‘A Useless Sham’

A Review of the Oyu Tolgoi Copper/Gold Mine Environmental and Social Impact Assessment

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Executive Summary

We are an international network of civil society organizations that have been following the development of the Oyu Tolgoi copper/gold mine in southern Mongolia for many years. The mine is classified as a Category A project by the International Finance Corporation (IFC) and the European Bank for Reconstruction and Development (EBRD) because of the significant adverse social and environmental impacts posed by project activities. An Environmental and Social Impact Assessment (ESIA) conducted by Oyu Tolgoi LLC, the Rio Tinto/Turquoise Hill subsidiary that manages the mine, was released in August 2012, as required by the IFC and the EBRD for projects of this nature, after eight months of delay during which time construction of the mine proceeded apace.

We have determined that the Oyu Tolgoi project's ESIA is a non-starter and deeply flawed based on our own research as well as that of expert reviewers. The ESIA does not comply with fundamental provisions of the IFC's Performance Standards, as it is incomplete and retroactive; lacks a robust risk assessment; ignores the health, safety, and livelihood security of the affected communities; fails to establish the protection of the South Gobi's scant water resources and biodiversity; and omits critical assessments of cumulative impacts or impacts from associated facilities such as infrastructure, the international airport, or the planned coal-powered plant. Failure to comply with the Performance Standards undermines the development objectives of the project.

The project has already caused a significant amount of damage to the local community and the environment. The ESIA and mitigation plans must be revised to ensure that all future negative impacts are avoided or minimized. As the World Bank, EBRD and other international financial institutions have the ability to use their funding as leverage to enforce these changes, we ask that consideration of the proposed loan by the Boards of the World Bank and EBRD be delayed until the following criteria have been met:

- A full ESIA is developed and reviewed. This should include: the Operational Management Plans; cumulative impacts from demand on water resources, linear infrastructure, and associated facilities; and a political and economic risk analysis.
- An independent expert review panel is established to inform and review the full ESIA. This panel should cover at the very least topics on hydrology, dust pollution, biodiversity protection, waste management, and land acquisition and resettlement.
- An independent expert panel is established to review the ESIA and other documentation related to the coal power plant, including a robust alternatives analysis, as required by the World Bank Group's *Criteria for Screening Coal Projects under the Strategic Framework for Development and Climate Change*.
- The current, inadequate compensation contract is reviewed and renegotiated to include all impacted herders and to ensure compliance with IFC Performance Standards 5 and 7, including: access to sufficient, high quality water and pasture; protection of livelihoods; culturally appropriate consultation; and adequate compensation.
- All studies and reports referenced in the ESIA are made publicly available in English and Mongolian, either through links to external websites or uploaded onto the company website. For a full list of suggested documents, please see Chapter 9: Recommendations.

Table of Contents

Note:

Throughout this report, we have highlighted the policies within the International Finance Corporation's Performance Standards that have been violated by the Oyu Tolgoi Environmental and Social Impact Assessment in boxes entitled *Policy Violations*.

Due to the timing of the project, we disagree with IFC staff over which version of the Performance Standards apply. As the project was mandated by the IFC in 2011 following the signing of the Investment Agreement in 2009, the IFC argues that the ESIA should be reviewed under the 2006 Performance Standards. However, as the ESIA itself is dated 31 July 2012, and both it and the IFC project information documents were not disclosed until August 2012, we believe that the new Performance Standards (which came into effect in January 2012) should apply to the current review.

In order to accommodate these differing stances, as well as to illustrate how this ESIA is insufficient under either policy, we have included violations of both the 2006 and 2012 Performance Standards in this report. We apologize in advance for any confusion.

1. Introduction and Overview

The Oyu Tolgoi copper/gold mine in southern Mongolia is classified as a Category A project by the International Finance Corporation (IFC) and the European Bank for Reconstruction and Development (EBRD) because of the significant adverse social and environmental impacts posed by project activities. An Environmental and Social Impact Assessment (ESIA) conducted by Oyu Tolgoi LLC (the company), the Rio Tinto/Turquoise Hill subsidiary that manages the mine, was released in August 2012, as required by the IFC and the EBRD for projects of this nature, after eight months of delay.

We are an international network of civil society organizations that have been following the project's development for many years, and we are concerned that the ESIA produced for Oyu Tolgoi (OT) does not comply with international standards or best practices. We have seen the negative impacts already created by the project and have been rebuffed by the company when we have raised concerns to them in the past. As the ESIA forms the basis for investment decisions at the IFC, EBRD, the Australian Export Finance and Insurance Corporation (EFIC), the US Export-Import Bank, and other international financial institutions (IFIs), a flawed assessment will lead to serious repercussions for the local community and damage the reputation of all invested parties.[1]

The following are comments on some of the most significant deficiencies we have noted in the ESIA. We ask that no further negotiations on financing take place until these issues are addressed per our recommendations below.

2. Content and Timing of the ESIA

The IFC, EBRD, and other IFIs require clients to produce a comprehensive Environmental and Social Impact Assessment for any greenfield development projects that are likely to generate significant environmental and social impacts. The purpose of the ESIA is to feed into the design and appraisal process at the various IFIs to establish, prior to approval of financing, compliance with international standards throughout the life of the project. The current ESIA for Oyu Tolgoi fails to meet this requirement, as it is both incomplete and retroactive.

2.1. The ESIA is incomplete

An ESIA is meant to cover the impacts and mitigation strategies of a project throughout its life cycle (design, construction, commissioning, operation, decommissioning, closure and sometimes post-closure). Mining activities in particular tend to generate significant environmental and social impacts at each of these stages, so an ESIA regarding a mining project should include comprehensive assessments of all stages of the project. Moreover, an ESIA, as a single document

[1] The World Bank Group – the IFC in particular – has a terrible track record of investing in extractive industry projects with significantly flawed ESIAs where serious social and environmental ills occurred as a consequence. See for example the strikes and killings at the Yanacocha and Conga mines in Peru, the Marikana and Kopanang mines in South Africa, and the Marlin mine in Guatemala.

covering all stages of a project in detail, should be internally consistent in its descriptions of that project.

The Oyu Tolgoi ESIA recognizes these principles in stating that it covers the entire life cycle of the mine:

> This ESIA is based on the initial construction of an open pit copper-gold mining operation at the Southern Oyu deposit, supplemented within four years by production from the underground development to establish block cave mining operations at the Hugo North deposit…The development, construction, operation and eventual closure and decommissioning of the greenfield mining project described above and the attendant infrastructure as listed below comprise the "Project" for the purposes of this ESIA.[2]

However, while the impacts and management plans of the construction phase are outlined in detail, the language on operational and closure plans is vague and sometimes even omitted entirely. For instance, both the Tailings Management Plan and Waste Rock Management Plan sections read "*This section is intentionally omitted and will be included with the operations- phase management plans which will be prepared in due course.*"[3] As tailings management is one of the riskier parts of the mining operations in terms of pollution and water misuse, its omission from the current management plans is a serious oversight.

Language in the Environmental and Social Management Plan Framework admits that the suite of operational management plans is not yet ready for publishing, and according to the IFC website these plans, including the Mine Closure Plan, are not due until December 31, 2012. Other relevant management plans, such as the Worker Housing Development ESIA that evaluates the impact of the workers' camp on water resources, are not due until December 31, 2013.[4] At this point, there is no guarantee that the omitted documents will meet international standards, so to approve financing for this project based on what is currently available would be premature.

Additionally, because the current ESIA seems to be compiled from a number of Detailed Environmental Impact Assessments (DEIAs) that were prepared for various elements of the project between 2002 and 2011, information between chapters is not always consistent, leading to confusion. The problem of inconsistent information created by sections being essentially copied into the ESIA from other documents is yet another way in which the ESIA can be seen as incomplete and is another example of its failure to meet international standards.

[2] Oyu Tolgoi Environmental and Social Impact Assessment (see http://www.ot.mn/?q=en/node/2679), Chapter A4, p 5.
[3] OT ESIA, Chapters D10 and D9 respectively.
[4] IFC, OT LLC Environmental and Social Review Summary, E & S Action Plans.
http://www.ifc.org/ifcext/spiwebsite1.nsf/651aeb16abd09c1f8525797d006976ba/d8a67e4647784ed385257a62005d32e1?opendocument

Policy Violation

IFC Performance Standard 1, paragraph 4 (2012): "Where applicable, this [assessment] could include aspects from the early developmental stages through the entire life cycle (design, construction, commissioning, operations, closure or, where applicable, post-closure) of a physical asset."

IFC Performance Standard 1, paragraph 6 (2006): "Risks and impacts will also be analyzed for the key stages of the project cycle, including pre-construction, construction, operations, and decommissioning or closure."

2.2. The ESIA is retroactive

The main purpose of an ESIA is to improve the design of the project, usually during the feasibility stage. To be an effective planning and appraisal document, the ESIA should be published and vetted before significant work on the project has begun. However, the OT ESIA is dated 31 July 2012, a time when the construction phase was over 94% complete. Oyu Tolgoi mine exploration began in 1997 and continued through the signing of the 2009 Investment Agreement, while construction on the project started in 2010. The tardiness of the ESIA is thus inherently problematic, and is made significantly worse by the omission of management plans for the operational phase of the project. The ESIA only contains management plans for the construction phase, all of which are essentially retroactive and ultimately useless.

As independent consultant Robert Goodland explains:

> In some ways even more serious is that not only is the ESIA late in terms of the construction having already taken place, but it also doesn't include the final information on implementation of operational impacts/management plans, and therefore the operational phase ESIA will also be late. Making the ESIA into a useless sham is consistent with Ivanhoe CEO Robert Friedland's knowledge of OT's environment in his claim: "*The nice thing about (Oyu Tolgoi) is that there are no people around, the land is flat, there's no tropical jungle, there are no NGOs*."[5] (Jan. 21st 2012, The Economist).[6]

The ESIA, as a financial due diligence document, should describe what the company *will do* to mitigate risks and impacts, not what it has already done. While it is understood that the development of the ESIA is a lengthy process, the timing of this ESIA suggests that the construction phase management plans were developed concurrently with construction, rather than before when they would be most effective. The same will seemingly be true for the operational phase management plans – initial production and operations is expected to begin prior to the disclosure of the management plans.

[5] Robert Friedland's comment on the context of Oyu Tolgoi is clearly erroneous, as there are certainly significant impacts on people and the environment, especially considering the sparse population of Mongolia in general and the fact that desert ecosystems can be more sensitive to disruption than tropical jungles. And while there may not have been NGOs in Khanbogd prior to the development of the project, there are a number of them now in place that are focused specifically on the impacts of the Oyu Tolgoi mine. Unfortunately, this attitude is not limited to Mr. Friedland and permeates both our interactions with the company and the IFIs.

[6] See attached: Goodland, R. 2012. *Mongolia: The Oyu Tolgoi Copper & Gold Mine Project – Comments on Chapter D1 of the ESIA: "Environmental and Social Management Plan Framework"*, p 1.

"Prevention is cheaper and more effective than cure,"[7] but as many significant impacts accrued during the construction phase, there is now no way to ascertain what damage has already been done. An ESIA and related studies conducted prior to construction would have benefited the project greatly by identifying in advance potential impacts and ways to mitigate them.

3. Risk Analysis

An extractive project of this nature and magnitude should thoroughly address the economic, environmental, and political risks associated with the proposed project. These risks should be publicly assessed prior to project financing in order to allow stakeholders and investors to verify the claims made by the project proponents. In the case of Oyu Tolgoi, the absence of a public risk assessment on this multi-component project, either through omission or a lack of transparency, is particularly troubling given the other concerns we have noted regarding the ESIA.

While the ESIA does briefly mention the risk of Dutch Disease,[8] little attention is given to the risk of resource nationalism in Mongolia, which is a growing and serious concern. Oyu Tolgoi is not immune to this political shift taking place in Ulaanbaatar, as the government has attempted to renegotiate the 2009 Investment Agreement (IA) in order to increase its ownership in the mine from 34% to 51%. This renegotiation, while understandable given the unfair nature of the IA in general, represents the current conflicts within Parliament regarding the distribution and management of mining revenues. While some Parliamentarians truly want to see the entire country benefit from Oyu Tolgoi and other mines through proper redistribution, others simply want to earn more for themselves. This conflict over mineral wealth is compounded by the lack of IFI assistance on economic diversification. The World Bank's most recent Country Partnership Strategy (CPS) for Mongolia, for example, focuses primarily on "mining for sustainable development."[9] Any support for other economic sectors, such as agriculture, is limited in scope, and these projects receive far less funding than mining-related activities.

A risk assessment should also address potential project failure. In other words, the ESIA should have included potential risks of physical and chemical hazards to the existing surface water resources of indigenous herder communities, as well as the political risks of various forms of expropriation, to which the risks of project hazards obviously contribute. The ESIA does not address these issues sufficiently in the relevant sections of the document, causing us to doubt the veracity of the company's claims.

For instance, the ESIA does not address the impacts of the subsidence zone of the first Block Caving Project (Hugo), which is expected to be quite substantial- approximately the size of downtown Ulaanbaatar.[10] It is imperative that all impacts of block caving are included in the overall project

[7] Ibid.
[8] OT ESIA, Chapter C7.
[9] World Bank, Country Partnership Strategy for Mongolia, 2013-2017 (http://documents.worldbank.org/curated/en/2012/01/16244913/mongolia-country-partnership-strategy-period-fy2013-2017#).
[10] Or roughly 2 km by 2.5 km. See OT ESIA, Chapter A4, p 23.

risk assessment, as this mining method can pose serious harm to both the environment[11] and workers.[12] Subsidence can also cause damage to adjacent rock masses which contain shallow aquifers currently used by the nomadic herders, which should prompt the company to perform a rigorous evaluation of this issue before mining begins. It is not clear from the ESIA that this is the case, as it claims that there is the "potential for surface subsidence or settling" in relation to the block caving sections of the mine, but the discussion makes it sound as if subsidence is only a possible or likely risk, rather than a certain one.[13]

These doubts cause us to fear that there is a real likelihood that the wider economic benefits asserted on the project website will not be delivered. Moreover, it is not feasible for Mongolian civil society to judge the claims of benefit so made unless the Management Contract and other reports are made public. Unfortunately, the vast majority of consultants' reports referenced in the body of the ESIA have not been made publicly available, making it difficult to independently review these sources. This, along with the omission of a robust risk assessment or impact/benefit agreement,[14] underlines the lack of transparency that has plagued the project from the beginning.

4. Affected Communities and Vulnerable Populations

Effective engagement with Affected Communities (local communities directly impacted by the project) throughout the development of an Environmental and Social Impact Assessment is key to minimizing adverse impacts felt by the community. Vulnerable groups in particular - such as women, children, the elderly, or marginalized/indigenous peoples – should be targeted for tailored consultation strategies. If any member of the affected community is physically or economically displaced as a result of the project, a compensation package that restores or improves their livelihoods is required.

In the case of the Oyu Tolgoi ESIA, flaws in the methodologies employed by the company regarding identification and assessment of vulnerable groups, consultations, participation, compensation, and health impacts are apparent and unsettling. The ESIA also fails to describe how the company benchmarks broad community support, which the IFC admits it has not been able to confirm.[15]

4.1. The nomadic herders of the South Gobi should be classified as indigenous peoples

In recent years, international financial institutions such as the World Bank Group, the EBRD, and the International Labour Organization have instituted policies meant to protect the rights of

[11] As Paul Robinson of the Southwest Research and Information Center notes: "The cave zone is unreclaimable as it is not physically stable enough for backfilling or reclamation. The large unreclaimable cave is the part of the mining plan at OT most likely to create a permanent 'moonscape,' a concern expressed by the herders about the long-term legacy of OT." (Personal Communication, November 2012)
[12] In the ESIA, the company points to the Northparkes mine in Australia as one of its block caving success stories (Chapter A4, p 22). What the company fails to mention is that four miners died at the Northparkes mine in 1999 as a direct result of Rio Tinto's mining methods. An inquest into their deaths found that "the production rate [was] far greater than the rate at which ore was falling from the caveback, [and] took precedence over factors which concerned [miners'] safety." (See North Parkes Coronial, Findings and Recommendations, p 1. http://eagcg.org/common/pdf/NorthParkesCoronial.pdf)
[13] OT ESIA, Chapter A4, p 21.
[14] Goodland, p 6.
[15] IFC, OT LLC Environmental and Social Review Summary, BCS.

indigenous peoples worldwide.[16] While the mandatory concept of Free, Prior, and Informed Consent (FPIC) can be found in these policies, it did not gain universal acceptance until the publication of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)[17] in 2007.

Private companies such as Rio Tinto have also publicly committed to safeguarding the rights of indigenous peoples. While there is no universally accepted definition of "indigenous peoples", in general these peoples must self-identify as indigenous. As Dr. Chris Anderson of Rio Tinto verified at an Oxfam event earlier this year, the company considers indigenous peoples to be any "land-based" people groups,[18] which would include the Mongolian nomadic herders.

The nomadic herders of the South Gobi identify themselves as indigenous peoples because of their land-based culture and the fact that they are carriers of ancient traditions. Indigenous peoples should have the right to self-identify as such, without companies or banks negating their identities as indigenous peoples. However, since the company is seeking financing from the International Finance Corporation, the guidelines for identifying indigenous peoples established by Performance Standard (PS) 7 must apply. Mongolia's nomadic herders should have been classified as indigenous peoples and afforded all the related protections set forth in PS 7, because they exhibit at least the first three characteristics of indigenous peoples described in the Performance Standard.

First, as mentioned above, the herders self-identify as Indigenous Peoples and are recognized as such by others.[19] Second, they maintain an intimate attachment to distinct, ancestral territories in and surrounding the project area. This centuries-old attachment is displayed in a seasonal and cyclical migration from one traditional location to the next. Third, the herders are separated from mainstream culture by distinct cultural and economic customs; namely, a nomadic lifestyle rooted in a natural resource-based livelihood that is tied to the geographic area they inhabit. Finally, regarding the fourth characteristic outlined in PS 7, the herders' use of words and phrases not heard in the mainstream Mongolian language distinguishes them from the rest of the country. While this particularized dialect may not rise to the level of a distinct language, it does play a significant role in the nomadic pastoralist identity.

In addition to strongly displaying the first three characteristics identified in PS 7 and displaying elements of the fourth characteristic, the nomadic herders demonstrate the type of identity the Performance Standard intends to protect. The Guidance Notes explicitly mention that the standard applies to nomadic communities "who seasonally migrate over relatively short distances, and whose attachment to ancestral territories may be periodic or seasonal in nature."[20] The nomadic herders will suffer unique impacts because of their ties to the land and must be treated as more than simply "vulnerable" Affected Communities.

[16] Namely IFC PS 7 and World Bank OP/BP 4.10; EBRD Performance Requirement 7; ILO Convention 169.
[17] http://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf
[18] http://www.oxfamamerica.org/campaigns/extractive-industries/community-consent-index
[19] See, e.g.: Minority Rights Group International. July 2011. *State of the World's Minorities and Indigenous Peoples 2011 – Mongolia*. ("Mongolian herders, mostly minorities and indigenous peoples, were confronted with severe drought and a harsh winter, forcing thousands of them to abandon their nomadic life. . . .") http://www.unhcr.org/refworld/docid/4e16d36711.html
[20] IFC, PS 7 Guidance Note 7 (2012).

Yet, the ESIA "inappropriately dismisses" the policy's application to this project.[21] There is no evidence in the ESIA that the company undertook the analysis necessary to determine whether the nomadic herders should be recognized as indigenous peoples under PS 7. The ESIA simply concludes: "There are no indigenous peoples associated with this Project. Herder communities are part of the mainstream of Mongolian society from an ethnic and cultural perspective. Herder communities are treated as a 'vulnerable group' within the ESIA given the pressures being placed on their traditional lifestyle by economic development and social changes."[22]

At the very least, this determination should have been a close call, considering that the herders self-identify as indigenous and are indisputably tied to a geographically distinct habitat and to ancestral territories in the project area, both characteristics that under the IFC's standards should have weighed in favor of considering them Indigenous Peoples.[23] The lack of analysis in the ESIA to support the company's apparent determination that the nomadic herders do not qualify as Indigenous Peoples is thus a startling violation of PS 7.

Policy Violation

IFC Performance Standard 7, paragraph 5 (2012): "In this Performance Standard, the term 'Indigenous Peoples' is used in a generic sense to refer to a distinct social and cultural group possessing the following characteristics in varying degrees:

- Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;
- Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
- Customary cultural, economic, social, or political institutions that are separate from those of the mainstream society or culture; or
- A distinct language or dialect, often different from the official language or languages of the country or region in which they reside."

IFC Performance Standard 7, paragraph 5 (2006): "In this Performance Standard, the term 'Indigenous Peoples' is used in a generic sense to refer to a distinct social and cultural group possessing the following characteristics in varying degrees:

- Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others
- Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories
- Customary cultural, economic, social, or political institutions that are separate from those of the dominant society or culture
- An indigenous language, often different from the official language of the country or region."

[21] See attached: Gleason, J. 2012. *Evaluation of the Environmental and Social Impact Assessment (ESIA) for the Oyu Tolgoi Copper and Gold Project and the application of IFC and EBRD Performance Standards*. ELAW, p 1.
[22] OT ESIA, Chapter A2, p 27.
[23] The Guidance Notes suggest that clients should undertake the assessment of whether a group should be recognized as indigenous very seriously, including by potentially undertaking activities such as: investigation of application laws and regulations, including obligations under international law; archival research; ethnographic research, including documentation of culture, customs, institutions and customary law; and participatory appraisals. Additionally, "[t]he client should retain competent experts to assist in this work." IFC, PS 7 Guidance Note 6 (2012).

4.2. The free, prior and informed consent of the nomadic herders must be obtained before the project moves forward

For projects affecting indigenous peoples, such as the nomadic herders, free, prior and informed consent (FPIC) is required for all impacts to land and natural resources subject to traditional ownership or use and for relocation of indigenous peoples from such land or natural resources.[24] Because the company failed to identify the herders as indigenous peoples, it has made no attempt to comply with this requirement. Although true free, prior and informed consent is no longer possible for many aspects of the project, considering that much of the project has already been constructed and many herders have been physically or economically displaced, the company should make every effort to ensure the implementation of FPIC for all future developments, such as the coal power plant.

Policy Violation

IFC Performance Standard 1, paragraph 32 (2012): "For projects with adverse impacts on Indigenous Peoples, the client is required to engage them in a process of ICP and in certain circumstances the client is required to obtain their Free, Prior and Informed Consent (FPIC)."

IFC Performance Standard 7, paragraph 15 (2012): "The client will consider feasible alternative project designs to avoid the relocations of Indigenous Peoples from communally held lands and natural resources subject to traditional ownership or under customary use. If such relocation is unavoidable the client will not proceed with the project unless FPIC has been obtained as described above."

IFC Performance Standard 7, paragraph 9 (2006): "The client will establish an ongoing relationship with the affected communities of Indigenous Peoples from as early as possible in the project planning and throughout the life of the project. In projects with adverse impacts on affected communities of Indigenous Peoples, the consultation process will ensure their free, prior, and informed consultation and facilitate their informed participation on matters that affect them directly, such as proposed mitigation measures, the sharing of development benefits and opportunities, and implementation issues. The process of community engagement will be culturally appropriate and commensurate with the risks and potential impacts to the Indigenous Peoples."

4.3. The stakeholder consultation process is flawed and cannot prove broad community support for the project

The Affected Communities in the Oyu Tolgoi project can be separated into roughly three groups: those who live in the Khanbogd soum center, the indigenous nomadic herders who live in Gavliut and Javhlant baghs in Khanbogd soum, and the families of Bayan-Ovoo soum who live along the infrastructure corridor which stretches from the mine to the Chinese border. Most of the impacted herders live 15-20 km away from the soum center, making travel to the main village difficult, and the lack of telecommunications infrastructure limits access to internet and cellular services. In a practical sense, it is therefore not surprising that the company would rely on household visits as the primary method of consultation with the local herders,[25] but to focus predominantly on one-on-one

[24] Performance Standard 7, pp. 13-15.
[25] OT ESIA, Chapter D14, p 39

consultations undermines the principle of freedom from intimidation invoked in the IFC Performance Standards.

In accordance with their cultural traditions, herders treat visitors to their homes as guests and are therefore unlikely to voice their concerns about, or disagreement with, anything their guests propose. One-on-one consultations therefore do not elicit candid responses from herders and are not culturally appropriate. Group consultations with herders and soum centre residents would encourage discussions in which herders would be more likely to feel comfortable speaking freely about their concerns regarding the project.

However, the few group consultations that have taken place in the soum center have suffered from various problems. For example, for some of these consultations the relevant documents were not provided to the community in a timely manner, in some cases only shared on the day of the event itself, and the consultations were usually more of a presentation of what the company has done and will do, rather than an in-depth, participatory discussion about the needs and concerns of the herders and soum center residents. For instance, to date, none of the group consultations have included discussions about pollution of air, soil, and water from the mining operations or how the company plans to mitigate impacts on community health, all of which are questions that deeply concern the herders and soum residents. The company has also not provided information to the community on the best way to protect themselves and their livestock from any negative impacts.

Herders have become increasingly disgruntled with the operations of Oyu Tolgoi and other mining companies, which has prompted the herders to organize themselves into NGOs such as Gobi Soil. These groups have threatened hunger strikes and organized protests against mining-related projects, such as the transport roads leading from Oyu Tolgoi and Tavan Tolgoi to Gashuun Sukhait. This group activity is unusual for the region given that the herders, who live 5-10 km apart on average, generally do not interact much.

This growing opposition among the herder community, as well as the local government,[26] indicates that the Oyu Tolgoi consultation methodology as described in the ESIA is not working as intended and should be reviewed. The growing opposition also calls into question any claim that the project has broad community support, which is a requirement that must be met even if the higher standard of free, prior and informed consent, described above, does not apply. As noted above, the ESIA also fails to describe how the company benchmarks broad community support, which the IFC admits it has not been able to confirm.[27]

[26] http://ubpost.mongolnews.mn/?p=1442
[27] IFC, OT LLC Environmental and Social Review Summary, BCS.

Policy Violation

IFC Performance Standard 1, paragraph 30 (2012): "Effective consultation is a two-way process… The client will tailor its consultation process to the language preferences of the Affected Communities, their decision-making process, and the needs of disadvantaged or vulnerable groups."

IFC Performance Standard 1, paragraph 31 (2012): "For projects with potentially significant adverse impacts on Affected Communities, the client will conduct an Informed Consultation and Participation (ICP) process that will build upon the steps outlined above in Consultation… ICP involved a more in-depth exchange of views and information, and an organized and iterative consultation, leading to the client's incorporating into their decision-making process the views of the Affected Communities on matters that affect them directly."

IFC Performance Standard 1, paragraph 22 (2006): "For projects with significant adverse impacts on affected communities, the consultation process will ensure their free, prior and informed consultation and facilitate their informed participation. Informed participation involves organized and iterative consultation, leading to the client's incorporating into their decision-making process the views of the affected communities on matters that affect them directly."

4.4. The project's Resettlement Action Plan and related compensation contracts are inadequate and destroying the affected communities' livelihoods

In 2004, as a result of project, 11 households were forced to relocate from their winter camps within the project license land to areas that were inherently inferior to their old camps. As noted above, this was done without obtaining their free, prior and informed consultation or consent. The company claims that only 10 families were resettled, as one family had to move back to the old campsite due to the inadequacy of the resettlement plan and the new campsite. Unfortunately, the company does not want to discuss this failure and has adjusted the numbers accordingly.[28]

The Resettlement Action Plan was not rooted in a proper understanding of herding practices and needs, leading to significant problems with the resettled households. Degraded pasture, dust, broken well pumps, and a strong winter storm called a *dzud,* among other issues, led to significant livestock death and decline in the remaining livestock quality, and at least one resettled household lost all of its animals.

In 2010, the company then began a "compensation without relocation" program to compensate for economic displacement caused by construction of roads, the airport, and other infrastructure related to the project. 84-89 households (including 7 of the originally displaced families) qualified for the "compensation without relocation" program, and the company has used a variety of methods to intimidate or manipulate[29] the herders to sign a compensation contract that many herders deem unfair. Their claims are not addressed in the ESIA, which does not include specific information about the new compensation contracts. While the company freely shares the 2004 relocation contract as an annex to the Resettlement Action Plan in the ESIA, it refuses to release the 2011

[28] See OT ESIA, Chapter D10, p 44 for the company's description of the relocation program.
[29] One herder family, for example, was visited by OT staff every day until they signed the contract. Others were told that they were the last to sign and that they were preventing their neighbors from benefitting from the project, or that the NGOs would not protect them, or promised certain benefits from signing (such as jobs or disability compensation) that never materialized.

compensation contract to OT Watch after numerous attempts, despite company claims of transparency.

One of the major problems with the current compensation contracts is that the herder households are treated only as family units, rather than small-scale businesses, which would require more substantial benefits to replace the herders' lost income and business opportunities. The herders' entire livelihood is based on the quality of their livestock. Access to water, sufficient pasture land, and winter camps where the land does not freeze are key infrastructure elements related to this livelihood, all of which are being impacted by the project. The reduction of the herders' economic wellbeing, and therefore their quality of life, as a result of the mine's impacts on the landscape should not be ignored.

This problem is very clear in the Land Use and Displacement Impact Assessment, where the international airport is characterized as being located on the neighboring herders' summer pasture and therefore only impacting 22 households.[30] The Assessment entirely fails to address the fact that the land on which the airport is located is also the only reserve pasture used by all the herders living in the Gavliut and Javhlant baghs. This reserve pasture is the most fertile in the area, as it is one of the few places where the Undai River surfaces. All of the herder families in the area rely on this pasture when harsh winters or other conditions make their normal pastures unavailable. Building an airport in the middle of this very important communal land thus creates negative impacts that reach much farther than the families living within 11 km of the airstrip. The mischaracterization of the land taken by the airport and the resulting failure to properly compensate all the affected herders is a serious oversight and one that needs to be immediately addressed.

Unfortunately, both the 2004 and 2011 compensation contracts do not take into account the realities of the herders' livelihoods, instead only focusing on the direct physical impacts. As a result, the offered compensation that the herders are being forced to accept is insufficient to counteract the losses incurred by the project. The herders, who, as described above, consider themselves to be indigenous peoples who carry on the ancient traditions of Mongolia, will lose the ability to practice their traditional herding lifestyles if the full extent of their losses are not compensated, making them no longer be able to pass on their cultural heritage to their descendants because the contracts drafted by the company fail to protect their rights.[31]

[30] OT ESIA, Chapter C10, p 15.
[31] These concerns led many herders to submit a complaint with the IFC's accountability mechanism, the Compliance Advisor and Ombudsman (CAO) on 12 October 2012. The complaint has recently been deemed eligible for assessment (see http://www.cao-ombudsman.org/cases/case_detail.aspx?id=191).

Policy Violation

IFC Performance Standard 5, paragraph 9 (2012): "When displacement cannot be avoided, the client will offer displaced communities and persons compensation at full replacement cost and other assistance to help them improve or restore their standards of living or livelihoods, as provided in this Performance Standard. Compensation standards will be transparent and applied consistently to all communities and persons affected by the displacement."

IFC Performance Standard 5, paragraph 20 (2012): "New resettlement sites built for displaced persons must offer improved living conditions."

IFC Performance Standard 5, paragraph 8 (2006): "When displacement cannot be avoided, the client will offer displaced persons and communities compensation for loss of assets at full replacement cost and other assistance to help them improve or at least restore their standards of living or livelihoods, as provided in this Performance Standard. Standards for compensation will be transparent and consistent within the project. Where livelihoods of displaced persons are land-based, or where land is collectively owned, the client will offer land-based compensation, where feasible. The client will provide opportunities to displaced persons and communities to derive appropriate development benefits from the project."

Policy Violation

IFC Performance Standard 7, paragraph 14 (2012): "Offer Affected Communities of Indigenous Peoples compensation and due process in the case of commercial develop of their land and natural resources, together with culturally appropriate sustainable development opportunities, including:

- Providing land-based compensation or compensation-in-kind in lieu of cash compensation where feasible.
- Ensuring continued access to natural resources, identifying the equivalent replace resources, or as a last option, providing compensation and identifying alternative livelihoods if project development results in the loss of access to and the loss of natural resources independent of project land acquisition.
- Ensuring fair and equitable sharing of benefits associated with project usage of the resources where the client intends to utilize natural resources that are central to the identity and livelihood of Affected Communities of Indigenous People and their usage thereof exacerbates livelihood risk.
- Providing Affected Communities of Indigenous Peoples with access, usage, and transit on land it is developing subject to overriding health, safety, and security considerations."

IFC Performance Standard 7, paragraph 13 (2006): "If the client proposes to locate the project on, or commercially develop natural resources located within, traditional or customary lands under use, and adverse impacts can be expected on the livelihoods, or cultural, ceremonial, or spiritual use that define the identity and community of the Indigenous Peoples, the client will respect their use by taking the following steps… The client will offer affected communities of Indigenous Peoples at least compensation and due process available to those with full legal title to land in the case of commercial development of their land under national laws, together with culturally appropriate development opportunities; land-based compensation or compensation-in-kind will be offered in lieu of cash compensation where feasible."

4.5. There is no Gender Impact Assessment or other gender-differentiated analysis in the ESIA

Given the rapid mining development in the region and in Khanbogd soum particularly, special attention should have been devoted to gender impact assessment. However, the current ESIA fails to include a section evaluating gender impacts.

The ADB projects that the population of Khanbogd soum will increase significantly by 2020, from 3,522[32] (measured in the 2010 census) to 14,000 in 2015 and 20,000 by 2020. Such an increase will almost certainly have gender implications, particularly considering that major jobs in mining are usually occupied by males. Although the ESIA states that approximately 30% of the Oyu Tolgoi workforce is female and that this number is set to increase, there are Mongolian laws placing restrictions on female occupation in mines that makes this assertion difficult to assess without a full tabulation of what kinds of jobs these women are employed in.

Additionally, the possible increase in prostitution and sexually transmitted diseases related to the project and its associated population influx should be assessed and mitigated not only with workers, but also with the community in general. Sexual harassment and violence against women, especially in the worker camps, has also become an issue, but the company has not produced specific policies or procedures for the prevention of gender-based violence in the workplace, other than establishing a code of conduct for employees banning harassment of any kind.

Community members have also complained about the long working shifts (21-45 days on average) at the mine and the toll it has taken on their family life. The time spent away from home has already translated into an increased divorce rate, an issue that disproportionately affects women.

Policy Violation

IFC Performance Standard 1, paragraph 31 (2012): "The consultation process should (i) capture both men's and women's views, if necessary through separate forums or engagements, and (ii) reflect men's and women's different concerns and priorities about impacts, mitigation mechanisms, and benefits, where appropriate."

IFC Performance Standard 2, paragraph 15 (2012): "The client will take measures to prevent and address harassment, intimidation, and/or exploitation, especially in regard to women."

IFC Performance Standard 1, paragraph 12 and footnote 2 (2006): "As part of the Assessment, the client will identify individuals and groups that may be differentially or disproportionately affected by the project because of their disadvantaged or vulnerable status. [This status may stem from an individual's or group's race, color, sex, language, religion, political or other opinion, national or social origin, property, birth or other status. The client should also consider factors such as gender, ethnicity, culture, sickness, physical or mental disability, poverty or economic disadvantage, and dependence on unique natural resources.]"

[32] It should be noted that the census only covers the registered population. The actual population of Khanbogd together with the unregistered immigrant population comprises twice the reported number here.

4.6. The Health Impact Assessment does not fully address concerns related to mine operations or dust pollution

While the ESIA describes the health situation in the region, the issue of dust and its impacts on public health should be emphasized. Omnogovi aimag in particular is heavily involved in mining, and in July 2011, Khanbogd's head doctor informed civil society representatives who were in the area conducting field research that respiratory illnesses caused by dust and the population influx associated with the project were the most worrying conditions recently seen in Khanbogd.[33] These findings are in line with the health impacts outlined in the ESIA for Phase II of the Ukhaa Khudag (UHG) coal project, a similar project in Omnogovi.[34]

The ESIA indicates the selection of five dust monitoring points with locations chosen on the basis of prevailing wind conditions and the areas of greatest likely impacts.[35] In contrast, the dust monitoring factsheet indicates the continuation of routine dust monitoring at seven fixed locations since 2003.[36] It is unclear which is correct. Moreover, not a single point is located in the direction of the Khanbogd soum, which is a clear omission. Oyu Tolgoi should help install such monitoring points as the local Khanbogd government does not have the capacity, technically or financially, to do so, as discovered by NGOs during a visit in July 2011.[37]

Other omissions dominate the sections on community health, safety and security. For example, the ESIA does not mention the impacts of tailings on the environment and human health, nor does it address the impacts of aerial gas emissions on the health of both humans and livestock. Additionally, despite the mention of health and safety impacts due to decommissioning and closure in the ESIA,[38] the lack of a mine closure plan means that there is no way to tell how or if these risks will be mitigated.

Policy Violation

IFC Performance Standard 4, paragraph 8 (2012): "The project's direct impacts on priority ecosystem services may result in adverse health and safety risks and impacts to Affected Communities… The diminution or degradation of natural resources, such as adverse impacts on the quality, quantity, and availability of freshwater, may result in health-related risks and impacts. Where appropriate and feasible, the client will identify those risks and potential impacts on priority ecosystem services that may be exacerbated by climate change. Adverse impacts should be avoided, and if these impacts are unavoidable, the client will implement mitigation measures in accordance with paragraphs 24 and 25 of Performance Standard 6."

IFC Performance Standard 4, paragraph 9 (2006): "The client will also avoid or minimize adverse impacts due to project activities on soil, water, and other natural resources in use by the affected communities."

[33] CEE Bankwatch Network, BIC, urgewald. 2011. *Spirited away: Mongolian Mining Boom and the People that development left behind.* http://bankwatch.org/sites/default/files/spirited-away-mongolia-mining.pdf
[34] http://www.energyresources.mn/uploads/14649Hrpt_-_ESIAfinal.pdf
[35] OT ESIA, Chapter B3, p 8.
[36] http://www.ot.mn/sites/default/files/documents/ESIA_Factsheet_Dust_EN.pdf
[37] See CEE Bankwatch, et al.
[38] OT ESIA, Chapter C12, p 6.

5. Water Resource Management

Water is a scarce commodity in Mongolia, especially in the arid South Gobi region where Oyu Tolgoi is located. These limited water resources are likely to become harder to access as a result of climate change, increased desertification, and competition between numerous mining projects in the region. It is therefore imperative that Oyu Tolgoi outlines a thorough and exhaustive Water Management Plan for the entire life of the mine to ensure that direct, indirect, and cumulative impacts are successfully minimized and mitigated for the good of the environment and the community. The current ESIA does not address these issues adequately, as the ESIA includes only water management plans for the construction phase and makes no mention of the water needed to operate or maintain associated facilities, even in the cumulative impact assessment.

5.1. The ESIA fails to establish that water abstraction from Gunii Hooloi will not impact other water resources in the area

As with most large mines, Oyu Tolgoi requires access to a significant amount of water during construction and operations. In this case, the company has asserted that the majority of its water needs will come from the Gunii Hooloi deep aquifer. The ESIA states the following regarding Oyu Tolgoi's use of water from Gunii Hooloi:

> Oyu Tolgoi is currently permitted by the Government of Mongolia to take approximately 70,000 m3/day of water from the Gunii Hooloi deep aquifer. Given the positive economic impact the Project will have on Mongolia (30-40% increase in GDP at Project commencement), the use of the fossil groundwater in Gunii Hooloi is considered to be justified given the economic return to Mongolia from the use of this water; however the use of the water still needs to be undertaken in a responsible manner which maximises the return per unit of water used. The current models of the Gunii Hooloi aquifer demonstrate that it can be exploited by Oyu Tolgoi at a rate which maintains its confined nature for approximately 40 years.[39]

There are several flaws with the company's plan on extracting water from Gunii Hooloi as revealed here.

First, the company has failed to identify concretely that the Gunii Hooloi aquifer will supply all the water needs of the mine without impacting the shallow aquifers beyond 2020, less than half of the mine's expected 27-year life span. As it is, there are no guarantees that abstraction from the deep aquifer will not adversely impact the shallow aquifers. The clay layer may not be continuous between the different aquifer levels, and the act of drilling the wells themselves may cause fracturing in the layers, leading to leakage. In fact, the ESIA itself[40] admits that this type of leaking may already be occurring at one of the boreholes, and, according to some herders, a Korean research team sent to investigate the pipeline in June 2012 found at least four other boreholes

[39] OT ESIA, Chapter C5, p 4.
[40] Ibid, p 29.

where the sound of cascading water could be heard. Unfortunately, the documentation of this research was never made publically available, though some herders had either gone with the team out into the field or watched a video produced by the team at the Mongolian Water Ministry office.

Moreover, subsidence due to the abstraction and a very slow recharge rate could lower the water table enough that the shallow aquifers effectively disappear. Local herders have noted that several wells along the Gunii Hooloi pipeline have already dried up, and they are afraid that in four to five years Khanbogd will face a real water crisis. Yet the company continues to assert that there is no communication between the deep and shallow aquifers, despite the complete lack of publicly available evidence to back up its claims.[41] The ESIA also makes no mention of the increase in water abstraction that will be required if the project does indeed expand to a production rate of 160,000 tpd and the impact that will have on Gunii Hooloi and other groundwater resources.

Second, the privatization of water associated with this project is a significant concern. In order to accommodate the needs of Oyu Tolgoi, the Mongolian government amended its Water Law to give OT private ownership over any water discovered by the company. The company still needs permission from the government to pump water at certain rates from Gunii Hooloi, but it owns sole rights to the aquifer. The local community hotly contested the construction of the Gunii Hooloi pipeline, but due to the water privatization law their complaints were ignored. In this way, the government has stepped in to settle water disputes between mines and the local communities in favor of the large mining companies. This political context is important in order to understand the implications of the water abstraction, especially since the company has failed to prove that the use of this aquifer, which it now owns, will not impact the aquifers it does not own.

5.2. The Detailed Environmental Impact Assessment for the Undai River Diversion should be published immediately

The Undai River is an ephemeral stream that provides the main source of surface water used by herders and wildlife in Khanbogd soum and flows through the Oyu Tolgoi mine license area. As the open pit mine is being constructed in the middle of the Undai River watercourse, the company plans to divert the river using a cut-off wall and subsurface pipeline. A 6.8 km section of the river is expected to be lost, including the Bor Ovoo spring, a very important surface water source in the region.[42] The company plans to create an artificial spring to recreate the ecosystem services provided by Bor Ovoo, but there is little detail in the ESIA on this point. In fact, the ESIA states that this information is not available yet because it is part of the Detailed Environmental Impact Assessment (DEIA) on the Undai River diversion that has not been approved by the government as required by Mongolian law.[43]

[41] Johnston, L. 2011. *Mongolia – Oyu Tolgoi Copper/Gold/Silver Mine Project Trip Report*. USAID, p 8 http://mongolia.usaid.gov/wp-content/uploads/Mongolia-Oyu-Tolgoi-Trip-Report.pdf
[42] OT ESIA, Chapter C5, p 8.
[43] Ibid, p 22.

The company states that the DEIA will be finished by the end 2012 and that related construction will begin in 2013, as soon as the permits are available.[44] Yet, this timeline does not coincide with the company's plan to begin production in late 2012. The open pit mine cannot start producing ore in the next few months if there is water flowing into the pit, which means that the Undai River will have to be diverted prior to commencement of operations. In fact, there have been claims that the diversion has already started, despite the lack of approval by relevant state agencies. We have asked the company several times for a copy of the DEIA, but none has been forthcoming. As the diversion of the Undai River is a project that is fundamental to beginning mine operations, the DEIA should have been disclosed together with the current ESIA. Its omission is unacceptable and no financing should go forward until the DEIA for the river diversion is disclosed and fully vetted by stakeholders and experts.

5.3. The decision to use wet tailings rather than dry tailings increases the potential environmental and social hazards of the project dramatically

According to the Environmental Law Alliance Worldwide (ELAW), the dry method of tailings disposal, in which the waste is dewatered and used as paste backfill, is considered to be the most environmentally sound.[45] Dry tailings help reduce the amount of water locked in the tailings, lowering the risk of acid leachate developing in the storage facilities. This not only reduces the amount of water the company would need to operate the tailing storage facilities, but it also protects against the risk of ground and surface water pollution. The paste can also be used during the closure and reclamation period as backfill in the open pit, hastening the restoration of the land to pre-mining status.

The company, by contrast, has elected to use conventional wet tailings storage methods, reasoning that extreme winter conditions would present operational constraints due to the paste freezing.[46] As ELAW points out, this claim is factually inaccurate, as "cold and arid locations are considered to strongly favor the use of dry tailings disposal over other tailings disposal options."[47] For instance, for mining projects in Nunavut, Canada, where the average annual temperature is -11.3°C, dry tailings are considered to be best practice precisely because the tailings freeze in the winter, containing hazardous waste.[48] The only reason not to use dry tailings is because of the initial costs, which is incredibly myopic since the risks involved in wet tailings disposal far outweigh the benefits generated by saving money.

As over 80% of the water losses at Oyu Tolgoi are associated with the tailing storage facilities,[49] the decision not to use the more water-efficient and environmentally secure alternative is mindboggling. Unfortunately, there is no way to independently assess the company's decision to use

[44] OT ESIA, Chapter A5, p 8: "Detailed engineering design for the diversion was completed in 2011 and it is expected that construction work will start on the diversion in by 2013, following Mongolian permitting approvals."
[45] Environmental Law Alliance Worldwide (ELAW). 2010. *Guidebook for Evaluating Mining Project EIAs.*, p 29 http://www.elaw.org/mining-eia-guidebook
[46] OT ESIA, Chapter A5, p 28.
[47] See attached: Chernaik, M. and H. Weiskel. 2012. *Evaluation of the Environmental and Social Impact Assessment (ESIA) for the Oyu Tolgoi Copper and Gold Project*. ELAW, p 3.
[48] Ibid, p 4.
[49] OT ESIA, Chapter C5, p 55.

conventional tailings disposal as the two supporting documents referenced in the ESIA are not publicly available.[50] This lack of transparency on an important part of the mine's operations phase, especially one that presents a significant threat to the quality of water in an arid region, is simply unacceptable.

Policy Violation

IFC Performance Standard 3, paragraph 9 (2012): "When the project is a potentially significant consumer of water, in addition to applying the resource efficiency requirements of this Performance Standard, the client shall adopt measures that avoid or reduce water usage so that the project's water consumption does not have significant adverse impacts on others."

IFC Performance Standard 3, paragraph 6 (2012): "The client will implement technically and financially feasible and cost effective measures for improving efficiency in its consumption of energy, water, as well as other resources and material inputs, with a focus on areas that are considered core business activities."

IFC Performance Standard 3, paragraph 4 (2006): "The client will avoid the release of pollutants or, when avoidance is not feasible, minimize or control the intensity or load of their release. This applies to the release of pollutants due to routine, non-routine or accidental circumstances with the potential for local, regional, and transboundary impacts. In addition, the client should examine and incorporate in its operations resource conservation and energy efficiency measures, consistent with the principles of cleaner production."

6. Biodiversity

The conservation of biodiversity and living natural resources is fundamental to the implementation of any project under international best practices, especially because the ecosystem services humans value are often underpinned by biodiversity.[51] Additionally, the South Gobi is critical habitat for at least six endangered and threatened species found nowhere else in the world.[52] Two protected areas, the Small Gobi Strictly Protected Area A (SGA) and the Small Gobi Strictly Protected Area B (SGB) are located in close proximity to Oyu Tolgoi and are included in the mine's area of impact. In particular, part of SGB will be transected by roads and potentially a railroad carrying minerals from Oyu Tolgoi and other mines in the South Gobi to the Gashuun Sukhait border crossing. As a result of the potential impacts the mine has on critical habitat, the ESIA should contain a robust biodiversity strategy which first seeks to avoid these impacts. However, the EBRD has already had to derogate from Performance Requirements 1 and 6 with regard to the design of power lines from China, indicating that the Biodiversity Mitigation Hierarchy required by most IFIs (avoid-minimize-mitigate-offset) was clearly neglected in this project.[53]

[50] Chernaik and Weiskel, p 3.
[51] IFC Performance Standard 6 (2012), paragraph 3.
[52] See Johnston (USAID) for more info, particularly pp 4-8.
[53] EBRD, Oyu Tolgoi Project Summary Document http://www.ebrd.com/english/pages/project/psd/2012/41158.shtml

6.1. The baseline assessment is not based on scientifically rigorous research

An important component in identifying the scale and nature of potential impacts caused by a project is accurately determining the biodiversity baseline. In the case of the Oyu Tolgoi ESIA, there are indications that the Biodiversity Baseline Assessment[54] is not robust and does not comply with international best practices. As one expert notes, "The ESIA takes on a strategy to present purely descriptive data from limited literature" and one of the four studies referred to was observational and non-experimental.[55] The ESIA also points to extensive flora and fauna studies of 1,400 10x10m plots of SGA and SGB, which turns out to only account for less than 1% of the potentially impacted area, far short of a robust sample size.[56]

The ESIA also overlooks meta-population dynamics (the migration of individuals between population sources and sinks), an important aspect of conservation biology. "Only describing the current, static state of the populations does not fully reveal the precarious stability of these animals" and undermines any management strategy developed based on this data.[57] As rehabilitating desert systems is extremely difficult and the mine has already impacted the region, the lack of an accurate baseline for the project's area of impact is distressing as now there is no way to measure the extent of the mine's impacts.

6.2. The management plans are unrealistic and poorly defined

The ESIA asserts that its biodiversity monitoring system will be sufficient to mitigate the project's adverse impacts on biodiversity, but the lack of detail in the proposed program is disconcerting.[58] For example, the ESIA makes frequent mention of improved rangeland management, but never explains what that management plan consists of, making it difficult to confirm whether or not the management plan will result in genuine improvements.[59] The mitigation strategies proposed in the Flora and Fauna Construction Management Plan[60] are also problematic, as certain plans are either too optimistic or woefully inadequate, such as the undefined "practicable steps" planned to minimize impacts on items of environmental and cultural significance.[61]

The water protection plans in particular, as scientists from ELAW mention, are of special concern in relation to biodiversity. The Undai River diversion will have significant impact on multiple habitats both at the project site and downstream, but there is little explanation of how the subsurface flow of the river will be successfully diverted. The river diversion will also cause the Bor Ovoo spring to dry up, a critical source of surface water for wildlife in the area. The company intends to construct a replacement spring that mimics the ecological functions of Bor Ovoo, but "it stretches the bounds of ecological reason that it will be possible to easily install a new spring in this habitat, let alone one that mimics the ecological functions of an existing spring."[62]

[54] OT ESIA, Chapter B7a.
[55] See attached: Song, D. 2012. *Analysis of: Section B: Baseline Assessment – Chapter B7a: Biodiversity*. University of Pennsylvania, p 3.
[56] Ibid, p 2.
[57] Ibid, p 4.
[58] Ibid, pp 5-6.
[59] Chernaik and Weiskel, p 20.
[60] OT ESIA, Chapter D6.
[61] Chernaik and Weiskel, p 18.
[62] Ibid.

Mitigation strategies should be predicated on thorough evaluation and clearly defined methods, not on hollow assertions. The fact that the ESIA does not establish credible or realistic steps to implement the company's management plans is unacceptable.

6.3. The offset strategy is based on insufficient and inaccurate data

Offsets, or measurable conservation outcomes, are generally used as the last resort in biodiversity protection and conservation when avoidance, minimization, and restoration measures are applied but significant project impacts persist. In critical habitats, offsets must result in a net gain in biodiversity. However, the success of offsets will only be as good as the data used in the offset calculations. In this ESIA, the data is questionable at best, which should alarm stakeholders and potential investors.

One major issue with the ESIA is the lack of a sufficient baseline for the offsets. As biologist Daniel Song notes, the ESIA states that there are some ecosystem services and biodiversity losses that will not be offsetable. But as he explains:

> The only way to find out whether losses will be offsetable or not, as set forth in the ESIA, is when the loss is incurred; it is plain for anyone reading this document that at the point when it is discovered that a loss is not offsetable, it is, in fact, not offsetable.[63]

The purpose of the assessment is to establish prior to project activities whether losses will be offsetable. If that determination cannot be made until after the damage is done, then there is a significant problem with the risk assessment strategy.

Then there is the problem of the offset calculations themselves, which as a review by ELAW points out, are insufficient and in some cases are "essentially based on expert opinion and educated guess work rather than empirical evidence."[64] Table 2 (see below) in the Biodiversity Offset Strategy, for example, predicts that the overall offset gains of all the mammals (551) and birds (21) is exactly the same regardless of species. [65]

[63] Ibid, p 6
[64] Chernaik and Weiskel, p 19, quoting OT ESIA Biodiversity Appendix 5, p 16
[65] OT ESIA, Biodiversity Appendix 4, p 7

Table 2. Projected net position in 2036 for priority biodiversity features addressed by the offsets strategy (Quality Hectares)

Name	Direct & indirect habitat loss (1000 ha)	Quality of habitat lost (0-1)	Loss from increased hunting (1000 QH)	Residual loss (1000 QH)	Gain from hunting control (1000 QH)	Gain from rangeland manage-ment (1000 QH)	Predicted overall offset gain (1000 QH)	Net position (1000 QH)	NPI?
Mongolian Chesney[1]	9	0.9		8	0	21	21	13	Yes
Asiatic Wild Ass	155	0.5	392	470	530	21	551	59	Yes
Argali	30	0.5	392	407	530	21	551	122	Yes
Goitered Gazelle	130	0.5	392	458	530	21	551	72	Yes
Mongolian Gazelle	76	0.5	392	431	530	21	551	99	Yes
Swan Goose	0			0	0	0	0		Yes[2]
Ferruginous Duck	0			0	0	0	0		Yes[2]
Short-toed Snake-eagle	9	0.9		8	0	21	21	13	Yes[2]
Saker Falcon	9	0.9		8	0	21	21	13	Yes[2]
Egyptian Vulture	9	0.9		8	0	21	21	13	Yes[2]
Great Bustard	71	0.9		64	0	21	21	-43	No[2,3]
Houbara Bustard	71	0.9		64	0	21	21	-43	No[2,3]
Relict Gull	0			0	0	0	0		Yes[2]
Pallas' Sandgrouse	9	0.9		8	0	21	21	13	Yes[2]
Yellow-breasted Bunting	9	0.9		8	0	21	21	13	Yes
Mongolian Ground-Jay	9	0.9		8	0	21	21	13	Yes
Granite Outcrop Floral Communities[4]	0			0	0	0	0	0	Yes
Riverine Elm Trees	0			0	0	+	+	+	Yes[5]
Tall Saxaul Forest	+	?	-	+	+	+	+	+	Yes[6]
Eastern Gobi desert-steppe	5.5	0.9		5	0	9	9	4	Yes
Alashan Plateau semi-desert	3.5	0.9		3	0	12	12	9	Yes

[1] Assumed here to represent all 18 'very rare' plants known or predicted from the project area
[2] Assuming mitigation is put in place on all OT powerlines plus an additional >64km of non-OT powerlines
[3] Yes if there is an appropriate additional offset
[4] Even though these are not predicted to be impacted, they are included here since they are a Critical Habitat-qualifying biodiversity value in the area
[5] Yes if the three translocated trees survive; offset gains depend on specific offset site
[6] Yes assuming adequate control of illegal collecting (not quantified)

To assume that all species in the impacted area will react to project developments in the same way ignores the fact that each species "may inhabit the projected area differently and migrate with different behaviors being affected uniquely."[66] Moreover, the net position figures given in Table 2 for the four mammal species do not even add up correctly. The analysis is also based on a static baseline that does not take into account accelerated development in the region, which based on the number of projects in the South Gobi that are in the initial stages of development, is an unrealistic and dangerous assumption to make.[67] The lack of scientific rigor in developing the data behind the offset strategies proposed by the project undermines the entire purpose of the assessment and fails to justify the construction and operation of the project.

[66] Chernaik and Weiskel, p 20
[67] OT ESIA ,Biodiversity Appendix 4, p 7

Policy Violation

IFC Performance Standard 6, paragraph 17 (2012): The client must meet certain criteria when the project's area of influence includes critical habitat, including: "The project does not lead to measurable adverse impacts on those biodiversity values for which the critical habitat was designated, and on the ecological processes supporting those biodiversity values" and "A robust, appropriately designed, and long-term biodiversity monitoring and evaluation program is integrated into the client's management program."

IFC Performance Standard 6, paragraph 19 (2012): "In such cases where biodiversity offsets are proposed as part of the mitigation strategy, the client must demonstrate through an assessment that the project's significant residual impacts on biodiversity will be adequately mitigated to meet the requirements of paragraph 17."

IFC Performance Standard 6, paragraph 9 (2006):
"In areas of critical habitat, the client will not implement any project activities unless the following requirements are met:

- There are no measurable adverse impacts on the ability of the critical habitat to support the established population of species described in paragraph 9 or the functions of the critical habitat described in paragraph 9
- There is no reduction in the population of any recognized critically endangered or endangered species
- Any lesser impacts are mitigated in accordance with paragraph 8"

7. Infrastructure and Project Facilities

Large-scale projects such as Oyu Tolgoi often require infrastructure support, such as railways, roads, power supplies, warehouses, and other utilities in order to operate successfully. These independent infrastructure projects, referred to as associated facilities, would not exist without the project in question, and therefore their environmental and social impacts must be taken into account when assessing the impacts of the project as a whole. While the Oyu Tolgoi does list the relevant associated facilities in the project description (roads, international airport, transmission lines, coal power plant, etc.), the assessment of the impacts of these projects is not as detailed as it should be. To be more effective, the company should have created a chapter on Associated Facilities instead of spreading the projects across several chapters, which creates a disjointed and partial view of these facilities' impacts, especially for the international airport and coal power plant.

7.1. Most of the major impacts caused by the international airport are omitted from the ESIA

According to the ESIA, Khanbumbat International Airport will be turned over to the authorities after the mine construction phase is completed to be used as a regional airport.[68] However, this airport would not have been constructed without the project, and its use beyond servicing the mine is likely to be limited. As a result, this airport should have been treated as an associated facility and a full-scale ESIA should have been created for it.

[68] OT ESIA, Chapter A1, p 13.

Currently, details about the impacts the airport will have in the region are limited to noise and land use. No mention of the airport's use of water either during construction or operations is located anywhere in the ESIA, not even in the cumulative impact assessment. As water resource management is a pressing issue in the South Gobi, the omission of the airport's impacts on the region's water supplies is alarming.

7.2. The environmental and social impacts of the coal power plant should have been included in the first release of the ESIA

Oyu Tolgoi is bound by the 2009 Investment Agreement with the Mongolian government to source its power supply from within Mongolia by the fourth year of production. The agreement stipulates that the mine can either build a captive coal power plant or source its electricity from the Mongolian electrical grid, but considering the power required for this project the latter is not an option. According to the project description, a supplemental ESIA will be created for the coal power plant. Some of the impacts of the plant are noted in the cumulative impacts assessment, but comments about water usage in particular are limited.

It is a good sign that an ESIA will be developed for the power plant, as it is an associated facility that would not exist without the project. However, the current ESIA should not have been considered complete without the assessment of the coal plant, considering the significant impacts created by coal power. For instance, there is little indication that greenhouse gas emissions or a cumulative climate impact evaluation have been considered in relation to this project. There is also little to suggest that ways to minimize the use of coal have been considered for the captive power plant, especially given information in the ESIA indicating that the company is expediting the construction of the plant in order to finish two years ahead of schedule.[69] Mongolia is a great candidate for exploiting renewable resources such as wind and solar power, and Oyu Tolgoi could certainly reduce its environmental impact by employing one of these methods for its project to reduce reliance on coal. A robust alternatives assessment for this plant by independent experts would do much to improve the company's ecological footprint and public image, and is in fact required by the World Bank under its Sustainable Development Framework for Climate Change, as noted by a review of the plant done by the Sierra Club.[70] As such, no financing should go forward until the ESIA for the coal plant, including an alternatives assessment, has been disclosed and fully vetted by stakeholders and experts.

7.3. The ESIA does not adequately address the adverse impacts of roads and other infrastructure developments on biodiversity and the local herding community

As a greenfield development, Oyu Tolgoi and other mining developments in the South Gobi have had to construct their own infrastructure, including roads, railways, and power lines, to support project activities. However, Oyu Tolgoi's roads and power lines have significant impacts on the traditional herders and their livestock, natural ecosystems, and wildlife due to the fracturing of

[69] OT ESIA, Chapter A4, p 71 says Oyu Tolgoi has accelerated the development of the Power Plant comprising 3 x 150MW units, with provision for subsequent expansion to a total of 5 x 150MW units. It expects to award the contract for construction of the Power Plant in 2012 and is scheduled to be commissioned in the fourth quarter of 2014.
[70] See attached: Scott, G. 2012. "Oyu Tolgoi Copper & Gold Mine Associated Power Plant: Violations of IFC and World Bank Policies on Environmental Impacts and Criteria for Coal Projects," The Sierra Club.

pasture land in the Gobi. OT's road and transmission line pass through the buffer zone of the Small Gobi Strictly Protected Area B (SGB) and Galba Gobi Important Bird Area (IBA),[71] critically important and protected habitats, in order to reach the Gashuun Sukhait border crossing point on the Mongolian-Chinese border within the SGB. This is compounded by the construction on the Tavan Tolgoi coal road, which was started before studies on wildlife migration patterns could be completed.

According to the ESIA, roads and other transportation infrastructure will have serious impacts on herders and their livestock by separating herder camp sites and animal shelters from their water sources and fracturing pastureland.[72] The roads also pose a serious threat to wildlife, as

> not enough is known about what migration routes are used by these animals, and what sorts of facilities they will use to cross major roads and railways. Studies to identify wildlife behaviour (particularly migration routes) and appropriate wildlife crossing arrangements are a high priority. Requirements to construct wildlife crossings will be included in any environmental management plans for approved roads and railways. Where feasible, transport networks will be planned to minimise disruption to major migration routes.[73]

Given the known impacts of transportation and transmission infrastructure, the ESIA should encompass the aggregated and cumulative impacts for the herders and the region's biodiversity, including loss of access to habitat and related impacts on migration and breeding, caused by the coal road, Oyu Tolgoi infrastructure corridor, future rail, and transmission lines. The Tavan Tolgoi coal road and railway also cut off parts of the surface flow of the Undai River, already threated by the planned diversion at Oyu Tolgoi, with unknown consequences on the downstream community. Unfortunately, the ESIA fails to address these cumulative impacts or propose mitigation measures.

Herders have protested the use of these unpaved roads, once in May 2011 (resulting in the temporary closure of the Tavan Tolgoi coal road) and once in September 2012, noting the impacts of noise and dust on their livestock. These protests "suggest social unrest and that that OT's policy of zero harm is not being met,"[74] despite the company's claim to the contrary. The increased traffic on the Oyu Tolgoi roads once operations begin will add to these growing issues, but the ESIA remains silent on these issues.

Far from adequately addressing these cumulative impacts, mining companies continue to move forward with their own infrastructure development plans despite these concerns. And Oyu Tolgoi in particular tries to avoid the problem by saying that

> the marginal cumulative impacts of Oyu Tolgoi- related traffic on the upgraded road will be minor due to existing fragmentation effects of the coal truck traffic in the

[71] Small Gobi SPA sectors A and B qualify as Critical Habitat and are categorized as Ib – Wilderness Area under the IUCN designation. The Galba Gobi Important Bird Area (IBA) encompasses lands in Parts A and B of the SGSPA, as well as unprotected lands in between and to the north of the SGSPA. The Galba Gobi IBA is recognized under Mongolia's participation in the Bonn Convention due to the endangered birds and mammals within it.
[72] OT ESIA, Chapter C12, p 4.
[73] OT ESIA, Chapter C13, p 9.
[74] Goodland, pp 5-6.

> region (especially in consideration of future coal truck traffic volumes). This means that, activities by Oyu Tolgoi to mitigate and minimise the fragmentation impacts of its road cannot be expected to mitigate road fragmentation impacts at a broader scale unless similar measures are also implemented for the coal transportation route.[75]

The company, though addressing the problems caused by the lack of information related to migration, is ready to absolve itself of any responsibility by saying that the impacts will be marginal. This assertion is outrageous, and does not sufficiently address the critical comments made by USAID[76] and others on the matter. The failure by the company to address the cumulative impacts of these roads is a serious oversight, as coordinating transportation infrastructure with Tavan Tolgoi would have significantly reduced the environmental and social impacts of these roads. As it is, the impacts of such diffuse infrastructure have not been minimized and mitigated effectively. This should be closely evaluated before any financing is provided for the project.

Policy Violation

IFC Performance Standard 1, paragraph 8 and footnote 15 (2012): Risks and impacts from the project's area of influence includes: "Associated facilities, which are facilities that are not funded as part of the project and that would not have been constructed or expanded is the project did not exist and without which the project would not be viable [Associated facilities may include railways, roads, captive power plants or transmission lines, pipelines, utilities, warehouses, and logistics terminals]."

IFC Performance Standard 3, paragraph 7 (2012): "The client will 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… adoption of renewable or low carbon energy resource."

IFC Performance Standard 1, paragraph 5 (2006): Risks and impacts from the project's area of influence includes: "(ii) associated facilities that are not funded as part of the project (funding may be provided separately by the client or by third parties including the government), and whose viability and existence depend exclusively on the project and whose goods or services are essential for the successful operation of the project."

IFC Performance Standard 3, paragraph 11 (2006): "In addition, the client will evaluate technically and financially feasible and cost-effective options to reduce or offset project-related GHG emissions during the design and operation of the project."

[75] OT ESIA, Chapter C13, p 20-21.
[76] Johnston, p 8.

8. Cumulative Impacts

Cumulative impacts are defined as:

> the combination of multiple impacts from existing projects, the proposed project, and/or anticipated future projects that may result in significant adverse and/or beneficial impacts that would not be expected in case of a stand-alone project.[77]

The impacts must be included in the ESIA if they involve an issue, such as water resource management, that is recognized as a concern by the scientific or locally affected community. In the OT ESIA, the chapter on Cumulative Impacts represents the overview of the studies performed for the South Gobi region by the World Bank.[78] However, the company has decided to move forward with the project without taking into account the proposed recommendations in those World Bank studies regarding habitat fragmentation, impacts of the multiple roads and ecological barriers for wildlife, and the need for a regional groundwater assessment. Climate change, as an overarching element of the environment that may exacerbate some of the mine's adverse impacts, should also be noted in the Cumulative Impact assessment as a contributing factor to many of the risks and impacts identified in the assessment.

Policy Violation

IFC Performance Standard 1, paragraph 8 (2012): Risks and impacts from the project's area of influence includes: "Cumulative impacts that result from the incremental impact, on areas or resources used or directly impacted by the project, from other, existing, planned or reasonably defined developments at the time the risks and impacts identification process is conducted."

IFC Performance Standard 1, paragraph 5 (2006): Risks and impacts from the project's area of influence includes: "(iii) areas potentially impacted by cumulative impacts from further planned development of the project, any existing project or condition, and other project-related developments that are realistically defined at the time the Social and Environmental Assessment is undertaken; and (iv) areas potentially affected by impacts from unplanned but predictable developments caused by the project that may occur later or at a different location."

8.1. Impacts from regional water consumption and future potential transboundary impacts should have been included in the ESIA

Dozens of mining licenses have been awarded in the South Gobi within 200km of Oyu Tolgoi for development in the coming years, most notably the Tavan Tolgoi coal mine and the Tsagaan Suvarga copper mine, both large-scale mines whose operations will require as much if not more water than OT. As water is a scarce resource in the South Gobi, competition between these mines over groundwater aquifers – the primary source of water in the region – is fierce and could be

[77] IFC Policy & Performance Standards and Guidance Notes, Glossary of Terms http://www.ifc.org/ifcext/enviro.nsf/AttachmentsByTitle/pol_PerformanceStandards2006_glossary/$FILE/Glossary+of+Terms.pdf

[78] Namely the following: Walton, T. 2010. *Southern Gobi Regional Environmental Assessment*. Mongolia Discussions Papers, East Asia and Pacific Sustainable Development Department, Washington D.C.: World Bank; Tuinhof, A. and Buyanhisnig, N. 2010. *Groundwater Assessment of the Southern Gobi Region*. Mongolia Discussions Papers, East Asia and Pacific Sustainable Development Department, Washington D.C.: World Bank; and Warlters, M. 2009. *Southern Mongolia Infrastructure Strategy:* World Bank.

compared, in geographical terms, to a resource dispute between several European countries. The Cumulative Impact assessment makes no mention of the role the government's new water privatizations laws play in these disputes, which should certainly be considered a significant risk for this and other mining projects in the region.

The ESIA itself states that if the region's planned mining and infrastructure developments continue, groundwater resources will be significantly depleted by 2020.[79] Under this high water use scenario, the deep aquifers would need to be supplemented by surface water diverted from rivers in Northern Mongolia. As the high case is the more likely scenario at this point in time, the ESIA should have spent more time discussing the implications of these long-distance water conveyance projects rather than dismissing them out of hand simply because Oyu Tolgoi does not plan on utilizing the water from these projects at the moment, even though the ESIA admits that it may need to rely on this surface water in the future.[80]

In order to alleviate the pressure on the South Gobi's aquifers from mining developments, the Government of Mongolia plans on diverting water from the Kherlen and Orkhon Rivers. The World Bank is currently conducting a feasibility study on the Orkhon-Gobi project under the Mining Infrastructure Investment Support (MINIS) project,[81] and the Kherlen-Gobi project is still in the pre-feasibility stage. Both projects pose severe environmental and social risks to those living within the watershed, as well as significant transboundary impacts. The Kherlen River, for example, flows into the Sangiin Dalai Lake in Inner Mongolia, China. The Orkhon River (the longest river in Mongolia) is the main tributary to the Selenga River, the key tributary of Lake Baikal in Russia. As Robert Goodland notes, both Lake Baikal and Lake Dalai are protected under national legislation, as well as under the United Nations Ramsar Convention.[82] The exclusion from the Cumulative Impact assessment of the potential transboundary impacts and subsequent violations of the UN Ramsar Convention posed by these river diversion projects is unsettling, especially since it is almost guaranteed by the World Bank and the ESIA itself that these river diversion projects will take place due to increased demand for water by mining activities in the South Gobi.

8.2. The impacts of climate change and greenhouse gas emissions are not adequately addressed

Mongolia is uniquely impacted by the effects of climate change as it is currently on pace for significantly higher increase in temperature than the global average. Droughts, severe winter storms, and desertification are already putting pressure on the local population, yet the current ESIA does not mention the effects of climate change on important issues such as the protection of water resources, ecosystem services, and public health.

For example, in relation to biodiversity, "the south [of Mongolia] is expected to see increased desertification. There will be a great deal of consequences to ecosystem services such as carbon

[79] OT ESIA, Chapter C13, p 5.
[80] Ibid, p 9.
[81] A number of Russian NGOs have written letters to the World Bank and the Kuwait Fund in 2012 to specifically protest the inclusion of the Orkhon-Gobi project and the planned Shuren Hydropower Plant on the Selenge River under MINIS, as both projects are likely to have negative impacts on Lake Baikal.
[82] Goodland, p 5.

storage" as ecosystem services are strained by loss of forests and an increase in sedentary populations by 2050.[83] The ESIA's omission of the ecological impacts of climate change and biome switching in the region and the effects this will have on the mining project and post-closure rehabilitation is unacceptable.

An important component of climate change mitigation is the assessment and minimization of greenhouse gas (GHG) emissions. It is clear from the ESIA that fuel for vehicles and diesel generators will be one of the main sources of greenhouse emissions at the site.[84] However, the ESIA does not appear to show how the fuel will be transported to the site and what the environmental impacts of this will be. The ESIA also does not cover the emissions from the planned 450 MW coal power plant. Without a clear mitigation plan for GHG emissions, and considering the project-related destruction of saxaul forests within the 70 km pipeline corridor, carbon neutrality has not been established and is highly unlikely to be attained.[85]

The ESIA also fails to provide quantitative information on the social costs of Oyu Tolgoi's GHG emissions. A review of the OT ESIA by ELAW concluded that the present-day value of the project's lifetime social costs based on the Stern Review would be nearly $1.5 billion,[86] a figure that "ought to weigh heavily on government decision-makers and investors" interested in financing the project.[87]

Policy Violation

IFC Performance Standard 1, paragraph 7 (2012): "The risks and impacts identification process will consider the emissions of greenhouse gases, the relevant risks associated with a changing climate and the adaptation opportunities, and potential transboundary effects, such as the pollution of air, or the use or pollution of international waterways."

IFC Performance Standard 1, paragraph 6 (2006): "The Assessment will also consider potential transboundary effects, such as pollution of air, or use or pollution of international waterways, as well as global impacts, such as the emission of greenhouse gasses."

[83] Song, p 5.
[84] OT ESIA, Chapter C2, p 20.
[85] Goodland, p 4.
[86] Stern, N. 2007. *The economics of climate change: The Stern Review*. Cambridge: Cambridge University Press. This quantitative method was adopted by the World Bank in the Eskom power project in South Africa and uses a value of $29 per ton of CO2 for a calculated 1,349,798 ton output during construction and 1,857,019 ton output for each year of production for 27 years, as defined by Chapter C2 of the ESIA.
[87] Chernaik and Weiskel, p 16.

9. Recommendations

The World Bank Board of Executive Directors should not approve financing of the Oyu Tolgoi mine by the IFC and MIGA until the significant flaws and policy violations in the ESIA are rectified, an independent panel of experts is formed and has completed its findings on the project's environmental and social impacts, and a remedial action plan for all affected herder families that is consistent with the IFC Performance Standards is established.

As the project has already caused a significant amount of damage to the local community and the environment, the ESIA and mitigation plans must be significantly revised to ensure that all future negative impacts are avoided or minimized. The World Bank, EBRD and other international financial institutions have the ability to use their funding as leverage to enforce these changes, so we ask that consideration of the proposed loan be delayed until the following is accomplished:

- A full ESIA is developed that has undergone a rigorous review and consultation process. This ESIA should include:
  - Cumulative and transboundary impacts of demands on water sources from competing mines in the South Gobi;
  - Operational Management Plans, including the Tailings Management Plan, the Operational Phase Water Resources Management Plan and the Mine Closure Plan;
  - Detailed analysis of associated facilities with current data, including the international airport and coal power plant;
  - Cumulative impacts of the proliferation of transportation and transmission infrastructure associated with the OT project and other projects in the area on herders, their livestock, and their livelihoods and on the region's biodiversity;
  - Detailed assessment of the climate change impacts and social costs of OT's greenhouse gas emissions, particularly from the planned 450 MW coal power plant; and
  - Political and economic risk analysis.

- An independent expert panel is established to review and inform the full ESIA. The panel should cover at least the following topics:
  - Hydrology;
  - Dust Pollution;
  - Biodiversity Protection;
  - Waste Management; and
  - Land Acquisition and Resettlement.

- An independent expert panel is established to review the ESIA and other documentation related to the coal power plant, including a robust alternatives analysis, as required by the World Bank Group's *Criteria for Screening Coal Projects under the Strategic Framework for Development and Climate Change*.[88]

[88] World Bank Group. 2010. *Criteria for Screening Coal Projects under the Strategic Framework for Development and Climate Change,* p 4. (http://siteresources.worldbank.org/EXTENERGY2/Resources/CGN_20100331.pdf)

- The current inadequate compensation contract is reviewed and renegotiated to include all impacted herders and to ensure compliance with IFC Performance Standards 5 and 7, including access to sufficient, high quality water and pasture; protection of livelihoods; culturally appropriate consultation; and adequate compensation.

- All studies and reports referenced in the ESIA are made publicly available in English and Mongolian, either through links to external websites or uploaded onto the company website. These include evaluations such as:

  - **Chapter B6: Water Baseline Assessment**
    - Eco- Trade(2004): Oyu Tolgoi Project EIA Vol 1 Report of the Oyu Tolgoi to Gashhun Road and Infrastructure Corridor, Environmental Protection Plan and Environmental Monitoring Plan, Eco-Trade LLC, 2004.
    - ESIC (2007): Oyu Tolgoi Project EIA report for the Oyu Tolgoi Project Domestic Airstrip Relocation, Environmental Study & Information Centre OC LLC, 2007.
    - Eco- Trade (2005): Oyu Tolgoi Project Groundwater Resource Use from the Gunii Hooloi and Galbyn Gobi Regional Aquifers, Eco-Trade LLC, 2005.
    - Eco- Trade (2006): Oyu Tolgoi Project EIA Vol 3 Mining and Processing, Eco-Trade LLC, 2006.

  - **Engineering design for water supply - key peer reviews**
    - Golder Associates (2003): Review of hydrogeology & modelling, August 2003.
    - Water Management Consultants [Shrewsbury] (2006): Review of hydrogeology & modelling, Feb 2006
    - Black & Veatch (2008): Engineering review of overall water supply system, April 2008.
    - Maison Worley Parsons (2010): Pipeline and Borefield Design Review.
    - Acacia Water (2009), ref in Tuinhof and Buyanhisnig (2010)
    - Aquaterra (2004): Groundwater Exploration Investigation, Oyu Tolgoi Process Water Supply, vols 1-5, inc vol 1: Resources Assessment and Borehole Design
    - Aquaterra (2008): Gunii Hooloi Aquifer, Groundwater Investigation and Resources Assessment- 2007 [Revised water Demand], ref 658/F/331a, Aquaterra Consulting Pty Ltd, 2008
    - Aquaterra (2008): Gunii Hooloi Aquifer Detailed Design – Bore Design [Revised Water demand], ref 658/G/328b, 2008
    - Aquaterra (2010): Oyu Tolgoi Mine Site Hydrological Assessment report, re U25D/111c, 2010.

  - **Khanbogd Water Supply**
    - Geomaster Engineering (2010): Report on Groundwater Geophysical Exploration for Water Supply of Khanbogd Soum, Omnogovi Province

  - **Tailings Management**
    - Oyu Tolgoi (2009): Mongolian Feasibility Study, Attachment Section 10, Process - Tailings Storage Facility Subsection 7

- Golder (2005): Draft Report on "Review of Feasibility Design, Tailing Storage Facility, Oyu Tolgoi Project Mongolia" Project No 05-1362-126, Prepared by Golder Associated Ltd., May 2005.
- Klohn Crippen Berger (2010): Oyu Tolgoi Tailings Storage Facility
- Klohn Crippen Berger (2011): Oyu Tolgoi Tailings Storage Facility 2010 Feasibility Study Update report

- **Undai River Diversion**
  - SMEC (2011): Oyu Tolgoi Project: River Diversion Detailed Engineering Design Report- Final, Ref: A2MW-90-K487

- **Chapter C5: Water Impact Assessment**
  - Aquaterra (2007), ref in Tuinhof and Buyanhisnig 2010.
  - Oyu Tolgoi (2010): Preliminary Mine Closure Plan for Mongolian Feasibility Study, AMEC 2010.
  - SMEC (2010) [as above]: ref A2MW-90-K
  - Aquaterra (2010) [as above]
  - Aquaterra (2010): personal comm. Nov 2010.
  - SMEC (2007): Undai River Diversion Basic Engineering, Final report, SMEC 2007.
  - Maison Worley Parsons (2010): Assessment of Subsidence on Pipeline for Raw Water Supply System, Doc ref A2MW-6100-00-EV043, Rev. B, Oct 2010.
  - Knight Piesold Pty Ltd (2005): Oyu Tolgoi Project, Feasibility Study, Undai River Diversion, May 2005, Ref PE601-0001/18, Rev 1.
  - Eco- Trade (2006): Detailed EIA Report for the Oyu Tolgoi Project, Mining and Processing, 2006
  - CPR (2007): Perceptions Study on Water Use [see p28/65]
  - JEMR Consulting LLC (2010): Amendment Detailed EIA Report on use of Gunii Hooloi underground water resource for Oyu Tolgoi Project, Oct 2010.
  - MNS 6148 (2010): Sewage Discharge Standard

- **Waste Rock Management**
  - EGI (2008): Oyu Tolgoi Project Acid Rock Drainage Review and Recommended Investigation Programme, for Ivanhoe Mines MN by Environmental Geochemistry International May 2008
  - Oyu Tolgoi (2010): personal comm. Nov 2010.

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