



United Nations  
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# World Heritage Patrimoine mondial

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UNITED NATIONS EDUCATIONAL,  
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POUR L'EDUCATION, LA SCIENCE ET LA CULTURE

CONVENTION CONCERNING THE PROTECTION OF THE WORLD  
CULTURAL AND NATURAL HERITAGE

CONVENTION CONCERNANT LA PROTECTION DU PATRIMOINE  
MONDIAL, CULTUREL ET NATUREL

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**Item 7 of the Provisional Agenda: State of conservation of properties inscribed on the World Heritage List and/or on the List of World Heritage in Danger.**

**Point 7 de l'Ordre du jour provisoire: Etat de conservation de biens inscrits sur la Liste du patrimoine mondial et/ou sur la Liste du patrimoine mondial en péril**

MISSION REPORT / RAPPORT DE MISSION

Lake Baikal (Russian Federation) (754)  
Lac Baïkal (Fédération de Russie) (754)

13-17 April 2015

This mission report should be read in conjunction with Document:  
Ce rapport de mission doit être lu conjointement avec le document suivant:  
WHC-15/39.COM/7B.Add)

IUCN

**MISSION REPORT**

***Reactive Monitoring Mission to Mongolia  
Concerning the World Heritage Property of Lake Baikal  
(Russian Federation)  
13-17 April 2015***



**Selenge river** (Credit: EMC2I).

**Hervé LETHIER**

**May 2015**

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**LIST OF ACCRONYMS**

<b>EIA</b>	Environmental Impact Assessment
<b>FS</b>	Feasibility Study
<b>IBRD</b>	International Bank for Reconstruction and Development
<b>IUCN</b>	International Union for Conservation of Nature
<b>ME</b>	Ministry of Energy
<b>MINIS</b>	Mining Infrastructure Support Project
<b>MNEGDT</b>	Ministry of Nature, Environment, Green Development and Tourism
<b>NGO</b>	Non Governmental Organization
<b>OG</b>	Operational guidelines
<b>OUV</b>	Outstanding Universal Value
<b>Tors</b>	Terms of reference
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization
<b>UNDP</b>	United Nations Development Programme
<b>WB</b>	World bank
<b>WHC</b>	World Heritage Centre

## ACKNOWLEDGMENTS

The mission thanks the National Commission of Mongolia for UNESCO, the Ministry of Nature, Environment, Green Development and Tourism (MNEGDT) and the Ministry of Energy of Mongolia (ME) for the coordination and organisation of the mission.

It is grateful to M. KHURELSUKH, Vice Minister of MNEGDT, T.s BAYARBAATAR, Director general/ME, P. TOVUUDORJ, Director general "Strategic Policy and Planning Department/ME, D.ODKHUU and his team, Egiin Gol Project Director/ME, B. ENKHBAATAR, Shuren Project Director/ME, B. ENKHBAARAT, Project Director/World Bank (WB), K. MAITSETSEG, Division of International Affairs/MNEGDT and P. BADAMDORJ, Department of Land management and integrated water resources policy Unit/MNEGDT, for meeting the mission and providing information during its visit.

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The mission wishes to acknowledge the representatives of local government and public met in Darkhan, in particular G.GANZORIG, Director, Agency of Environment and Tourism, Darkhan-Uul province, B. ERDENE, Director, Selenge river basin Authority, L. GALBADRAKH, Director, Kharaa-Eruu river basin Authority, O. NYAMDAAVA, Executive director, Thermal Power station of Darkhan, N. LKHAGVASUREN, President, 'Khongor forest' commonwealth Association, B. ELDEVOCHIR, Head of representatives of 'Khongor forest' commonwealth Association ; they shared their views with the expert and provided him valuable information on the conservation issues of the property and the water management of the Selenge, in relation to the conservation of Lake Baikal.

Finally, the mission would like to thank the specialists from Coyne et Bellier, M. RIFFART-CHENET, hydrologist, J.M. VUILLOT, Deputy Director and J.L. PIGEON, Director, who provided the mission with useful additional technical information and data on the potential hydrological effects of the Egiin Gol Project on the property, as well as basic information on the contents of the EIA report.

Each of them contributed greatly to facilitate the work of the mission and enabled it to report on the context.

## EXECUTIVE SUMMARY

Lake Baikal was inscribed on the World Heritage List in 1996, under criterion (vii), (viii), (ix) and (x).

At its 37<sup>th</sup> session (Phnom Penh, 2013), the World Heritage Committee noted with concern the potential impacts on the property from the planned construction of a dam on the Orkhon river in Mongolia and also requested the State Parties of the Russian Federation and Mongolia to “provide more information on the status of these plans, as well as on the environmental impact assessments which are foreseen to quantify these potential impacts, in line with paragraph 172 of the *Operational Guidelines*”.

At its 38<sup>th</sup> session (Doha, 2014), the World Heritage Committee noted with concern that the State Party of Mongolia continues to consider the development of dams on the Selenga and Orkhon rivers..

The World Heritage Committee requested the State Party of Mongolia to ensure that no dam development on either river proceed before the potential impacts, including cumulative impacts, of these projects on OUV have been duly assessed, in conformity with IUCN’s World Heritage Advice Note on Environmental Assessment, and to provide a copy of the environmental impact assessment of these projects is provided to the World Heritage Centre (WHC) in line with Paragraph 172 of the *Operational Guidelines*.

The main power production in Mongolia comes from coal-fired thermal power plants, which are designed to generate the base load electricity for the national power system.

Furthermore, in the last 10 years, a total of more than 500 rivers and springs dried up in Mongolia<sup>1</sup> which led the country to become one of the driest countries in the world ; fresh water shortage has been predicted in the near future.

A “*National Program for renewable energy 2005-2020*” of Mongolia was adopted in 2005 planning the development of feasibility studies for the construction of large hydropower plants on Selenge, Eg and Orkhon rivers.

The mission visited two out of the three projects which are planned currently; the first two projects are in prefeasibility phase, and the third one in feasibility phase:

- the Shuren hydropower plant project is located on the Selenge River, 360 km upstream from Lake Baikal; this project is part of a large programme “Mining Infrastructure Support project” (MINIS) funded by the World Bank (WB);
- the Orkhon-Gobi project is also part of the MINIS Programme; this project would aim to facilitate and support investments in the mining sector and transfer water from the Orkhon River to the Gobi desert via pipelines;
- the Egiin Gol hydropower project is located on the Eg River, a tributary of the Selenge River, 580 km upstream from Lake Baikal, and would respond especially to the peak seasonal demands of electricity in the central part of Mongolia.

Based on the information and data provided and after discussion with local stakeholders, the mission is of the opinion that potential impacts of those three projects on the property could be significant and should be further assessed, including their cumulative and synergistic potential impacts:

- additional information - existing or not - on the Egiin Gol project should be requested from the State Party;

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<sup>1</sup> Letter from the MNEGDT to the mission dated 17 April 2015, § 4 (Annex 4).

- the terms of reference of the EIAs of the Shuren and Orkhon Gobi projects should be adapted according to the IUCN World Heritage Advice Note. Those EIAs should address all potential impacts of the projects on the property in consideration of the OUV of the property.

The State Party of the Russian Federation should be requested to provide a report on the state of conservation of the property, including information on the recent modification of the water use regulation on Lake Baikal and its subsequent effects on the utilization of the water resources by the existing hydropower plants downstream of the property, on the Angara river.

Finally, both States Parties of Mongolia and the Russian Federation should also be invited to develop a common strategic approach to water resource management at the Selenge/Lake Baikal ecosystem level, in order to ensure the long-term protection of the OUV of the property and its integrity.

The mission did not visit the property and therefore was not mandated and not able to evaluate its state of conservation. As specified and requested in its terms of reference, it focused on the three projects and on the issue of their potential impacts on the property.

**In conclusion, the mission recommends the World Heritage Committee to:**

- request the State Party of Mongolia:
  - to ensure that the EIA developed for the Egiin Gol Project includes assessment of potential impacts not only on the hydrology, but also on the ecological processes and biodiversity of the property, and to provide to the WHC the full EIA report;
  - to revise the terms of reference developed for the preparation of EIAs for the Shuren Hydropower plant and the Orkhon Gobi projects in order to include a request for a specific assessment of any potential impacts of the projects on the OUV and integrity of the property and to develop an assessment of the potential cumulative impacts of all three projects;
  - to submit the full EIA reports to the WHC, when available;
  - not to approve any of those projects until the provided information has been reviewed by the WHC and IUCN.
- request the State Party of the Russian Federation to submit to the WHC an updated report on the state of conservation of the property, including specifically on the existing provisions and regulations for water use and management in Lake Baikal and their subsequent effects on the hydropower plant management downstream of the property, for examination by the World Heritage Committee at its 40<sup>th</sup> session;
- invite both States Parties to continue and strengthen their cooperation for Lake Baikal water management and to jointly develop a Strategic Environmental Assessment for any future hydropower and other large water management projects which could potentially affect the property, taking into account all planned and existing infrastructure in both countries.

## 1 BACKGROUND TO THE MISSION

Lake Baikal is located in south-east Siberia in the Russian Federation, nearby the border with Mongolia; it is the deepest lake in the world, containing 20% of all fresh running water, coming partly from the Selenge River watershed which is shared between both countries.

The property was inscribed on the World Heritage List in 1996, under criterion (vii), (viii), (ix) and (x).

At its 37<sup>th</sup> session (Phnom Penh, 2013), the World Heritage Committee noted with concern the potential impacts on the property from the planned construction of a dam on the Orkhon river in Mongolia and also requested the States Parties of the Russian Federation and Mongolia to “provide more information on the status of these plans, as well as on the environmental impact assessments which are foreseen to quantify these potential impacts, in line with paragraph 172 of the *Operational Guidelines*”.

At its 38<sup>th</sup> session (Doha, 2014), the World Heritage Committee noted with concern that the State Party of Mongolia continues to consider the development of dams on the Selenga and Orkhon rivers. (**Annex 1**).

The World Heritage Committee requested the State Party of Mongolia to ensure that no dam development on either river proceed before the potential impacts, including cumulative impacts of these projects on OUV, are duly assessed, in conformity with IUCN’s World Heritage Advice Note on Environmental Assessment, and a copy of the environmental impact assessment of these projects is provided to the World Heritage Centre, in line with Paragraph 172 of the *Operational Guidelines*.

Upon request from the World Heritage Committee, the State Party of Mongolia invited an IUCN reactive monitoring mission, from 13 to 17 April 2015, to review the scope, scale and status of the dam projects in Mongolia and to have a discussion early in the planning process about the potential impacts of these projects on the property. The World Heritage Centre provided all relevant information concerning this mission to the authorities of the Russian Federation. The State Party of the Russian Federation did not take part in this mission.

The IUCN reactive monitoring mission visited two of the three projects in Mongolia and had discussions with the MNEGDT, the ME and various stakeholders (**Annex 2**), in accordance with the terms of reference of the mission (**Annex 3**).

## 2 OVERALL CONTEXT

The main power production in Mongolia comes from coal-fired thermal power plants, which are designed to generate the base load electricity for the national power system.

The five existing coal-fired thermal power plants generate 92,7% of the total energy in the country, with further 5,8% being imported from Russia, 1,1% produced by hydropower plants and the rest coming from diesel generators<sup>2</sup>.

Furthermore, in the last 10 years, a total of more than 500 rivers and springs dried up in Mongolia<sup>3</sup> which led the country to become one of the driest countries in the world ; fresh water shortage has been predicted by the government in the near future, in absence of additional natural water resources and reservoirs.

<sup>2</sup> Source: Energy Regulatory Authority of Mongolia.

<sup>3</sup> Letter from the MNEGDT to the mission dated 17 April 2015, § 4 (Annex 4).

The “*Mongolia Sustainable Energy Sector Development Strategy Plan for 2002-2010*” approved by the government in 2002 included the development of hydropower plants to meet demands for electricity by the mining sector and to fill the electricity shortfall faced by the country.

A “*National Program for renewable energy 2005-2020*” was adopted in 2005 by the State Great Hural and a “*Renewable energy law*” was voted in 2007, organizing the utilization of renewable energy sources.

The development of feasibility studies on construction of large hydropower plants on Selenge, Eg and Orkhon rivers are explicitly mentioned in that programme which seeks not only to respond to water demand increase but also to develop more eco-friendly energy and reduce greenhouse gas and carbon emissions.

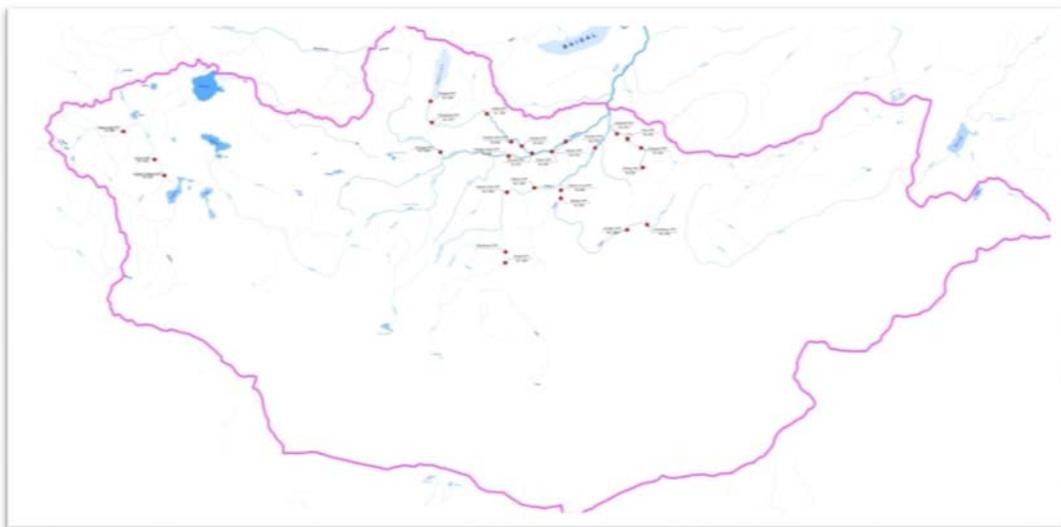
The State Party has committed indeed to implement the decisions of the UN General Assembly adopted in 2014, at its 69<sup>th</sup> session, and wishes to reduce its greenhouse gas emissions and support the production of renewable energies in the country.

The State Party is of the opinion that wind and solar energies are economically not profitable in the Mongolian geographical and climatic context, and that therefore the development of hydropower energy is the only reliable and realistic way to:

- meet its energy needs;
- reduce its current carbon emissions and replace progressively the existing coal-fired power plants ;

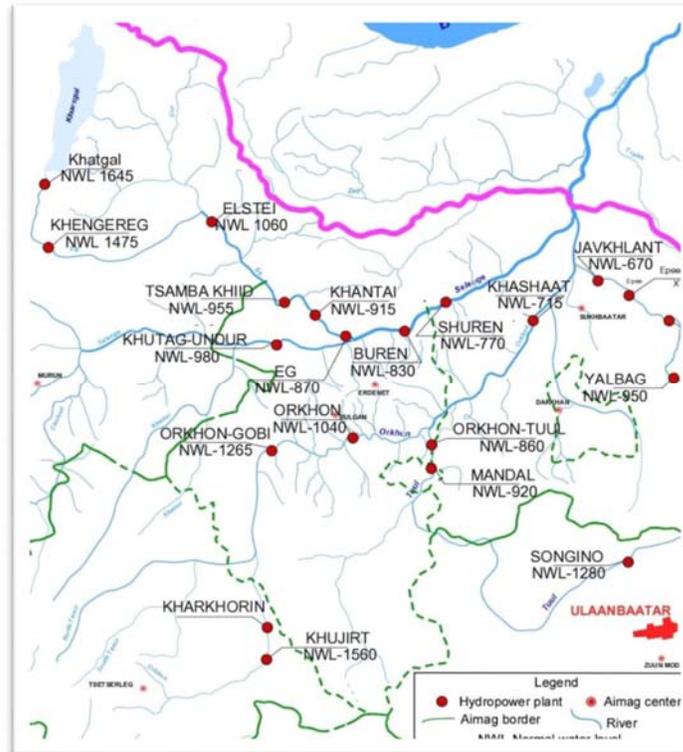
Since the sixties, the government of Mongolia has thus carried out several surveys and inventories in order to pre-identify potential locations for constructing hydropower plants (**Map 1**).

The first hydropower plant was built in 1959 on the Orkhon River, Kharhorum, with a capacity of 525 kW; thirteen (13) hydropower plants have been built since then, 5 being no longer operational.



**Map 1** – Pre-identification of hydropower potential locations in Mongolia  
(Source: Pre-feasibility study of Mongolian hydro energy resource, 1960s).

Nineteen (19) sites have been selected by the State Party of Mongolia so far, as the most suitable and best-fit projects for the construction of hydropower plants (**Map 2**), three of them being the Shuren, Orkhon Gobi and Egiin Gol projects that were assessed by the mission. All the identified potential sites are located in the Selenge watershed and according to the Shuren prefeasibility report would be “*planned and financed in medium and long term*”<sup>4</sup>.



**Map 2** – Location of the 19 most suitable hydropower equipments in Mongolia  
(Source : Shuren prefeasibility study report, chapter 1).

In this context, the mission recommends that the World Heritage Committee urges the State Party of Mongolia to develop a clear and comprehensive national strategy on the development of hydro energy in the Selenge watershed, for the medium and long terms, that takes into account the context of Lake Baikal and thus addresses the overall potential impacts on the property.

This strategy should deal with, amongst others, the questions of the preservation of natural processes and ecosystem services, and more specifically those in relation to Lake Baikal water regime and ecology; it should be elaborated in coordination with the Russian Federation. It is further recommended that the two countries jointly develop a Strategic Environmental Assessment (SEA) for any planned hydropower and water management projects that could potentially affect the property, taking into account all planned and existing infrastructure in both countries and their potential cumulative impacts.

The three projects that were assessed are located in the wide Selenge watershed which is the longest river in Mongolia and the main tributary of Lake Baikal (**Figure 1**); two thirds of

<sup>4</sup> Shuren prefeasibility study report, 2014, page 1-17.

its catchment are located in Mongolia, representing more than 80% of the whole basin of Lake Baikal in surface, and 40% of the water flowing into the property<sup>5</sup>.

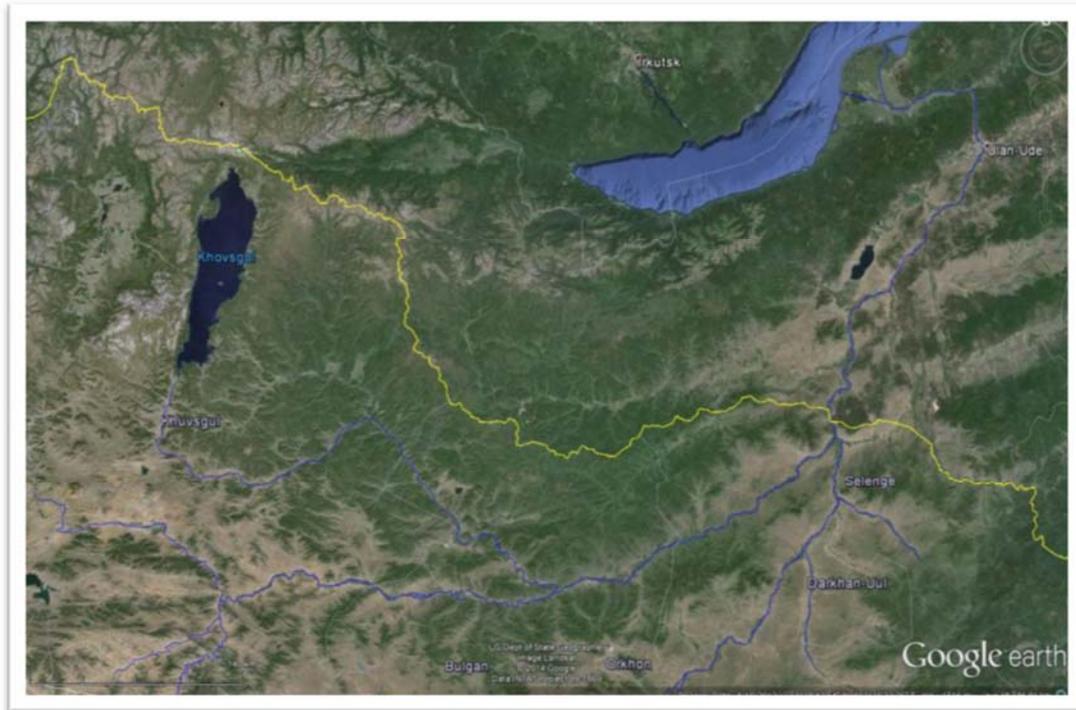


Figure 1 - Selenge, Orkhon and Eg rivers basin (Source: Shuren prefeasibility study report).

The mission was able to visit 2 of the 3 projects in the field, the Shuren Project situated directly on the Selenge River and the Egiin Gol Project located on one tributary, the Egg River. The third project has not been visited by the mission due to time constraints; it is located on the Orkhon River (Map 3).



Map 3 – Location of the three projects assessed (Source: from Tractebel Engineering, 2015.)

<sup>5</sup> Tractebel Engineering, 2015 – Egiin Goliin hydropower plant project, hydrological impacts on Selenge River regime and Lake Baikal, March 2015, 100 p.

### 3 ASSESSMENT OF THE PROJECTS AND REVIEW OF THE RELEVANT DOCUMENTS

Three hydroelectric projects are currently under way.

#### 3-1 SHUREN HYDROPOWER PROJECT

The mission has visited the area of this project which is in an early stage of development and received:

- the full prefeasibility study report conducted in 2014;
- draft Terms of reference (ToRs) developed for the regional environmental assessment and environmental and social impact assessment;
- draft ToRs developed for the feasibility study (FS);
- various other general documents on the project.

##### 3-1-1 Location

Shuren hydropower plant project has been studied since the 1960s. This project would be located on the Selenge River, 360 km upstream from Lake Baikal;

##### 3-1-2 Scope and scale

The project would be located nearby the confluence between Shuren River and Selenge River and would comprise the construction of the following equipments:

- a dam with a fish pass;
- a drainage system in case of flood;
- a hydropower plant.

Several options have been reviewed in the prefeasibility study; all of them would be located in the same area (**Figure 2**); they differ mainly in the technical characteristics of the equipments and infrastructures (dam's height and length, reservoir's surface).

The project would provide water and energy mostly for domestic and agriculture needs in the central region of Mongolia and, according to the prefeasibility study report, also for *“ensuring reliable and sustainable energy and operation in mining industry in the Gobi area”*.

This “mining” objective is doubtful for the mission because of the geographical location of the Shuren project, far away from large mining areas; the State Party should be invited to confirm this objective although this project is part of the MINIS project (Mining Infrastructure Support Project) financed by the WB, and aiming to facilitate and support investments in the mining sector.

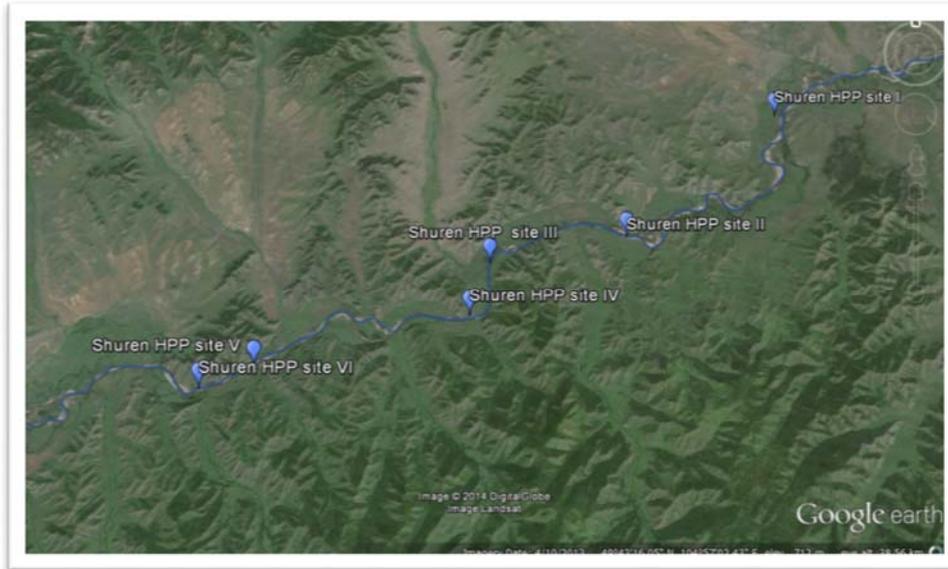


Figure 2 – Shuren project, location of the six options (Source: Prefeasibility study report, chap. 8).

### 3-1-3 Current status

The project is in the feasibility phase; a prefeasibility study has been conducted but neither the study report nor the draft terms of reference for the feasibility study make any reference to the property.

Would this project be pursued and according to the recommendations of the pre-feasibility study report, detailed studies on biodiversity should be conducted during the feasibility phase, especially on migratory fish and birds distributed along the Selenge river and Lake Baikal; further information should be collected in the field in appropriate seasons and time, on distribution, densities, key habitats, migration routes, seasonal patterns, etc, of, at least, the key species and ecosystems that contribute to the OUV of the property.

The feasibility study should deal with the natural processes that are crucial to the OUV of the property.

**To conclude, the State Party should be requested:**

- **to adapt the draft terms of reference developed for the regional environmental assessment and environmental and social impact assessment and for the feasibility study, to ensure that they address specifically the assessments of potential impacts of the project on the OUV of the property, in conformity with IUCN’s World Heritage Advice Note on Environmental Assessment;**
- **to provide the World Heritage Centre and IUCN with a copy of the assessment reports when available;**
- **not to approve this project until the provided information has been reviewed by the World Heritage Centre and IUCN.**

### 3-2 ORKHON-GOBI HYDROPOWER PROJECT

This project is also part of the MINIS project mentioned above (see § 3-1) and financed by the WB, aiming to facilitate and support investments in the mining sector.

Approximately 90% of Mongolia's territory is characterized as arid or semi arid, 40% comprised in the Gobi desert. It is proposed to build a dam and a reservoir on the Orkhon River, a tributary of the Selenge River that will regulate flow and retain water to meet increasing water demand from the mining industry.

The mission did not visit the site and did not have the chance and opportunity to discuss and exchange directly with the project developer; the comments that follow are based only on the review of the documents provided to the mission:

- a study report on initial economic, financial, environmental and social screening<sup>6</sup>;
- draft ToRs for regional environmental assessment and environmental and social impact assessment for flow regulation of the Orkhon river and construction of reservoir complex project ;
- draft ToRs for the preparation of the feasibility study.

### 3-2-1 Location

The Orkhon River originates from the south slope of Suvarga Khaikhan mountain, Grand Khangai mountain range, and is a tributary of Selenge River. Water resources would be diverted from Orkhon River to supply the Gobi region.



Map 4 – Location of the area of the Orkhon Gobi Project (Source: Draft ToRs).

### 3-2-2 Scope and scale

This project aims to satisfy future water demand trends and to ensure sustainable development of the region; it would respond to domestic, agricultural and industrial/mining needs, and complement the existing local ground water resources.

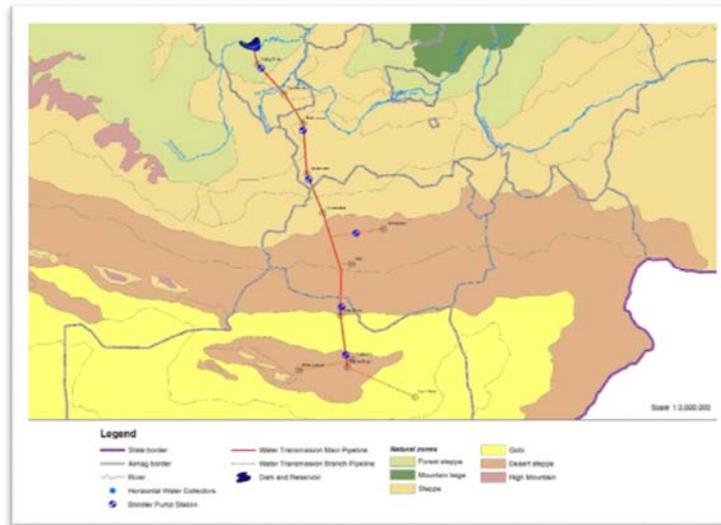
Water would be piped from the Orkhon river to the Gobi desert; alternative sites and management would be assessed and various technical options and socioeconomic assets would be reviewed.

This project would comprise:

- a hydropower station;
- a dam equipped with a fish pass;

<sup>6</sup> PRESTIGE CO., Ltd., 2013 - report on initial economic, financial, environmental and social screening preparation of terms of reference for feasibility studies on flow regulation of Orkhon river and construction of water reservoir complex project, 126 p.

- a water reservoir;
- a water pipeline with a road along it (**Map 5**);
- various supporting facilities, buildings and infrastructure.



**Map 5** – Location of the planned water pipeline (Source: PRESTIGE Ltd, 2013).

The area of influence of the project is recognized by the screening survey report as extending from the upper limits of the catchment of the reservoir to downstream, including the watershed and river valley below the dam.

According to this report, one of the main identified impacts of the project would be the alteration of water flow downstream. The report concludes also on:

- the potential long term effects of the project on siltation and water quality in the reservoir and the river downstream;
- impacts on hydrology of the river basin and on levels of water table above and below the reservoir;
- salinization problems with direct ecological impacts on downstream water.

The report states that *“it is therefore essential that dam projects be planned and managed in the context of overall river basin and regional development plans, including both the upland catchment areas above the dam and floodplain, and watershed areas downstream”*.

### 3-2-3 Current status

Four options have been studied so far; the option “C” would combine the uses of groundwater resources and surface water of Orkhon River Basin via a water transmission pipeline to the Southern Gobi Region; it has been evaluated as the most feasible water supply solution to satisfy increased water demands of the Southern Gobi Region.

However, this option seems not to be the most eco-friendly with regard to the preservation of the OUV of the property of Lake Baikal. Furthermore, the initial screening of the environmental impacts of the project did not assess the potential impacts of the project on the property of Lake Baikal, regardless of which option is chosen.

The project is currently in its feasibility phase. A feasibility study will analyze further the possibility of implementing the project from technical, economic and financial standpoints.

At the same time, a regional environmental assessment (REA) and an environmental and social impact assessment (ESIA) will be carried out.

ToRs have been drafted for both studies that will be conducted by different contractors. They do not make any reference to the property; they also do not mention the existence of the two other hydropower projects planned on the Selenge watershed and therefore do not raise the cumulative effects of those three projects and their overall potential impacts on the property.

**At this early stage of development of the Orkhon Gobi project, the mission recommends that the State Party of Mongolia be requested:**

- **to revise the current terms of reference of both the Regional Environmental Assessment and the Environmental and Social Impact Assessment and include a specific assessment of any potential impacts of the project on the OUV and integrity of the property, including cumulative impacts with the Shuren and Egiin Gol projects;**
- **to submit the EIA report for comments to the World Heritage Centre and IUCN, when available;**
- **not to approve the project until the provided information has been reviewed by the World Heritage Centre and IUCN.**

**The World Heritage Committee should also reiterate the need to assess duly those impacts, in conformity with the IUCN's World Heritage Advice Note on environmental assessment, including any potential cumulative impacts. This assessment should meet the 8 principles adopted for World Heritage assessment, including a consultation of all relevant stakeholders such as local communities, indigenous people, scientists and NGOs.**

### **3-3 EGIIN GOL HYDROPOWER PROJECT**

The mission reiterated several times unsuccessfully, during the visit, its need to get the full FS report and the EIA for the Egiin Gol project, to be able to assess this project properly as required by its terms of reference.

It was stated by the officials of the State Party<sup>7</sup> that the subject of Egiin Gol was not introduced in the decision 38 COM 7B.76 of the World Heritage Committee; the mission was able to access only:

- the Egiin Gol EIA table of contents (6 pages), foreword (1 page), brief description (3 pages) and conclusion (10 pages), all documents very general and without substantial information and data ;
- copy of its Chapter 8 on Lake Baikal (9 pages)<sup>8</sup> ;
- a brief note from the Project contractor on the contents of the Environmental and Social Management Plan<sup>9</sup>.

A substantial report on the hydrological impacts of this project on Selenge River and Lake Baikal was however provided to the mission, as well as a synopsis of the updated feasibility study and a power point presentation<sup>10</sup>.

#### **3-3-1 Location**

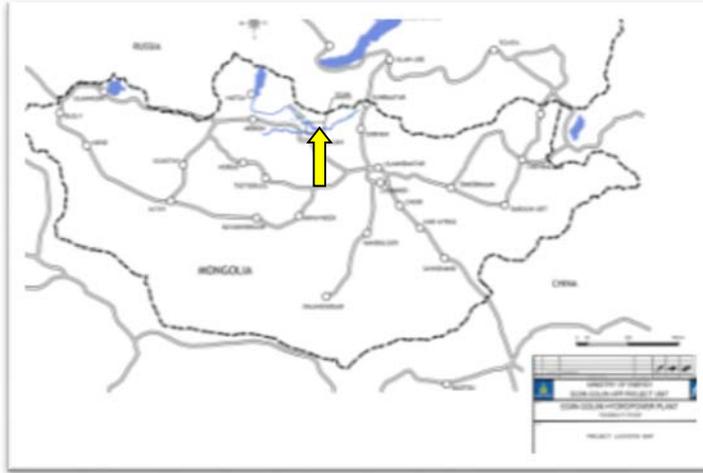
<sup>7</sup> See letter from the Vice Minister of the MNEGDT dated 17 April 2015 and mail from the project Director on 24 April 2015.

<sup>8</sup> Received by mail on 24 April from the Project Director.

<sup>9</sup> On 4 May, in Paris (Power Point Presentation, Tractebel Engineering, May 2015).

<sup>10</sup> Tractebel Engineering.

This project would be located on the Eg river, 2,5 km upstream from the confluence with the Selenge river (**Map 6**).



**Map 6** – Location of the Egiin Gol Project (Source: Tractebel engineering).

It would comprise several components:

- a reservoir covering a surface maximum of 167,5 km<sup>2</sup> and storing 5 666 Mm<sup>3</sup> of water;
- a dam with a maximum height and crest length of respectively 103 m and 740 m;
- a powerhouse equipped with 6 turbines, built at the toe of the dam and producing 315 Mw ;
- a transmission line and an existing access road to the site that will be upgraded.

All equipments would be situated around 580 km upstream from Lake Baikal<sup>11</sup>, in the Selenge watershed.

### 3-3-2 Scope and scale

Presented as an “*eco friendly project*”, this project aims to produce energy mostly for domestic and agriculture purposes, in winter time (January to March), and during specific “peak” hours (from 17H00 to 20H00 pm), in response to the demand. According to the developer, it would contribute to green development and generate environmentally friendly electricity; it would also reduce the use of existing coal-fired power plants and decrease the emission of greenhouse gases and carbon of Mongolia as mentioned above.

### 3-3-3 Current status

Several studies were carried out on the project over the last 25 years.

A feasibility study has been conducted in 2014<sup>12</sup>, reviewing and updating the previous studies; it has also adjusted significantly the initial concept, increasing the reservoir level, its installed capacity and the number of turbines, adding a fish pass and modifying as well specific equipments, like the access road. Those investigations have been mostly adapted from the previously available topographical and geological data.

<sup>11</sup> 300 km from the Russian border.

<sup>12</sup> Tractebel Engineering, 2014 – Updated feasibility study, synopsis, 10 p.

A specific survey on the hydrological impacts of this project on the Selenge River and Lake Baikal has been carried out in 2015<sup>13</sup>. That survey concludes - from the results obtained with the method employed - that the potential impact of the project on the hydrological regime of the Selenge River would decrease from upstream to downstream and would reach negligible levels at Mostovoy gauging station which is the last station before Lake Baikal.

This survey concludes also that those negligible effects would be even attenuated on Lake Baikal, as other tributaries of the Selenge River will not be affected by this project, and bearing in mind that the Russian sub-catchments are more contributive to runoff than the Mongolian ones.

According to those conclusions:

- the intra-annual distribution of water would be mainly impacted in winter, with increase of winter flows and slight decrease in summer flows, but changes would never be higher than 1% of the annual inflow of Selenge River into Lake Baikal;
- seasonality and variability of water would not be affected significantly;
- the higher impact would occur during the reservoir filling and would represent a deficit of 9% of annual inflow for a 3-years long period, in a dry period<sup>14</sup>. According to the mission, this impact could be reduced if needed, with a longer filling period and in adapting the dam and reservoir characteristics; this leads to study project alternatives in order to minimize its potential impacts on the OUV of the property.

There could be possible impact on:

- availability of colonization sites for plants, morphology of the Selenge River as well as habitat availability;
- the life cycle of organisms and on behavioural mechanism during winter;
- soil moisture conditions, habitat availability and exchanges between the river and its floodplain.

According to the survey's conclusions and with the intrinsic limits of the method employed that focuses on hydrological features, no "*ecological impact*" is expected from the rate of flow variations or would overcome "*the acceptable range of variability*"<sup>15</sup>.

Those conclusions cover however only hydrological potential impacts of this project on the ecosystem but do not address the other potential impacts on the OUV of the property, with regard to criteria (ix) and (x) in particular.

The Selenge River and its tributaries - the Eg river included - host important endangered migratory species of fish, endemic from the Selenge watershed, on the basis of which the OUV of the property was partly established under criterion (x); although general and basic information were provided to the mission on the offset measures that would be taken in order to prevent and minimize the impacts of the project on those species and their key habitats, the mission was not able to assess to what extent this issue was taken into consideration properly in the EIA report which was not made available.

A fish trap would be built at the toe of the dam and the fish, Taimen (*Hucho taimen*) essentially - known as being a migratory species that moves up or downstream to spawning locations and overwintering in deep pools - would be transported upstream by van; the mission did not obtain satisfactory response on the fish return migration, neither on the ecological effects of the dam on the fish population (distribution, demography, et.al.) and on

<sup>13</sup> Tractebel Engineering, 2015.

<sup>14</sup>Nota : certainly more considering a wet or flood period.

<sup>15</sup> Tractebel Engineering, 2015 - Egiin Goliin HydroPower Plant Project, Hydrological impacts on Selenge River and Baikal Lake regimes, power point presentation, 34 slides.

the river ecology in general. It is the mission's view that those issues should be further studied in order to assess properly the potential impacts of this project on the property.

Furthermore, the Selenge valley, including the Eg River valley, is also known as a global important area for other vulnerable<sup>16</sup> or endangered species of fish<sup>17</sup> as well as for vulnerable<sup>18</sup> and endangered species of birds<sup>19</sup> and their steppe habitats that contribute to the OUV of the property and would be flooded at least partly by the reservoir.

Those issues should also be studied in-depth unless they have been already addressed in the EIA report that the mission has not been able to verify unfortunately.

The mission was also not in a position to assess if the project would have significant potential impacts on the ecological and biological processes in the evolution and development of ecosystems and flora and fauna communities, on the basis of which the property has been listed under criterion (ix).

A “*monitoring plan*” and a “*prevention and mitigation plan*” would be implemented, including tree plantations and the construction of the fish pass mentioned above; according to the officials met, “*more suitable habitat will occur for migratory birds*” and the project will have “*no negative impact on fauna*”.

However, it is not clear whether these predictions are based on scientific literature and, more importantly, on field work.

In conclusion, on the basis of information in its possession, the mission is not in the position to fully assess the potential impacts of this project on the property and can only conclude as follows:

- Chapter VIII of the EIA, dedicated to Lake Baikal, remains very general and it cannot be deemed to meet the international standards, as well as the principles and advice on integrating natural World Heritage sites within environmental assessments<sup>20</sup>;
- all potential types of impacts of the project on the OUV of the property have not been assessed; the assessment should cover not only hydrological but also all aspects related to biodiversity and ecological processes under the criteria met by the property; the potential effects of the project should also be studied on the basis of updated data and information, from current literature and field works; it seems, from the discussions and documents, that it might not have been the case up to now;
- the connection of this project to the wider context of the Selenge watershed, including Lake Baikal, has not been assessed properly;
- it appears that no alternative options have been identified and assessed as should be done in any EIA;
- no separate chapter in the EIA seems to present clear and full conclusions on the potential direct, indirect, cumulative and synergistic impacts of this project and the others planned<sup>21</sup>, on the OUV of the property;
- it does not seem from the discussions and documents available to the mission that public consultation has involved local stakeholders;
- .

<sup>16</sup> Siberian Sturgeon (*Acipenser baerii*); listed critically endangered at regional level (on the three known spawning sites, two would be in Selenge River and one in Orkhon River. (Source: Ocock, J: and al, 2006 - Mongolian Red List of Fish, 72 p).

<sup>17</sup> Pidschian (*Coregonus pidschian*), Mongolian Grayling (*Thymallus revirostris*), Lenok (*Brachymystax lenok*).

<sup>18</sup> Great Bustard (*Otis tarda*); Eastern Imperial Eagle (*Aquila heliaca*) and Greater Spotted Eagle (*A. Clanga*) (Source: Brown, H:J: and al, 2011 - Summary Conservation Action Plans for Mongolian Birds, 149 p.).

<sup>19</sup> Saker Falcon (*Falco cherrug*).

<sup>20</sup> IUCN, 2013 – Advice note – World Heritage Advice Note: environmental assessment, 18 November 2013, 15 p.

<sup>21</sup> Shuren, Orkhon Gobi and any others that are planned or could be planned in the future on the Selenge watershed.

**The mission recommends therefore that the World Heritage Committee requests the State Party of Mongolia to provide the full Environmental Impact Assessment (EIA) report developed for the Egiin Gol project and submit it for review and comments to the World Heritage Centre and IUCN before approving this project.**

**Beforehand, the State Party should be invited to verify if the existing EIA report covers all aspects and addresses issues mentioned here above, related to the preservation of the features and natural processes of the property and that contribute to the preservation of its OUV and integrity.**

### **3-4 OTHER ISSUES**

#### **3-4-1 Cumulative impacts**

The cumulative impacts of the construction of several dams in the same watershed, the Selenge watershed, have been addressed by the World Heritage Committee in its 37th and 38<sup>th</sup> sessions, but it has neither been adequately dealt with in the Egg project, nor in the Shuren and Orkhon projects which are in an earlier stage of development.

In that context, a cumulative impact assessment should cover all projects of infrastructures planned in the Selenge watershed to evaluate not only the cumulative effects of the three projects *stricto sensu*, but also their incremental and synergistic potential impacts on the whole ecosystem, and on the key endangered migratory species of fish and birds inhabiting the Selenge/Lake Baikal complex, their habitats, and on the natural processes which shape the water features and regime of the Selenge River.

The construction of the three planned dams – and perhaps others in the future – should proceed from a comprehensive strategic plan seeking to identify clearly the hydropower dam opportunities at the Selenge basin level, and evaluate their overall potential impacts on the river and downstream on Lake Baikal.

This strategic plan should meet the international standards and be based on an ecosystem approach.

**In conclusion (see § 2), the State Party of Mongolia should be urged to develop such a comprehensive strategic plan jointly with the State Party of the Russian Federation for any existing and future hydropower and other large water management projects which could potentially affect the property; both States Parties should be invited to initiate this work under their existing intergovernmental agreement and report on progress at the next session of the World Heritage Committee.**

#### **3-4-2 Water management of Lake Baikal and existing hydro equipments**

During the visit, it was brought to the attention of the mission that the water level of Lake Baikal has dropped down significantly since 2014 and would currently be lower by 13 cm from the acceptable minimum established by Resolution 234 of the Government of the Russian Federation issued in 2001. A recent Resolution 97, dated 4 February 2015, allowed the use of water resources from Lake Baikal below the minimum level established by Resolution 234 for the winter period 2014-2015 in order to ensure the continuation of economic and industrial activities depending on the hydropower cascade in the unexpected low water level period which occurred in 2014-2015, with further normalization of water levels following the 2015 spring high water period.

According to the State Party of Mongolia, this modification and the subsequent change in the management of the dams situated downstream of the property, on the Angara River, would potentially affect the property more than the projects planned in the territory of the State Party of Mongolia.

To summarize the situation, a series of 4 hydropower private dams<sup>22</sup> are built downstream of Lake Baikal, on the Angara river which is the only river draining the property. The last one was opened in 2012. Their installed capacity would total over 12 000 M Watts and the energy produced annually by those dams would reach 66 000 G Watt/h.

The officials of the State Party of Mongolia are very much concerned by this overall context that affects directly the water level and hydrology of Lake Baikal.

This issue has been widely documented in the press recently and the mission has received several articles on it.

The mission is of the opinion that this context should be assessed further, as significant changes on the regulation of the Lake Baikal water regime may affect the state of conservation of the property and potentially deteriorate its OUV and integrity.

**The mission thus recommends that the State Party of the Russian Federation be invited to assess the situation and to submit an updated report on the state of conservation of the property, including specifically on the existing regulations and provisions for water use and water level management of Lake Baikal, for consideration of the World Heritage Committee, at its 40<sup>th</sup> session.**

**The State Party of the Russian Federation should also be reminded that according to art. 172 of the *Operational Guidelines*, the World Heritage Committee should be informed of any intentions to undertake major works or to take decisions which may affect the OUV of the property.**

## CONCLUSION AND RECOMMENDATIONS

The mission did not visit the property and therefore was not mandated and able to check its state of conservation. As specified and requested in its terms of reference, it focused on the three projects and only on their potential impacts on the property.

The mission recommends as follows:

- the State Party of Mongolia should be requested:
  - to ensure that the EIA developed for the Egiin Gol Project includes assessment of potential impacts not only on the hydrology, but also on the ecological processes and biodiversity of the property, and to provide the WHC with the full EIA report;
  - to revise the terms of reference developed for the preparation of EIAs for the Shuren Hydropower plant and the Orkhon Gobi projects in order to include a request for a specific assessment of any potential impacts of the projects on the OUV and integrity of the property, including on its biodiversity and ecological processes, and to develop an assessment of the potential cumulative impacts of all three projects;
  - to submit the full EIAs reports to the WHC, when available;

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<sup>22</sup> Irkhutsk (1958), Bratsk (1967), Ust-Ilimsk (1979) and Boguchany (2012).

- not to approve any of those projects until the provided information has been reviewed by the WHC and IUCN.
- the State Party of the Russian Federation should be requested to submit to the WHC an updated report on the state of conservation of the property, including specifically on the existing provisions and regulations for water use and management in Lake Baikal and their subsequent effects on the hydropower plant management downstream the property, for examination by the World Heritage Committee at its next session;
- both States Parties should be invited to continue and strengthen their cooperation for Lake Baikal water management and to jointly develop a Strategic Environmental Assessment for any future hydropower and other large water management projects which could potentially affect the property, taking into account all planned and existing infrastructure in both countries.

**LIST OF ANNEXES**

- ANNEX 1**     DECISION 38 COM 7B.76
- ANNEX 2**     PROGRAMME OF THE MISSION
- ANNEX 3**     TERMS OF REFERENCE OF THE MISSION
- ANNEX 4**     LETTER FROM THE VICE MINISTER OF NATURE, ENVIRONMENT,  
GREEN DEVELOPMENT AND TOURISM TO THE MISSION DATED 17  
APRIL 2015

**Decision: 38 COM 7B.76**

The World Heritage Committee,

1. Having examined Document WHC-14/38.COM/7B.Add,
2. Recalling Decision **37 COM 7B.22**, adopted at its 37th session (Phnom Penh, 2013),
3. Welcomes the information provided by the State Party that the Baikalsk Pulp and Paper Mill (BPPM) has been shut down, although it continues to produce heat, and requests the State Party to develop a detailed Environmental Impact Assessment (EIA) on the future use of the BPPM site and its impact on the Outstanding Universal Value (OUV) of the property;
4. Notes with concern that the State Party of Mongolia continues to consider the development of dams on the Selenge and Orkhon rivers, and also requests the State Party of Mongolia to ensure that no dam development on either river proceeds before the potential impacts, including cumulative impacts, of these projects on OUV have been duly assessed, in conformity with IUCN's World Heritage Advice Note on Environmental Assessment, and to provide a copy of the environmental impact assessments of these projects to the World Heritage Centre in line with Paragraph 172 of the *Operational Guidelines* ;
5. Further requests the State Party of Mongolia to invite an IUCN reactive monitoring mission, with an invitation also extended to the authorities of the Russian Federation, in order to review the scope, scale and status of the dam projects in Mongolia and to have a discussion early in the planning process about the potential impacts of these projects on the property;
6. Reiterates its position that mining is incompatible with World Heritage status, and requests furthermore the State Party of the Russian Federation to ensure that mining at the Kholodninskoye deposit remains prohibited beyond 31 December 2014;
7. Expresses its concern over the continued development of the "Baikal Harbour" and "Gate of Baikal" Special Economic Zones and the lack of assessment of the impacts of these developments on the OUV of the property, and requests moreover the State Party to undertake a Strategic Environmental Assessment of the Special Economic Zones (SEZs), in particular concerning tourism development within the property and its vicinity, in order to identify alternatives that will not have a negative impact on the OUV of the property;
8. Also expresses its concern over reported proposals to introduce changes to Federal Law N 94-FZ which would weaken the protection of the property, and requests in addition the State Party to provide further information on these proposed changes;
9. Urges the State Party to expedite the development of management plans for the protected areas which constitute the property as well as an integrated management plan for the property as a whole, in line with Paragraph 112 of the *Operational Guidelines*;
10. Finally requests the State Party to submit to the World Heritage Centre, by **1 February 2015**, an updated report, including a 1-page executive summary, on the state of conservation of the property, including on the implementation of the actions noted above, for examination by the World Heritage Committee at its 39th session in 2015.

## AGENDA OF THE MISSION

Date	Time	Plan	Location	Features/Details
13/04 MON	11:05 (UB time)	Pick up IUCN expert	Chinggis Khaan International Airport	Mr. Kh. Erdembileg Programme officer for Culture and World Heritage Mongolian National Commission for UNESCO
	12:30	Check in hotel	Ulaanbaatar hotel	
	14:30-15:30	Meeting with the representatives of the Ministry of Environment, Green Development and Tourism	Ministry of Environment, Green Development and Tourism (MEGDT)	-Mr. M.Khurelsukh, Vice Minister for MEGDT  -Mr. D.Batbold, Director, River basin management division, MEGDT  -Mr.P.Badamdorj, officer, Department of Land Management and Integrated Water Policy, MEGDT  -Mrs. Kh. Maitsetseg, senior officer, Department of Foreign relationship, MEGDT  -Mr. Kh.Erdembileg Programme officer for Culture and World Heritage Mongolian National Commission for UNESCO
	16:00-17:30	Meetings with the representatives of the Ministry of Energy	Ministry of Energy	-Mr. Ts.Bayarbaatar, Director, Department of Policy Implementation and coordination, Ministry of Energy  -Mr. P. Tovuudorj, Director, Department of Strategic policy and planning, Ministry of Energy  -Mr. P.Badamdorj, officer, Department of Land Management and Integrated Water Policy, MEGDT  -Mr. Kh.Erdembileg Programme officer for Culture and World Heritage Mongolian National Commission for UNESCO  -Others
		Meeting with the representatives EgiinGol Hydro Power Project	Ministry of Energy (conference hall)	-Mrs. Marina Riffard, hydrologist Tractebel Engineering, France  -Others

	18:00-18:40	Meeting with the representatives of the Shuren Hydro Power Project and the representatives of the regarding the Orkhon River and Construction of Reservoir Complex Project	<i>Project Administration office</i>	<p>-Mr. G.Yondongombo, Project Manager of Shuren Hydro Power Project, Ministry of Energy</p> <p>-B.Enkhbaatar, Mining Infrastructure Investment support project,</p> <p>-Mr. P.Badamdorj, officer, Department of Land Management and Integrated Water Policy, MEGDT</p> <p>-Mr. Kh.Erdembileg, Programme officer for Culture and World Heritage, Mongolian National Commission for UNESCO</p>
	19:00	Dinner		<p>Mr. M.Khurelsukh, Vice Minister for MEGDT</p> <p>-Mr. D.Batbold, Director, River basin management division, MEGDT</p> <p>-Mr. P.Badamdorj, officer, Department of Land Management and Integrated Water Policy, MEGDT</p> <p>-Mrs. Kh. Maitsetseg, senior officer, Department of Foreign relationship, MEGDT</p> <p>-Mrs. Marina Riffard, hydrologist Tractebel Engineering, France</p> <p>- Mr. Kh.Erdembileg Programme officer for Culture and World Heritage Mongolian National Commission for UNESCO</p>
	07:30-08:30	Breakfast	Ulaanbaatar hotel	
	<b>Ulaanbaatar city – Darkhan city</b>			
<b>14/04 TUE</b>	09:00	Journey to Darkhan city	Darkhan city	Accompany experts:
	13:00-14:00	Lunch	Darkhan city	-Mr. G.Yondongombo, Project Manager of Shuren Hydro Power Project, Ministry of Energy
	14:00-16:00	Meeting with Representatives of local government and NGO	Darkhan city	-B.Enkhbaatar, Mining Infrastructure Investment support project,
	16:00-19:00	Journey to Tourism lounge		-Mr. P.Badamdorj, officer, Department of Land Management and Integrated Water Policy, MEGDT
	19:30-20:30	Dinner and overnight	Tourism lounge	-Mr. Kh.Erdembileg, Programme officer for Culture and World Heritage, Mongolian National Commission for UNESCO
	<b>Tourism lounge -Shuren HPP site</b>			
<b>15/10 WED</b>	8.00-8:30	Breakfast	Tsagaannuur Soum of Selenge Province,	Accompany experts:
	9.00-13.00	Journey to Shuren		-Mr. G.Yondongombo, Project Manager of Shuren Hydro Power Project, Ministry of Energy
	13:00-15:00	Site seeing and field lunch		

	15:00-19.00 19:00-20:00	Back journey Dinner Overnight stay	Night in Tourism Lounge	-Mr. P.Badamdorj, officer, Department of Land Management and Integrated Water Policy, MEGDT -Mr. Kh.Erdembileg, Programme officer for Culture and World Heritage, Mongolian National Commission for UNESCO, -Others
<b>16/04 THU</b>	<b>Egiin Gol Project visit</b>			
	08.00-09.00 09.00-13.00	Breakfast Visit of the Egiin Gol site Lunch in the field Visit (continuing) Discussion on the project Dinner and overnight	Tourism lounge	Accompany experts: -Mr. G.Yondongombo, Project Manager of Shuren Hydro Power Project, Ministry of Energy -Mr. P.Badamdorj, officer, Department of Land Management and Integrated Water Policy, MEGDT - Mrs. Marina Riffard, hydrologist Tractebel Engineering, France - Egiin Gol Project staff -Mr. Kh.Erdembileg, Programme officer for Culture and World Heritage, Mongolian National Commission for UNESCO
<b>17/04 FRI</b>	08.00 13.00 16.00 19.00	Return to Ulaan Bator Lunch at the Presidency Free afternoon Diner and overnight at the Presidency	Presidency	- Vice Minister of NEGDT and other officials from the Ministry - Officials from the Ministry of Energy - Mrs. Marina Riffard, hydrologist Tractebel Engineering, France - Egiin Gol Project director - Others
<b>18/04 SAT</b>	07.00 22.00	Departure for return flight Arrival Geneva airport	Chinggis khaan international airport	

**IUCN Reactive Monitoring Mission to Mongolia  
concerning the World Heritage property of Lake Baikal (754, Russian Federation)  
13 – 19 April 2015**

At its 38th session, the World Heritage Committee requested the State Party of Mongolia to invite an IUCN reactive monitoring mission to review the scope, scale and status of dam projects in Mongolia and to have a discussion early in the planning process about the potential impacts of these projects on Lake Baikal World Heritage Site in Russia (Decision **38 COM 7B.76**). The Mongolian authorities confirmed its invitation for the IUCN reactive monitoring in December 2014. The mission will be conducted by Hervé Lethier, representing IUCN.

In particular, the mission should undertake the following:

1. Assess the current status, scope and scale of the hydroelectric projects on the Selenge (Shuren project), Eg (Egiin Gol Hydropower project) and Orkhon (Orkhon-Gobi Hydropower project) Rivers and their potential impacts on the property's Outstanding Universal Value and integrity, including cumulative impacts;
2. Review the already completed pre-feasibility studies and the Terms of Reference developed for the preparation of the corresponding Environmental and Social Impact Assessments (ESIA) and assess the adequacy of the planning and approval process for these projects in terms of its consideration of the potential impacts on the property's OUV;
3. Discuss any potential future hydroelectric and other projects that might have negative impacts on the property;
4. In line with paragraph 173 of the Operational Guidelines, assess any other relevant conservation issues associated with any projects on the territory of Mongolia that may negatively impact on the Outstanding Universal Value of the property;

The mission should be assisted to conduct the necessary field visits to key locations. In order to enable preparation for the mission, the following items should be provided in English to the World Heritage Centre (copied to IUCN) as soon as possible, and preferably before the 12<sup>th</sup> of April:

- a) The completed pre-feasibility study (technical study report) for the Shuren Hydropower Plant project;
- b) Terms of reference developed for the preparation of the ESIA for the Shuren Hydropower Plant project;
- c) Terms of reference developed for the preparation of the feasibility study for the Orkhon-Gobi project;
- d) The feasibility study report and the EIA for the Egiin Gol project;

The mission should hold consultations with the Mongolian authorities at national, regional and local levels, including representatives of the Ministry of Environment, Green Development and Tourism and the Ministry of Energy, as well as representatives of organizations responsible for the preparation of the feasibility studies and any other relevant stakeholders (researchers, NGOs).

As requested by the World Heritage Committee in its Decision 38 COM 7B.76, the authorities of the Russian Federation should also be invited to participate in the meetings foreseen during the mission.

Based on the results of the above-mentioned assessments and discussions with the State Party representatives and stakeholders, the mission will develop recommendations to the Governments of Mongolia and Russian Federation and the World Heritage Committee with the objective of providing guidance to the States Parties on actions to be taken to ensure the long-term conservation of the property's Outstanding Universal Value. It should be noted that recommendations are made within the mission report (see below), and not while the mission is still on-going.

The mission will prepare a concise mission report on the findings and recommendations of this reactive monitoring mission no later than 6 weeks after the end of the field visit, following the standard format.



**MINISTRY OF ENVIRONMENT,  
GREEN DEVELOPMENT AND TOURISM  
OF MONGOLIA**

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Date 17. Apr. 2015  
Ref. 02/2227

DEAR MR. HERVE LETHIER,  
EXPERT OF INTERNATIONAL  
UNION FOR CONSERVATION OF  
NATURE, WORLD HERITAGE  
COMMITTEE

Subject: Providing explanatory information

The intention of this letter is to express our position and to provide some explanation regarding to your mission, of which objective is to assess the current status of hydroelectric projects in Mongolia, in accordance with the Decision 38 COM 7B.76 of 38<sup>th</sup> session of World Heritage Committee of UNESCO.

1. Decline in the water level of Lake Baikal

The position is that conditions within the Russian Federation, particularly hydropower plants of the Russian Federation using Lake Baikal as a water reservoir, are strongly affecting the water level of Lake Baikal, World Heritage Site, rather than the hydroelectric projects, planned to be constructed in the territory of the State Party of Mongolia.

On the Angara River, which is the only river draining Lake Baikal, there are four cascade hydropower plants – Irkutsk, Bratsk, Ust-Ilimsk and Boguchany – owned by "IrkutskEnergO" JSC, with major interest of private entity. The total installed capacity of the hydropower plants is 12000 MW and the annual energy production is 66000 GWh, which generates the annual income of 53.5 billion ruble or 1.3 billion US dollar using the cheapest electric rate available.

The Resolution 234 issued by the Government of the Russian Federation in 2001 established the acceptable maximum (at 457 m masl) and minimum (at 456 m masl) water levels of Lake Baikal. In order to comply with the resolution and not to reduce the water level of Lake Baikal below the acceptable minimum level, the Irkutsk Hydro Power Plant discharge should be at 700m<sup>3</sup>/s, but Water Resource Agency of Russia permitted to increase its discharge up to 1300m<sup>3</sup>/s, and all discharge was used by the aforementioned 4 Hydro Power Plants, owned by private company. Approximately, 220 million USD could have been generated from the discharge difference of 600 m<sup>3</sup>/s.

Even though there are not any hydropower plants and dams built on Mongolian rivers, the water level of Lake Baikal has dropped since August 2014, and currently it is lower by 13 cm. Meanwhile, the water usage by the Irkutsk hydropower plant has been exceeded 44.4% than the accepted level. In other words, economic interest was put ahead and the energy production is being continued rather than taking proper measurements to keep the water level of Lake Baikal at the stated level.

Furthermore, the Resolution 97 of the Government of The Russian Federation, dated 4<sup>th</sup> of February, 2015, did not set any water level, thus has permitted to further reduce the water level of Lake Baikal, and. Based on the aforementioned circumstances, it can be concluded that the evaluation and the estimation of Government of the Russian Federation and Water Resource Agency, Irkutsk hydroelectric power station's energy production activities and water discharge are predominantly affecting the water level of Lake Baikal (relevant 2 Resolutions and Statements are attached)

## 2. Definition of "basin", Results of study conducted by Tractebel Engineering

Russian side interprets word "basin" in much wider sense with a meaning of "drainage basin", and forcing this interpretation to the Mongolian side, although in law of Mongolia on Water there is no definition of "drainage basin". Instead, legal terminology of the "water basin" is defined with meaning "area covering catchment area of surface water, and water feed, dispersion zone of underground water resource" according to the clause 3.1.3 of Law of Mongolia on Water.

Pursuant to this law, by order of Minister of Environment and Tourism № 332, dated 2009, has been approved total 29 water basin of Mongolia. According to this order, there are two separate water basin, one of them water basin of Selenge with catchment area 30.9 thousand km<sup>2</sup>, another one is Khuvsgul-Eg water basin with catchment area 41 thousand km<sup>2</sup>.

Mongolia is taking these projects very seriously, particularly potential hydrological impacts on Lake Baikal, and has invited internationally well recognized "Tractebel Engineering" /GDF Suez/ company to conduct an assessment of hydrological impacts on water regime of the Selenge River and Lake Baikal during the normal operation of Egiin Gol hydropower plant. This study has been submitted to you.

According to this study, it is concluded that there is no hydrological impact on inflow to Lake Baikal at annual time-step under normal dam operation. A hydrologist who conducted this study will present the results during your visit. Based on the above-mentioned grounds, we think it is impossible to justify the predisposition of the Russian Federation, which states that hydropower projects planned to be developed in the Mongolian territory will negatively affect Lake Baikal.

## 3. Session of World Heritage Committee of UNESCO at Doha

Mongolia resolves trans boundary water issues on the Russian-Mongolian border in compliance with international principles and standards, and according to the agreement between the governments of Mongolia and the Russian Federation on protection and usage of trans boundary water, enacted by Mongolian Parliament in 1995. A working group and a committee, established by the both parties according the agreement, regularly convene and resolve issues by negotiation and agreement. Despite this agreement, we are saddened that the decision was made without considering the standpoint of Mongolia, who acted as an observer during the session. Moreover, please kindly consider the fact that these two neighboring countries have twenty years of experience in resolving trans boundary water issues.

Back in 1965 when the Soviet Union was present, vast research was conducted, and recommendations to establish 28 hydropower plants throughout Mongolian territory were made. (This report can be translated and delivered, if required). The opposing

position of the Russian Federation is very surprising when Mongolia is no longer under the influence of the Soviet Union after the collapse of the socialist system. What kind of concept is it when hydropower plants can be constructed when Mongolia is under the influence, and cannot be constructed when Mongolia is out of the influence? Today Mongolia is supplying 20 percent of total energy consumption by importing energy and the price of the energy increases by 15 percent annually.

#### 4. Necessity of hydropower plant project in Mongolia

In recent 10 years, a total of 511 rivers and springs have dried up at national scale, and thus Mongolia becomes one of the countries with the highest desertification rate. In addition, fresh water shortage has been predicted to occur in near future although Mongolian population is only three millions. There is no water reservoir in Mongolia, not counting water reservoirs of Durgun (12 MW) and Taishir (11 MW) hydropower plants, and it becomes essential to construct water reservoir that is common in many countries.

Air pollution of Ulaanbaatar city, where 1/3 of total population of Mongolia resides, reaches at disastrous level. Therefore, renewable energy source is vital to Mongolia.

Constructing water reservoir will change microclimate by increasing humidity, thus decreasing magnitude and frequency of dust storm that reaches China, Korea and Japan. The desertification is limited not only within Mongolia; it becomes regional issue, which should be concerned.

As a member of UN, Mongolia is obliged to fulfill its commitments to the international organization, thus implementing many programs and policies to decrease carbon dioxide emission, which is main factor of climate change. Mongolia obtains 96% of total energy produced internally from coal power plants. In this process, Mongolia annually uses up 6 million ton coal on average, and produces 8.4 million ton carbon dioxide emission which makes Mongolia is the one of countries that contributes greatly to carbon dioxide emission.

At high-level meeting "Climate Summit 2014" of 69th Session of the UN General Assembly, convened in September of 2014 in New York, a number of major initiatives, coalitions and commitments on reducing greenhouse gas emission were announced or launched. For instance, the European Union commits to reduce greenhouse emission by 40% by 2030.

The President of Mongolia has stated that Mongolia supports the appeals of UN concerning the reduction of greenhouse emission. Mongolia supports production of renewable energy, and constructs wind power plants although it is economically not profitable (Salkhit wind power plant with capacity of 50 MW). Wind and solar energy sources are economically not profitable because they are not reliable energy sources due to geographical location and climate features of Mongolia.

Hydropower is the only source, which can realistically reduce greenhouse emission. Therefore, the planned hydropower projects such as Shuren, Egiin Gol and Orkhon-Govi in Mongolia are the most feasible actions towards mitigating global climate change.

If World Heritage Committee opposes the development of hydropower plant in Mongolia, we may reconsider and negotiate the hydropower projects when only World Heritage Committee pleads with United Nations Framework Convention on Climate Change to make a statement of "only Mongolia is allowed to have coal power plant."

We believe that the World Heritage Committee would support the effort of the Mongolian Government to increase the production of renewable energy up to 20 percent within the frames of the United Nation's programs.

#### 5. Monitoring mission of the expert

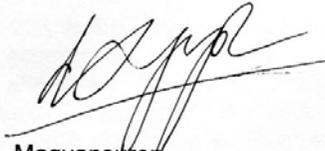
The feasibility study and environmental impact assessment of Egiin Goliin Hydropower project have been included to be reviewed in the Terms of Reference while Egiin Goliin Hydropower project was not introduced at all in the Decision 38 COM 7B.76 of Doha. Hence, our party is now of the opinion that we have no obligation to disclose the required.

Moreover, it is noted that expert activities will not be independent if the authorities of the Russian Federation are invited to participate in the meetings foreseen during the mission.

We are subject to the valid laws in the territory of Mongolia particularly "Regulation of public and private interests in public services" and "Prevent conflict of interest", and obligated to avoid having any conflict of interest. We expect that the principle of preventing conflict of interest is universal in all countries around world, and we consider the presence of authority of plaintiff at the mission as a violation of the abovementioned law, an attempt to influence expert of which responsibility is to make independent conclusion, and a step towards contradicting the results of expert's work.

In conclusion, Mongolia closely collaborates with international organizations such as UN, UNESCO and World Heritage Committee, respects their decisions and recommendations, and strives towards fulfilling its obligations. Thus, our party is expressing our will to cooperate with you and provide you all the relevant documents and information, as we believe you are an expert who is able to make independent judgments.

Sincerely,



**KHURELSUKH. Magvansuren**  
**VICE MINISTRY OF NATURE, ENVIRONMENT,**  
**GREEN DEVELOPMENT AND TOURISM**

A copy is to mr. President of world heritage centre of unesco kishore roa