REPORT OF THE IFC PERFORMANCE STANDARDS TASK FORCE AT ITS 1ST MEETING

20 MAY 2016

GLAND, SWITZERLAND

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CONTENTS

ACRONYMS

BAP	Biodiversity Action Plan
BBOP	Business & Biodiversity Offset Programme
CHA	Critical Habitat Assessment
CIA	Cumulative Impact Assessment
CMP	Conservation Management Plan
Company	Sakhalin Energy Investment Company Ltd.
CR	Critically Endangered
CTA	Common Terms Agreement
DMU	Discrete Management Unit
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EN	Endangered
ESIA	Environment and Social Impact Assessment
ESMS	Environmental and Social Management System
ESR	Ecosystem Services Review
GN	Guidance Note
GPH	IFC Good Practice Handbook on Cumulative Impacts
HSESAP	Health, Safety and Social Action Plan
IBA	Important Bird Area
IFC	International Finance Corporation
IMMA	Important Marine Mammal Area
IUCN	International Union for Conservation of Nature
IWC	International Whaling Commission
KBA	Key Biodiversity Areas
LNG	Liquefied Natural Gas
MMPP	Marine Mammal Protection Plan
Panel	Western Gray Whale Advisory Panel
PS1	IFC Performance Standard 1 on Assessment and Management of Environmental and Social Risks and Impacts (2012)
PS6	IFC Performance Standard 6 on Biodiversity Conservation and Sustainable Management of Living Natural Resources (2012)
PSTF	IFC Performance Standards Task Force
Sakhalin Energy	Sakhalin Energy Investment Company Ltd.
TOR	Terms of Reference
VEC	Valued Ecosystem Component
WGW	Western Gray Whale
WGWAP	Western Gray Whale Advisory Panel

1 INTRODUCTORY ITEMS

1.1 Introductions and logistics

The 1st meeting of the International Finance Corporation (IFC) Performance Standards Task Force (hereafter PSTF) of the Western Gray Whale Advisory Panel (WGWAP or Panel) was held at IUCN Headquarters, Gland, Switzerland, 20 May 2016 under the co-chairmanship of Greg Donovan and Randall Reeves. The list of participants is given as Annex A.

The purposes of this meeting were to: (1) ensure that WGWAP members and other participants have a basic understanding of how concepts, definitions, requirements etc. of the IFC 2012 Performance Standard (PS) 1 "Assessment and Management of Environmental and Social Risks and Impacts" (PS1) and Performance Standard 6 "Biodiversity Conservation and Sustainable Management of Living Natural Resources" (PS6) apply to Sakhalin-2 and western gray whales; (2) brief participants on efforts to date by Sakhalin Energy to comply with PS1 and PS6 particularly in relation to gray whales; (3) align all participants' understanding of expectations concerning Panel engagement and provision of advice on this subject; (4) make progress towards agreement on the nature and meaning of some concepts; (5) agree on a workplan and schedule for delivery of relevant Panel advice through 2016. It was agreed that the actions recommended as follow-up to the meeting would be pursued by relevant parties without awaiting a Panel report.

1.2 Adoption of agenda

The draft agenda was adopted as final and is given as Annex B.

1.3 Available documents/materials

The list of documents and presentations is given as Annex C.

2 PRESENTATIONS: SETTING THE SCENE

2.1 International Finance Corporation (IFC) Performance Standards

2.1.1 Presentation

Jon Hancox and Peter Burston provided an introductory presentation, summarized briefly as follows:

At the time of the original Lender due diligence for the Sakhalin-2Phase 2 project, the applicable standards were the 1998 World Bank safeguard policies. In 2013, Sakhalin Energy (also called the Company) voluntarily agreed to adopt the more recent standards, namely the IFC Performance Standards 2012 on Environmental and Social Sustainability.

The Company's environmental and social commitments to the Phase 2 Lenders are embodied within the loan documentation (Common Terms Agreement (CTA)). Specifically, the CTA covenants the Company to comply with its Health, Safety, Environment and Social Action Plan (HSESAP; PSTF-1/INF.8), which in turn includes the following commitments of particular relevance to WGWAP:

- International Requirements for Managing Risk document of the HSESAP (PSTF-1/INF.9) adopts IFC PS1;
- International Requirements for Biodiversity document of the HSESAP (PSTF-1/INF.10) adopts a range of international biodiversity standards, including IFC PS6 (2012);
- Marine Mammal Specification document of the HSESAP (PSTF-1/INF.11)) includes requirements to support a western gray whale advisory body.

The HSESAP is publicly available on the Sakhalin Energy website.

There are eight Performance Standards, as follows:

- Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts;
- Performance Standard 2: Labor and Working Conditions;
- Performance Standard 3: Resource Efficiency and Pollution Prevention;
- Performance Standard 4: Community Health, Safety, and Security;
- Performance Standard 5: Land Acquisition and Involuntary Resettlement;
- Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources;
- Performance Standard 7: Indigenous Peoples;
- Performance Standard 8: Cultural Heritage.

A Guidance Note is provided for each IFC Performance Standard in order to aid interpretation.

PS6 (PSTF-1/INF.2&3; discussed later) and PS1 (PSTF-1/INF.4&5) are of greatest relevance for WGWAP. PS1 is the overarching standard and its objectives include the following, of which the first three are of particular relevance here:

- To identify and evaluate environmental and social risks and impacts of the project;
- To adopt a mitigation hierarchy to anticipate and avoid, or where avoidance is not possible, minimize, and, where residual impacts remain, compensate/offset for risks and impacts to workers, 'affected communities', and the environment;
- To promote improved environmental and social performance of clients through the effective use of management systems;
- To ensure that grievances from affected communities and external communications from other stakeholders are responded to and managed appropriately;
- To promote and provide means for adequate engagement with affected communities throughout the project cycle on issues that could affect them and to ensure that relevant environmental and social information is disclosed and disseminated.

In terms of the Environmental Impact Assessment (EIA) requirements under PS1, the following elements are typically additional to those of the country where the action is taking place (and this is true for Russia):

- Need to consider direct and indirect areas of influence;
- Need to consider 'associated facilities';
- Need to consider social impacts;
- Need to assess of ecosystem services;[1]
- Need to assess cumulative impacts;[2]

[1] Note: ecosystem services are benefits ('services') provided to humans by the natural environment

[2] See also IFC Good Practice Handbook on Cumulative Impact Assessment and Management: Guidance for the Private Sector in Emerging Markets; PSTF-1/INF.6

- Need to assess biodiversity in line with PS6.

Under Sakhalin Energy's CTA conditions, EIAs are required for all new activities and project expansions.

In addition to the Performance Standards, the IFC has produced Environment, Health and Safety (EHS) Guidelines. This is a suite of topic- and sector-specific guidelines that define good practice for EHS management. The EHS Guidelines relate mainly to PS3 but there are elements relevant to PS1 and PS6. In this context, the EHS Guidelines for Offshore Oil & Gas Development (PSTF-1/INF.7) are of particular relevance for WGWAP as they include, for example, high-level requirements related to seismic surveys, oil spill response, etc.

A primary element of PS6 is the requirement to classify habitats within the 'project area of influence', as either modified or natural, as well as to determine whether such habitats represent critical habitat.

For natural habitats, PS6 requires application of the mitigation hierarchy (i.e. Avoid > Mitigate > Restore > Offset) to deliver no net loss of biodiversity, where feasible. For critical habitat, PS6 requires achievement of 'net gains' in the biodiversity values that trigger the critical habitat designation.

PS6 also requires the project proponent to:

- Promote and enhance protected or internationally recognised areas;
- Prevent and control alien invasive species;
- Manage impacts on ecosystem services.

In February 2016, Ramboll Environ developed and circulated a white paper on IFC PS6 implementation (PSTF-1/1) meant to provide Sakhalin Energy with guidance on its application and to improve Panel members' understanding of various elements of the standard.

The White Paper concludes with the following recommendations for action by Sakhalin Energy:

(1) Complete a project-wide Critical Habitat Assessment (CHA);

(2) Identify natural habitats in the [Sakhalin Energy's Sakhalin 2, Phase 2] project area;

(3) Define and agree ongoing and future project activities to be included in an assessment under PS6;

(4) Quantify losses of natural and critical habitat (due to ongoing and future Project activities) using appropriate metrics;

(5) Review mitigation plans with regard to mitigation hierarchy;

(6) Assess internationally and nationally recognised areas

(7) Complete an Ecosystem Services Review (ESR);

(8) Develop an offset strategy;

(9) Update the project's Biodiversity Action Plan (BAP).

The IFC Performance Standards place the onus on the project proponent to undertake assessments and manage operations in compliance with the standards. Sakhalin Energy therefore needs to develop the CHA, BAP etc., defined in the foregoing White Paper action list. It was emphasized that EIAs are required for all new activities and project expansions, and therefore in the case of Sakhalin Energy, compliance with the IFC Performance Standards is viewed in a forward-looking perspective and not in terms of decisions taken, activities conducted, and infrastructure developed in previous years. This application to forward-looking activities reflects the fact that Sakhalin Energy adopted the standard voluntarily, sometime after initiation of the Project. The IFC Performance Standards have been written primarily with new projects that are seeking finance prior to construction in mind. Therefore, retrofitting the standards to existing projects such as Sakhalin-2 Phase 2 requires some additional interpretation.

2.1.2 Discussion

A number of points were clarified during the discussions following the presentation.

Hancox explained that the current 'due diligence' process for project lenders began in 2001 with World Bank Safeguard Policies, which were in turn based on the 1998 World Bank Standards. These include the World Bank Operating Policies OP4.01 and 4.04 that set standards for environmental impact assessment and for projects, such as Sakhalin Energy's, in natural/critical habitats. The policies also establish for certain projects, requirements for receiving independent advice on environmental risk reduction and mitigation. This was a key driver in the formation of the Independent Scientific Review Panel convened by IUCN in 2004[3], a precursor of WGWAP. The Equator Principles, formally launched in 2003 and drawing on the IFC's environmental and social policy frameworks that existed at the time, provide a 'risk management framework, adopted by financial institutions, for determining, assessing and managing environmental and social risk in projects.[4]' It was emphasized that one common criterion used to define critical habitat is the presence of 'high biodiversity.'

When asked how the phrase 'where feasible' should be interpreted within the context of 'no net loss of natural habitat' (PS6), Burston explained that it presupposes that alternatives have been considered and found not to be financially or practically viable. Ultimately it is up to the Lenders to agree on the interpretation of feasibility.

When asked to clarify what the 'mitigation hierarchy' involves, Burston noted that this concept is widely applied and well-established, e.g. in the (draft) IUCN policy on biodiversity offsets (PSTF-1/INF.12). It is built into most offset principles. The hierarchy always begins with the ideal of situations where negative impacts can be avoided. Unfortunately, complete *avoidance* is often difficult or impossible. It therefore becomes necessary to design and implement measures to limit and reduce the impacts (*mitigation*). After the construction or other disturbing activity comes to an end, there is a requirement for *restoration*. Normally, even despite mitigation and after restoration, there is still a residual impact, which leads to a demand for some kind of *compensation*.

Hancox was asked what happens if Ramboll Environ determines that in its judgement, a company is not compliant with regard to one or more aspects of the IFC Performance Standards. He noted that it is not uncommon for compliance issues, of varying significance, to be identified on projects seeking financing. When an impasse is reached on a particular matter, and a company has gone as far as it is prepared to go towards achieving compliance, the Lenders' consultant (in the case of Sakhalin Energy, Ramboll Environ) is expected to present its opinion on compliance, including commentary on the significance of any residual compliance issue, to the Lenders, but it is ultimately the decision of each Lender to determine whether any such derogations are acceptable (derogations must be fully justified and explained). In this respect, the process is similar to the WGWAP *modus operandi* whereby the contracting company (Sakhalin Energy) is obliged by the Terms of Reference to either implement all 'reasonable' recommendations from the Panel, or provide a clear explain of why it is unable or unwilling to do so.

Another procedural clarification provided by Hancox was that the responsibility for meeting the IFC Performance Standards rests with the company (Sakhalin Energy). The consultant to the Lenders reviews the

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[3] See ISRP report, Impacts of Sakhalin II, Phase 2 on Western North Pacific Gray Whales and Related Biodiversity (2005): http://www.iucn.org/sites/dev/files/isrp_report_with_covers_high_res.pdf

[4] http://www.equator-principles.com/

company's approaches to meeting the standards and then advises the Lenders on the level of compliance, but the individual Lenders have the ultimate responsibility for determining compliance. Hancox added that in his experience, the nature of the IFC Performance Standards allows some degree of interpretation of the standards by different parties, although guidance notes, case studies and experience sharing are all used within the industry to help build and maintain consistency.

Regarding the question of whether companies are required to adopt the IFC Performance Standards, Hancox explained that most of the major international lending institutions have adopted the relevant international lender standards (e.g. for commercial banks via adoption of the Equator Principles). Sakhalin Energy chose to adopt the 2012 IFC Performance Standards voluntarily but did so only in regard to its ongoing and future activities; adoption was not intended to apply retroactively to the Sakhalin-2 project. However, there are, according to Hancox, numerous 'grey areas' in distinguishing between 'ongoing' and 'historical' aspects of the project in this regard and it is incumbent on the Company to develop a clear interpretation of the distinction for review by Ramboll Environ and ultimately the Lenders.

Lock reminded participants that Ramboll Environ is an independent environmental consultant with a duty of care to the Lenders, not to the Company. In this role, Ramboll Environ can give the Lenders an idea of what to expect from the Company as it seeks to interpret and comply with the IFC Performance Standards. Hancox stressed Ramboll Environ's position of independence from the Company, and that Ramboll Environ is careful not to give Sakhalin Energy detailed advice on how it should go about meeting its IFC commitments.

Finally, Asante-Owusu observed that in her experience, a great deal of 'pragmatism' is involved in most applications of the mitigation hierarchy and as a result companies tend to be given considerable latitude in how they choose to interpret and implement the Net Gain or No Net Loss requirements in Standards and regulations. There is no clearly definitive method to reaching a No Net Loss or Net Gain for biodiversity within a given operation; rather, there is considerable reliance on case studies and adaptive approaches. It should be noted that while different interpretations do occur, the IFC has produced a 70-page guidance note on the application of PS6 (PSTF-1/INF.3) which is intended to aid more uniform application between projects.

2.2 Sakhalin Energy plans for compliance with IFC Performance Standards

2.2.1 Update on Critical Habitat Assessment with a brief description of the methodology

Lock introduced 'Update on Critical Habitat Assessment with a Brief Description of the Methodology' (PSTF-1/2). She began by explaining that Sakhalin Energy's compliance with PS1 is being developed and undertaken primarily through its Environmental and Social Management System (ESMS) / Health, Safety, Environment and Social Action Plan (HSESAP) process. She stressed that the Company was well aware of PS6 requirements, including the need for an appropriate mitigation strategy and a strategy for achieving net gains, both of which it planned to frame within the Company's BAP. For areas of critical habitat, she noted that the Company needed to carry out an assessment of how its activities may have impacts on such habitat. It must then (a) demonstrate that it has examined all alternatives to any activities judged to be potentially harmful, if there are no feasible alternatives, show how the risks to biodiversity (in this case gray whales) are being mitigated and (c) describe any net gains from Company activities. Moreover, any cumulative impacts of Company activities must be described and mitigated.

Lock acknowledged the usefulness of the Ramboll Environ White Paper (PSFT-1/1) to the Company's compliance planning efforts to date. She suggested the following set of actions needed for the Company to comply with PS6:

(1) Screen existing biological data to identify potential triggers of critical habitat and complete a project-wide CHA;

(2) Identify natural habitats in the project's area of influence;

(3) Define and agree ongoing and future project activities to be included in an assessment under PS6;

(4) Quantify losses of natural and critical habitat resulting from ongoing and future project activities, using appropriate metrics (this would only quantify losses that are additional to the existing baseline conditions, rather than the pre-construction baseline);

(5) Review mitigation plans with regard to mitigation hierarchy;

(6) Assess compliance with paragraph 20 of IFC PS6 in relation to internationally and nationally recognised areas;

(7) Complete an ESR for the project to identify Priority 1 and 2 Ecosystem Services

(8) Develop an offset strategy to meet no net loss / net gains in natural and critical habitats

(9) Update Project BAP to align with IFC PS6 requirements and to incorporate additional measures arising from suggested actions 1-7 above.

Lock shared some details of the Company's Central HSE Functional Plan which calls for the majority of the data review and analysis to be completed in 2016.

Recognizing the advantages of completing a Project-wide CHA (i.e. effectively island-wide screening of critical and natural habitats) over individual assessments for each additional Project activity or expansion, in terms of avoiding duplication of effort, achieving consistency of approach, and taking full advantage of the considerable data and information already compiled on the island's flora, fauna, and environment, the Company intends to complete a CHA for the whole Sakhalin II Project. This is expected to be a key document to inform baseline survey requirements for any future expansions and to facilitate effective BAPs. For practical purposes, the project-wide CHA is being prepared sequentially by geographical zone, commencing with the marine offshore environment, followed by Aniva Bay, and then terrestrial zones.

2.2.2 Critical Habitat Assessment of Piltun-Astokh and Lunskoye Areas: Approach and methods

Donaghy summarised progress to date on Sakhalin Energy's initial work to identify natural and critical habitats as well as discrete management units (DMUs) as defined in PS6 and its Guidance Notes. This effort is being led by the Biodiversity Manager, Natalya Tsarenko, who unfortunately was not able to attend the meeting.

Donaghy began by reminding participants of the following:

- According to IFC PS6, natural habitats are areas composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's primary ecological functions and species composition;
- Critical habitats are defined in PS6 as areas with high biodiversity value. This includes areas that meet one or more of following criteria:
    - Criterion 1: Critically Endangered and/or Endangered species (with reference to either the IUCN Red List of Threatened Species™, the Russian Federation's Red Book, or Sakhalin Oblast's Red Book);
    - Criterion 2: endemic and/or restricted-range species;
    - Criterion 3: migratory and/or congregatory species;
    - Criterion 4: highly threatened and/or unique ecosystems;
    - Criterion 5: key evolutionary processes;

- Consideration of critical habitat must extend beyond the Project's footprint and relatively broad landscape and seascape units might qualify;
- The scale of a critical habitat assessment depends on the biodiversity attributes particular to the habitat or species in question and the ecological processes required to maintain those attributes;
- For Criteria 1-3, determination of critical habitat should be based on a DMU which is an area that has a definable boundary (ecological or political) within which the biological communities have more in common with each other than they do with those outside that boundary (PS6 Guidance Note paragraph GN65).

The Company has preliminarily selected the marine area from the northern border of Piltun Lagoon to the southern border of Lunsky Lagoon for a critical habitat assessment. The Company has suggested that this area be divided into two DMU zones: a Coastal Zone DMU from shore seaward to a depth of 20 m and a Shelf Zone DMU between the 20 m and 200 m depth contours. Donaghy emphasized that the Coastal Zone DMU is where considerable influence may be (directly and indirectly) exerted by terrestrial processes.

Five species of marine mammals have been identified by the Company as potentially qualifying for critical habitat consideration because of their listing status: gray whale, bowhead whale, North Pacific right whale, fin whale, and Steller sea lion. Western gray whales are IUCN red-listed as a Critically Endangered subpopulation and this subpopulation is Tier 1 (under *Criterion 1*) based on the fact that its habitat off Sakhalin sustains > 10% of the total individuals in the subpopulation (see PS6 Guidance Note paragraphs GN74 & 75).

Under *Criterion 3*, gray whales clearly fit the definitions of both migratory (paragraph GN85) and congregatory (paragraph GN86). The Sakhalin feeding habitat is Tier 1 for the migratory and congregatory western subpopulation (paragraph GN88: "… known to sustain, on a cyclical or otherwise regular basis, ≥ 95 percent of the global population of a migratory or congregatory species at any point of the species' life-cycle where that habitat could be considered a discrete management unit for that species") and Tier 2 for the gray whale species as a whole (paragraph GN89: "known to sustain, on a cyclical or otherwise regular basis, ≥ 1 percent but < 95 percent of the global population of a migratory or congregatory species at any point of the species' life-cycle and where that habitat could be considered a discrete management unit for that species, where adequate data are available and/or based on expert judgment").

Finally, Sakhalin Energy has tentatively judged that there are critical habitats in its Project area based on *Criterion 4*. Donaghy described the Piltun and Offshore areas as "the main gray whale feeding areas on the shelf of Sakhalin," with the population density and biomass of benthic prey "comparable to and in many cases exceed[ing]" what has been found in other highly productive areas of the North Pacific (see paragraphs GN90 to 93).

Lock stated that the Company regards the CHA as an important activity and, as such, it will share drafts with key stakeholders (in relation to the marine environment CHA aspects that are relevant to gray whales) and provide adequate time for them to comment and provide input.

2.2.3 Discussion

Sakhalin Energy emphasized that its existing BAP has been in place for a considerable time and is actively used to guide the Company's efforts to mitigate and manage impacts on biodiversity. The BAP identifies biodiversity priorities and determines required mitigation actions. A newly revised BAP is planned to be produced in 2017.

There was brief mention of the planned review by WGWAP of Sakhalin Energy's revised, updated Marine Mammal Protection Plan (MMPP), and it was agreed that this would be organized by the Company through IUCN, to begin in several months' time.

Panel members drew attention to the proposed northern boundary of the Company's DMUs, in particular the northern boundary which was set at the latitude of the northern end of Piltun Lagoon. It was noted that gray whales regularly use habitat to the north of that latitude and therefore the DMUs as proposed would not capture the full extent of the near-shore (Piltun) feeding area. Sakhalin Energy acknowledged this, but indicated that it considered the boundary to reflect the zone of influence of the Company's assets. Burston advised that the CHA should be independent of impacts and considerable flexibility can be applied in deciding how to delimit the geographical scope. The CHA should encompass at least the entire area of influence of the Company's activities. It may or may not be defined by a political boundary or a 'sensible ecological boundary'. Burston stated that in his experience from studying other DMUs for species with similar requirements, it would be preferable to use an ecological boundary relevant to the species being assessed, although acknowledging that sometimes a political boundary can suffice where the ecology is not well understood. Lock accepted this advice from Burston and the Panel and **agreed** to extend the CHA boundary northward.

Weller asked whether CHAs have a 'shelf life' and are subject to regular or periodic review and updating. This is especially relevant for a long-term project such as Sakhalin-2 (with its 40-50 year lifespan) given the unforeseen impacts of climate change and the general trend of increasing urbanization of coastal environments worldwide. Burston and Hancox stated that there is no specific requirement in the IFC Performance Standards concerning review and revision of CHAs. However, as they and Sakhalin Energy explained, the normal, ongoing revision process applied to the BAP (intended to be annual and indeed individual programs are currently reviewed annually; required at intervals of no longer than five years according to Lock), allows priorities to be reassigned and mitigation actions adjusted at any time. If monitoring indicates that a wild population has changed markedly or gone above or below a threshold, or if significant degradation of the habitat becomes evident (e.g. because of climate change), this can prompt a BAP update.

Burston added that the requirement for the company to deliver a net gain remains the same.

3 CONSIDERATION OF SPECIFIC DEFINITIONS, CRITERIA, ETC.

For this part of the agenda, Ramboll Environ provided an initial presentation of each concept, which was usually followed by a discussion.

3.1 Forward-looking application of IFC PS6

3.1.1 Presentation

As mentioned earlier, Sakhalin Energy voluntarily adopted the 2012 IFC Performance Standards and in doing so indicated its intention to apply the standards in a 'forward-looking' manner. Therefore, the IFC Performance Standards will not be applied retrospectively to the Project's past activities but will be applied to future developments such as:

- Project expansions (as defined under the HSESAP);
- Intrusive unplanned maintenance/repair activities;
- Seismic surveys;
- Decommissioning of facilities.

Application of the IFC Performance Standards to ongoing routine activities also needs to be considered.

Difficulties can be expected when trying to disentangle ‘historical’ (i.e. backward-looking) impacts such as those related to disturbance from platform construction, pipeline installation and the existing physical presence of project infrastructure. As the adoption of PS6 was voluntary, it seems reasonable that in the first instance Sakhalin Energy defines its approach to ongoing activities and that this is then reviewed by Ramboll Environ, Lenders and WGWAP.

3.1.2 Discussion

The Company has set 2016 as the baseline for application of IFC Performance Standards for its activities, but indicated that it remains open to the possibility of using an earlier baseline. Inert installations such as pipelines are assumed to have little or no continuing impact, but there is potential for ongoing impacts from the platforms and the Liquefied Natural Gas (LNG) plant. The current background or ambient conditions implicitly include the noise from platform operations, for example, and this needs to be taken into account. Future activities such as seismic surveys, including the associated vessel noise, obviously need to be subject to assessment against the IFC Performance Standards.

It was noted that the increase in abundance of Sakhalin gray whales over the past decade-plus could mean that it is in the Company’s interest to set the baseline earlier. However, it is unlikely that a credible argument could be made for the increase being due to Sakhalin Energy’s efforts. Even if the baseline abundance has been increasing, there is still a need to demonstrate a net gain (see later). Several participants reiterated that there is no way of knowing what the rate of increase might have been if there were no oil and gas development activity on the Sakhalin shelf during the past 20 or so years. Given that, it could be argued that 2000 should be considered the baseline year and the trend in abundance since that time might be used as a baseline index.

Ramboll Environ clarified that it can be acceptable to use different baselines for different species, as long as the reasoning for doing so is clearly explained.

The Company was encouraged to develop and explain in detail its own position on how to define the baseline, bearing in mind that if it were set as the present and no account was taken of the whales’ previous exposure to industrial noise at Sakhalin, this could impair any ability to assess cumulative impacts.

3.2 Process of compliance

The purpose of raising the topic of compliance again here was to clarify whether the Panel can help Sakhalin Energy to define and develop the whale-related aspects of its CHA, BAP, offset strategy, Environment and Social Impact Assessments (ESIAs) etc. without compromising its independence.

The Panel’s role with regard to Sakhalin Energy is primarily to provide advice on the Company’s plans and activities. Hereafter, it is expected by the Company that much of that advice will be set in the context of compliance with IFC Performance Standards.

The Company has received advice over the years and used this in preparing an updated MMPP, which is being prepared for review. The process by which the Panel gives advice is more formal and independent if it is given in the form of responses to documents produced by the Company, e.g. concerning vessel speeds, noise exposure limits, etc.

3.3 Natural and critical habitat

3.3.1 Presentation

The PS6 criteria for defining critical habitat and the tiers within those criteria are listed and discussed above (Item 2.2). A habitat needs to meet only one of the five Criteria to qualify as critical. In looking specifically at Sakhalin gray whales, the following preliminary analysis was provided:

- Criterion 1: Presence of Critically Endangered (CR) and Endangered (EN) species. The number of individuals in the Sakhalin subpopulation ranges from 150-200. Under Tier 1 it qualifies as containing ≥ 10% of the world population of the species (i.e. in this instance the western subpopulation as recognized by IUCN and the International Whaling Commission).'subpopulation' according to Red List terminology). Considered as a distinct population (or 'subpopulation'), 100% of the individuals use this habitat and their occupation of this habitat is 'regular occurrence'. Sakhalin Energy indicated its intention to use Criterion 1 even if the Sakhalin subpopulation is down-listed in the Red List from CR to EN;
- Criterion 2: Endemic and/or restricted-range species. Gray whales are endemic to the North Pacific Ocean and adjacent seas, but not to Sakhalin waters. In fact, the total range of the Sakhalin subpopulation is much larger than just the Sakhalin region and it therefore is not endemic to Sakhalin. Neither the species nor the Sakhalin subpopulation is range-restricted;
- Criterion 3: Migratory and/or congregatory species. Gray whales in general, and the Sakhalin subpopulation as well, qualify as both migratory and congregatory. Their lengthy migration is well documented, and they congregate in the summer and autumn feeding areas off Sakhalin;
- Criterion 4: Highly threatened and/or unique ecosystems. A substantial body of literature can be used to argue that the Sakhalin feeding areas are part of an ecosystem uniquely suited to gray whale foraging and that this ecosystem is highly threatened by ongoing industrialization and urbanization;
- Criterion 5: Key evolutionary processes. Not applicable.

Burston drew attention to IUCN's work on classifying threatened habitats[5], which uses procedures broadly similar to those of the Red List.

3.3.2 Discussion

It was generally agreed that Sakhalin Energy has what is needed to proceed with development of this component of its compliance strategy.

3.4 Discrete management units

3.4.1 Presentation

DMUs were described under Item 2.2. The Ramboll Environ team pointed out that the size and number of DMUs can affect the application of percentage (tier) thresholds. For example, in some instances larger areas are more likely to meet the thresholds. Analyses are normally expected to be carried out at the landscape or seascape level rather than the project level.

3.4.2 Discussion

The Company was asked to clarify its reason(s) for proposing two DMUs – Coastal Zone and Shelf Zone (see Item 2.2). It was suggested that the entire area where gray whales congregate could be considered a single DMU (assuming that only gray whales are the focal concern). It was stressed that, following PS6 Guidance Note paragraph GN 65, critical habitat should be defined as extending beyond the noise footprint of the seismic surveys.

Critical habitat (as defined by PS6) is being recognized to exist within the operating theatres of many more projects than had been expected. The US Overseas Private Investment Corporation (OPIC)[6] has a stated

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[5] See IUCN Red List of Ecosystems https://www.iucn.org/resources/conservation-tools/iucn-red-list-ecosystems and PSTF-1/INF.13 & 14

[6] https://www.opic.gov

policy that its clients cannot operate where there is critical habitat. Participants were reminded that the final arbiters of PS compliance are the project Lenders.

Hancox pointed out that by accepting the Sakhalin gray whale population's status as Critically Endangered in the IUCN Red List of Threatened Species™ and as Endangered in the Russian Federation's Red Book, Sakhalin Energy has simplified its task of classifying habitat. However, for other marine mammal species that do not have the same listing status and about which less is known concerning their regional occurrence, abundance, habitat characteristics etc., the tasks of classifying habitat and defining DMUs will be considerably more challenging.

3.5 Internationally and nationally recognized areas

3.5.1 Presentation

With reference to internationally and nationally recognised areas, paragraph 20 of PS6 specifies that projects must:

- Demonstrate that the proposed development in such areas is legally permitted;
- Act in a manner consistent with any government-recognized management plans for such areas;
- Consult protected area sponsors and managers, affected communities, indigenous peoples and other stakeholders on the proposed project, as appropriate;
- Implement additional programs, as appropriate, to promote and enhance the conservation aims and effective management of the areas.

Internationally and nationally recognised areas for Sakhalin can include (this is not intended as a comprehensive list):

- Important Bird Areas (IBAs);
- Marine IBAs;
- Russian Nature Monuments.

Burston pointed out that not all internationally recognized areas (e.g. IBAs and Key Biodiversity Areas (KBAs)) are protected at the national level. He also noted that there are candidate Marine IBAs for kittiwakes and little terns off NE Sakhalin and that the NE Sakhalin lagoon systems are recognized as IBAs. Lunsky Lagoon, south of Piltun, is officially recognized by the Russian Federation as a Nature Monument. Burston suggested that it would be useful for Sakhalin Energy to produce a systematic list of these designated sites and candidate sites in the region, including those with limited or no direct relevance to gray whales. He further advised that Marine Protected Areas have been discussed in various forums as suitable offset mechanisms.

3.5.2 Discussion

The KBA identification and designation process, being led by IUCN, is expected to have global status similar to that accorded to the well-established and long-recognized IBAs. It was pointed out that another parallel and complementary process is underway to identify and designate Important Marine Mammal Areas (IMMAs)[7]. Parts of north-eastern Sakhalin are likely to be candidate areas for consideration for both KBA and IMMA designation and therefore Sakhalin Energy is advised to follow both processes closely.

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[7] http://icmmpa.org/iucn-task-force/

http://www.iucn-csg.org/index.php/2013/11/13/announcement-of-the-creation-of-the-marine-mammal-protected-area-task-force/

3.6 Achieving compliance with paragraph 17 of IFC PS6

3.6.1 Presentation

Paragraph 17 of PS6 requires the project to demonstrate that:

- No other viable alternatives within the region exist for development of the project on modified or natural habitats that are not critical;
- The project does not lead to measurable adverse impacts on those biodiversity values for which the critical habitat was designated, or on the ecological processes supporting those biodiversity values;
- The project does not lead to a net reduction in the global and/or national/regional population of any Critically Endangered or Endangered species over a reasonable period of time;
- A robust, appropriately designed, and long-term biodiversity monitoring and evaluation program is integrated into the client's management programme.

These are fundamental requirements that must be met before new developments in critical habitat are allowed.

3.6.2 Discussion

There will be a need for Sakhalin Energy to propose working definitions of a number of terms related to these requirements, e.g. 'measurable adverse impacts'. The PS6 Guidance Notes may be useful in this regard, as may be the extensive literature on biodiversity offsets be (e.g. for defining 'net reduction' and determining what metrics are appropriate for measuring net losses and net gains).

When the ESIA for the 2015 seismic survey was prepared, the Company referred to two papers that were used as evidence of compliance with PS6 Paragraph 17 (Muir *et al.*, 2015; Gailey *et al.*, 2016). Although neither of these studies found clear evidence of an adverse impact on the gray whale population that could be linked to the seismic survey, in both cases the authors acknowledged that the available data were insufficient to detect subtle to moderate effects on whale behaviour.

It was explained that the third point above, concerning 'net reduction', should be interpreted as referring to the population trend, not necessarily to the absolute population size.

3.7 No net loss/net gain

3.7.1 Presentation

As explained earlier (Item 2.1.2), application of the mitigation hierarchy leads to, and is intimately linked to, the concepts of residual impact, no net loss, offset etc. It is often the case that offsets are required in order to argue that habitat has been brought to a state of no net loss.

PS6 requires:

- For natural habitat – no net loss;
- For critical habitat – net gains (this applies after the developer has demonstrated compliance with paragraph 17 (see above).

PS6 provides the following definitions of *no net loss* and *net gains*:

- No net loss is defined as the point at which project-related impacts on biodiversity are balanced by measures taken to avoid and minimize the project's impacts, to undertake on-site restoration and finally to offset significant residual impacts, if any, on an appropriate geographic scale (e.g. local, landscape-level, national, regional);

- Net gains are additional conservation outcomes that can be achieved for the biodiversity values for which the critical habitat was designated.

In the context of the mitigation hierarchy, *offsets* are what are required to achieve no net loss/net gains *after* avoidance, mitigation and restoration/rehabilitation. There is a range of internationally accepted principles for *offsets*, which include *inter alia*:

- It needs to be accepted that there are limits to the feasibility of what can be achieved by offsets;
- 'Additionality' can be considered;
- Offsets need to demonstrate equivalency (like-for-like or better, including accounting for time-lags and uncertainty);
- Permanence of offsets (across the project lifetime) needs to be taken into account;
- Offsets need to be demonstrable 'on-the-ground action' (e.g. research in itself is not admissible as an offset).

The steps to be taken are:

- Step 1: Prioritize and select biodiversity features;
- Step 2: Select data collection methods;
- Step 3: Convert data into 'currency', e.g. habitat hectares. This is difficult with species, e.g. population size, density, viability, averted mortality risk;
- Step 4: Decide on adjustments needed for fair exchange (exchange mechanism).

Reference sources for the development of offsets include Business & Biodiversity Offset Program (BBOP) and the (draft) IUCN policy on biodiversity offsets, themselves based on the BBOP principles.

3.7.2 Discussion

There are some differences between the PS6 approach to offsets and the draft IUCN principles, and therefore it will be important that these be acknowledged and accounted for in the materials prepared by Sakhalin Energy. The IUCN principles (for example) clearly define scenarios where offsets can and cannot be used. A key element of the principles is that 'perverse' incentives (incentives that can have unintended and undesirable consequences that are contrary to the intentions or interests of those who create them) should be anticipated and avoided.

Permanence is considered relative to the life of the residual impact, not the life of the project.

Offsets can take two forms – those that are based on restoration or creation activities (restoration offsets), and those intended to reduce or reverse negative trends (often referred to as averted loss offsets). Examples of restoration offsets might include actions such as re-flooding coastal areas that had previously been converted to dry land, or restoring forests on land previously converted to agricultural production. Averted loss offsets might include (i) the buying-up of fishing rights to reduce pressure on fish populations and eliminate incidental mortality of at-risk species or (ii) increasing levels of legal protection.

3.8 Risks and offsets

Risk in this context refers to the extent to which significant (or even catastrophic) but unlikely events such as major oil spills can or should be included when calculating offsets. If risk is acknowledged at the start of the project, it may be possible to increase the resilience of the system by taking measures to reduce or minimize the risk. This process is not spelled out in PS6 or the associated guidance note.

3.9 Existing pressures considered in the context of offsets

3.9.1 Presentation

Alleviation of existing pressures on a species or its habitat, even if such pressures are unrelated to project activities, is a potential approach for identifying offsets. In the case of western gray whales, the draft IUCN/IWC Conservation Management Plan (CMP)[8] was used to identify existing pressures and their relative importance as follows:

- Entrapment in set nets – high priority;
- Entanglement in other types of fishing gear – high priority;
- Vessel strikes – moderate priority;
- Deliberate killing – low priority;
- Noise in feeding areas – moderate to high priority;
- Contamination of prey – low priority;
- Oil spill direct effects – moderate to high priority;
- Noise in migratory routes – low priority;
- Physical disturbance of prey – low priority;
- Physical modification of coastal zone – low priority.

It was suggested that Sakhalin Energy considers whether there are opportunities to alleviate any of those pressures and, in so doing, could achieve offsets for the impacts of the Company’s offshore activities. The list of existing pressures should be reviewed and updated, for example taking account of recent apparent changes in fishing and tourist activity off Sakhalin, as should the scientific information on gray whales that has accrued since 2010 (e.g. concerning migratory movements).

3.9.2 Discussion

The requirement for a net gain necessitates the use of offsets: the only way to achieve a net gain is through offsets. The Company must achieve compliance with Paragraph 17 of PS6 and it has a responsibility to deliver viable offsets. The PSTF can advise on this, including how to measure the offsets, e.g. through modelling. However, in many cases it will be a challenge to relate gains to actions of the Company.

It was emphasized during the discussion that mitigation measures, research (see Item 3.7.1) and training cannot be considered as offsets, unless an averted loss can be proven (see Item 3.7.1 and below).

The Sakhalin gray whale population has been growing steadily but slowly since monitoring began in the late 1990s. The question was raised of whether the Company would be able to demonstrate that its actions are enabling the population to grow more quickly than it otherwise would, and it was agreed that this would be

[8] https://www.iucn.org/western-gray-whale-advisory-panel/about-gray-whales/rangewide-conservation-issues

very difficult to do with a high level of confidence. It was suggested, as an example, that Sakhalin Energy could take actions to reduce the risk to the whales from some threat factor unrelated to oil and gas development, such as entanglement or entrapment in fishing gear. If the benefits to the whales could be defined and measured, this might constitute an offset. WGWAP has prepared a white paper summarizing entanglement impacts on Sakhalin gray whales that may provide a starting point for consideration of offsets relative to this threat factor (see Annex D).

A technology is being developed that would absorb or dampen sound during seismic surveys. If something like this were to become available, it would most likely be considered a form of mitigation, not an offset. Nevertheless, the Company might be able to achieve an offset by promoting use of the technology by other operators, and measuring the outcome of the effort in terms of reduced noise exposure.

Another suggestion was that the Company considers taking actions that benefit some other threatened species, although it was pointed out that PS6 does not allow one species to be ‘swapped’ for another. Such swapping can be done with habitats although the habitat used as an offset must represent ‘like for like’ or be of substantially better quality than the habitat that has been damaged or destroyed. In fact, Burston noted that it may be acceptable to lose a moderately important habitat if a higher-value one can be protected. This possibility is underpinned by an agreed hierarchy of habitat values.

A category above net gain, termed ‘further conservation actions’, is not in the ‘net positive impact’ (net gain) equation but can still be considered.

In the course of discussion, an example was mentioned of an offset being defined by the outcome, not the action itself. In Yemen, a company’s project initially caused extensive damage to a large coral reef area. However, the virtual ‘no go’ area in the vicinity of the LNG terminal has created a *de facto* protected area where corals are now thriving.

One way to deal with uncertain outcomes related to offsets is to pursue a suite of options, to enhance the probability that one will work and create a net gain. This is the approach preferred by Sakhalin Energy. The next step therefore would be for the Company to develop a suite of proposed offsets, informed by updated consideration of what is known about pressures currently acting on the Sakhalin gray whale population. Proposals may include various types of averted loss, the spread of good practice, and the other possibilities mentioned above. Consideration should be given to the use of modelling to help assess benefits and guide future monitoring efforts to validate predictions.

The Company should also attempt to quantify and assess its residual impacts, recognizing that no measurable impacts of its activities have yet been demonstrated empirically. It was noted that even if this remains true, the Company will still ultimately need to show a net gain.

3.10 Cumulative impacts

This topic was covered by a presentation by Ramboll Environ but there was little time for discussion.

The IFC has produced a Good Practice Handbook (GPH) on cumulative assessment good practice (PSTF-1/INF.6) that is especially relevant in areas where governments lack legal or regulatory processes on cumulative impacts. The GPH provides high-level guidance on identifying Valued Ecosystem Components (VECs) and on the *structure* of the assessment. It includes the following stages in the process of Cumulative Impact Assessment (CIA):

1. Scoping Phase I – VECs, spatial and temporal boundaries;
2. Scoping Phase II – other activities and environmental drivers;
3. Baseline;
4. Assessment of cumulative impacts (VEC-centric);

5. Significance of cumulative impacts;
6. Management of cumulative impacts.

However, the GPH does not contain detailed guidance or approaches to actual CIA and quantification methods for application to specific species. A question for consideration by the Panel (and others) is what role currently available methods or research approaches might play in CIA for Sakhalin gray whales (e.g. Population Consequences of Disturbance – PCoD, E&P Sound and Marine Life Joint Industry Programme research, J. Cooke's individual-based population analyses, etc.).

The GPH also does very little to distinguish between different types of cumulative impact (e.g. intra-year vs inter-year, chronic vs acute, etc.).

Finally, the GPH provides a useful summary of how compliance can be achieved by projects being developed in areas where local governments lack legal and regulatory processes on cumulative impacts. In such situations (which include Russia), compliance is achieved by:

- Actually implementing those aspects of CIA that are in the control of the developer;
- Making 'best efforts' (Ramboll Environ noted that 'reasonable efforts' may be preferable terminology) to coordinate with and influence those aspects of CIA that are not under the developer's direct control.

The analytical basis of CIAs can be inherently uncertain. There are also significant implementation challenges in situations like Sakhalin where some of the operators do not participate fully in the provision of data and information, and nor do they support the analyses either directly or indirectly.

Compliance with IFC PS1 and the GPH by an individual project proponent in the context of cumulative impacts is to be based on implementation of those aspects under its own control and the use of best or reasonable efforts to influence other relevant stakeholders in the assessment and protection of the VECs. While it is ideal if such other stakeholders respond positively and effectively in the overall protection of VECs, their actions are ultimately outside the direct control of the project proponent. This is illustrated in Figure 2 of the GPH which was presented during the discussion. The company therefore, at a minimum, needs to be able to demonstrate that it has done everything it can to broaden its mitigation effort – e.g. through engagement with other stakeholders to agree on VECs.

4 IMPLICATIONS FOR THE WORK OF THE PANEL (INCLUDING TIMELINE)

The role of Ramboll Environ, as the Lenders' Independent Environmental & Social Consultant, is to *review* (not develop or advise on) Sakhalin Energy's plans and assessments on behalf of the Lenders and to *confirm* whether, in its opinion, these are compliant with the IFC Performance Standards.

IUCN and the Company have interpreted the currently applicable WGWAP TOR to mean that the Panel's advice to Sakhalin Energy should be placed in the context of the Company's commitment to comply with the IFC Performance Standards. This principle is explicitly established in the new WGWAP TOR that will become applicable starting 1 January 2017. However, a point for IUCN and the Panel to consider is whether the Panel can also help Sakhalin Energy to define and develop (the WGW-related aspects of) its CHA, BAP, offset strategy and even EIAs without compromising its independence.

The level of detail of the advice offered will depend, at least in part, on the nature of the advice the Company is seeking. For example, advice on measurable offsets may need to be quite detailed. Such advice should be in line with the principles of net gain. The Panel should be allowed, like Ramboll Environ, to express an opinion on whether it considers a new activity proposed by Sakhalin Energy to comply with Paragraph 17 of

PS6. It should also be able to conclude that a given activity, even though it may be generally consistent with the IFC Performance Standards, requires improved mitigation or even perhaps is ill-advised in terms of the risk to western gray whales or their habitat.

As stated in the Introduction (Item 1.1), it was expected that the actions recommended as follow-up to this meeting would be pursued by relevant parties without awaiting a Panel report. It was also agreed that this first report of the PSTF would be reviewed by meeting participants as a draft before finalization and posting on the WGWAP website. It is anticipated that new materials will have been received from Sakhalin Energy for review at the 17th meeting of the Panel (WGWAP-17) in November 2016 in Moscow.

5 REFERENCES

Gailey, G., Sychenko, O., McDonald, T., Racca, R., Rutenko, A. and Bröker, K. 2016. Behavioural responses of western gray whales to a 4-D seismic survey off northeastern Sakhalin Island, Russia. Endangered Species Research 30:53-71.

Muir, J.E., Ainsworth, L., Joy, R., Bychkov, Y., Gailey, G., Vladimirov, V., Starodymov, S. and Bröker, K. 2015. Distance from shore as an indicator of disturbance of gray whales during a seismic survey off Sakhalin Island, Russia. Endangered Species Research 29:161-178.

ANNEX A – LIST OF PARTICIPANTS

Alexander Burdin (WGWAP)
Peter Burston (Ramboll Environ)
Justin Cooke (WGWAP)
Mike Donaghy (MDA/Sakhalin Energy)
Greg Donovan (WGWAP) (Co-chair)
Wouter Drinkwaard (Shell International)
Adam Fitchet (Ramboll Environ)
Jonathan Hancox (Ramboll Environ)
Olof Linden (WGWAP)
Lloyd Lowry (WGWAP)
Stephanie Lock (Sakhalin Energy)
Douglas Nowacek (WGWAP)
Corinne Pomerleau (WGWAP)
Randall Reeves (WGWAP) (Co-chair)
Brandon Southall (WGWAP)
Andrey Samatov (Sakhalin Energy)
Grigory Tsidulko (WGWAP)
Alexander Vedenev (WGWAP)
David Weller (WGWAP)

IUCN

Rachel Asante-Owusu
Anete Berzina
Giulia Carbone
Simon Delany (Rapporteur)

Interpreters

Alexander Danilov
Grigory Shkalikov

Apologies: Natalya Tsarenko (Sakhalin Energy)

ANNEX B – AGENDA

1 INTRODUCTORY ITEMS (CO-CHAIRS, IUCN, LOCK)

1.1 Introductions and logistics

1.2 Adoption of agenda

1.3 Available documents/materials

2 PRESENTATIONS: SETTING THE SCENE

2.1 IFC 2012 Performance Standard 6 on Biodiversity Conservation and Sustainable Management of Living Natural Resources (Hancox, Burston)

2.1.1 How lender commitments are placed on Sakhalin Energy (very briefly);

2.1.2 The wider context of IFC Performance Standards, including relevant aspects of IFC Performance Standard 1 on Assessment and Management of Environmental and Social Risks and Impacts;

2.1.3 The Ramboll Environ White Paper on the Sakhalin-II Energy Project: IFC Performance Standard 6 (2012) Requirements (with focus on suggested steps identified at the end of the paper);

2.1.4 Process of compliance and roles of the Company and lenders (and the Panel);

2.2 Sakhalin Energy Plans for compliance with IFC Performance Standards (Lock, Donaghy)

2.3 Questions and discussion

3 CONSIDERATION OF SPECIFIC DEFINITIONS, CRITERIA ETC.

3.1 ‘Forward looking’ application of IFC Performance Standard 6

3.2 Process of compliance

3.3 Natural and critical habitat

3.4 Internationally and nationally recognized areas

3.5 Achieving compliance with paragraph 17 of IFC Performance Standard 6 (requirements for project activities in the areas of critical habitat)

3.6 No net loss/net gain

3.7 Biodiversity offsets

3.8 Risk (e.g. oil spills)

3.9 Existing pressures

3.10 Cumulative impacts

4 IMPLICATIONS FOR THE WORK OF THE PANEL (INCL. TIMELINE)

5 STRATEGY FOR COMPLETION OF FINAL MEETING REPORT

ANNEX C – LIST OF DOCUMENTS

Document #	Title	Language	Status
Primary documents			
PSTF-1/1	Sakhalin II Energy Project: IFC PS6 (2012) Requirements (Revision 2, February 2016, Ramboll Environ)	English	Confidential
PSTF-1/1-PPT	Ramboll Environ pesentation on IFC PS6 (2012) requirements	English	Confidential
PSTF-1/2	Sakhalin Energy's update on Critical Habitat Assessment with a brief description of the methodology	English	Confidential
PSTF-1/2-PPT	Sakhalin Energy's presentation on Critical Habitat Assessment	English/ Russian	Confidential
Background documents			
PSTF-1/INF.1	IFC 2012 Performance Standards Objectives (flyer)	English	Public
PSTF-1/INF.2	IFC 2012 Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources / Стандарт деятельности 6: Сохранение биологического разнообразия и устойчивое управление живыми природными ресурсами	English / Russian	Public
PSTF-1/INF.3	IFC 2012 Guidance Note 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources / 2012 Руководство 6: Сохранение биологического разнообразия и устойчивое управление живыми природными ресурсами	English / Russian	Public
PSTF-1/INF.4	IFC 2012 Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts / 2012 Стандарт деятельности 1: Оценка и управление экологическими и социальными рисками и воздействиями	English / Russian	Public
PSTF-1/INF.5	IFC 2012 Guidance Note 1: Assessment and Management of Environmental and Social Risks and Impacts / 2012 Руководство 1: Оценка и управление экологическими и социальными рисками и воздействиями	English / Russian	Public
PSTF-1/INF.6	IFC 2013 Good Practice Handbook on Cumulative Impact Assessment and Management: Guidance for the Private Sector in Emerging Markets	English	Public

PSTF-1/INF.7	World Bank 2015 Environmental, Health, and Safety (EHS) Guidelines for Offshore Oil and Gas Development	English	Public
PSTF-1/INF.8	Sakhalin Energy Health, Safety, Environment and Social Action Plan (HSESAP) План действий «Сахалин Энерджи» в области охраны труда, здоровья и социальной деятельности (План действий по ОТЗОС)	English / Russian	Public
PSTF-1/INF.9	Sakhalin Energy HSESAP - International Requirements for Managing Risk План действий «Сахалин Энерджи» по ОТЗОС - Международные требования к управлению рисками	English / Russian	Public
PSTF-1/INF.10	Sakhalin Energy HSESAP - International Requirements for Biodiversity План действий «Сахалин Энерджи» по ОТЗОС - Международные требования к биоразнообразию	English / Russian	Public
PSTF-1/INF.11	Sakhalin Energy HSESAP - Marine Mammal Specification План действий «Сахалин Энерджи» по ОТЗОС - Требования к охране морских млекопитающих	English / Russian	Public
PSTF-1/INF.12	Draft IUCN Biodiversity Offsets Policy (January 2016, submitted for approval at the IUCN World Conservation Congress in September 2016)	English	Public
PSTF-1/INF.13	IUCN (2016). An Introduction to the IUCN Red List of Ecosystems: The Categories and Criteria for Assessing Risks to Ecosystems. Gland, Switzerland: IUCN.	English	Public
PSTF-1/INF.14	Lucie M. Bland, David A. Keith, Rebecca M. Miller, Nicholas J. Murray and Jon Paul Rodríguez (eds) (2016). Guidelines for the application of IUCN Red List of Ecosystems Categories and Criteria, Version 1.0. IUCN: IUCN, Gland, Switzerland.	English	Public
PSTF-1/INF.15	Equator Principles Good Practice webpage	English	Public

ANNEX D - BACKGROUND STUDY ON FISHERIES INTERACTIONS WITH GRAY WHALES

By Lloyd Lowry - 31 December 2015

INTRODUCTION

Population and Status of Gray Whales

Gray whales (*Eschrichtius robustus*) occur in the eastern and western North Pacific and adjacent seas. The eastern stock ranges from Baja California to the Arctic Ocean, and is abundant and not assigned any special protective status (Caretta *et al.* 2015). The situation with western gray whales (WGWs) is much different. Historical evidence suggests that gray whales must have been fairly numerous in the western Pacific prior to modern commercial whaling that began in the region in the 1890s, and at that time they migrated along the Asian coast between eastern Russia and the South China Sea. However sightings had become very infrequent by the middle of the 20th century, and some considered WGWs to be extinct. More recent observations made off the east coast of Sakhalin Island and southern Kamchatka suggest that a population of around 140 WGWs older than calves existed in 2012, with an increasing trend in abundance (Cooke 2013). WGWs are included in the Russian Red Data Book, and are listed as endangered under the U.S. Endangered Species Act, as depleted and strategic under the U.S. Marine Mammal Protection Act, and as critically endangered in the Red List of Threatened Animals maintained by the International Union for Conservation of Nature (IUCN). Although genetics studies show differences between the eastern and western populations (Lang *et al.* 2011), tagging studies (Mate *et al.* 2015) and photographic and genetic matching of animals seen in the eastern and western North Pacific (Weller *et al.* 2012) indicate that WGWs sometimes occur in coastal waters of the U.S., Canada, and Mexico where their distribution overlaps that of eastern gray whales.

Takes of WGWs in Western Pacific Fisheries

There is considerable concern about the potential for interactions between western Pacific fisheries and WGWs (CMP 2010, Weller *et al.* 2014), in particular interactions that may cause serious injury or mortality (SI/M). Several sources of information confirm that SI/M interactions occur frequently:

- During 2005-2007 four female WGWs died in trap nets along the Pacific coast of Honshu, Japan (Kato *et al.* 2013). One of them had been photo-identified off Sakhalin Island in 2006 (Weller *et al.* 2014);
- In 2013, fishermen unofficially reported that a large whale (species unspecified) became entangled and drowned in a trap net set south of Piltun Lagoon (WGWAP-14 report);
- A WGW was seen near Sakhalin in 2013 with rope around its caudal peduncle. It was seen the next year without the rope (WGWAP-14 report);
- A WGW carcass found on the southeastern shore of Sakhalin Island in 2010 included rope among the bones, and entanglement in fishing gear could not be ruled out as a cause of death (WGWAP-16 report);
- Bradford *et al.* (2009) examined photos of WGWs for scars indicating anthropogenic interactions. They found that 28 of 150 individual whales showed signs of having interacted with fishing gear at least once. Unfortunately, in this type of analysis the locations where whales encountered the gear are not known.

Commercial fishing for salmon (*Oncorhynchus* spp.) has occurred in waters of eastern Russia since the early 20th century. Gear types used include weirs, beach seines, floating gillnets, and trap nets. In the Sakhalin region trap nets are most commonly used to harvest pink salmon (*O. gorbuscha*). Trap nets are large structures that use a long, 10 m high, lead (like a fence) set perpendicular to shore to guide fish into traps at the offshore end. Leads are up to 2 km long and nets must be set at least 2 km apart. Fishing typically begins in early to mid-July and ends the first week of September. There are 738 potential fishing sites on Sakhalin Island but not all are operated in every year (MRAG 2012).

In the summer of 2013, WGW researchers observed salmon trap nets operating in the gray whale feeding area near Piltun Lagoon in northeastern Sakhalin Island for the first time since at least since 1995 (Weller *et al.* 2014). The two trap nets seen were approximately 1.5 km long and were set perpendicular to the coastline. The placement of this gear is of particular concern because all mother-calf pairs use this nearshore area for feeding and most are seen < 1 km from shore. In 2013, WGWs, including mother-calf pairs, were seen within 100 m of the nets (Weller *et al.* 2014). In 2014, only one trap net was set. In 2015, at least seven trap nets were set close to Piltun Lagoon (D. Lisitsyn, personal communication).

Takes of Gray Whales in Fisheries Elsewhere

IWC (2014) tabulated known entanglements of gray whales in the eastern North Pacific (not including Alaska) for the period 1978-2012. In this 35-year period there were 79 recorded deaths caused by entanglements in fishing gear and 202 injuries (degree of injury was not specified). The documented bycatch rate (including deaths and injuries) was about 8 whales per year for that region.

Caretta *et al.* (2015) reported on bycatch of gray whales along the west coast of the U.S. during 2008-2012. The average annual known fishery-caused SI/M was 4.45 whales per year. Incidents were reported from January to October, in nets (8), pot gear (7), lines/buoys only (9), and trawls (1).

Information provided at the December 2015 Biennial Conference on the Biology of Marine Mammals showed that 2015 was a record year for whale entanglements in fishing gear along the U.S. west coast (Valdivia et al. 2015). Data on the number of entangled whales collected during 2000-2015 showed a highly significant increasing trend over time. Of the 238 total entanglements, 95 involved gray whales (6.3 per year). The fishing gear involved was mostly pots (set for crabs, lobsters, prawns, and finfish) and gillnets.

While the above figures show convincingly that gray whales in the eastern Pacific commonly become entangled in fishing gear, and sometimes are seriously injured or killed as a result, it isn't possible at this time to estimate how many of those animals may have been WGWs. Also, all of the figures presented above underestimate the problem because only some, possibly a small fraction, of whales that become entangled are seen by people, reported, and examined to determine species and cause of death.

PRELIMINARY SITUATION ANALYSIS

Potential Population Impact

The method used in the United States (and some other places) to assess and manage marine mammal bycatch is called Potential Biological Removal (PBR). A PBR is calculated for each stock based on a conservative estimate of stock size, the maximum reproductive rate of the stock, and a recovery factor that takes account of the stock's conservation status. In the U.S., if SI/M from bycatch exceeds the PBR, actions must be taken to reduce the bycatch level. The PBR that has been calculated for WGWs is 0.06 whales per year (Caretta *et al.* 2015). To stay below this level, SI/M would have to be less than 1 whale taken in a 17-year period. Even with the fragmentary information on WGW bycatch described above, it seems very likely that PBR is being exceeded for this population.

The WGW population model presented by Justin Cooke at WGWAP-16 could be used to explore how deaths caused by entanglement would impact the future trajectory of the WGW population. The model can take into account the population impact of losing animals of specific sex and age classes. The model could be used to estimate impacts of known takes, or to explore the potential impacts of possible future take scenarios.

Scientific Approach/Questions To Be Addressed

There are many gaps in our understanding of how WGWs may interact with fishing gear and become entangled, and how that may impact their population status and recovery potential. Some of the primary questions that should be addressed are listed below:

- What types of gear are likely to entangle gray whales and cause SI/M?
- Where, when, and how often do WGWs interact with those types of gear?
- Can gray whales detect gear and will they avoid it?
- What is the risk to the WGW (or Sakhalin) population from entanglement in fishing gear?

A full exploration of the scientific approaches that could be used to study these questions is beyond the scope of this analysis, but some preliminary ideas are presented in Annex 1.

Management Issues

Regardless of what science may say about impacts of fishery bycatch on WGWs, it is evident that for the population to recover the number of unnecessary deaths must be limited as much as possible. Other potential impacts should also be considered, including potential impacts of fishing on WGW prey availability and the potential for fishing activity to displace whales from habitats important for feeding or other activities.

Thinking specifically about salmon trap net fishing near Piltun, a number of management actions might be considered, as follows:

- Make gear less likely to entangle whales, e.g., fewer lines, buoys, and anchors;
- Make gear less damaging to whales, e.g., weak links in lines;
- Make gear more detectable to whales, e.g., pingers, different colors of rope;
- Deter whales from the fishing area, e.g., broadcast killer whale calls;
- Disentanglement;
- Change fishing methods to use gear not hazardous to whales, e.g., purse seines;
- Move fishing effort to places/times where/when there are no feeding whales, e.g., into Piltun Lagoon;
- Stop fishing, e.g., buy out fishing permits.

Some of these methods have been tried, although not with gray whales and not with the trap net gear used for fishing at Piltun. One thing peculiar to the Piltun situation is that the salmon fishing is going on in an area adjacent to, and overlapping with, where WGWs feed. That most likely makes deterring whales from the fishing area not an option as that could negatively affect their nutritional status. Disentanglement may not be a good option because of the specialized training and equipment required, as well as the fact that once they are entangled whales may be seriously injured and not survive or reproduce normally even if disentangled. Options for making changes to gear to minimize entanglements and their impacts may seem attractive, but given the WGW situation the goal should be to eliminate entanglement potential rather than to mitigate it.

RECOMMENDATIONS FOR FURTHER ACTION BY IUCN

Salmon Fishing At Piltun Lagoon

Salmon fishing using trap nets near and in the main gray whale feeding area at Piltun Lagoon poses an obvious risk of whale entanglement. This risk is particularly significant because as far as is known, all cow-calf pairs in this population feed in that area. IUCN should do whatever it can to promote and facilitate efforts to mitigate, or preferably eliminate, that potential source of SI/M. Devising and implementing a solution to this problem will require collaboration with Russian scientists and resource managers, the fishing industry, and local, regional, national, and international conservation organizations.

Informal discussions with experts at WGWAP-16 confirmed that the situation with Sakhalin salmon fisheries is complex and nuanced, and will require a carefully crafted approach. One way to proceed would be to select options for further analysis from the list above based on input from Russian experts. That should be followed by a detailed analysis and prioritization of the selected options, and development of a strategy for implementation of priority options. The final challenge will be to convince the appropriate authorities to implement changes that may be needed in how the fisheries are conducted.

Entanglement Impacts Rangewide

There is overwhelming evidence to show that gray whales can and do become entangled in fishing gear, particularly gillnets and vertical lines used for pots or traps. But available data are not adequate to describe the overall level of interactions for WGWs, or the specifics of when, where, and how whales become entangled and injured or killed. Obviously a whale will not become entangled unless there is potentially entangling gear in an area that it is occupying or moving through. An obvious first step will be to obtain information from fishery managers throughout the WGW range on what types of fishing gear, and how much, are being used where and when. Another obvious need is for better information on where WGWs occur throughout the year, which is best obtained by tagging animals with satellite-linked tags. The datasets from these two actions, when combined in a Geographic Information System, would allow an analysis to identify problem "hotspots" of risk. Other actions that would help with understanding the nature, frequency, and consequences of WGW-fisheries interactions are listed in Annex 1.

Bycatch in fishing gear is not a problem just for WGWs, but also for many species of cetaceans, pinnipeds, seabirds, fishes, and other marine organisms. IUCN is obviously aware of the bycatch problem, which is considered a priority by the Species Survival Commission's Marine Conservation Subcommittee (C. Campagna, personal communication). To protect biodiversity, and in particular to aid in recovery of threatened taxa, IUCN should continue and expand its efforts to mitigate bycatch problems worldwide.

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