



Guidelines
for Financial Services
in the Energie Sector

May 2013

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Preface and Acknowledgements

At a time of energy transition, the members of the ORSE Finance Club wished to launch collective debate aimed at establishing Guidelines covering all financial services to the energy sector.

These Guidelines analyse the social and/or environmental risks related to the energy sector (coal-fired power plants, mining, oil and gas, hydro-electric dams and nuclear power). They cover all financial services in this sector: financing, investments and international trade operations and services (payments, insurance, mergers & acquisitions, consulting...).

This «white paper» intends to bring together the best practices observed in the market, to serve as the basis for the drafting sector policies specific to each institution. It may also serve to encourage their clients to develop a carbon intensity reduction strategy.

The quality of the work of the Finance Club is based on the strong commitment of its members and the sharing of experiences with experts from diverse backgrounds.

The development of these Guidelines has been the occasion for fruitful discussions between many energy sector stakeholders, in particular companies and NGOs.

Our thanks go out to all those who contributed to the establishment of these Guidelines, especially:

- The members of the ad hoc Working Group moderated by Jérôme Courcier, CSR Manager, Credit Agricole SA, and piloted by:
 - Michel Laviale, President of the Finance Club
 - Patricia Lavaud, Head of the Finance Club
- The ORSE team, especially Catherine Delettang, for her careful proofreading and formatting of this document.

GOAL

The members of the ORSE Finance Club are **major players in financing** the French and international economies and, as such, are required to support certain sectors, particularly in the energy field, that carry social and/or environmental risks. The energy sector covers coal-fired power plants, mining, oil and gas, dams and hydropower and nuclear power plants.

They wanted to launch **collective debate** in order to establish Guidelines that cover all financial services involved in funding, investment and international trade / services operations (payments, insurance, mergers and acquisitions, consulting...) in this sector.

This «White Paper» aims to collect best market practices to serve as the basis for the drafting of sectoral policies within each specific institution. It may also be used to encourage customers to develop a carbon intensity reduction strategy.

PREAMBULE

The Members of the ORSE Finance Club recognize:

- The important role currently occupied by energy in the global economy and growing energy needs worldwide.
- The fact that, in the near future, the production of electricity will require a different energy mix depending on the country.

They also believe that:

- It is for **States** to establish and develop regulations in this area, and for customers to define their own investment policy.
- While **financial institutions** have no calling to substitute for government or the business sector, they may nevertheless act in a way that promotes transition to a low carbon economy, including through support for the efforts of governments and the private sector to diversify energy sources and increase the use of renewable energy, thus contributing to the fight against climate change.
- Since the energy sector has a **major environmental and social impact**, it is necessary to promote **responsible practices** that ensure the health and safety of both workers and local populations, combat climate change, conserve biodiversity and, more generally, protect the environment.
- The following guidelines, which apply to all banking and financial activities of the institutions concerned, may facilitate **dialogue with customers** operating in this sensitive sector as well as **stakeholders**, and strengthen their own **risk analysis** processes



Sectoral Policies Affirming the Social Responsibility of Financial Institutions

The French Study Center for Corporate Social Responsibility (ORSE - Observatoire de la Responsabilité Sociétale de l'Entreprise) has established guidelines for finance and investment in the energy sector (coal, nuclear, oil...). The goal is to help financial institutions to act with a view to transition to a low carbon economy.

ORSE (*Observatoire de la Responsabilité Sociétale de l'Entreprise*) is an active witness to this renewed dialogue between companies and their stakeholders concerning their responsibility “*vis-à-vis the effects they have on society*”. For over 10 years, ORSE'S Finance Club has been leading a collective reflection together with its members on major challenges faced by the finance sector.

« **More and more financial institutions consider the environmental and social impact of the aggregated activity of their clients, and publish selective sectoral policies.** »

Launch collective debate

ORSE (*Observatoire de la Responsabilité Sociétale de l'Entreprise*) is an active witness to this dialogue. Indeed, the members of its Finance Club are major players in financing the French and international economies and, as such, are required to support certain sectors, particularly in the energy field, that carry social and/or environmental risks. Until now, the Equator Principles¹, signed in 2003, were the only framework to assess and manage these risks, and only for transactions explicitly or implicitly dedicated to the construction of a project (non-recourse financing). Having found that more and more financial institutions consider the environmental and social impact of the aggregated activity of their clients and publish selective sectoral policies, ORSE wished to launch a collective debate to help the entire profession to establish guidelines for financing, investment and services, especially in the energy sector.

The aim of this «*White Paper*» was thus to collect best market practices to serve as the basis for the drafting of sectoral policies within each specific institution. It can also be used to encourage customers to develop a carbon intensity reduction strategy.

What can we expect from financial institutions as regards corporate social responsibility?

If one believes the NGOs that signed the Collevocchio Declaration in January 2003², financial institutions should:

- focus on financing or insuring transactions that promote sustainability;
- prevent and minimizing the environmentally and/or socially detrimental impacts of their operations;
- bear responsibility for the environmental and social impacts of their transactions;
- be accountable to their stakeholders, particularly those that are affected by the activities of the customers they finance or insure;
- provide robust, regular and standardized disclosure of their policies, procedures and transactions; and
- Actively support public policy, regulatory and/or market mechanisms that facilitate sustainability and foster full cost accounting of social and environmental externalities.

The ORSE Guidelines meet these civil society expectations, to the extent that they:

- list the environmental and social issues in each sector;
- identify the reference framework for each industrial activity;
- provide details of the main impacts of these activities on water, air, terrestrial, energy, biodiversity and social issues;
- establish a broad scope for both the industrial and financial sides; and above all
- set out a number of principles for the evaluation of counterparties and specific transactions.

¹ Established in 2003, the Equator Principles, signed by the major world banks, provide a credit risk management framework for determining, assessing and managing environmental and social risk in Project Finance transactions.

²The Collevocchio Declaration, signed by more than 200 NGOs, calls on financial institutions to respect six commitments in favour of sustainable development.

The ORSE Guidelines

As regards coal-fired power plants, the ORSE recommendation is to only finance or insure those whose HHV³ thermal efficiency is greater than 43% in High-income OECD Countries and 38% in other countries, as well as those that can be considered «suitable for carbon dioxide capture and storage», and those whose renovation substantially improves their overall environmental performance.

As for nuclear power plants, ORSE suggests taking into consideration the technology used (does it meet IAEA⁴ standards and those of reference countries?), the technical characteristics of the project, the capacity of the host country to control a nuclear project (is it a member of the IAEA and has it ratified all the conventions in this sector?), especially through its National Security Authority (does it have the statutory authority to issue permits and carry out inspections that could lead to sanctions?) and the ability of the operator to operate the nuclear project (was it the subject of a Pre-OSART, OSART⁵ or WANO⁶ mission?) .

Concerning hydro-electric dams, ORSE proposes that, in High-income OECD Countries, financial institutions should only finance or insure those projects that meet the following IFC⁷ Performance Standards on Environmental and Social Sustainability: 1 (assessment and management of environmental and social risks and impacts), 3 (resource efficiency and pollution prevention), 6 (biodiversity) and 7 (indigenous peoples). In other countries: only those projects that meet all the IFC Performance Standards and the decision-making framework of the World Commission on Dams (WCD).

For the mining and metals sector, ORSE recommends to only finance or insure: in High-income OECD countries, counterparties or projects that meet the IFC Performance Standards on Environmental and Social Sustainability, in particular standards 1, 3, 6 and 7; and, in other countries, only those projects that meet all of the IFC Performance Standards, the International Council on Mining and Metals (ICMM) Principles and, as necessary, the International Cyanide Management Code (ICMC), the Kimberley Process certification scheme for diamonds, the Ramsar Convention on Wetlands of International Importance and the Extractive Industries Transparency Initiative (EITI).

In the oil and gas sector, ORSE advises to finance or insure only those counterparties or sensitive projects (oil sands, shale oil and gas...) in High-income OECD countries that meet the IFC Performance Standards on Environmental and Social Sustainability, and in particular standards 1, 3, 6 and 7; and in other countries, those that meet all the IFC Performance Standards and the Principles of the International Petroleum Industry Environmental Conservation Association (IPIECA) and the International Association of Oil and Gas Producers (OGP), as well as, where appropriate, the Global Gas Flaring Reduction partnership (GGFR), the Ramsar Convention on Wetlands of International Importance and the Extractive Industries Transparency Initiative (EITI).

Are these guidelines satisfactory?

These guidelines take account of the important role currently occupied by energy, including fossil fuels, in the global economy and growing global needs due to the economic development of emerging countries. They also take into consideration the fact that electricity production requires a different energy mix from country to country. ORSE is convinced, on the one hand, that States should establish and develop regulations in the energy sector, and that customers should define their investment policy, and on the other hand that, while financial institutions have no calling to substitute for government or the business sector, they may nevertheless act in a way that promotes transition to a low carbon economy, including through support for the efforts of governments and the private sector to diversify energy sources and increase the use of renewable energy.

In general, these specific analysis criteria meet an expectation from commercial teams and asset managers to be given specific instructions prior to any decision-making. They are in a sufficiently ambitious position to have a real impact on the environment and society, but also sufficiently realistic to ensure their implementation within the framework of a renewed dialogue with customers that goes beyond simple financial performance criteria.

³ HHV - High Heating Value.

⁴ International Atomic Energy Agency.

⁵ Operational Safety Review Team.

⁶ The World Association of Nuclear Operators.

⁷ The International Finance Corporation (IFC) is a World Bank entity



« As regards coal-fired power plants, the ORSE recommendation is to only finance or insure those whose HHV thermal efficiency is greater than 43% in High-income OECD Countries and 38% in other countries, as well as those that can be considered «suitable for carbon dioxide capture and storage», and those whose renovation substantially improves their overall environmental performance. »



1 Issues

- Coal plays a **major role as a source of energy**, particularly in global electrical power generation, according to the International Energy Agency (Source: Power Generation from Coal, 2011). Indeed, it is by far the leading resource for power generation, with a market share above 40%. Coal is expected to maintain its important role in the energy mix, given the abundance of reserves evenly distributed throughout the World, low production costs and the high expected growth in electricity demand from emerging countries. In addition, demand for coal in OECD countries is predicted to remain constant. According to the World Coal Association (Source: *Coal-Energy for Sustainable Development, April 2012*), the growth in coal consumption by 2030 is estimated at 50%, with demand coming almost entirely from emerging countries and mainly allocated to electricity needs.
- The **cost of electricity** is a key factor for every country's economy, especially in many developing countries where the use of cleaner, but more expensive, energy would be a major obstacle to economic development. In addition, a radical change in the energy mix in developed countries would require massive, heavy investments and structural changes to primary energy supply sources.

Such changes can only be implemented gradually, or they will negatively impact the country's **level of economic activity**.

- Coal fired power plants produce a very large share of the **Greenhouse Gases («GHG»)** emissions related to human activity. With 8.2 billion tons of CO₂ emissions in 2008, electricity generation from coal accounted for 28% of total CO₂ emissions, before transport (22%) and industry (20%) sectors.

In this context, in order to take account of the economic and environmental issues resulting from coal-fired electricity generation, it appeared important to develop guidelines including promotion of the most efficient power plants, since a 1% improvement in the energy efficiency of a power plant results in a 3% saving in terms of CO₂ emissions (Source: IEA, *Power Generation from Coal, 2011*).

2 Framework

Companies working in the sector of coal-fired power plants shall respect, and ensure respect by their clients and suppliers (if applicable) for:

- **national and international laws** and regulations in force in the host countries in which they operate;
- laws and regulations regarding GHG emissions (EU-ETS¹ included, where applicable), including future regulations that may be adopted within a reasonable time (emissions trading system, carbon stocking, offsets...), whether the **country is mentioned in Annex B to the Kyoto Protocol**² or not;
- as well as the **standards, conventions, initiatives and recommendations** issued by a number of organizations and professional associations in the electrical industry, aiming to better manage the environmental and social impact of activities in the sector:
 1. the **Equator Principles** and associated norms, such as the International Finance Corporation (IFC) Performance Standards and the applicable World Bank Environmental, Health and Safety (EHS) Guidelines;
 2. the Carbon Disclosure Project (www.cdproject.net/en-US/Pages/HomePage.aspx);
 3. the GHG Protocol (www.ghgprotocol.org);
 4. The World Coal Association (www.worldcoal.org).

3 Risks

When evaluating counterparties (clients) and/or sector-specific transactions, analysis of the impact on the following areas shall be given special attention:

WATER

- Water use (cooling, desulfurization and other uses).
- The water quality resulting from the construction and operation of the project (effluents...).



TERRESTRIAL

- Soil contamination due to previous activities.
- The conditions for transporting coal to the project site.

¹ EU ETS: EU Emissions Trading Scheme

² The same countries are listed in the annex to the United Nations Framework Convention on Climate Change

- Coal storage (dust, particles...), facilities for treating solid and liquid waste (ash, slag, sludge, sewage...) and their influence on the land.
- Other forms of pollution resulting from the construction and operation of the project.



AIR

- Atmospheric emissions; *i.e.* GHGs and other emissions (SO_x, NO_x, PM-10...), particularly when they affect an area where air quality is already degraded.



ENERGY

- Thermal efficiency of the electrical power plant(s), which directly influences the level of GHG and other emissions, as well as other pollutants.
- Consideration of a carbon price signal through an organized market.



BIODIVERSITY

- Ecosystems.



SOCIAL

- Resettlement or economic displacement caused by loss of land or property.
- Health and safety of workers and local communities.
- Operations conducted in areas of high social tension (due to historical operations or other reasons) or in countries with a weak regulatory framework, lack of transparency, a high level of corruption and/or a negative reputation for Human Rights violations.

4

Guidelines

4.1. Services that may be provided by financial institutions

The scope of these Guidelines covers all financial services:

1. Financing
2. Investments³ (primary debt and equity markets)
3. International trade transactions (Trade Finance)

4. Services (Payments, Insurance, Mergers and Acquisitions, Consulting...).

4.2. Levels of information retained

4.2.1. Classification by type of plant / technology

Three types of power plant may be distinguished, based on their technology, energy efficiency and level of GHG emissions:

1. Subcritical (pulverised coal or fluidised bed)
2. Supercritical (pulverised coal, fluidised bed or IGCC)
3. Ultra supercritical (pulverised coal)

4.2.2. Classification by type of transaction

Two types of transaction may be distinguished:

1. the construction of a new plant (greenfield)
2. renovation of an existing plant (brownfield)

4.2.3. Classification by type of country

In classifying the host country for the project, a distinction shall be made between the High-income OECD countries (over \$ 12,476 per capita) and other countries, as defined by the World Bank.⁴

The decisions of financial institutions shall be based on the information available to them. They shall employ due diligence to ensure the quality and reliability of such information.

These institutions shall include environmental and social risk and impact assessments in their decision-making processes both as regards counterparties and the specific transactions for which the use of funds is known.

4.3. Guiding Principles

These Guidelines are based on the following guiding principles:

4.3.1 Evaluation of counterparties

Counterparties (clients carrying out the transaction) shall ensure sustainable management of the environmental and social issues relating to their operations. Assessment of practices will be based on the ability to demonstrate that the issues listed in paragraph 3 (Risks) have been properly addressed.

4.3.2. Evaluation of specific transactions

Transactions specific⁵ to coal-fired power plants must meet the conditions described below:

³ Proprietary or third party asset management excluding passive index-based management.

⁴ See World Bank classification: http://data.worldbank.org/about/country-classifications/country-and-lending-groups#High_income

⁵ That is, transactions for which the use of funds is known and limited to one or two physical projects or specific assets – and using the implementation procedures specific to each financial institution.



A. For project finance

Compliance with the **Equator Principles** and associated norms such as the International Finance Corporation (IFC) Performance Standards and the applicable World Bank Group Environmental, Health and Safety (EHS) Guidelines.

B. For existing power plants (renovation / brownfield)

Significant improvement in energy efficiency and/or overall environmental performance (treatment of waste gas or other improvements).

C. For new power plants (construction / greenfield)

- Compliance with internationally accepted environmental standards such as the **World Bank Group Environmental, Health and Safety (EHS) Guidelines**.

- **HHV thermal efficiency⁶ (as defined in the glossary in paragraph 6 below)** greater than 43% when the host country is High-income and 38% for other host countries. Failure to respect these thresholds should be justified and reasoned, based on an analysis of the global environmental balance of the plant⁷.
- Demonstration that the plant can be considered «CCS-Ready» (CCS / Carbon Capture & Storage), as defined by the International Energy Agency⁸ (in countries where CCS regulations have been, or are being developed).

D. Special areas for attention or exclusion

- Key Biodiversity Areas.
- UNESCO classified World Heritage Sites.
- Wetlands of International Importance identified in the Ramsar Convention.
- IUCN I-IV Protected Areas.

5 Summary

The detailed guidelines are described above in Part 4.3. The Table below sets out the main elements

| Technology | HHV Energy Efficiency (1) (2) | Kg/MWh (2) | Greenfield plants | | Centrales brownfield Renovation |
|---|-------------------------------|-------------|------------------------------------|-------------------------------|---|
| | | | Non-High Income OCDE Countries (3) | High Income OCDE Countries(3) | |
| SUB CRITICAL (1) Pulverised (1) Fluidised bed (1) | Less than 38% | 900 to 1000 | No (4) | No | Yes, if significant improvement in energy efficiency and/or overall environmental performance (SOx, NOx or CCS) |
| SUPER CRITICAL (1) Pulverised (1) Fluidised bed (1) IGCC (1) | 38% to 43% | 800 to 900 | Yes | No (4) | |
| ULTRA SUPERCRITICAL (1) Pulverised (1) | Above 43% | 700 to 800 | Yes | Yes | |

(1) These terms are defined in the Glossary below.

(2) Source IADB.

(3) See the World Bank classification: http://data.worldbank.org/about/country-classifications/country-and-lending-groups#High_income

(4) Subject to the comments made in section 4.3.2 Evaluation of specific transactions.

⁶This criteria does not apply to CHP co-generation power plants and plants producing less than 200 MW.

⁷The global environmental effect of a power plant is gauged on a set of parameters including not only the thermal efficiency value but also the quality of the coal, CO₂, SOx, NOx and PM emissions and their corresponding corrective equipment (pre-combustion processing of coal, desulfurization - FGD, denitrification - SCR...). In addition, certain technologies such as the so-called fluidized bed can be beneficial from an environmental perspective by nature, due to the use of biomass, waste recycling and lower SOx, NOx and CO₂ emission levels, thereby justifying derogation from the efficiency value thresholds set out above.

⁸The International Energy Agency's definition of CCS readiness includes that "Developers of capture-ready plants should take responsibility for ensuring that all known factors in their control that would prevent installation and operation of CO₂ capture have been eliminated. This might include: (i) A study of options for CO₂ capture retrofit and potential pre-investments, (ii) Inclusion of sufficient space and access for the additional facilities that would be required, (iii) Identification of reasonable route(s) to storage of CO₂"

6 Glossary

➔ **Carbon Capture and Storage (CCS):** A set of techniques to capture carbon dioxide (CO₂), that is, to separate it from other gases produced during combustion or processing:

- either by heating the primary fuel by means of steam and air or oxygen, so as to convert it into a gas containing mainly hydrogen and CO₂, which can be easily separated from each other (**pre-combustion**);
- by using pure oxygen to burn the fuel instead of air (air contains only 20% oxygen), to produce a gaseous mixture consisting essentially of CO₂ and steam, the latter being easy to remove from the CO₂ by cooling and compressing the gas stream (**oxy-fuel combustion**); or
- by capturing CO₂ in the flue gas through reaction with amines or ammonia (**post-combustion**). Once trapped, the CO₂ is stored by injection into the ocean (or the ocean floor) or in geological formations (aquifers, coal seams in mines). All these techniques have the disadvantage of consuming a lot of energy and, thus, reducing the net efficiency of the power plant by around 10 points.

➔ **CHP:** (combined heat and power) cogeneration: a power plant whose low temperature heat is recovered for use in various applications such as district heating (short distance), thereby maximizing the yield to more than 80%.

➔ **Fluidised bed:** technology allowing the use of lower quality coal, biomass and waste; the fuel is burned on a bed of solid particles (limestone) maintained in suspension by an updraft at a moderate temperature of about 850°C, which prevents ash fusion and limits the production of nitrogen and sulfur oxides; this is called a **circulating fluidized bed** («CFB»). An increase in yield, and a consequent reduction in GHG emissions, can be achieved by improving the technique through combustion under pressure, which is called a **pressurized fluidized bed** («PFB”).

➔ **HHV (Higher Heating Value), also known as Higher Calorific Value (HCV) or Gross Calorific Value (GCV):** a measure of the heating value of a power plant, i.e. the amount of heat released during the combustion of a fuel unit, determined after condensing any steam produced.

➔ **IFC Performance Standards:** A reference framework that came into force on 30 April 2006 and was updated on 1 January 2012, which puts into practice the commitment of the International Finance Corporation to social and environmental sustainability and clearly sets out the responsibilities of clients in the environmental and social spheres.

<http://www.ifc.org/ifcext/sustainability.nsf/Content/PerformanceStandards>

- **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

Performance Standard 1 establishes the importance of

- (i) integrated assessment to identify the environmental and social impacts, risks and opportunities of projects;
- (ii) effective community engagement through disclosure of project-related information and consultation with local communities on matters that directly affect them;
- and (iii) the client's management of environmental and social performance throughout the life of the project.

Performance Standards 2 through 8 establish objectives and requirements to avoid, minimize, and where residual impacts remain, to compensate/offset for risks and impacts to workers, affected communities and the environment. While all relevant environmental and social risks and potential impacts should be considered as part of the assessment, Performance Standards 2 through 8 describe potential environmental and social risks and impacts that require particular attention. Where environmental or social risks and impacts are identified, the client is required to manage them through its Environmental and Social Management System (ESMS) consistent with Performance Standard 1.



➔ **IGCC («Integrated Gasification Combined Cycle»):** type of power plant where the gas turbine exhaust gas is used to heat a conventional thermal power plant; instead of using natural gas, a mixture of pulverized coal and oxygen is converted by a gasifier, at 1,500°C and 28 bars, into a synthetic gas, the mixture then being fed into a heat recovery exchanger, then into a scrubber at the end of which it expands and is burned to generate electricity. In order to produce additional electricity, exhaust gas from the turbine is fed into a heat recovery steam generator (HRSG), which recovers the excess heat.

➔ **LHV (Low Heating Value), or Lower Calorific Value (LCV) or Net Calorific Value (NCV):** a measure of the heating capacity of a power plant after subtracting the amount of energy required to vaporize the water from its HHV, since the heat contained in the steam escapes into the heated combustion gases and cannot thus be recovered by a power plant under normal operating conditions. The difference between the HHV and LHV can be great if the fuel contains a lot of hydrogen or water.

➔ **Pulverised Coal:** technique in which coal is reduced to a very fine powder before being injected into the boiler furnace and burned at temperatures between 1,300°C and 1,500 ° C.

➔ **Sub-critical:** a power plant with steam entering the turbine below the critical point for water (the critical point being the threshold beyond which water becomes steam directly without boiling, corresponding to a pressure of 221 bars at a temperature of 374°C).

➔ **Supercritical (SC)** a power plant in which the pressure of the superheated steam entering the turbine exceeds the critical point for water; including advanced supercritical plants (ASC), where the pressure and temperature reach 250 bars and 565°C respectively, and ultra supercritical plants (USC) where they reach 300 bars and 585°C. The yield of ASC and USC plants is higher than that of other plants and each kilowatt-hour produced accordingly emits less carbon than low yield plants.

➔ **Treatment of flue gas, mechanisms include:**

- **Dedusting:** the dust (soot) contained in the flue gas is normally captured in ESPs (electrostatic precipitators consisting of frames containing electrified wires in which the dust particles become electrically charged and stick to large metal plates; the plates are then struck in order to shake off the dust, which is collected in hoppers and taken out to be re-employed);
- **Flue Gas Desulfurization (FGD):** sulfur oxides (SO₂, SO₃) are generally trapped in FGD units;
- **Denitrification:** nitrogen oxides (NO_x) are generally removed by bringing the flue gas into contact with ammonia, which produces water and nitrogen. (Low-NO_x burners or SCR -selective catalytic reduction);
- Finally, **particles** are treated by ESP filters.

All these techniques have the disadvantage of consuming energy and thus reducing the performance of the power plant.



« *For the mining and metals sector, ORSE recommends to only finance or insure: in High-income OECD countries, counterparties or projects that meet the IFC Performance Standards on Environmental and Social Sustainability, in particular standards 1, 3, 6 and 7; and, in other countries, only those projects that meet all of the IFC Performance Standards, the International Council on Mining and Metals (ICMM) Principles and, as necessary, the International Cyanide Management Code (ICMC), the Kimberley Process certification scheme for diamonds, the Ramsar Convention on Wetlands of International Importance and the Extractive Industries Transparency Initiative (EITI).* »



1

Issues

- **Mineral ore mining is essential to the global economy:** metals are used in the production of many capital and consumer goods; recycling is insufficient, given the sometimes long life of end products and economic growth; uranium and coal are used to produce energy, particularly electricity; the share of renewable energy is increasing but no «credible» global energy scenario totally excludes nuclear or fossil-fuelled energy. Other mineral substances (phosphates, potash...) that are generally consumed by agriculture and chemical industries remain essential, even though rationalisation measures must be implemented.
- For many primary producer countries, particularly developing countries, the exploitation of natural resources is an **important source of economic wealth, when properly managed.**
- Nevertheless, **the environmental and social (E & S) risks and impacts** relating to the mining industry are serious.

2

Framework

Companies working in the mining sector shall respect, and ensure respect by their clients and suppliers, for:

- the **laws and regulations** in force in the countries in which they operate;
- as well as the **standards, conventions, initiatives and recommendations** issued by a number of organizations and professional associations in the mining and metals industry, aiming to better manage the E & S impact of activities in the sector.

The standards listed below assist in assessing the management of E & S impacts arising from the activities of clients:

1. Principles of the Extractive Industries Transparency Initiative (**EITI**);
2. The **Voluntary Principles on Security and Human Rights**;
3. The United Nations **Declaration on the Rights of Indigenous Peoples**;
4. The **Equator Principles** and associated norms, such as the International Finance Corporation (IFC) Performance Standards and the applicable World Bank Group Environmental, Health and Safety (EHS) Guidelines;

5. The **Convention Concerning the Protection of the World Cultural and Natural Heritage** (UNESCO);
6. The **Convention on Wetlands of International Importance** (known as the Ramsar Convention);
7. The **Convention on Biological Diversity** (UNEP);
8. The Principles of the International Council on Mining and Metals (**ICMM**)
9. The **International Cyanide Management Code** (ICMC);
10. The **Kimberley Process certification scheme** (diamonds);
11. The **iTSCi project** for the traceability of tin ore in Central Africa (iTSCi - ITRI Tin Supply Chain Initiative);
12. The **Rules of the SEC** (U.S. Securities and Exchange Commission) concerning traceability of conflict minerals;
13. The **World Nuclear Association** (WNA) best practice guide for uranium mines.

3

Risks

When evaluating clients and/or mining sector transactions, analysis of the following areas shall be given special attention:



WATER

- Pressure on the resource.
- Pollution, direct discharge of waste into rivers / the marine environment or risk of drainage of toxic substances (pollution).



TERRESTRIAL

- Soil pollution.
- Inadequate waste and landfill management.
- Modification of landscapes.



AIR

- Pollution.



ENERGY

- High energy consumption.
- CO₂ emissions.



BIODIVERSITY

- Development of access to remote areas (which can induce indirect impacts such as deforestation).
- Direct discharge of waste into rivers / the marine environment or risk of drainage of toxic substances.
- The absence, or failure of rehabilitation of mine sites after closure.



SOCIAL

- Development of access to remote areas (which can lead to indirect impacts such as conflict with the local population).
- Inappropriate management of the health and safety of workers and / or high frequency of accidents, especially in underground mines.
- Increased risk to the health and safety of the local population; e.g. safety of tailings dams, increased risk of erosion or land subsidence (safety of surrounding communities).
- Inappropriate noise and vibration management (impact vis-à-vis employees).
- Resettlement or economic displacement (including squatters or artisanal miners) caused by loss of land or property (such as access to fishing, agricultural land or land resources) (benefits received by the local population).
- Impact on local communities and inadequate grievance mechanisms.
- Impact on indigenous peoples or the land used by indigenous peoples (benefits received by the local population).
- Use of security force services, especially when they are not under the control of the client.
- Operations conducted in areas of high social tension (because of previous mining activities, closure of mines or other reasons) or in countries with a weak regulatory framework, lack of transparency, a high level of corruption and/or a negative reputation for Human Rights violations.
- Forced labour.



Guidelines

4.1. Scope

The following Guidelines, intended as a reference grid for the granting of a range of financial services, were derived from the above regulations, conventions and standards. They cover:

- All stages of the life cycle of a mine (exploration / production / rehabilitation and closure).
- Mines for metals (ferrous and non-ferrous ore, precious metals, uranium), non-metallic minerals (coal, phosphates, potash...) and quarries for building materials.
- Underground, open cut, alluvial and marine mining.
- In-situ or open cut mineral processing and hydrometallurgy («heap» leaching), with the exception of metallurgical operations such as pyrometallurgy and hydrometallurgy, performed at specific industrial sites.

They exclude all stages of the exploitation of hydrocarbons¹.

4.2. Services that may be provided by financial institutions

The scope of these Guidelines covers all financial services:

1. Financing
2. Investments² (primary debt and equity markets)
3. International trade transactions (Trade Finance)
4. Services (Payments, Insurance, Mergers and Acquisitions, Consulting...)

4.3. Levels of information retained

The decisions of financial institutions shall be based on the information available to them.

These institutions shall include environmental and social (E & S) risk and impact assessments in their decision-making processes both as regards counterparties and the specific transactions for which the use of funds is known.

4.4. Guiding Principles

A distinction shall be made between **countries of origin** (the country where the counterparty is registered) and **destination countries** (the country where the mineral resource is mined).

These Guidelines are based on the following guiding principles:

4.4.1. Evaluation of counterparties

Counterparties shall ensure sustainable management of the environmental and social issues relating to their operations. Assessment of practices will be based on the ability to demonstrate that the issues listed in paragraph 3 (Risks) have been properly addressed.

¹ The oil and gas industry is subject to specific Guidelines including both classic and unconventional oil operations (tar sands, shale gas).

² Proprietary or third party asset management, excluding passive index-based management.





- In OECD High-income **countries of origin** (as ranked by the World Bank), counterparties are generally expected to apply national regulations. Companies with significant sensitive activities³ (more than 20% of their overall activity) are also expected to implement a corporate policy that is consistent with national laws and IFC social and environmental sustainability Performance Standards 1, 3, 6 and 7.
- In any **other countries of origin**, counterparties are expected to comply with the Principles of the International Council on Mining and Metals (ICMM), other case-specific principles, where applicable (the International Cyanide Management Code (ICMC), the Kimberley diamond certification process...) and the Extractive Industries Transparency Initiative (EITI).

4.4.2. Evaluation of specific transactions

Transactions specific⁴ to the mining and metals sector must meet the conditions described below:

- In OECD High-income **countries of destination** (as ranked by the World Bank), the client is expected, as a general rule, to apply national regulations.

- In sensitive sectors, it should also comply with the IFC environmental and social sustainability Performance Standards, and in particular Standards 1 (Assessment and Management of Environmental and Social Risks and Impacts), 3 (Resource Efficiency and Pollution Prevention), 6 (Biodiversity) and 7 (Indigenous Peoples).
- In **other countries of destination**, the client is expected to comply with all IFC social and environmental sustainability Performance Standards, other specific principles, where appropriate (the International Cyanide Management Code (ICMC), the Kimberley diamond certification process...) and the Extractive Industries Transparency Initiative (EITI).

4.4.3. Areas of focus or exclusion

- Key Biodiversity Areas
- UNESCO classified World Heritage Sites
- Wetlands of International Importance identified in the Ramsar Convention
- IUCN I-IV Protected Areas

5

Summary

| Counterparty | | Specific assets | |
|--|---|---|---|
| Country of origin | | Country of destination | |
| OECD High-income ¹ | Other | OECD High-income ¹ | Other |
| Apply national regulations | Respect the International Council on Mining and Metals (ICMM) Principles | Apply national regulations | Respect all IFC social and environmental sustainability Performance Standards |
| For companies with more than 20% “sensitive” activities²: Implement a corporate policy that is consistent with IFC social and environmental sustainability Performance Standards 1, 3, 6 and 7 | For the concerned companies: Sectoral principles: The International Cyanide Management Code, (ICMC) Kimberley diamond certification process... Extractive Industries Transparency Initiative (EITI) | For assets relating to sensitive activities²: Respect IFC social and environmental sustainability Performance Standards 1, 3, 6 and 7 | For the concerned assets: Sectoral principles: International Cyanide Management Code (ICMC), Kimberley diamond certification process... Extractive Industries Transparency Initiative (EITI) |

¹ See the World Bank classification: http://data.worldbank.org/about/country-classifications/country-and-lending-groups#High_income

² Sensitive Activities: Mountain Top Removal (MTR) and asbestos mines. Tar sands and shale oil and gas are covered by the **Guidelines for hydrocarbons**.

³ Sensitive activities: Mountain Top Mining and asbestos mines. Mountain Top Mining (also called Mountain Top Removal or MTR) is a practice used in some coalmines in the Appalachian mountains in the United States. It should be noted that tar sands and shale oil and gas are covered by the guidelines for hydrocarbons.

⁴ That is, transactions for which the use of funds is known and limited to one or two physical projects or specific assets – and using the application procedures specific to each financial institution

6 Glossary

- ➔ **Convention on Biological Diversity:** the first global agreement on the conservation and long-term respect for biological diversity, the Convention was opened for signature in 1992 at the United Nations Conference on Environment and Development in Rio de Janeiro (Brazil). Quickly and widely accepted, the treaty has been ratified by 175 countries so far. The Convention lays a milestone in international law by recognizing, for the first time, that the conservation of biological diversity is «a common concern of humankind» and an integral part of the development process. It covers all ecosystems, species and genetic resources. It establishes the principle of fair and equitable distribution of benefits arising from the utilization of genetic resources, including for commercial purposes. It also extends to the field of biotechnology in addressing issues of transfer and the development of biotechnology, the distribution of the resulting benefits and bio-security. Countries acceding to the, legally binding, Convention are obliged to apply its provisions.
<http://www.cbd.int>
- ➔ **Convention concerning the Protection of World Cultural and Natural Heritage (UNESCO)** an international convention adopted by the General Conference of UNESCO in 1972. This treaty is based on the principle that there are places on Earth that are of outstanding universal value that should be part of the common heritage of humanity. These places and property are as diverse and unique as the pyramids of Egypt, the Great Barrier Reef in Australia, the Galapagos Islands in Ecuador, the Taj Mahal in India, the Grand Canyon in the United States and the Acropolis in Greece. The Convention is an international treaty that, over 30 years, has become the most important instrument for the conservation of cultural and natural heritage.
<http://whc.unesco.org/archive/convention-en.pdf>
- ➔ **Convention on Wetlands of International Importance (known as the Ramsar Convention)** the Ramsar Convention (Ramsar, Iran, 1971) is an intergovernmental treaty that embodies the commitments of its Member States to maintain the ecological character of their Wetlands of International Importance and to plan for the «wise use», or sustainable use, of all wetlands within their territory. The Ramsar Convention is not affiliated with multilateral environmental agreements of the United Nations system, unlike other global conventions in the field of environment, yet it works closely with other MEAs and is a full partner in the group of treaties and agreements «relating to biodiversity.»
http://www.ramsar.org/cda/en/ramsar-home/main/ramsar/1_4000_0__
- ➔ **Equator Principles:** a financial industry credit risk management framework for determining, assessing and managing environmental and social risk in project finance transactions, based on the IFC standards.
<http://www.equator-principles.com/>
- ➔ **Extractive Industries Transparency Initiative (EITI) - <http://eiti.org>:** a coalition of governments, companies, civil society groups, investors and international organisations that have defined six criteria to promote payment and revenue transparency in extractive industries:
1. Regular publication of all material oil, gas and mining payments by companies to governments (“payments”) and all material revenues received by governments from oil, gas and mining companies (“revenues”) to a wide audience in a publicly accessible, comprehensive and comprehensible manner.
 2. Where such audits do not already exist, payments and revenues are the subject of a credible, independent audit, applying international auditing standards.
 3. Payments and revenues are reconciled by a credible, independent administrator, applying international auditing standards and with publication of the administrator’s opinion regarding that reconciliation including discrepancies, should any be identified.
 4. This approach is extended to all companies including state-owned enterprises.
 5. Civil society is actively engaged as a participant in the design, monitoring and evaluation of this process and contributes towards public debate.
 6. A public, financially sustainable work plan for all the above is developed by the host government, with assistance from the international financial institutions where required, including measurable targets, a timetable for implementation, and an assessment of potential capacity constraints.
- ➔ **IFC Performance Standards:** A reference framework that came into force on 30 April 2006 and was updated on 1 January 2012, which puts into practice the commitment of the International Finance Corporation to social and environmental sustainability and clearly sets out the responsibilities of clients in the environmental and social spheres.
<http://www.ifc.org/ifcext/sustainability.nsf/Content/PerformanceStandards>





- **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

➔ **International Council on Mining and Metals (ICMM) Principles**

<http://www.icmm.com/our-work/sustainable-development-framework/10-principles>

1. Implement and maintain ethical business practices and sound systems of corporate governance.
2. Integrate sustainable development considerations within the corporate decision-making process.
3. Uphold fundamental human rights and respect cultures, customs and values in dealings with employees and others who are affected by our activities.
4. Implement risk management strategies based on valid data and sound science.
5. Seek continual improvement of our health and safety performance.
6. Seek continual improvement of our environmental performance.
7. Contribute to conservation of biodiversity and integrated approaches to land use planning.
8. Facilitate and encourage responsible product design, use, re-use, recycling and disposal of our products.
9. Contribute to the social, economic and institutional development of the communities in which we operate.
10. Implement effective and transparent engagement, communication and independently verified reporting arrangements with our stakeholders.

➔ **International Cyanide Management Code (ICMC):**

the International Cyanide Management Code For the Manufacture, Transport, and Use of Cyanide In the Production of Gold» (Code) was developed by a multi-stakeholder Steering Committee under the guidance of the United Nations Environmental Program (UNEP) and the then-International Council on Metals and the Environment (ICME).

The objective of the Code is to improve the management of cyanide used in gold mining and assist in the protection of human health and the reduction of environmental impacts.

<http://www.cyanidecode.org/>

- ➔ **The iTSCi project for the traceability of tin ore in Central Africa (iTSCi):** the iTSCi is an initiative of the tin industry with the end goal of ensuring the traceability of tin ore in Central Africa through a due diligence process.

https://www.itri.co.uk/index.php?option=com_zoo&task=item&item_id=2193&Itemid=191



◀ In the oil and gas sector, ORSE advises to finance or insure only those counterparties or sensitive projects (oil sands, shale oil and gas...) in High-income OECD countries that meet the IFC Performance Standards on Environmental and Social Sustainability, and in particular standards 1, 3, 6 and 7; and in other countries, those that meet all the IFC Performance Standards and the Principles of the International Petroleum Industry Environmental Conservation Association (IPIECA) and the International Association of Oil and Gas Producers (OGP), as well as, where appropriate, the Global Gas Flaring Reduction partnership (GGFR), the Ramsar Convention on Wetlands of International Importance and the Extractive Industries Transparency Initiative (EITI). ▶▶



1 ISSUES

- Oil and gas **production is essential to the global economy**: hydrocarbons are used as inputs for the chemical and plastics industries; they are used to produce energy, particularly electricity; although the share of renewable energy is increasing, global energy scenarios continue to rely on the inclusion of hydrocarbons.
- For many primary producer countries, particularly developing countries, the exploitation of natural resources is an **important source of economic wealth, when properly managed**.
- Nevertheless, the **environmental and social risks and impacts** relating to the oil and gas sector are serious.

2 Framework

Companies working in the oil and gas sector shall respect, and ensure respect by their clients and suppliers, for:

- the **laws and regulations** in force in the countries in which they operate;
- as well as the **standards, conventions, initiatives and recommendations** issued by a number of organizations and professional associations in the oil and gas sector, aiming to better manage the environmental and social impact of activities in the sector.

The standards listed below assist in assessing the management of environmental, social and governance impacts arising from the activities of clients:

1. Transparency - the Extractive Industries Transparency Initiative (**EITI**).
2. Gas Flaring - the Global Gas Flaring Reduction partnership (**GGFR**).
3. Emergency Situations in Maritime operations - the International Convention on Oil Pollution Preparedness, Response and Co-operation (**OPRC**, 1990).
4. Marine Pollution – the 2003 amendment to Annex 1 of the International Convention for the Prevention of Pollution from Ships (**MARPOL**), which relates to the prevention of oil pollution, as well as the other criteria of the MARPOL Convention, as applicable; and the Convention for the Protection of the marine Environment of the North-East Atlantic (the OSPAR Convention).

5. Compensation for damage caused by oil pollution – the criteria in the International Convention on Civil Liability for Oil Pollution Damage (**CLC**) and those of the International Oil Pollution Compensation Funds (**IOPC Funds**).
6. The Guidelines established by the global oil and gas industry association for environmental and social issues (**IPIECA**) and by the International Association of Oil and Gas Producers (**OGP**).
7. For the assessment of project finance and related operations, application of the **Equator Principles** and associated norms, such as the International Finance Corporation (IFC) Performance Standards and the World Bank Group Environmental, Health and Safety (EHS) Guidelines applicable to the oil and gas sector.
8. Human Rights - the **Voluntary Principles on Security and Human Rights**.
9. The United Nations **Declaration on the Rights of Indigenous Peoples**.
10. Biodiversity – the recommendations of the Energy and Biodiversity Initiative (**EBI**) and, where applicable, the principles of the Joint Nature Conservation Committee (**JNCC**) for the offshore industry (protection of marine animals).
11. The **Convention Concerning the Protection of the World Cultural and Natural Heritage** (UNESCO).
12. The **Convention on Wetlands of International Importance** (known as the Ramsar Convention).
13. The Extractive Industries Review Report (**EIRR**) conducted by the World Bank in 2003.

3 Risks

When evaluating clients and/or oil and gas sector transactions, analysis of the following areas shall be given special attention:

WATER

- Potential adverse impacts on water quality as a result of oil spills or leaks in settling ponds, wastewater management, or due to improper waste management, especially when produced by offshore installations.
- Pressure on water resources for the operation and cooling of installations (tar sands).



TERRESTRIAL

- Soil pollution (leakage, dismantling, inadequate waste management...).
- Modification of landscapes (tar sands).
- Specific impact of non-conventional extraction techniques.



AIR

- Atmospheric emissions, especially when flaring is used routinely in the management of associated gas, but also in the event of venting or fires.
- The specific impact of unconventional extraction techniques.



ENERGY

- High energy consumption (tar sands / SAGD, liquefaction, transport, regasification).
- CO₂ emissions.



BIODIVERSITY

- Impacts on critical habitats and protected ecological or cultural areas (oil spills, sonar exploration, failure to cover settling ponds...).
- Facilitated access to remote areas, which can induce indirect impacts such as deforestation.
- The absence, or failure of rehabilitation of extraction sites after closure.



SOCIAL

- Corruption / deprivation of wealth / tax evasion.
- Facilitated access to remote areas, which can induce indirect impacts such as conflict with the local population.
- Forced labour.
- Inappropriate management of the health and safety of workers.
- Increased risk to the health and safety of the local population (explosions, leakage, oil spills...).
- Inappropriate noise and vibration management (impact vis-à-vis employees and local residents).
- Resettlement or economic displacement caused by loss of land or property.
- Impact on local communities / human rights violations, in particular due to inadequate grievance mechanisms.
- Impact on indigenous peoples or the land used by indigenous peoples.

- Use of security force services, especially when they are not under the control of the client.
- Operations conducted in areas of high social tension or in countries with a weak regulatory framework, lack of transparency, a high level of corruption and/ or a negative reputation for Human Rights violations.



Guidelines

4.1. Scope

The following Guidelines, intended as a reference grid for the granting of a range of financial services, were derived from the above regulations, conventions and standards. They cover:

- seismic surveys and exploratory drilling;
- planning and development of wells;
- field operation and production;
- refining and processing;
- transport, storage and distribution;
- services to the oil and gas industry.

with the exception of sensitive activities / non-conventional hydrocarbon operations (which will be covered by specific guidelines).

4.2. Services that may be provided by financial institutions

The scope of these Guidelines covers all financial services:

1. Financing
2. Investments¹ (primary debt and equity markets)
3. International trade transactions (Trade Finance)
4. Services (Payments, Insurance, Mergers and Acquisitions, Consulting...)

4.3. Levels of information retained

The decisions of financial institutions shall be based on the information available to them.

These institutions shall include environmental and social risk and impact assessments in their decision-making processes both as regards counterparties and the specific transactions for which the use of funds is known.

4.4. Guiding Principles

A distinction shall be made between **countries of origin** (the country where the counterparty is registered) and **destination countries** (the country where the oil or gas resource is extracted).

¹ Proprietary or third party asset management, excluding passive index-based management



4.4.1. Evaluation of counterparties

Counterparties shall ensure sustainable management of the environmental and social issues relating to their operations. Assessment of practices will be based on the ability to demonstrate that the issues listed in paragraph 3 (Risks) have been properly addressed.

- In OECD High-income **countries of origin** (as ranked by the World Bank), counterparties are expected, as a general rule, to apply national regulations. Companies with significant sensitive activities² (more than 20% of their overall activity) are also expected to implement a corporate policy that is consistent with national laws and IFC social and environmental sustainability Performance Standards 1, 3, 6 and 7;
- In **other countries of origin**, counterparties are expected to establish and maintain a management system consistent with the principles established by the Global Gas Flaring Reduction partnership (GGFR), the Extractive Industries Transparency Initiative (EITI) and respect the Guidelines established by the global oil and gas industry association for environmental and social issues (IPIECA) and those of the International Association of Oil and Gas Producers (OGP).

4.4.2. Evaluation of specific transactions

Transactions specific³ to the oil and gas sector must meet the conditions described below:

- In OECD High-income **countries of destination** (as ranked by the World Bank), the client is expected, as a general rule, to apply national regulations. In sensitive sectors, it should also comply with the IFC environmental and social sustainability Performance Standards, and in particular Standards 1 (Assessment and Management of Environmental and Social Risks and Impacts), 3 (Resource Efficiency and Pollution Prevention), 6 (Biodiversity) and 7 (Indigenous Peoples);
- In **other countries of destination**, the client is expected to comply with all IFC social and environmental sustainability Performance Standards and, where appropriate, establish and maintain a management system consistent with the principles established by the Global Gas Flaring Reduction partnership (GGFR) and the Extractive Industries Transparency Initiative (EITI).

4.4.3. Areas of focus or exclusion

- Key Biodiversity Areas
- UNESCO classified World Heritage Sites
- Wetlands of International Importance identified in the Ramsar Convention
- IUCN I-IV Protected Areas.

5

Summary

| Counterparty | | Specific assets | |
|--|--|---|---|
| Country of origin | | Country of destination | |
| OECD High-income ¹ | Other | OECD High-income ¹ | Other |
| Apply national regulations | Respect the Guidelines established by the global oil and gas industry association for environmental and social issues (IPIECA) and those of the International Association of Oil and Gas Producers (OGP) | Apply national regulations | Respect all IFC social and environmental sustainability Performance Standards |
| For companies with more than 20% “sensitive” activities ² : Implement a corporate policy that is consistent with IFC social and environmental sustainability Performance Standards 1, 3, 6 and 7 | For the concerned companies, establishment and maintenance of a management system consistent with: The Extractive Industries Transparency Initiative (EITI) The global oil and gas industry association for environmental and social issues (IPIECA) | For assets relating to sensitive activities ² : Respect IFC social and environmental sustainability performance standards 1, 3, 6 and 7 | For the concerned assets; establishment and maintenance of a management system consistent with: The Extractive Industries Transparency Initiative (EITI) The global oil and gas industry association for environmental and social issues (IPIECA) |

¹ See the World Bank classification: http://data.worldbank.org/about/country-classifications/country-and-lending-groups#High_income

² Sensitive Activities: tar sands, non-conventional oil and gas (bedrock...).

² Sensitive activities: tar sands and non-conventional oil and gas (bedrock...).

³ That is, transactions for which the use of funds is known and limited to one or two physical projects or specific assets – and using the application procedures specific to each financial institution.

- ➔ **Convention on Biological Diversity:** the first global agreement on the conservation and long-term respect for biological diversity, the Convention was opened for signature in 1992 at the United Nations Conference on Environment and Development in Rio de Janeiro (Brazil). Quickly and widely accepted, the treaty has been ratified by 175 countries so far. The Convention lays a milestone in international law by recognizing, for the first time, that the conservation of biological diversity is «a common concern of humankind» and an integral part of the development process. It covers all ecosystems, species and genetic resources. It establishes the principle of fair and equitable distribution of benefits arising from the utilization of genetic resources, including for commercial purposes. It also extends to the field of biotechnology in addressing issues of transfer and the development of biotechnology, the distribution of the resulting benefits and bio-security. Countries acceding to the, legally binding, Convention are obliged to apply its provisions.
<http://www.cbd.int>
- ➔ **Convention concerning the Protection of World Cultural and Natural Heritage (UNESCO)** an international convention adopted by the General Conference of UNESCO in 1972. This treaty is based on the principle that there are places on Earth that are of outstanding universal value that should be part of the common heritage of humanity. These places and property are as diverse and unique as the pyramids of Egypt, the Great Barrier Reef in Australia, the Galapagos Islands in Ecuador, the Taj Mahal in India, the Grand Canyon in the United States and the Acropolis in Greece. The Convention is an international treaty that, over 30 years, has become the most important instrument for the conservation of cultural and natural heritage.
<http://whc.unesco.org/archive/convention-en.pdf>
- ➔ **Convention on Wetlands of International Importance (known as the Ramsar Convention)** the Ramsar Convention (Ramsar, Iran, 1971) is an intergovernmental treaty that embodies the commitments of its Member States to maintain the ecological character of their Wetlands of International Importance and to plan for the «wise use», or sustainable use, of all wetlands within their territory. The Ramsar Convention is not affiliated with multilateral environmental agreements of the United Nations system, unlike other global conventions in the field of environment, yet it works closely with other MEAs and is a full partner in the group of treaties and agreements «relating to biodiversity.»
http://www.ramsar.org/cda/en/ramsar-home/main/ramsar/1_4000_0__
- ➔ **Environmental, Health and Safety (EHS) Guidelines:** World Bank Technical reference documents that provide general and industry specific examples of international best practice. They indicate the measures and performance levels that are generally considered to be achievable in new facilities by existing technology at a reasonable cost.
- ➔ **Equator Principles:** a financial industry credit risk management framework for determining, assessing and managing environmental and social risk in project finance transactions, based on the IFC standards.
<http://www.equator-principles.com/>
- ➔ **Extractive Industries Transparency Initiative (EITI) - <http://eiti.org>** : a coalition of governments, companies, civil society groups, investors and international organisations that have defined six criteria to promote payment and revenue transparency in extractive industries:
1. Regular publication of all material oil, gas and mining payments by companies to governments (“payments”) and all material revenues received by governments from oil, gas and mining companies (“revenues”) to a wide audience in a publicly accessible, comprehensive and comprehensible manner.
 2. Where such audits do not already exist, payments and revenues are the subject of a credible, independent audit, applying international auditing standards.
 3. Payments and revenues are reconciled by a credible, independent administrator, applying international auditing standards and with publication of the administrator’s opinion regarding that reconciliation including discrepancies, should any be identified.
 4. This approach is extended to all companies including state-owned enterprises.
 5. Civil society is actively engaged as a participant in the design, monitoring and evaluation of this process and contributes towards public debate.
 6. A public, financially sustainable work plan for all the above is developed by the host government, with assistance from the international financial institutions where required, including measurable targets, a timetable for implementation, and an assessment of potential capacity constraints.





➔ **Global Gas Flaring Reduction partnership (GGFR),**

A World Bank public-private partnership to promote and support the efforts of oil producing countries to increase the use of gas that is currently flared, by encouraging the establishment of effective regulatory frameworks and tackling the factors impeding the use of these gases, such as lack of infrastructure and poor access to local and international energy markets, particularly for developing countries. To overcome the barriers to reducing gas flaring, the GGFR focuses on four key areas:

- Commercialization of associated gas;
- Regulations for associated gas;
- The implementation of the Voluntary Standard for Global Gas Flaring and Venting Reduction;
- Building the capacity needed to obtain carbon funding for projects aimed at reducing the volume of gas flaring and venting.

➔ **The global oil and gas industry association for environmental and social issues (IPIECA):**

<http://www.ipieca.org>

➔ **IFC Performance Standards:** A reference framework that came into force on 30 April 2006 and was updated on 1 January 2012, which puts into practice the commitment of the International Finance Corporation to social and environmental sustainability and clearly sets out the responsibilities of clients in the environmental and social spheres. <http://www.ifc.org/ifcext/sustainability.nsf/Content/PerformanceStandards>

- **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

➔ **International Association of Oil and Gas Producers (OGP)**

<http://www.ogp.org.uk/>

➔ **United Nations Declaration on the Rights of Indigenous Peoples:** a Resolution adopted by the UN General Assembly recognizing the right of indigenous peoples to live in dignity, to maintain and strengthen their own institutions, cultures and traditions and to pursue freely their development in accordance with their aspirations and needs.

<http://social.un.org/index/IndigenousPeoples/DeclarationontheRightsofIndigenousPeoples.aspx>

➔ **Voluntary Principles on Security and Human Rights:** Principles drafted by a group of governments, companies in the extractive and energy sectors and NGOs on the responsible management of security forces.

http://www.voluntaryprinciples.org/files/voluntary_principles_english.pdf



Concerning hydro-electric dams, ORSE proposes that, in High-income OECD Countries, financial institutions should only finance or insure those projects that meet the following IFC Performance Standards on Environmental and Social Sustainability: 1 (assessment and management of environmental and social risks and impacts), 3 (resource efficiency and pollution prevention), 6 (biodiversity) and 7 (indigenous peoples). In other countries: only those projects that meet all the IFC Performance Standards and the decision-making framework of the World Commission on Dams (WCD). >>>

1

Issues

- Hydroelectric power (“hydropower”) is a **renewable energy** source that has a role to play in meeting the growing demand for reliable, affordable energy. Hydropower also has particularly useful qualities for power grids, for example storage potential, immediate availability and constancy.
- When included in an adequate water resource management plan, dams can improve the allocation of resources and better manage episodes of flooding or drought.
- Projects associated with the sector of dams and hydropower are often complex and can raise **environmental and social issues**.

2

Framework

Companies working in the sector of dams and hydropower shall respect, and ensure respect by their clients and suppliers, for:

- the **laws and regulations** in force in the countries in which they operate; and
- the **standards, conventions, initiatives and recommendations** issued by a number of organizations, multi-stakeholder forums and professional associations in the sector of dams and hydropower, aiming to better manage the environmental and social impact of activities in the sector.

The standards listed below assist in assessing the management of environmental, social and governance (ESG) impacts arising from the activities of clients:

1. The International Finance Corporation (IFC) **Performance Standards**¹;
2. The **decision-making framework of the World Commission on Dams** (WCD);
3. The **Equator Principles** and associated norms, such as the International Finance Corporation (IFC) Performance Standards and applicable World Bank Group Environmental, Health, and Safety (EHS) Guidelines - for the assessment of project finance operations.

In addition, clients responsible for project development in the sector of dams and hydropower are encouraged:

- to apply the **Hydropower Sustainability Assessment Protocol** - HSAP² to guide them during the all stages of project development and share the results of the HSAP evaluation with the stakeholders in the project, including financial institutions; and
- to inform stakeholders of the national and regional strategic framework of the project.

3

Risks

When evaluating clients and/or transactions relating to the sector of dams and hydropower, analysis of the following areas shall be given special attention:



WATER

- Potential adverse impacts on both the quantity (especially as regards the concept of instream flow) and the physicochemical and biological quality of water upstream (in the reservoir area, especially at depth) and downstream.
- Pressure on water resources (Change of regime – downstream flow regulation, including environmental flows³).



TERRESTRIAL

- Loss of natural spaces.
- Soil pollution (flooding can lead to the recycling of mercury present in the soil in various compounds that are particularly toxic for aquatic fauna and its predators).
- Modification of landscapes (reservoirs).
- Riverbank erosion.
- Reduction of soil quality downstream (the natural action of rivers transports minerals and organic nutrients that nourish the soil).



AIR

- Potential for emission of Greenhouse gases (GHG).

¹ In addition to the environmental and social (E and S) management conditions applicable to all business sectors, IFC Performance Standard 4 includes a specific request for third party review of dam security in certain cases.

² Established by a multi-stakeholder forum and adopted in 2010 by the International Hydropower Association (IHA).

³ Under the IUCN definition, an environmental flow is the water regime provided within a river, wetland or coastal zone to maintain ecosystems and their benefits where there are competing water uses and where flows are regulated.

**BIODIVERSITY**

- Landscape fragmentation (a dam can slow or block the migration of aquatic and land-based species).
- Impacts on critical habitats and protected ecological or cultural areas due to the reservoir.
- Facilitated access to remote areas, which can induce indirect impacts such as deforestation.

**SOCIAL**

- Forced evictions (displaced persons often refuse to leave their land willingly).
- Reduction in availability of food (less bountiful catches, affected agriculture) leading to increased poverty of the population.
- Increase in illnesses (e.g. proliferation of mosquitos).
- Fragmentation of local culture and identity.
- Operations conducted in areas of high social tension (due to previous exploitation or other reasons) or in countries with a weak regulatory framework, lack of transparency, a high level of corruption and/or a negative reputation for Human Rights violations.

**4 Guidelines****4.1. Scope**

The following Guidelines, intended as a reference grid for the granting of a range of financial services relating to large dams⁴, were derived from the above regulations, conventions and standards. They cover:

- Infrastructure: construction camps, roads and bridges, ancillary installations (spillways, bottom outlets, intakes), turbines and generators, transformer installations and power lines.
- Construction of the dam itself, the production of electric power, transmission, water storage and irrigation.

4.2. Services that may be provided by financial institutions

The scope of these Guidelines covers all financial services:

1. Financing
2. Investments⁵ (primary debt and equity markets)
3. International trade transactions (Trade Finance)
4. Services (Payments, Insurance, Mergers and Acquisitions, Consulting...)

4.3. Analytical Criteria**4.3.1. Classification by nature of the transaction**

Two types of transaction may be distinguished:

1. Construction of a new dam (*green field*)
2. Renovation of an existing dam (*brownfield*)

4.3.2. Classification by country type

A distinction shall be made for destination countries, as well as between **High-income OECD countries** and other countries as ranked by the World Bank⁶.

The decisions of financial institutions shall be based on the information available to them. They shall employ due diligence to ensure the quality and reliability of such information.

These institutions shall include environmental and social risk and impact assessments in their decision-making processes both as regards counterparties and the specific transactions for which the use of funds is known.

4.4. Guiding Principles

These Guidelines are based on the following guiding principles:

4.4.1. Evaluation of counterparties

Counterparties shall ensure sustainable management of the environmental and social issues relating to their operations. Assessment of practices shall be based on the ability to demonstrate that the issues listed in paragraph 3 (Risks) have been properly addressed.

4.4.2. Evaluation of specific transactions

Transactions specific⁷ to the large dams must meet the conditions described below:

A. For project finance:

compliance with the **Equator Principles** and associated norms such as the International Finance Corporation (IFC) Performance Standards and the applicable World Bank Environmental, Health and Safety (EHS) Guidelines.

B. For existing dams (*renovation / brownfield*) improvement in overall environmental performance (especially environmental impacts and safety).

⁴ The International Commission on Large Dams (ICOLD) defines a large dam as a dam that is at least 15m high above the foundations. Dams between 5 and 15 m, but with a reservoir volume of more than 3 million cubic metres, are also considered to be large dams.

⁵ Proprietary or third party asset management, excluding passive index-based management.

⁶ See the World Bank classification: http://data.worldbank.org/about/country-classifications/country-and-lending-groups#High_income: - [High Income: + USD12,476].

⁷ That is, transactions for which the use of funds is known and limited to one or two physical projects or specific assets – and using the application procedures specific to each financial institution



C. For new dams (*construction / green field*)

In the context of new operations:

- In **High-income OECD** countries of destination (as ranked by the World Bank), the client is expected, as a general rule, to apply national regulations and comply with the IFC environmental and social sustainability Performance Standards, in particular Standards 1 (Assessment and Management of Environmental and Social Risks and Impacts), 3 (Resource Efficiency and Pollution Prevention), 6 (biodiversity) and 7 (Indigenous Peoples);
- In **other countries of destination**, the client is expected to comply with all IFC social and environmental sustainability Performance Standards and the general framework of the World

Commission on Dams.

4.4.3. Areas of focus or exclusion

- Key Biodiversity Areas
- UNESCO classified World Heritage Sites
- Wetlands of International Importance identified in the Ramsar Convention
- IUCN I-IV Protected Areas.

5

Summary

| Construction <i>Greenfield</i> | | Renovation <i>Brownfield</i> |
|--|---|---|
| Country of destination | | |
| High Income OECD countries ¹ | Other | All countries |
| Apply national regulations | Respect all IFC social and environmental sustainability Performance Standards | Yes, if improvement in overall environmental performance (especially environmental impacts and safety). |
| Respect IFC social and environmental sustainability Performance Standards 1, 3, 6 and 7 | Respect the decision-making framework of the World Commission on Dams | |

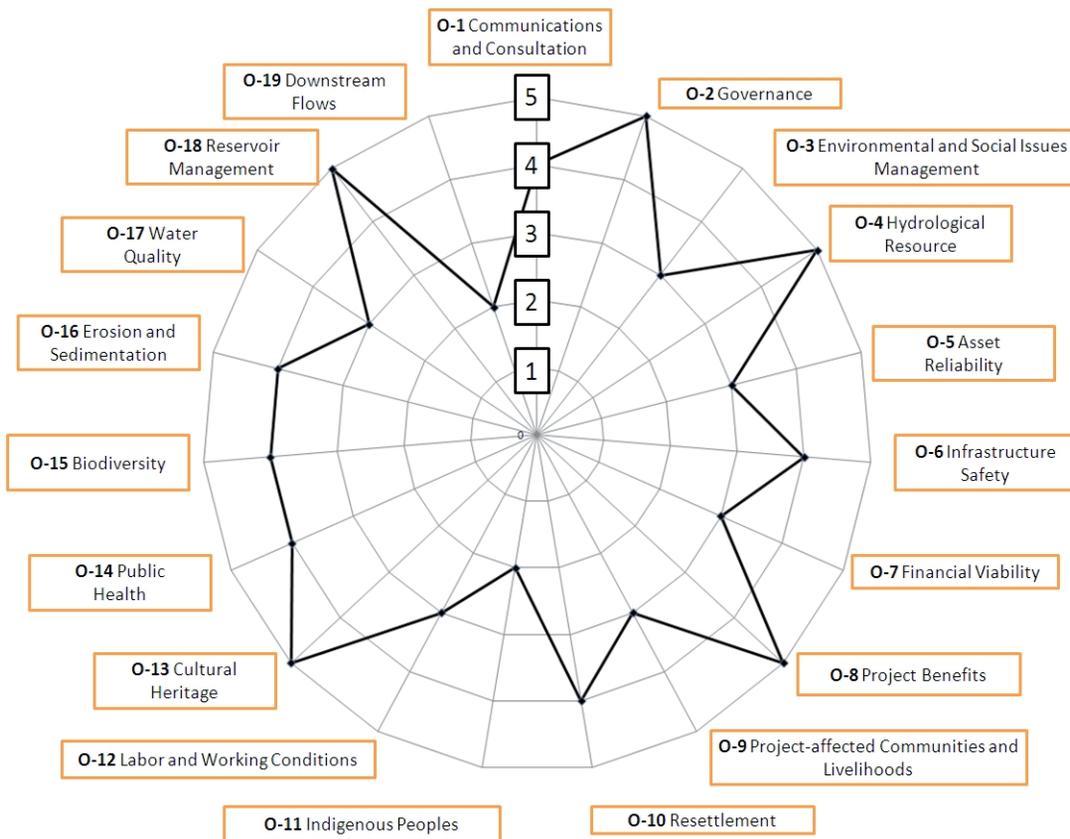
¹ See the World Bank classification: http://data.worldbank.org/about/country-classifications/country-and-lending-groups#High_income

6 Glossary

- ➔ **Dam:** an artificial (or natural) edifice, generally constructed across a valley, transforming an appropriate natural site into a water reservoir. If the dam is at least 15m high, or between 5 and 15m but with a reservoir volume of more than 3 million cubic metres, it is considered to be a large dam. Placed in a geologically watertight basin, the dam consists of: a foundation that is watertight on the upstream side and permeable downstream; a body of variable form; and ancillary installations (spillways, bottom outlets, intakes).
- ➔ **IFC Performance Standards:** A reference framework that came into force on 30 April 2006 and was updated on 1 January 2012, which puts into practice the commitment of the International Finance Corporation to social and environmental sustainability and clearly sets out the responsibilities of clients in the environmental and social spheres. <http://www.ifc.org/ifcext/sustainability.nsf/Content/PerformanceStandards>
- **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
- Performance Standard 1 establishes the importance of
- (i) integrated assessment to identify the environmental and social impacts, risks and opportunities of projects;
 - (ii) effective community engagement through disclosure of project-related information and consultation with local communities on matters that directly affect them;
- (iii) the client's management of environmental and social performance throughout the life of the project. Performance Standards 2 through 8 establish objectives and requirements to avoid, minimize, and where residual impacts remain, to compensate/offset for risks and impacts to workers, affected communities and the environment. While all relevant environmental and social risks and potential impacts should be considered as part of the assessment, Performance Standards 2 through 8 describe potential environmental and social risks and impacts that require particular attention. Where environmental or social risks and impacts are identified, the client is required to manage them through its Environmental and Social Management System (ESMS) consistent with Performance Standard 1.
- ➔ **International Commission on Large Dams (ICOLD):** a non-governmental International Organization which provides a forum for the exchange of knowledge and experience in dam engineering. www.icold-cigb.net
- ➔ **Hydropower Sustainability Assessment Protocol (HSAP):** an assessment tool used to measure and guide environmental and social performance in the hydropower sector. The Protocol assesses the four main stages of hydropower development: Early Stage, Preparation, Implementation and Operation. The assessments create a sustainability profile against some 20 topics depending on the relevant stage, covering all aspects of environmental and social sustainability. It is available at: <http://www.hydrosustainability.org/Protocol.aspx>



➤ **HSAP - 'Spider Diagram' example of protocol result summary**



➤ **World Commission on Dams (WCD):** an independent commission initiated in 1997 by the World Bank and the World Conservation Union (IUCN) to resolve the problems raised by large dam projects.

It made 7 recommendations:

1. Gain public acceptance;
2. Conduct a comprehensive options assessment;
3. Optimise existing dams;
4. Sustain rivers and livelihoods;
5. Recognise entitlements and share benefits;
6. Ensure compliance with these standards; and
7. Share rivers for peace, development and security.

http://www.internationalrivers.org/files/attached-files/world_commission_on_dams_final_report.pdf



◀◀ *As for nuclear power plants, ORSE suggests taking into consideration the technology used (does it meets IAEA standards and those of reference countries?), the technical characteristics of the project, the capacity of the host country to control a nuclear project (is it a member of the IAEA and has it ratified all the conventions in this sector?), especially through its National Security Authority (does it have the statutory authority to issue permits and carry out inspections that could lead to sanctions?) and the ability of the operator to operate the nuclear project (was it the subject of a Pre-OSART, OSART or WANO mission?) .* ▶▶

1

Issues

- Nuclear energy is generally considered, at present, to be a **non-intermittent, low-carbon source of energy**. It thus can play an important role in a country's energy mix.
- However, nuclear energy involves a number of **major elements of complexity** (safety, waste management, decommissioning costs...) that deserve special attention and have led a number of countries to limit or eliminate the share of nuclear in their energy mix. The rules relating to nuclear safety are undeniably one of the key aspects of the sector.
- Other important issues include the choice of technology, the specific characteristics of the project (including its location) and operator's experience. Only a few OECD countries have top tier nuclear experience, a nuclear safety authority respecting best practice and, more generally, a highly developed industrial base in this area. They appear at the forefront of preventing nuclear accidents due to constant upgrading of the safety of existing facilities and through research and development of technology to achieve the highest level of safety (third generation reactors¹). These countries thus constitute "reference countries" for assessment of the acceptability of any existing or new nuclear technology.

2

Framework

Companies working in the nuclear sector shall respect, and ensure respect by their clients and suppliers, for:

- the **laws and regulations** in force in the countries in which they operate;
- as well as the **standards, conventions, initiatives and recommendations** issued by a number of organizations and professional associations in the nuclear sector, aiming to better manage the environmental and social impact of activities in the sector.

The standards listed below assist in assessing the management of environmental, social and governance (ESG) impacts arising from the activities of clients:

1. The International Atomic Energy Agency (IAEA), especially its Safety Standards; the Convention on Nuclear Safety, Convention on the Physical Protection of Nuclear Material, the Joint Convention on the

safety of spent fuel management and on the safe management of radioactive waste;

2. The Non-Proliferation Treaty;
3. The Convention for the suppression of acts of nuclear terrorism;
4. The Vienna Convention on Civil Liability for Nuclear Damage, the Paris Convention on Third Party Liability in the Field of Nuclear Energy and the Convention on Supplementary Compensation for Nuclear Damage;
5. The Euratom Treaty;
6. The documents issued by European regulators' associations: European Nuclear Safety Regulator Group (ENSREG); and Western European Nuclear Regulators' Association (WENRA);
7. Guides and documents describing best practices issued by the professional association: World Association of Nuclear Operators;
8. The Nuclear Power Plant Exporters' Principles of Conduct, an initiative of major players in the sector; and
9. The standards of the World Bank Group, including Performance Standards and Environmental, Health and Safety regulations.

3

Risks

When evaluating clients and/or transactions relating to the nuclear sector, analysis of the following areas shall be given special attention:



WATER

- Liquid radioactive discharges from the plant's purification and filtration systems.
- Pressure on water resources for the cooling of installations.
- Heat discharge (the water that feeds the plant's cooling systems is still hot when it is discharged into the river or the sea).
- Chemical discharge (to be used in plant cooling systems, water must undergo various chemical treatments that result in the discharge of effluents such as sodium, chloride and sulphates).



TERRESTRIAL

- Soil pollution (leaks, inadequate waste management...) that can lead to significant costs (de-contamination of sites).

¹ This generic term refers to the new generation of reactors designed to integrate the lessons learned from the Three Mile Island and Chernobyl accidents. In addition, the conclusions of the on-going supplementary safety investigations after the Fukushima accident will also have to be included. Compliance with the safety targets for new reactors published by WENRA in November 2010 (or an equivalent text) is an appropriate benchmark.

² IAEA Safety Standards Series N° SSR-2/1 «Safety of Nuclear Power Plants: Design» (Specific Safety Requirements) and IAEA Safety Standards Series N° SSG-16 «Establishing the Safety Infrastructure for a Nuclear Power Programme» (Specific Safety Guide).



AIR

- Radioactive gas discharge from the plant's purification and filtration systems.
- Noise pollution from cooling towers and turbo-generators.



ACCIDENT

- Risk of meltdown of a nuclear reactor through the fuel overheating due to an internal or external event (including extreme natural disasters and major climatic hazards).
- Risk of explosion during fuel fabrication.
- Risk of accident (leakage, explosion) during transport of nuclear material (highly radioactive sources transported by road, rail, ship or plane).



BIODIVERSITY

- Negative impacts on the fauna and flora of the aquatic and terrestrial environments (water intakes and outlets, electrical power lines...).



SOCIAL

- Workers and residents: risks of explosion, radiation hazards in and around the site, and forced evacuations during tests or major incidents.
- Operations conducted in areas with high social tension (due to operational history or other reasons) or in countries with a weak regulatory framework, lack of transparency and a high level of corruption and/or a negative record for Human Rights violations.



Guidelines

4.1. Scope

The following Guidelines, intended as a reference grid for the granting of a range of financial services, were derived from the above regulations, conventions and standards.

They cover the area of civil nuclear power plants and related facilities in the civilian nuclear fuel cycle (including conversion, enrichment, storage and disposal) with the exception of mining.

They do not cover mining³ (including uranium mining), medical, food, military and research activities.

4.2. Services that may be provided by financial institutions

The scope of these Guidelines covers all financial services:

1. Financing
2. Investments⁴ (primary debt and equity markets)
3. International trade transactions (Trade Finance)
4. Services (Payments, Insurance, Mergers and Acquisitions, Consulting...)

4.3. Analytical Criteria

4.3.1. The technology used and technical characteristics of the project

The technology shall be analysed against IAEA standards.

The technology shall also be assessed against sector best practices, defined as those of the Reference Countries. The technology used will be regarded as meeting the standards of the Reference Countries:

- in the **case of the construction of a greenfield power plant**, if at least one of the following conditions is met:
 - a similar power plant is in operation or planned for construction in a Reference Country;
 - a Reference Country's safety authority has validated the generic design; or
 - where there is no similar project in any Reference Country, a positive benchmark has been established in relation to a completed project in operation in a Reference Country.
- in the **case of an existing power plant**, if at least one of the following conditions is met:
 - a similar power plant (including any improvements made in order to enhance safety) is in operation in a Reference Country;
 - where there is no similar project in any Reference Country, a positive benchmark has been established in relation to a completed project in operation in a Reference Country.

Furthermore, for new projects being developed in a Euratom member country, the opinion of the European Commission, issued pursuant to Article 43 of the Euratom Treaty, will be an important assessment criterion.

In addition to the national authorization process, financial institutions may request that an independent expert assist them in assessing the project, in particular with respect to its specific characteristics and location.

³ This sector is covered by specific Guidelines.

⁴ Proprietary or third party asset management, excluding passive index-based management.





4.3.2. The capability of the host country to monitor a nuclear project, especially through its national safety authority

The capability of the host country will be assessed on the basis of the nuclear experience of the country, the ability of its safety authority to perform its tasks, the level of international cooperation and whether appropriate measures are in place in relation to decommissioning and waste management.

The national safety authority has a crucial role to play, since it must assess the safety of the technology used, validate the design of the project and verify that specific risks have been appropriately integrated (including with respect to the location of the project), deliver construction and operating permits and monitor the quality of construction and operation of the nuclear installation.

The capability of a safety authority may be assessed on the basis of its material and human resources, coercive powers, level of independence (from the administration, the industry and lobby groups) and its level of transparency and international cooperation. The IAEA inspection reports assessing the institutional framework and the national safety authority (Integrated Regulatory Review Service - or IRRS) provide a serious benchmark in this respect. Disclosure of the findings will be regarded as good practice.

A country will be regarded as experienced if it has accumulated more than 300 reactor-years⁵, or more than 10 reactors are in operation. A country will be regarded as a newcomer if it has less than 2 reactors that have been in operation for more than 5 years each.

Incident statistics can be a useful assessment criterion in the case of experienced countries.

When the host country is not regarded as experienced, the conduct of two missions by the IAEA will be regarded as good practice (if such a mission has not already been conducted in the past 5 years):

- an Integrated Nuclear Infrastructure Review (INIR) mission, implementation of which is monitored by external experts;
- An audit of the safety authority (IRRS Mission) before commencing operation of the installation, its findings being disclosed (or at a minimum shared with the financial institution) and a commitment to implement the recommendations being given.

When the host country is regarded as a newcomer, special attention shall be paid to sector regulations, waste management, provisions for civil liability with respect to nuclear energy, public consultation procedures, the country's situation in terms of perceptions of transparency and corruption⁶ and the possible existence of conflict zones. An audit of the safety authority by the IAEA (IRRS mission) will be expected prior to the commissioning of the project.

4.3.3. The Capability of the operator to operate the nuclear project

Beyond financial aspects, the capability of the operator will be assessed in particular on the basis of:

- its past experience (i.e. number of reactors already being operated, incident statistics...);
- its ability to access sufficiently skilled resources;
- its knowledge of local conditions; and
- its safety monitoring mechanism, including whether the safety monitoring authority is independent from operational activities and whether periodic monitoring is performed.

IAEA mission (or peer review) reports (Operational Safety Review Team – OSART or Pre-OSART, World Association of Nuclear Operators - WANO, as the case may be) are a useful basis in this respect. Disclosure of the findings of IAEA missions is considered to be good practice.

An IAEA or peer review mission (Pre-OSART, OSART, WANO, as the case may be) less than 10 years beforehand with respect to operation of a reactor using the same technology and operated by the same operator in the same country would be considered good practice. The findings should be disclosed (or at a minimum shared with the financial institution) and a commitment to implement the recommendations should be taken.

4.4. Guiding Principles and issues

These Guidelines are based on the following guiding principles:

- **Where the transaction is directly related to the construction of a nuclear power plant**, the project shall be considered against all the analysis criteria defined in section 4.3, which must all be at least considered. Financial institutions may rely on analyses conducted by public financial institutions (multilateral institutions, development agencies, export credit agencies...) insofar as these institutions have similar policies or conduct analysis based on the evaluation criteria included in these Guidelines⁷.

⁵ This threshold covers the top third of all countries with nuclear experience relating to civil nuclear reactors.

⁶ See the list of countries established by the NGO, Transparency International, based on perceptions of corruption: <http://www.transparency.org/>

⁷ Also, where applicable, the financial institution may rely upon due diligence performed under the Nuclear Power Plant Exporters' Principles of Conduct by a company which has adopted these principles



- Where the transaction is directly linked to the refinancing or operation of an existing installation, the project shall be assessed according to the same analysis criteria, with the exception of the criteria relating to the construction of new projects (authorisation process, pre-OSART missions).
- Where the transaction is not directly related to the construction, refinancing or operation of a specific nuclear power plant, but the client operates an industrial installation coming within the scope of these Guidelines, the latter shall be communicated to it. The analysis criteria set out in section 4.3 shall be taken into account in determining the position of the financial institution. This approach may take account of developments and any improvement plans. The analysis shall concern the client's on-going projects and in relation to those countries in which it has its principle operations, in the context of customary exchanges of information.

- Financing or investments covered by these Guidelines but related to nuclear assets other than nuclear power plants (fuel preparation and reprocessing, waste management) shall follow similar principles to those outlined in Section 4.3.

4.5. Areas of focus or exclusion

Particular vigilance shall be observed in sensitive geographical areas that may be negatively and durably impacted (environmental and/or social) by the construction of a nuclear power plant, including:

- Key Biodiversity Areas;
- UNESCO classified World Heritage Sites;
- Wetlands of International Importance identified in the Ramsar Convention; and
- IUCN I-IV Protected Areas.

5 Summary

| Type of information / transactions | Construction | Renovation |
|------------------------------------|--|---|
| Technology | Yes, if the technology complies with IAEA standards | |
| | Yes, if the technology meets the standards of the reference country (1) | |
| | Yes, if there is a similar project under construction or completed within the last 5 years in a reference country, or if the safety authority of a reference country validated the generic design, or if a favourable benchmark was established with respect to a project completed less than five years beforehand in a reference country | Yes, if there is a similar plant in reference operation in a reference country, or if a favourable benchmark was established with respect to an operating plant in a reference country |
| Host country | Yes, if the host country is a member of the IAEA | |
| | Yes, if the host country has ratified all the Conventions in the sector (2) | |
| Nuclear Safety Authority | Yes, if NSA has statutory authority to issue permits and conduct inspections that may lead to sanctions | |
| | Yes, if the NSA has been the object of an IRSS Mission | |
| Operator | Yes, if the operator has been the subject of a Pre-OSART, OSART or WANO mission | |
| Project | Yes, if the project has received the necessary approval from the competent national authorities | |
| | Yes, if there is a regular program of radioactivity measurement inside and around the facility | |
| | Yes, if the project meets the IFC Performance Standards and Environmental, Health and Safety (EHS) Guidelines | |

(1) High-income OECD countries with the following characteristics:

- experience among the top tier of all nuclear countries (ranked by the number of reactor-years);
- statutes and operations of the nuclear safety authority complying with IAEA recommendations (in terms of independence, ability to impose sanctions...); and
- no Level 4 (or higher) accident on the INES scale, over the past five years.

(2) Convention on the Physical Protection of Nuclear Material, Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, Nuclear Non-proliferation Convention, Convention against nuclear terrorism.

⁷ Also, where applicable, the financial institution may rely upon due diligence performed under the Nuclear Power Plant Exporters' Principles of Conduct by a company which has adopted these principles

➔ **Countries that have ratified the Convention on Nuclear Safety**

see: http://www.iaea.org/Publications/Documents/Conventions/nuclearsafety_status.pdf

➔ **Countries that have ratified the Convention on the Physical Protection of Nuclear Material**

see: http://www.iaea.org/Publications/Documents/Conventions/cppnm_status.pdf

➔ **Countries that have ratified the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management**

see: http://www.iaea.org/Publications/Documents/Conventions/jointconv_status.pdf

➔ **Countries that have ratified the Convention for the Suppression of Acts of Nuclear Terrorism**

see: http://treaties.un.org/Pages/ViewDetailsIII.aspx?&src=UNTSO&mtdsg_no=XVIII~15&chapter=18&Temp=mtdsg3&lang=en#Participants

➔ **Countries that have ratified the Non-Proliferation Treaty**

see: <http://disarmament.un.org/treaties/t/npt>

➔ **Environmental, Health and Safety (EHS) Guidelines:**

World Bank technical reference documents which provide examples of general or industry specific international best practice. They indicate the measures and performance levels that are generally considered to be achievable in new facilities by existing technology at reasonable costs.

➔ **Euratom:** the European Atomic Energy Community, established by treaty in 1957

see: <http://www.euratom.org>

➔ **IFC Performance Standards:** A reference framework that came into force on 30 April 2006 and was updated on 1 January 2012, which puts into practice the commitment of the International Finance Corporation to social and environmental sustainability and clearly sets out the responsibilities of clients in the environmental and social spheres.

<http://www.ifc.org/ifcext/sustainability.nsf/Content/PerformanceStandards>

- **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

Performance Standard 1 establishes the importance of

- (i) integrated assessment to identify the environmental and social impacts, risks and opportunities of projects;
- (ii) effective community engagement through disclosure of project-related information and consultation with local communities on matters that directly affect them;
- (iii) the client's management of environmental and social performance throughout the life of the project.

Performance Standards 2 through 8 establish objectives and requirements to avoid, minimize, and where residual impacts remain, to compensate/offset for risks and impacts to workers, affected communities and the environment. While all relevant environmental and social risks and potential impacts should be considered as part of the assessment,

Performance Standards 2 through 8 describe potential environmental and social risks and impacts that require particular attention. Where environmental or social risks and impacts are identified, the client is required to manage them through its Environmental and Social Management System (ESMS) consistent with Performance Standard 1.

➔ **Integrated Regulatory Review Service (IRRS):** a service provided to Member States by the International Atomic Energy Agency (IAEA), aiming to compare the practices of a country with international standards and international best practice.

➔ **International Atomic Energy Agency (IAEA):** an international organization under UN auspices seeking to promote the peaceful use of nuclear energy and to limit the development of its military applications.

Members: see <http://www.iaea.org/About/Policy/MemberStates/index.html>

The IAEA's activities mainly consist of organizing focus groups at different levels and drafting documents called «**Safety Standards**», describing safety principles and practices. Member States may use these texts as a basis for national regulations.

Since early 1996, this activity is supervised by a Commission on Safety Standards (CSS), which coordinates the work of four committees to monitor the preparation of documents in four areas:

- NUSSC (NUclear Safety Standards Committee) for the safety of installations;
- RASSC (RAdiation Safety Standards Committee) for radiation protection;
- TRANSSC (Transport Safety Standards Committee) for the safe transport of radioactive materials; and
- WASSC (Waste Safety Standards Committee) for the safe management of radioactive waste.

➔ **International Nuclear Event Scale (INES):** an international scale of nuclear and radiological events with seven levels: level 1 being an anomaly; and level 7 being a major accident.

See: <http://www.iaea.org/Publications/Factsheets/English/ines.pdf>

➔ **The Nuclear Power Plant Exporters' Principles of Conduct**, an initiative by important players in the sector. <http://nuclearprinciples.org>

➔ **Operational Safety Review Team (OSART):** a service offered to Member States by the International Atomic Energy Agency (IAEA), aiming to enhance the operational safety of nuclear power plants. It covers: management, organization and administration (MOA); training and qualification of personnel (TQ); operations (OPS); maintenance (MA); Technical Support (TS); (internal and external) operational experience feedback (OEF); radiation protection (and the management of radioactive waste and effluents) (RP); chemistry, which is an important element for the proper functioning of a plant (CH) and emergency planning and preparedness (EPP).

➔ **Reference Country:** High-income OECD countries with the following characteristics:

- Experience among the top third of all nuclear countries (ranked by the number of reactor-years);
- Statutes and operations of the nuclear safety authority complying with IAEA recommendations (in terms of independence, ability to impose sanctions...); and
- No Level 4 (or higher) accidents on the INES scale, over the past five years.

➔ **Transparency International (TI)** is an international non-governmental organization of German origin, the main purpose of which is to combat the corruption of governments and global inter-governmental institutions: <http://www.transparency.org/>

➔ **The UNESCO World Heritage List** includes properties forming part of the cultural and natural heritage which the World Heritage Committee considers as having outstanding universal value.

See: <http://whc.unesco.org/en/list>

➔ **World Association of Nuclear Operators (WANO):** an association created to help its members to achieve the highest possible levels of operational security, giving them access to the wealth of experience of the global nuclear community: www.wano.info

