

# Oyu Tolgoi Copper & Gold Mine Associated Power Plant:

*Violations of IFC and World Bank Policies  
on Environmental Impacts and Criteria for Coal Projects*

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## Overview

The Oyu Tolgoi (“OT”) project is a large-scale copper and gold mine consisting of an open-pit as well as an underground mine located in the South Gobi region of Mongolia. The mine site sits atop the largest copper and gold deposit in Mongolia and possibly the world.<sup>1</sup> The surface mine is expected to produce 100,000 tons of ore per day, with an additional 50,000 tons per day expected from the underground mine, both of which may be expanded in the future.<sup>2</sup>

The OT mining operations will be powered for the first four years by imported electricity from China.<sup>3</sup> After four years, the project Investor Agreement with the Mongolian government requires the project to source its power needs domestically.<sup>4</sup> Accordingly, a brand new on-site coal-fired power plant (“Power Plant”) will be constructed which will power the mine for the long-term. The Power Plant will consist of five boilers of 150 MW capacity each, for a total of 750 MW, and will be fueled by coal from the nearby Tavan Tolgoi coal mine.<sup>5</sup>

The OT project is managed by Oyu Tolgoi, LLC, a subsidiary jointly owned by the government of Mongolia through its public corporation Erdenes Oyu Tolgoi (34%) and mining conglomerates Rio Tinto of London and Turquoise Hill Resources, formerly Ivanhoe Mines, of Vancouver (jointly 66%).<sup>6</sup> The project has been in development off-and-on since 1997; the construction phase is nearly finished, and the operational phase is set to begin late in 2012.<sup>7</sup>

The project is estimated to cost upwards of USD 13 billion (possibly escalating to as much as USD 20 billion over the entire life of the project), most of which has already been raised and invested.<sup>8</sup> However, despite construction being 90% completed, the project is now seeking funding of up to USD 4 billion from a consortium of international lending institutions, including the International Finance Corporation (IFC, the private lending arm of the World Bank Group), the European Bank for Reconstruction and Development (EBRD), Export Development Canada, Standard Chartered Bank, BNP Paribas, and the U.S. Export-Import Bank.

This analysis focuses on the attached coal-fired Power Plant aspect of the project. As discussed in detail below, the Power Plant violates both the IFC’s Performance

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<sup>1</sup> Oyu Tolgoi, LLC, 2012. *Environmental and Social Impact Assessment* (hereinafter “ESIA”), chapter A1, p. 2.

<sup>2</sup> Leslie Johnston, USAID, 2011. *Mongolia – Oyu Tolgoi Copper/Gold/Silver Mine Project Trip Report* (hereinafter “Trip Report”), at 11.

<sup>3</sup> ESIA, chapter 4, at 71.

<sup>4</sup> *Investment Agreement between the Government of Mongolia, Ivanhoe Mines Mongolia Inc. LLC, Ivanhoe Mines Ltd., and Rio Tinto International Holdings Limited*, 2009, at ¶7.3.

<sup>5</sup> Oyu Tolgoi, LLC, 2011. “Coal-Fired Power Plant” *Detailed Environmental Impact Assessment Report* (hereinafter “DEIA”), at 12.

<sup>6</sup> ESIA, chapter A4, at 5.

<sup>7</sup> *Trip Report*, at 10.

<sup>8</sup> *Trip Report*, at 10.

Standards<sup>9</sup> and the World Bank Group (WBG) Strategic Framework for Development and Climate Change (SFDCC),<sup>10</sup> and therefore makes the project inappropriate for IFC funding.

## IFC Performance Standards

The IFC's *Performance Standards on Environmental and Social Sustainability* are guidelines for clients to follow in order to qualify for IFC funding, "designed to help avoid, mitigate, and manage risks and impacts as a way of doing business in a sustainable way."<sup>11</sup> This includes, first and foremost, conducting an Environmental and Social Impact Assessment (ESIA) to identify the impacts and risks resulting from a proposed project.<sup>12</sup>

Further, an ESIA is required to cover not only the direct project impacts (in this case, the copper and gold mine), but "associated facilities" as well, meaning "facilities that are not funded as part of the project and that would not have been constructed or expanded if the project did not exist and without which the project would not be viable."<sup>13</sup> This expressly includes "railways, roads, **captive power plants** or transmission lines, pipelines, utilities, warehouses, and logistics terminals" (emphasis added).<sup>14</sup> Accordingly, the IFC expressly requires the proposed Power Plant, which is intended to provide power for the OT mining operations, and the the coal roads, transmission lines, etc. which are contemplated in the project design, to be included in the project ESIA.

- i. The Power Plant violates IFC Performance Standard 1 because it fails to account for the cumulative impacts of the entire project and associated operations, and fails to cover the entire life-cycle of the project.**

Performance Standard 1 requires potential projects to conduct an ESIA covering "cumulative impacts that result from the incremental impact, on areas or resources used or directly impacted by the project."<sup>15</sup> This includes "incremental contribution of gaseous emissions to an airshed" and "reduction of water flows in a watershed due to multiple withdrawals."<sup>16</sup> The IFC Performance Standards Guidance Notes further explain this requirement, ensuring that the client "identifies and assesses cumulative impacts from further planned development of the project **and other project-related developments**, any existing project or condition whose impacts may be exacerbated by

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<sup>9</sup> IFC, 2012. *Performance Standards on Environmental and Social Sustainability* (hereinafter "*Performance Standards*").

<sup>10</sup> World Bank, 2008. *Development and Climate Change: A Strategic Framework for the World Bank Group* (hereinafter "*SFDCC*").

<sup>11</sup> *Performance Standards*, at ¶1.

<sup>12</sup> *Performance Standards*, at ¶3.

<sup>13</sup> *Performance Standard 1*, at ¶8.

<sup>14</sup> *Performance Standard 1*, at ¶8, footnote 15.

<sup>15</sup> *Performance Standard 1*, at ¶8.

<sup>16</sup> *Performance Standard 1*, at ¶8, footnote 16.

the project, and other developments of the same type that are realistically defined at the time of the risks and impacts identification process” (emphasis added).<sup>17</sup>

The OT ESIA purports to consider the cumulative impacts of the project as required, including the attached Power Plant, identifying “air emissions, wastewater discharges, visual impacts, noise emissions, worker construction camps, and electricity distribution infrastructure” as having potential impacts.<sup>18</sup> However, it defers a full analysis of the additional impacts of the Power Plant necessarily included in the project design to a supplemental ESIA not yet conducted, stating “complete information is not currently available for incorporation into this ESIA.”<sup>19</sup> In fact, the remainder of the ESIA expressly omits consideration of the Power Plant.<sup>20</sup>

Further, while OT conducted a separate DEIA specifically covering the Power Plant, it does so in isolation. The DEIA covers emissions, water use and contamination, and other environmental impacts from just the Power Plant. At no point does OT consider the cumulative impacts of the emissions and other environmental impacts of the Power Plant *on top of* the emissions and pollution from the mining operations, and its associated coal road, transmission lines, etc. For example, the Power Plant DEIA estimates its water needs from a nearby groundwater basin,<sup>21</sup> but never aggregates this usage along with the water needs of the rest of the OT mining operations. When so aggregated, the USAID Trip Report estimates that “there is enough groundwater to sustain projected development in the South Gobi Region until 2020.”<sup>22</sup> Accordingly, the project has failed to satisfy Performance Standard 1’s requirement that cumulative impacts be fully analyzed and considered prior to project approval and funding.

Performance Standard 1 also requires project ESIA’s to cover the entire life-cycle of the project, including “aspects from the early developmental stages through the entire life cycle (design, construction, commissioning, operation, decommissioning, closure or, where applicable, post-closure) of a physical asset.”<sup>23</sup> Again, the OT ESIA and Power Plant DEIA purport to cover all of these project phases, however the timeline estimated in the documents is woefully inadequate. The ESIA bases its analysis on a 27-year lifespan for the project.<sup>24</sup> While the DEIA does not specify a lifespan, it estimates operating costs only out to 2033.<sup>25</sup> The USAID Trip Report reveals that the project lifespan is likely to reach 60-120 years.<sup>26</sup> Thus, the project documents clearly fall short of the requirement that impacts be assessed over the entire life of the project.

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<sup>17</sup> IFC, 2012. *Guidance Notes: Performance Standards on Environmental and Social Sustainability* (hereinafter “*Guidance Notes*”), Note 41.

<sup>18</sup> *ESIA*, chapter C13, at 35.

<sup>19</sup> *ESIA*, chapter C13, at 33.

<sup>20</sup> *ESIA*, chapter B3, at 12, footnote 17; chapter C2, at 4, footnote 4.

<sup>21</sup> *DEIA*, at 32.

<sup>22</sup> *Trip Report*, at 9.

<sup>23</sup> *Performance Standard 1*, at ¶4.

<sup>24</sup> *ESIA*, chapter A4, at 5.

<sup>25</sup> *DEIA*, at 38.

<sup>26</sup> *Trip Report*, at 11.

**ii. The Power Plant violates IFC Performance Standard 3 because it fails to adequately consider low-carbon alternatives and quantify and account for CO<sub>2</sub> emissions.**

Under Performance Standard 3, projects are required to “consider alternatives and implement technically and financially feasible and cost-effective options to reduce project-related GHG emissions during the design and operation of the project. These options may include, but are not limited to, alternative project locations, adoption of renewable or low carbon energy sources, sustainable agricultural, forestry and livestock management practices, the reduction of fugitive emissions and the reduction of gas flaring.”<sup>27</sup>

At no point does the OT ESIA or the Power Plant DEIA give any meaningful consideration to low-carbon alternatives to coal-fired power supply. Both documents mention in passing that no other fuel source or power supply would be feasible, but do not provide the full analysis of renewable alternatives required by the Performance Standards. The ESIA merely states “initial studies by Oyu Tolgoi considered a number of power generation alternatives and concluded that the most appropriate long-term power supply for the Project would be to generate power by using the coal available in the southern Gobi region.”<sup>28</sup> Following from this, the ESIA identifies only three alternatives considered for providing power to the mining operations: obtaining it from either the Mongolian Central Electricity System or the Inner Mongolian Autonomous Region, or “generating power at or near the Project fuelled by local coal resources.”<sup>29</sup> No further consideration is given to renewable energy options.

The DEIA provides a bit more insight, stating that “there is only very limited generation capacity and no grid in the south Gobi and this situation will not change in the foreseeable future. This means a new stand-alone power plant is the only power supply option.” It adds that “there is no other commercially viable fuel option. While there is potential for wind generation this would only provide a relatively small proportion of the total power needs and not obviate the need for reliable base load generation.”<sup>30</sup> Not only are these treatments of renewable sources extremely limited, they are based on data derived from the tendering process for the project back in 2007.

These passing, dismissive references to alternative fuel sources in the project documents fall far short of fulfilling Performance Standard 3’s requirement of considering low-carbon energy sources to reduce project-related emissions. In fact, the project’s Investment Agreement affirmatively requires the project to power itself with a coal-fired power plant or from the Mongolian grid within four years of commencement,<sup>31</sup>

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<sup>27</sup> *Performance Standard 3*, at ¶7.

<sup>28</sup> *ESIA*, chapter 4, at 71.

<sup>29</sup> *ESIA*, chapter 5, at 20.

<sup>30</sup> *DEIA*, at 7.

<sup>31</sup> *Investment Agreement*, at ¶7.3.

and the ESIA echoes this requirement.<sup>32</sup> This requirement actually forecloses any possibility of complying with Performance Standard 3.

Performance Standard 3 also requires projects to account for and mitigate CO<sub>2</sub> emissions. For carbon intensive projects,<sup>33</sup> the IFC requires that “the client will quantify direct emissions from the facilities owned or controlled within the physical project boundary, as well as indirect emissions associated with the off-site production of energy used by the project. Quantification of GHG emissions will be conducted by the client annually in accordance with internationally recognized methodologies and good practice.”<sup>34</sup> The IFC Performance Standards Guidance Notes 16-24 provide further clarification on the precise CO<sub>2</sub> accounting requirements.<sup>35</sup>

The OT ESIA and the Power Plant DEIA fail to provide the careful CO<sub>2</sub> emissions quantification and accounting required by Performance Standard 3. Both documents discuss emissions generally, and even tout the Power Plant’s planned top-of-the-line equipment to minimize emissions. But at no point does either document actually attempt to quantify or estimate the projected emissions from the Power Plant or the project as a whole. This violates the IFC’s requirement to account for such emissions in the planning stage.

## **World Bank SFDCC Coal Guidance**

In addition to the IFC’s own performance standards, IFC-financed projects are subject to the broader World Bank guidance on *Criteria for Screening Coal Projects* under the SFDCC.<sup>36</sup> The SFDCC was developed in order to “help WBG clients—public and private—understand, analyze, manage, and adapt to climate change.”<sup>37</sup> Pertaining specifically to coal projects, the SFDCC lays out six criteria coal projects must meet in order to satisfy the purposes of the framework,<sup>38</sup> which are elaborated on further in the Coal Guidance.

- i. The Power Plant violates Criterion 1 because it fails to demonstrate a development impact which increases energy access for the poor or improves system reliability.**

Criterion 1 of the World Bank SFDCC requires coal projects to result in a “developmental impact . . . including improving overall energy security, reducing power

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<sup>32</sup> *ESIA*, chapter A2, at 20.

<sup>33</sup> Performance Standard 3 sets a threshold of 25,000 tons of CO<sub>2</sub>-equivalent annually. It is difficult to say whether this project as a whole or the Power Plant meets this threshold or not because the emissions are never precisely quantified or even estimated.

<sup>34</sup> *Performance Standard 3*, at ¶8.

<sup>35</sup> *Guidance Notes 16-24*.

<sup>36</sup> World Bank, 2010. *Operational Guidance for World Bank Group Staff: Criteria for Screening Coal Projects under the Strategic Framework for Development and Climate Change* (hereinafter “*Coal Guidance*”), at 3.

<sup>37</sup> *SFDCC*, at ¶16.

<sup>38</sup> *SFDCC*, at ¶27, footnote 6.

shortage or access for the poor.”<sup>39</sup> The SFDCC Coal Guidance breaks this criterion down into a “significant increase in access to electricity,” or improved “reliability of power supply for sustained economic growth and poverty reduction.”<sup>40</sup> Both of these benchmarks make it clear that the World Bank Coal Guidance’s primary focus is to improve energy supply for the poor.

The OT project, and specifically the Power Plant, don’t even claim to provide such a developmental impact. There is no discussion of improving energy access for the poor or improving reliability of energy supply for poverty reduction in the project ESIA or the Power Plant DEIA. The copper and gold mines will be the sole consumer of the power plant’s output. Therefore the Power Plant fails to satisfy the World Bank’s Coal Guidance Criterion 1 of improving energy access for the poor.

**ii. The Power Plant violates Criterion 2 because it fails to adequately consider low-carbon alternatives.**

Similar to IFC Performance Standard 3, the SFDCC Criterion 2 requires coal projects to identify and provide support to low-carbon projects.<sup>41</sup> The Coal Guidance explains that this requires “identification and possible support to Renewable Energy (RE), Energy Efficiency (EE) and other low carbon interventions, projects and policies, and identification of associated reductions in GHG emissions.”<sup>42</sup> This can take the form of technical assistance to prepare studies on available renewable energy alternatives, technical assistance to develop existing renewable energy projects, or financial support for bankable renewable energy projects already in production. As discussed in detail above under IFC Performance Standard 3, the OT project makes almost no effort to consider low-carbon alternatives or provide support to such projects, and therefore fails to satisfy Criterion 2 of the World Bank Coal Guidance as well.

**iii. The Power Plant violates Criterion 4 because it fails to consider viable alternatives to the least-cost coal project.**

In addition to considering low-carbon and renewable energy alternatives to coal projects, the SFDCC Criterion 4 even requires projects to consider “viable alternatives to the least-cost (including environmental externalities)” and seek “additional financing from donors for their incremental cost.”<sup>43</sup> This means that even if a coal project is the least-cost option to provide necessary power, a project must identify and seek private financing for more expensive low-carbon alternatives before it can proceed with the coal project. This shows how strong the preference is in the SFDCC for low-carbon, renewable energy sources. Again, the OT project and the included Power Plant violate this criterion by failing to even identify and consider low-carbon alternatives to a coal-fired power plant, much less seek private financing for the incremental cost of such renewable energy options.

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<sup>39</sup> SFDC, at ¶27, footnote 6.

<sup>40</sup> *Coal Guidance*, at 5.

<sup>41</sup> SFDC, at ¶27, footnote 6.

<sup>42</sup> *Coal Guidance*, at 6-7.

<sup>43</sup> SFDC, at ¶27, footnote 6.

In addition to all of the above violations of IFC and World Bank policies, it should be noted that the ESIA and Power Plant DEIA are simply deficient as environmental analyses of a coal plant. Chapter 12 of the ESIA, which covers “community health,” excludes any mention of the coal-fired power plant, thereby ignoring any effect from the plant and its emissions and other impacts on community health. The Power Plant’s emissions of particulates, NO<sub>x</sub>, and SO<sub>x</sub> are considered, but there is only passing reference to mercury emissions from the plant and no attempt made to reduce these emissions. Based on this factor alone, this plant *could not be built in the United States* under existing EPA regulations. Further, the environmental impacts which are included and analyzed rely on baseline data from 2003 and 2006-07, severely out-dated for a 2012 project.

## **Conclusion**

It is clear from the OT ESIA and Power Plant DEIA that the project fails to meet several of the IFC Performance Standards as well as World Bank SFDCS Coal Guidance criteria. The project fails to account for cumulative impacts, fails to assess impacts over the full life-cycle of the project, fails to give any meaningful consideration to low-carbon alternatives or support renewable energy projects, and fails to adequately account for CO<sub>2</sub> emissions so that they may be mitigated. Accordingly, the project does not meet IFC lending requirements at this time, and should not be approved for IFC funding.