidies for fossil fuels, which not only accelerate fossil fuel development but are also barriers to renewable energy investments.

Table 1 provides the expected electricity generation fuel mix for the energy sector development plans in Egypt. According to Egypt's Sustainable Development Strategy: 2030 Egypt Vision, which incorporates the energy targets supported by the current DPF program, coal will account for 27% of electricity; renewable energy for 35%; and natural gas/oil for 27% by 2030. Data were not available regarding targeted primary fuel mix, but given 90% of cement factories are switching from natural gas to coal it does not appear to support an overall shift to cleaner fuels.

Coal is by far the dirtiest fuel in terms of pollution and GHG emissions - burning coal releases approximately twice as much CO_2 emissions as natural gas. Development of Egypt's energy sector under the DPF operation does not result in a low-carbon transition nor is it consistent with keeping global temperature rise below 2°C.

Table 1: Egypt's Planned Electricity Generation Fuel Mix

	2015[59]	expected 2022[60]	expected 2030[61]
Coal	0%	20%[62]	27%
Natural gas & Oil	70% / 19%	60%	29%
Nuclear			9%
Renewables	11%	20%	35%
Hydropower	[9%]	[6%]	[5%]
Solar	[.5%]	[2%]	[16%]
Wind	[2%]	[12%]	[14%]

Given Egypt has one of the fastest growing GHG emissions in the world, in order for the World Bank to assist Egypt onto a low carbon development path it needed to get the investment incentives right to displace the planned coal power plants. The DPF operation does not displace any coal – it enables coal to be subsidized.

DPF Silent on New Coal Regulations

The DPF's development objectives and policy reforms do not operate in a vacuum. In order to understand the potential outcomes and risks, it is important to consider reforms that may not be explicitly part of the DPL-specified Prior Actions but are reforms taking place leading up to the DPL and share the same objective(s) as the DPL or are aimed at DPF-targeted sectors.

The current DPF was approved in November 2015. In April 2015, Egypt's cabinet approved new regulations on coal which include allowing the use of coal to generate power in residential areas reasoning that such a move was necessary to ensure domestic energy supply (i.e. DPF objective under Pillar 3).[63] The new rules now allowed for the use of coal for cement, iron and steel, and aluminum production, and in power plants.[64] The new coal regulations reversed a previous ban on the use of coal in residential areas.[65] As such, it was highly controversial and greatly opposed by civil society organizations as well as Egypt's Ministry of Environment, Ministry of Tourism, and Ministry of Health.[66]

Opponents of the new coal regulations advocated for investments in alternative energy such as wind and solar power, and the burning of waste material for cement production. In 2009, the Netherlands' cement industry was 98 percent powered by waste. In Germany, 61 percent of the energy used in cement production is generated from waste.[67]

Cement companies strongly advocated for the new coal regulations motivated by recent fuel shortages and by recent and planned energy subsidy reforms, especially tariff increases for natural gas delivered to cement factories. In 2014, natural gas went from US$6 per mBTU to $8 per mBTU.[68]

Cement industries' fuel switch from gas to coal represents a significant increase in CO_2 emissions for Egypt given that burning coal releases approximately twice as much CO_2 emissions as natural gas.

By May 2015, it was reported that 90% of cement plants were switching to coal.[69] One of the first cement factories to switch to coal was Alexandria Portland Cement Company (APCC) – a project supported by the International Finance Corporation (IFC), the World Bank's private sector arm. In 2010, IFC made an €80 million equity investment in APCC and maintains a 15.2 percent stake in APCC. APCC was granted a permit to begin using coal in December 2015 aided by a quick licensing process – a DPF reform priority.[70] Currently, there is both a complaint filed with the Compliance Advisor Ombudsman (CAO) of the IFC partly concerning the use of coal[71] and a lawsuit filed by local communities involving the negative health effects from APCC's coal use in a residential area.[72]

The cement industry is highly significant both on economic terms and on energy consumption terms in Egypt. It accounts for approximately 3% of Egypt's GDP and accounts for 59% of primary energy consumption among domestic energy-intensive industries.[73] Thus, the cement industries' fuel switch from gas to coal represents a significant increase in CO_2 emissions for Egypt given that burning coal releases approximately twice as much CO_2 emissions as natural gas.

The World Bank contends that "there is no link whatsoever between new coal regulations introduced by the government and the World Bank program" (see Annex of World Bank Comments on Egypt). **This paper argues that the Sustainable Energy focused DPF's Prior Actions should have specifically addressed the biggest climate risk in Egypt, i.e., coal developments.** Plans to build coal power plants and cement sector plans for fuel switching from natural gas to coal were both known by the World Bank in early 2014 as the Bank designed the DPF's Prior Actions. Yet, the billion dollar Sustainable Energy DPF program was completely silent on new coal regulations and coal power plant plans. The DPF should have ensured policy measures to address the cement industries' energy shortages through the usage of waste and clean renewable energy. It should have exempted coal from new investment subsidies for power generation. Instead, the DPF operation does not displace any planned coal developments.

DPF Climate Change Risk Assessment

The World Bank's DPF Program Document concludes that the DPF operation is "expected to result in overall positive effects on Egypt's environment". Further, the Bank states "Taken together, the proposed interventions will clearly result in environmental and health benefits, including decrease in greenhouse gas (GHG) emissions and a decrease in lower emissions of air pollutants."

The following section takes a look at the reasons given by the Bank to support its conclusion.

Reason 1: "...Pillar 2 ... comprises a number of policy interventions that are expected to bring about changes in the country's energy profile. This will essentially take place through a planned increase in fuel switching to natural gas by the production sectors of Egypt."

The cement industry is one of the most significant industries in Egypt. The Bank is right that an increase in fuel switching is taking place, but it's not towards natural gas. In fact, the sector's intention to switch from natural gas to coal, partly driven by subsidy reforms supported by the DPF, was known before the DPF was brought to the World Bank Board for approval.

Reason 2: "Other planned changes include the shift towards more renewables and cleaner forms of energy in the energy generation mix."

The Bank is correct in that more renewables will be added to the energy mix but the Bank is wrong in assuming there will be an overall shift to cleaner energy forms in the energy generation mix. According to Egypt's Sustainable Development Strategy: 2030 Egypt Vision, which incorporates the energy targets supported by the current DPF program, coal will account for 27% of electricity; renewable energy for 35%; and natural gas/oil for 27% by 2030 (see Table 1 above). Data were not available regarding targeted primary fuel mix, but given 90% of cement factories are switching from natural gas to coal it does not appear to support an overall shift to cleaner fuels.

Reason 3: "...it is anticipated that the planned gradual increase in electricity tariffs will lead to lower consumption through rationalization and higher efficiency of energy end-use.

While this World Bank assumption is reasonable, it is difficult to estimate how significant of an impact it would result in.

Reason 4: "...through the measures supported in the proposed DPF, GHG emissions are likely [to] decline by 11 to 21% by FY19 compared to the baseline trajectory."

The Bank's baseline trajectory is completely unclear as well as the assumptions it is based on. Even so, given the DPF measures support both renewable energy incentives as well as fossil fuel incentives, including for coal, on balance it is most likely that the DPF measures result in increased GHG emissions for Egypt (see Table 1 above). The Bank also does not appear to consider increased GHG emissions from a potential increase in oil and gas exports that could result from investment incentives and further developments associated with the new Natural Gas Law.

In general, when assessing the DPF, the Bank is very selective in only looking at potentially environmentally positive measures. The Bank either does not understand the potential risks or turns a blind eye to reforms with potentially significant negative environmental impacts, specifically with regards to climate change risks.

Summary of Findings

The climate crisis and the goal of limiting temperature increase to no more than 2 degrees require both the promotion of renewable energy and the significant reduction in fossil fuel usage. Given Egypt's significant climate change vulnerabilities and that the country already exceeds the per capita emissions limit for staying under 2 degrees warming, **any further expansion of fossil fuel burning potentially adds to increasing the severity of climate change impacts to Egypt and the poor**. Public money simply cannot be used to subsidize and accelerate the expansion of fossil fuels.

The World Bank's current Energy DPF program is attempting to help Egypt meet its energy needs at an affordable price, which is necessary for development and poverty reduction goals. However, by providing incentives to both fossil fuels and renewable energy, the DPF does not adequately prioritize low-carbon options and further accelerates fossil fuel expansion. Egypt has tremendous renewable energy resources with vast investor interest. With the right incentives and proper governance backing, these clean renewable resources could go a long way towards meeting Egypt's energy needs and climate change mitigation goals. Unfortunately, the Energy DPF program in Egypt includes several significant climate risks:

- **Introduction of New Fossil Fuel Subsidies** - The new Investment Law Amendments supported by the DPF program introduce new subsidies, including, *inter alia*: free or low cost land, reduced customs duties, and extension of infrastructure (e.g., power lines). The government is promoting more than a dozen oil and gas projects targeted to receive these new subsidies. Especially worrisome are:

    - **New Coal Subsidies** – The incentives/subsidies provided in the new Investment Law apply to all electricity generation. Thus, such subsidies apply to the government's planned 12.5 GW of new coal power plants. In 2013, 27 leading climate and energy scientists from 15 countries determined that in order to remain below 2°C warming the world cannot build any "new unabated coal power plants, even highly efficient ones, given their long lifetimes."[74] The new subsidized coal-fired power plants will lock Egypt into carbon-intensive infrastructure for decades.

    - **New Electricity Subsidies –** The new Investment Law Amendments include subsidized electricity. The subsidized electricity for new investments directly contradicts the DPF's reforms to decrease electricity price subsidies. Moreover, the Bank transfers one type of subsidy from one set of consumers, including small household consumers, to large industrial consumers, including fossil fuel producers. This enhances the concerns of CSOs in Egypt that the World Bank is motivated in its subsidy reforms by austerity and budget deficits rather than actually reducing fossil fuel subsidies for social and environmental considerations.

- **Inadequate Renewable Energy Support** – The tenders for renewable energy projects demonstrated enormous interest from the private sector. Although the DPF clearly supports the new Renewable Energy Law and its initial implementation, it is unclear why the DPF program did not go beyond this first step and provide support for subsequent steps necessary to prioritize and ensure the renewable energy sector reaches its full potential in Egypt**.**

- **No Mitigation of Coal Developments –** The next couple of years covered by the DPF's funding are critical in determining whether Egypt will be locking itself into carbon intensive infrastructure for the next 20 to 40 years. The DPF Prior Actions should have specifically addressed the biggest climate risk in Egypt, i.e., coal developments. Plans to build coal power plants and cement sector plans for fuel switching from natural gas to coal were both known by the World Bank in early 2014 as the Bank designed the DPFs Prior Actions. Yet, the billion dollar Sustainable Energy DPF program was completely silent on coal. The DPF should have exempted coal from new investment subsidies for power generation. It should have ensured policy measures to address the cement industries' energy shortages through the usage of waste and clean renewable energy. Instead, the DPF operation does not displace any planned coal – it enables coal to be subsidized.

- **Inadequate Climate Change Risk Assessment** – The Bank's environmental assessment of the DPF operation was very selective – only considering potentially positive measures. It failed to recognize and, thus, mitigate climate risks associated with, *inter alia*: new electricity subsidies contradicting DPF's actions to reduce such subsidies; new subsidies for fossil fuels, including coal; and planned fossil fuel projects to benefit from DPF incentives.

Recommendations

World Bank development policy finance represents a crucial opportunity to re-orient countries onto a low-carbon development path and better protect climate vulnerable poor communities. Given Egypt is one of the most climate-vulnerable countries in the world; the Bank must heed its own advice on confronting climate change by providing the right incentives for a clear pathway to low-carbon development for Egypt. To this end, the World Bank should adopt:

1. **Robust Climate Change Assessment for DPFs – Does it pass the 2 degree test**? The Egyptian case demonstrates how critical it is to fully assess and adequately address the climate risks associated with reforms contained in Development Policy Finance. Such operations reach far beyond the impacts of project investments and yet they are not adequately assessed by any Bank operational policy. The Bank should revise Operational Policy 8.60 on Development Policy Lending to ensure adequate assessment and mitigation of climate risks.[75]

   Overall, the DPF operation must be assessed against the World Bank's commitment to the globally-agreed goal of limiting temperature rise to 2°C. Thus, does the DPF operation support policy reforms that put the country on a 2 degree development path (based on 2 t/CO_2 emissions per capita) by 2030? This does not mean simply supporting renewable energy but also limiting/reducing fossil fuels to the necessary country level to not exceed 2 degrees warming.

   To begin, a DPF climate risk assessment needs to include an assessment of:

   - All DPF policy and institutional reforms and all corresponding measures and incentives (not just a selected sub-set) embodied within a new policy/institution.
   - How DPF reforms will change the overall carbon-intensity direction of targeted sectors, including current government sector medium-term strategies. Do they pass the 2 degree test?
   - The government's planned projects associated with the DPF operation: carbon intensive vs. low carbon projects; and projects involving both direct and indirect drivers of deforestation.
   - The risks embodied by policy/institutional reforms that are not explicitly part of the DPF-specified reforms but took place leading up to the DPF and/or have shared objective(s), such as promoting infrastructure investment or expediting land acquisition.
   - Whether the DPF reforms will enhance or undermine the governance capacity of key ministries regarding social and environmental safeguards, including forest protection.
   - Whether any DPF changes to land acquisition or investment laws will weaken or strengthen the land tenure and forest resource security of forest-dependent peoples.
   - Whether the DPF will strengthen or weaken the implementation of laws relating to forest protection, including international commitments regarding forest conservation.

2. **Improved DPF Transparency –** It is very difficult to understand the specific reforms and government actions supported by the World Bank's DPF operations, especially if one only reads the Bank's program documents. In order for community stakeholders to understand exactly what these operations are supporting and the potential social and environmental risks of these DPF operations, the DPF program document must disclose:

   - All incentives/subsidies contained in DPF-supported laws, policies and investment frameworks.
   - All current and planned investment projects related to the DPF operation.

3. **Sufficient Low-Carbon Incentives -** DPFs must be specifically designed to promote incentives that prioritize low-carbon development over carbon-intensive options. DPF operations should be assessed

to determine if all possible low-carbon alternatives have been adequately supported before any other options are considered. Egypt-specific suggestions include:

a. a bankable renewable project finance framework;
b. upgrades to the electricity grid to be able to fully utilize fluctuating renewable power;
c. investment incentives targeted at Integrated Solar Combined Cycle Power Plants (ISCC); and
d. grid operation policies to prioritize the dispatch of renewable power.

4. **Comprehensive End to Fossil Fuel Subsidies** – The World Bank's Climate Action Plan states that "the WBG will scale up country-level support and global advocacy to "get prices right" by reducing damaging fossil fuel subsidies..." The Bank often does not recognize its own promotion and creation of new fossil fuel subsidies largely to producers through support for government guarantees, infrastructure investment incentives, and Public-Private Partnerships. Producer subsidies are the drivers of investment and, in the case of those provided to fossil fuels, a significant barrier to low-carbon development.

5. **Elimination of Measures Supporting Fossil Fuel Exploration** – Scientists have determined that at least two-thirds of the world's current, proven reserves of oil, gas, and coal must not be burned if we are to avoid raising global temperatures above 2 degrees Celsius. Thus, any DPF measures supporting fossil fuel exploration are directly incompatible with preventing the worst impacts of climate change. It is worth noting that the Asian Development Bank already excludes finance for oil and gas exploration.

6. **Strengthened Governance – DPF Reforms Must Not Undermine Governance.** DPFs need to ensure that countries have adequate governance capacity to develop and enforce proper regulations and incentives (e.g., GHG emissions limits, reorientation towards renewables and forest protection) to transition the country onto a low-carbon development path. The World Bank specifically needs to ensure that DPFs do not introduce policy reforms that undermine such governance, such as expedited licensing approval and reduced environmental agency oversight.

End Notes

1. See http://www.worldbank.org/en/topic/climatechange/overview This paper reflects the contents of this World Bank webpage on March 14, 2016.
2. The globally agreed goal of holding warming below a 2°C increase above pre-industrial temperatures by 2100 means that the emissions of greenhouse gases need to be reduced rapidly in the coming years and decades, and brought to zero shortly after 2050.
3. See http://www.worldbank.org/en/news/feature/2015/03/18/5-ways-reduce-drivers-climate-change
4. The World Bank also provides technical assistance (TA) and advisory services that are often associated with DPLs. This paper does not cover these types of assistance. However, these types of assistance also influence government policies and investment incentives and thus, need to be adequately assessed and appropriately designed.
5. Metz, Bert (Dr.), et al, 2013. New unabated coal is not compatible with keeping global warming below 2^{0}C. Coal and 2 degrees C statement. European Climate Foundation, The Netherlands. October 2013.
6. Regarding the assessment of climate risks of DPLs, the current policy OP8.60 only suggests a non-binding "toolkit" to be used at the task team's discretion.
7. http://www.grida.no/publications/vg/climate/page/3088.aspx
8. United Nations, 2008. The State of the World's Cities Report 2008/09. The UN Human Settlements Program. As quoted in *The National*, 2008. Rising sea threatens millions in Egypt. November 20, 2008. http://www.thenational.ae/news/world/middle-east/rising-sea-threatens-millions-in-egypt
9. http://www.grida.no/publications/vg/climate/page/3088.aspx
10. https://www-cif.climateinvestmentfunds.org/country/egypt as viewed on August 16, 2016.
11. 2 tCO_2 per capita is the level of per capita emissions that is associated with a 50 percent chance of keeping the global average temperature rise to less than 2°C – the globally agreed limit. ESMAP, 2012. Planning for a Low Carbon Future: Lessons Learned from Seven Country Studies (Paper 73508). Energy Sector Management Assistance Program (ESMAP), World Bank. September 2012.

12. https://www-cif.climateinvestmentfunds.org/country/egypt as viewed on August 16, 2016.
13. *Mada Masr*, 2015. Egypt to rely on coal for 25-30% of energy. *Mada Masr,* May 15, 2015. http://www.madamasr.com/news/environment/egypt-rely-coal-25-30-energy
14. See: http://siteresources.worldbank.org/PROJECTS/Resources/40940-1244732625424/Q&Adplrev.pdf
15. World Bank, 2015. Program Document: First Fiscal Consolidation, Sustainable Energy and Competitiveness Programmatic Development Policy Financing Program. World Bank, November 2015.
16. DPF 1 Prior Action #4: The Prime Ministerial Decree No. 2259 of 2015 has been issued for implementing the second annual electricity tariff adjustment as part of a five year tariff reform plan outlined in the Prime Ministerial Decree No. 1257 of 2014 to reform the gas and electricity subsidy. DPF 2 Indicative Trigger #4.1: (i) The Egyptian Electric Utility and Consumer Protection Regulatory Agency issues an order for implementing the third annual electricity tariff adjustment as part of a five-year tariff increase plan outlined in the Prime Minister's Decree No. 1257/2014 to reform the gas and electricity subsidy. (ii) The Cabinet formulates and implements the policy for financing variations in actual fuel costs, compared to budgeted estimates. DPF 3 Indicative Trigger #4.2: (i) The Egyptian Electric Utility and Consumer Protection Regulatory Agency issues an order for implementing the fourth annual electricity tariff adjustment as part of a five-year tariff increase plan outlined in the Prime Minister's Decree No. 1257/2014 to reform the gas and electricity subsidy. (ii) The Cabinet implements the policy for allocating fuel costs financing variations in actual fuel costs, compared to budgeted estimates.
17. Ahram Online, 2016. Egypt introduces higher electricity tariffs to households, part of subsidy cut plan. August 8, 2016. http://english.ahram.org.eg/NewsContent/3/12/238217/Business/Economy/Egypt-introduces-higher-electricity-tariffs-to-hou.aspx
18. World Bank, 2015. Program Document: First Fiscal Consolidation, Sustainable Energy and Competitiveness Programmatic Development Policy Financing Program. World Bank, November 2015.
19. *Ibid.*
20. DPF 1 Prior Action #8: The decree promulgating Law No. 17 of 2015 and the Prime Ministerial Decree No. 1820 of 2015 have been issued which, respectively, introduced and implemented amendments to the Investment Guarantees and Incentives Law defining investor rights and improving investment facilitation services. This includes: (i) defining conditions and procedures for non-approval of licenses; (ii) designating GAFI as the sole interface with investors for certain investment activities; (iii) explicitly granting investor rights to establish and expand investment projects and to gain and transfer profits; and (iv) streamlining dispute resolution and liquidation mechanisms.
21. On July 6 , 2015 the Executive Regulations for the Investment Law were Issued in accordance with Prime Minister Decision No. 1820 of 2015 .
22. See Baker McKenzie, 2016. Doing Business in Egypt. http://www.bakermckenzie.com/-/media/files/insight/publications/2016/03/bk_egypt_dbi_2016.pdf?la=en and Peter Griffin, Thomas Laursen and James Robertson, 2016. Egypt: Guiding Reform of Energy Subsidies Long-Term, working paper 7571.
23. International Energy Agency, 2016. Renewable Energy Policies and Measures: Egypt. Available at: https://www.iea.org/policiesandmeasures/renewableenergy/?country=Egypt
24. PWC, 2015. Egypt: Amendments to the Investment Law provide reduced customs duties, low cost land and other incentives. PriceWaterhouseCoopers, November 2015. https://www.pwc.com/m1/en/tax/documents/amendments-to-egyptian-investment-law-and-executive-regulations.pdf
25. Government of Egypt, 2014. Sustainable Development Strategy: 2030 Egypt Vision. Ministry of Planning (MOP), Government of Egypt, 2014. http://mop.gov.eg/MopRep/SDS_Summary_English.pdf
26. Reuters, 2016. Japan's Marubeni may build coal power plant in Egypt. Reuters, March 2, 2016. http://www.reuters.com/article/marubeni-egypt-plant-idUSL3N16A3LG
27. *Mada Masr*, 2014. Egypt to sign 7 coal-power deals with Chinese companies. *Mada Masr*, December 24, 2014.
28. http://www.dailynewsegypt.com/2016/07/12/al-sisi-electricity-ministry-finalise-contract-shanghai-electric-coal-fired-power-plant-september/
29. Metz, Bert (Dr.), et al, 2013. New unabated coal is not compatible with keeping global warming below 2^0C. Coal and 2 degrees C statement. European Climate Foundation, The Netherlands. October 2013.
30. U.S. Energy Information Administration, "Country Analysis Brief: Egypt," 2014.
31. Business Monitor International, 2015. "Egypt's underexplored Western Desert offers oil production upside," Business Monitor Internationl, January 27, 2015. http://www.businessmonitor.com/news-and-views/egypts-underexplored-westerndesert-offers-oil-production-upside#sthash.sO8ZbsNx.dpuf.
32. Society of Petroleum Engineers, 2016. Egypt Rejuvenates Economy, Offers Opportunities for Oil and Gas Investment. Society of Petroleum Engineers, May 4, 2016. http://www.spe.org/news/article/egypt-rejuvenates-economy-offers-opportunities-for-oil-and-gas-investment
33. World Bank, 2015. Program Document: First Fiscal Consolidation, Sustainable Energy and Competitiveness Programmatic Development Policy Financing Program. World Bank, November 2015.
34. Hegazy, Karim, 2015. Egypt's Energy Sector: Regional Cooperation Outlook and Prospects of Furthering Engagement with the Energy Charter. Occasional Paper, Energy Charter Secretariat, 2015. http://www.energycharter.org/fileadmin/DocumentsMedia/Occasional/Egypt_and_the_Charter.pdf
35. From GAFI website: http://www.gafi.gov.eg/english/InvestmentMap/Pages/map.aspx?gov=&sector=4&filterby=sector&cul=en-US
36. Prior Action 6: The Cabinet has endorsed a draft gas law that provides for open access to the gas infrastructure and the establishment of an independent gas sector regulator. DPF 2 Indicative Trigger #6.1: (i) The President/ Parliament enacts the new gas law, and the Ministry of Petroleum and Mineral Resources issues the executive regulations implementing the new gas law. (ii) The Ministry of Petroleum and Mineral Resources establishes a new independent gas sector regulator pursuant to the new gas law. The newly created gas regulator will be responsible for the development and implementation of gas transmission codes,

the issuance of a gas transmission tariff, and the market entry of new private sector shippers and suppliers. Source: World Bank, 2015. Program Document: First Fiscal Consolidation, Sustainable Energy and Competitiveness Programmatic Development Policy Financing Program. World Bank, November 2015.

37. Hegazy, Karim, 2015. Egypt's Energy Sector: Regional Cooperation Outlook and Prospects of Furthering Engagement with the Energy Charter. Occasional Paper, Energy Charter Secretariat, 2015. http://www.energycharter.org/fileadmin/DocumentsMedia/Occasional/Egypt_and_the_Charter.pdf
38. *Ibid*.
39. Laura El-Katiri, "Egypt's Energy Sector Trap," *MENA Insights*, 2013.
40. Hegazy, Karim, 2015. Egypt's Energy Sector: Regional Cooperation Outlook and Prospects of Furthering Engagement with the Energy Charter. Occasional Paper, Energy Charter Secretariat, 2015. http://www.energycharter.org/fileadmin/DocumentsMedia/Occasional/Egypt_and_the_Charter.pdf
41. World Bank, 2015. Program Document: First Fiscal Consolidation, Sustainable Energy and Competitiveness Programmatic Development Policy Financing Program. World Bank, November 2015.
42. Hegazy, Karim, 2015. Egypt's Energy Sector: Regional Cooperation Outlook and Prospects of Furthering Engagement with the Energy Charter. Occasional Paper, Energy Charter Secretariat, 2015. http://www.energycharter.org/fileadmin/DocumentsMedia/Occasional/Egypt_and_the_Charter.pdf
43. World Bank, 2015. Program Document: First Fiscal Consolidation, Sustainable Energy and Competitiveness Programmatic Development Policy Financing Program. World Bank, November 2015.
44. *Ibid.*
45. Geoffrey Smith, "BP commits to $12 billion Egypt deal...and look who's back with them." *Fortune*, April 6, 2015. http://fortune.com/2015/03/06/bp-commits-to-12-billion-egypt-deal-and-look-whos-back-with-them/
46. World Bank, 2015. Program Document: First Fiscal Consolidation, Sustainable Energy and Competitiveness Programmatic Development Policy Financing Program. World Bank, November 2015.
47. DPF 1 Prior Action #7: (a) The decree promulgating Law No. 203 of 2014 has been issued for the stimulation of producing electricity from renewable energy sources. (b) The Egyptian Electric Utility and Consumer Protection Regulatory Agency has issued interim licenses to ten (10) private developers pursuant to Law No. 203/2014.
48. Projects between 500 kW and 20 MW will receive $0.136 per kWh and those producing 20 MW to 50 MW will be entitled to $0.1434 per kWh. Source: PV Magazine, 2014. Egypt announces renewable energy feed-in tariffs. PV Magazine, September 23, 2014. http://www.pv-magazine.com/news/details/beitrag/egypt-announces-renewable-energy-feed-in-tariffs_100016525/#axzz4HnWukwHE
49. DPF 3 Indicative Trigger #7.2: The Egyptian Electricity Transmission Company completes a competitive bidding process for the renewable energy program.
50. World Bank, 2015. Program Document: First Fiscal Consolidation, Sustainable Energy and Competitiveness Programmatic Development Policy Financing Program. World Bank, November 2015.
51. PV Magazine, 2015. Egypt on path to become 'renewable energy powerhouse'. PV Magazine, March 10, 205. http://www.pv-magazine.com/news/details/beitrag/egypt-on-path-to-become-renewable-energy-powerhouse_100018533/#axzz4HnWukwHE
52. Gawdat, Bahgat, 2013. "Egypt's Energy Outlook: Opportunities and Challenges," *Mediterranean Quarterly*, vol. 24, no.1, 2013, p.32.
53. PV Magazine, 2015. Egypt on path to become 'renewable energy powerhouse'. PV Magazine, March 10, 205. http://www.pv-magazine.com/news/details/beitrag/egypt-on-path-to-become-renewable-energy-powerhouse_100018533/#axzz4HnWukwHE
54. PV Magazine, 2015. Egypt on path to become 'renewable energy powerhouse'. PV Magazine, March 10, 205. http://www.pv-magazine.com/news/details/beitrag/egypt-on-path-to-become-renewable-energy-powerhouse_100018533/#axzz4HnWukwHE
55. *Ibid.*
56. PV Magazine, 2015. Scatec Solar to invest $300 million in Egypt for up to 200 MW of solar. PV Magazine, March 16, 2015. http://www.pv-magazine.com/news/details/beitrag/scatec-solar-to-invest-300-million-in-egypt-for-up-to-200-mw-of-solar_100018612/#axzz4HnWukwHE
57. According to PV Magazine, the government has set a production cap of 50 MW for each project. It is unclear why such a limit has been put on renewable energy projects.
58. http://thesolutionsproject.org/
59. As quoted in EIA, 2015. Egypt: International energy data and analysis. US Energy Information Administration (EIA), June 15, 2015. https://www.eia.gov/beta/international/analysis.cfm?iso=EGY
60. *Ibid.*
61. Government of Egypt, 2014. Sustainable Development Strategy: 2030 Egypt Vision. Ministry of Planning (MOP), Government of Egypt, 2014. http://mop.gov.eg/MopRep/SDS_Summary_English.pdf
62. Back calculated based on government plan for 30GW new installed since 2014 and 12.5 GW of coal by 2022.
63. Egyptian Initiative for Personal Rights, 2015. The New Amendments to the Implementing Regulations of the Law on Environment: Huge Expansion in the Use of Coal, and Serious Health and Environmental Toll. EIPR, May 18, 2015. http://eipr.org/en/pressrelease/2015/05/18/2390
64. *Aswat Masriya*, 2015. Egypt's cabinet adopts new rules on coal - state agency. http://en.aswatmasriya.com/news/details/792
65. Egyptian Initiative for Personal Rights, 2015. The New Amendments to the Implementing Regulations of the Law on Environment: Huge Expansion in the Use of Coal, and Serious Health and Environmental Toll. EIPR, May 18, 2015. http://eipr.org/en/pressrelease/2015/05/18/2390
66. *Mada Masr, 2014.* Egypt working toward energy mix, not coal imports, claims Iskandar. *Mada Masr,* March 10, 2014. http://www.madamasr.com/sections/environment/egypt-working-toward-energy-mix-not-coal-imports-claims-iskandar
67. *Mada Masr*, 2014. Don't give cement higher ground in coal battle, groups warn. *Mada Masr*, March 13, 2014. http://www.madamasr.com/news/dont-give-cement-higher-ground-coal-battle-groups-warn

68. *Mada Masr, 2014*. Sinai Cement converting to use coal. *Mada Masr, July 23, 2014*. http://www.madamasr.com/news/environment/sinai-cement-converting-use-coal
69. Oxford Business Group, 2016. Egypt's cement industry overcomes energy challenge with coal. http://www.oxfordbusinessgroup.com/analysis/not-set-stone-cement-producers-overcome-energy-challenges-using-coal
70. http://www.cao-ombudsman.org/cases/document-links/documents/CAOAssessmentReport_APCC_April_2016_English.pdf
71. http://www.cao-ombudsman.org/cases/document-links/documents/CAOAssessmentReport_APCC_April_2016_English.pdf
72. Egyptian Initiative for Personal Rights, 2016. Lawsuit against Titan cement factory in Alexandria for using coal. January 11, 2016. http://eipr.org/en/pressrelease/2016/01/11/2499
73. Atwa Hussien, 2015. Egyptian Regulations for Coal Related Activities and Cement Industries in Egypt. Egyptian Environmental Affairs Agency, April 24, 2015. http://www.jica.go.jp/information/seminar/2015/ku57pq00001p08mc-att/150424_01_02.pdf
74. Metz, Bert (Dr.), et al, 2013. New unabated coal is not compatible with keeping global warming below 2^0C. Coal and 2 degrees C statement. European Climate Foundation, The Netherlands. October 2013.
75. Regarding the assessment of climate risks of DPLs, the current policy OP8.60 only suggests a non-binding "toolkit" to be used at the task team's discretion.