Responses to Comments Received on the
Cap des Biches Expansion Project, T-Oil Project, and Ukraine Gas Storage Project

The following presents OPIC's response to each Friends of the Earth (FoE) comment. However, it should be noted that OPIC is not presenting the Ukraine Gas Storage Project at its June Board Meeting. Therefore, responses to comments on the Ukraine Gas Storage Project will be presented when the project is presented to the Board for their consideration.

1. **Continued financing of fossil fuel projects will result in devastating impacts on the climate**

Comment 1(a): Recent studies have found and the international community agreed in the Paris Agreement that the world must keep global warming to 1.5 degrees Celsius to avoid the worst impacts of climate change. Scientists have found that to have a good chance of keeping global warming at safe levels, 75% of existing fossil fuel reserves must stay in the ground. In order to have a 50 percent chance of accomplishing the higher 2 degree Celsius target, an Oxford study from this year found that new fossil fuel power plants cannot be built after 2017. This research reinforces the 2011 International Energy Agency finding that to have a half a chance of reaching the same goal, unless old fossil fuel-based infrastructure is scrapped before the end of its economic lifespan, which is unlikely, only zero carbon-based utilities and infrastructure should be built after 2017. Therefore, supporting the expansion of fossil fuel power plants and related infrastructure will put the planet at greater risk of missing the important and internationally agreed 1.5 degree Celsius target.

Response 1(a): OPIC is not presenting the Ukraine Gas Storage Project at its June Board Meeting. Responses to comments on the Ukraine Gas Storage Project will be presented when the project is presented to the Board for their consideration.

Senegal suffers from a chronic deficit in electricity supply that adversely affects living conditions and economic development. Although total installed national generation capacity is estimated at 461 MW, only 296 MW, or 64%, is fully functional. As a result, in addition to being woefully inadequate to meet energy demand, Senegal's electricity supply is unreliable. In an attempt to meet demand, SENELEC (the state-owned electric utility and Project offtaker) has implemented costly solutions to address electricity shortages, such as installing 140 MW of expensive emergency thermal power rental units. The Cap des Biches Expansion project together with the existing Cap des Biches project will contribute to solving the problem of electricity shortages in Senegal by adding a total of 85.9 MW of generation capacity, which is approximately a 30% increase in Senegal's overall current functional capacity of only 296 MW. The Cap des Biches Expansion Project is expected to replace the adjacent aging SENELEC Plant which is planned to be de-commissioned in 2018.

OPIC is also pursuing a renewable energy project in Taiba, Senegal, and will continue its successful efforts to pursue renewable projects all over the world, especially in Africa. Since 2009, OPIC has committed over $6 billion to renewable energy investment that is projected to produce more than 3,000 MW of renewable electricity. Senegal needs baseload power generation

capacity, and among available renewable energy technologies, only geothermal, concentrated solar (CSP), and hydropower resources can meet baseload demand. However, no commercially viable geothermal, CSP, or hydropower resources have been identified near the Dakar load center. Therefore, the proposed Cap des Biches Expansion project is the only viable baseload power generation source identified to meet the electricity needs of Dakar and its suburbs.

The T-Oil Project is designed to provide a safe, secure, and contained location for ship-to-ship transfer of oil, and will not result in additional oil extraction or consumption (and subsequent climate impacts). Currently, international oil companies perform this activity in less safe locations and using less safe methods such as open-water transfer or unmoored transfer. The T-Oil project is environmentally superior to existing transshipment solutions and will greatly reduce the environmental risks and impacts of such operations.

Comment 1(b): The environmental assessments for these three projects fail to properly consider – or consider at all – the climate impacts of these projects. The assessment for the Senegal power plant uses emission factors from 1994, which is absurdly outdated; in the 22 years since those factors were created our understanding of climate change has grown tremendously, including the severity of the issue and its causes. Using emission factors from the most recent Intergovernmental Panel on Climate Change report would be much more appropriate and would reveal the true climate impacts of the project.

Response 1(b): OPIC is not presenting the Ukraine Gas Storage Project at its June Board Meeting. Responses to comments on the Ukraine Gas Storage Project will be presented when the project is presented to the Board for their consideration.

For the Cap des Biches Expansion Project, OPIC estimated the greenhouse gas (GHG) emissions from the power plant using conservative assumptions (e.g., OPIC uses 8,000 hours of operation and 100 percent capacity which are the maximum that are technically feasible). We expect the Cap des Biches Expansion Project to switch to cleaner fuels (such as natural gas) when they become commercially available, which is expected to happen within five years. Even though the GHG impacts would be marginally lower for cleaner fuels, which may only be realized when these become commercially available in Senegal, the Project uses the most efficient technology for heavy fuel oil (HFO), the fuel mandated by the Senegalese Government. Use of the most efficient technology for HFO minimizes its associated GHG emissions.

With respect to the T-Oil Project, as noted above, the Project will not result in additional oil extraction or consumption. OPIC conservatively estimated the direct greenhouse gas (GHG) emissions from the T-Oil Project activities, which include fuel use during dredging and combustion of vapors generated as a result of the ship-to-ship transfer. It should be noted that the Project will not result in significant additional emissions from vapor combustion, as these vapors are currently being condensed by the vessels and burned as fuel.

Comment 1(c): The assessment for the Ukraine project merely reports the emissions without discussing the impacts on the climate. The evaluation of the Brazil project fails to consider the climate impacts of crude oil all together. These assessments must accurately and sufficiently consider what impacts these projects will have on the climate both during its operation, as well as the decades that they will potentially be in operation.

Response 1(c): OPIC is not presenting the Ukraine Gas Storage Project at its June Board Meeting. Responses to comments on the Ukraine Gas Storage Project will be presented when the project is presented to the Board for their consideration.

With respect to the T-Oil Project, as noted above, the Project will not result in additional oil extraction or consumption.

OPIC will account for the direct GHG emissions from the Cap des Biches Expansion Project and the T-Oil Project in its annual GHG Report, and in meeting its GHG emission portfolio reduction targets. OPIC is committed to continuing to pursue renewable projects wherever commercially feasible.

Comment 1(d): These assessments all fail to properly account for methane, greatly underestimating its impacts. For the Senegal plant, the assessment discusses the potential to convert to natural gas, which could increase the plant's lifespan, as well the country's dependence on fossil fuels, but then fails to assess the impacts on the climate, especially with relation to methane.

Response 1(d): OPIC is not presenting the Ukraine Gas Storage Project at its June Board Meeting. Responses to comments on the Ukraine Gas Storage Project will be presented when the project is presented to the Board for their consideration.

OPIC will account for GHG emissions associated with the use of methane at the Cap des Biches Expansion Project and the associated climate change impacts when natural gas becomes commercially available. However, if the plant converts to natural gas, there will be a net reduction in GHG emissions of approximately 50,000 tons of carbon dioxide equivalent per year. Also, conversion of the plant to natural gas would not involve replacement of existing engines and would therefore not increase the lifespan of the plant.

As noted above, the T-Oil Project will not result in additional oil or gas extraction or consumption. Currently, vapors generated during ship-to-ship transfer are condensed by the vessels and burned as fuel. Any vapor combustion by the Project itself will be performed at a dedicated vapor combustion unit, and methane emissions are expected to be minimal.

Comment 1(e): The Ukraine natural gas project states that venting will be used, but provides no calculation of the impacts. In addition, this assessment mistakenly finds that “the release of significant amounts of gas should only occur in an abnormal situation.” This is out of touch with the reality – the release of emissions from this type of infrastructure is a significant problem. Some estimates put methane leakage from oil and gas production occurring during extraction, transportation, and storage at 17 percent. The misconception that leakage is not a problem stems from the fact that these emissions are grossly underestimated by up to 50 percent even by government agencies in developed countries.

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2. Development mandate not fulfilled by these fossil fuel projects

Comment: These three projects will help fossil fuel companies and perhaps other countries to financially benefit, but how the projects help with development in the host country remains unclear. Similar fossil fuel projects in the past have actually hurt local communities, aggravating poverty and causing serious health, social, and human rights impacts. For example, a liquefied natural gas project on Sakhalin Island, Russia resulted in many negative impacts for the local population, including an increase in still born deaths, a greater incidence of HIV/AIDS, and hyperinflation. Since local populations usually do not have the requisite skills and experience to work on these projects, an influx of workers is required that causes greater violence and puts a strain on health, water, and sanitation systems.

A U.S. government-financed liquefied natural gas project in Papua New Guinea even resulted in 27 deaths from a landslide that the project caused. Development goals would be better achieved by financing projects that would help these countries improve social systems, such as education and healthcare, and transition their economies toward sustainable and clean energy, such as off-grid solar systems. Moreover, climate scientists are increasingly making clear that poorer countries will suffer the worst impacts of climate change. By claiming faux development benefits of fossil fuel projects while worsening climate change and its impacts on developing countries, OPIC fails to achieve its development mandate and hurts the very people that the agency claims to be helping.

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The Cap des Biches Expansion Project is expected to have a highly developmental impact on Senegal through a 33 MW expansion of a 52.9 MW combined cycle electricity generation facility, which will supply an additional 240-290 GWh of power to the country's national grid per year. In 2014, Senegal experienced an average of six electrical outages per month, with the duration of a typical electrical outage of one hour. Both Cap des Biches projects also align with Senegal's Poverty Reduction Strategy, which includes increasing involvement of private operators in the development of energy infrastructure and services.

As Brazil's first dedicated oil transshipment terminal, the T-Oil Project is expected to have a highly developmental impact. This Project comes at a time of economic challenge in Brazil, and focuses on needed improvements in infrastructure. According to the 2015- 2016 World Economic Forum's Global Competitiveness Report, out of 140 countries, Brazil ranked 123rd for quality of overall infrastructure, and 120th for its ports. Located in a private port north of Rio de Janeiro, the T-Oil Project will provide a safer location for independent oil companies ("IOCs") to transfer off-shore oil from one ship to another for transport to international markets. Currently IOCs must conduct ship-to-ship oil transfers in open seas, which is expensive and presents significant environmental risks such as potential oil spills in rough open waters. This Project will provide a more environmentally sustainable and efficient method for the transshipment of Brazil's off-shore oil. In addition, as the first privately-owned, dedicated oil transshipment

terminal, this Project has the potential to be a model for private sector involvement in infrastructure projects that have been historically reliant on state sponsorship.

3. **These countries will further their dependence on fossil fuels, rather than beginning to transition to renewables**

Comment: These projects support fossil fuel infrastructure all over the world, furthering the world's reliance on fossil fuels. The more institutions like OPIC finance these types of projects, the further down the road the transition to renewables is pushed. The expansion of the fossil fuel fired power plant in Senegal will give the plant a lifeline, ensuring that the plant stays in use potentially for decades to come. The natural gas storage project in Ukraine will encourage the increased reliance of the region, including much of Europe, on natural gas, as well as continue Ukraine's economic reliance on a volatile commodity. The crude oil projects in Brazil will have a similar impact, encouraging Brazil to continue its economic reliance on crude oil even as the country is reeling from a fossil fuel company corruption scandal. Now is the time to instead be financing small distributed renewable projects to start putting the necessary infrastructure in place.

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OPIC is actively pursuing renewable projects wherever they are commercially viable. Currently, OPIC is evaluating two renewable projects (one wind and one solar) in Senegal. But, these projects cannot meet the baseload needs in Dakar.

The T-Oil Project will not result in additional crude oil extraction or consumption, or dependency of the Brazilian economy on crude oil. Brazilian production of crude oil is dependent on market factors such as oil price and investment/operating costs. The T-Oil Project will provide a safe, secure, and contained location for ship-to-ship transfer of oil, which is environmentally superior to existing solutions.

4. **Cumulative impacts not properly analyzed**

Comment: When considering the environmental impacts, especially the effects of these fossil fuel projects on the climate, it is important to consider the impacts from the sector as a whole. The assessment for the Senegal power plant found that the emissions from each power plant would be negligible. Using this logic, almost no single fossil fuel project would have a disastrous impact, but when these projects are taken together, the impacts on the climate are devastating. The assessment must consider the cumulative impact that this project will have in conjunction with other fossil fuel power plants in the region. The other two projects make similar mistakes. The Ukraine assessment failed to evaluate the impacts of the natural gas industry as a whole. Ukraine has a large natural gas industry, so when all the storage sites, transportation lines, and related infrastructure are taken as a whole, the impacts on the climate, especially from methane,

are significant. While the Brazil project discusses the cumulative impacts on the local environment, which are important, the assessment fails to consider the impacts of this and similar projects on the climate.

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The Contour Global Expansion Project in Senegal is the lowest cost-based option that can be readily implemented to meet the immediate baseload electricity needs and also replace other costly and aging power generation plants. Therefore, the Senegalese Government considered the Contour Global Project to be consistent with their Climate Change Adaptation Plan, which assumes that baseload power generation needs will be met by thermal sources and that renewables will be used to meet additional electricity needs. The cumulative impacts of all the power plants in the Cap des Biches area were assessed in the Project's Environmental and Social Impact Assessment with a focus on ambient air quality.

As noted above, the T-Oil Project will not result in additional oil or gas extraction or consumption.

5. **Energy access will not be improved**

Comment 5(a): An important aspect of development is access to electricity, which allows for better health care systems, education, etc. Unfortunately, other countries and wealthy users will be the ones to benefit from these projects. The evaluation for the Senegal plant finds that the project will serve the country's need for more capacity. While the project will add capacity, it is unlikely to reach the users who need it most. Large centralized projects, such as natural gas power plants, do not solve the distribution issue, so they merely provide more electricity for those already connected and industrial users.

Response 5(a): The state-owned electricity utility SENELEC is responsible for serving the needs of the poor, for which it requires additional generation capacity. The Cap des Biches Expansion Project will feed electricity into the grid and SENELEC will be responsible for distributing it to the nearby users including the communities in Rufisque. The Cap des Biches Expansion Project is a critical component of Senegal's power generation and sustainable energy growth plan as it will add 33 MW of reliable baseload and materially less expensive power to the Dakar grid. On average, the Cap des Biches Expansion Project will generate electricity at a cost that is approximately 57% lower than the average cost of electricity generation in Senegal.

Comment 5(b): In addition, the Ukraine project's purpose is to transport natural gas through Ukraine to Western Europe, so the project has no plans to improve Ukraine's access to or affordability of its electricity.

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