OIL AND GAS

Key sector ESG aspects relevant to operations:
Labour conditions | Health, safety & security | Resource efficiency & pollution prevention | Land access, use & acquisition | Biodiversity & ecosystem services | Business integrity

1. APPLICABILITY

This Sector Profile is designed to help fund managers quickly familiarise themselves with the most frequent and important environmental, social and governance (ESG) aspects of investments in the oil and gas sector. It aims to be a starting point for thinking about ESG risks and opportunities, and not a detailed technical guidance document.

1.1 Using this Sector Profile

A company can be affected by non-sector specific issues such as impacts on Indigenous Peoples and cultural heritage. Therefore, each company must be carefully considered based on its specific characteristics and circumstances including scale of operation, location, technology utilised, management capacity, commitment and track record, and supply chains. Additionally, environmental and social (E&S) impacts, risks and opportunities in a particular company or sector can change over time for a number of reasons (e.g. changes in the applicable laws, or expansion of a company's activities or assets). Fund managers should have systems in place to identify such changes and manage any associated risks and impacts and, where possible, capitalise on new opportunities.

This Sector Profile draws on internationally recognised good practice standards and guidance, particularly the International Finance Corporation (IFC) Performance Standards and the World Bank Group Environmental, Health and Safety (EHS) Guidelines. The Sector Profile identifies key standards that are generally applicable to each sector (refer to the 'Standards, guidelines and other resources' section below). It is not a substitute for such standards, which should take precedence as authoritative sources and basic technical references. Applicable laws and regulations must be taken into account and compliance with them should be regarded as the minimum acceptable performance standard.

See CDC Environmental and Social Checklist and CDC Governance and Business Integrity Checklist for questions that fund managers should consider when evaluating an oil and gas investment from an ESG perspective.

1.2 Scope of this Sector Profile

This Sector Profile covers:

- Seismic exploration.
- Exploration and production drilling.
- Field development and production.
- Oil and natural gas refining.
- Decommissioning of drilling and extraction operations.

Business activities that fall within the scope of this Sector Profile include:

- Land-based and sea-based exploration, development and drilling.
- Land and shore-based storage terminal and depot operations.
- Liquefied natural gas (LNG) facilities including harbours, jetties and coastal facilities (e.g. coastal terminals).
- Oil, lube and gas refineries and processing operations.

- Oil and gas pipelines.
- Transportation of oil and gas resources by road, rail or sea.
- Retail operation of petroleum products (e.g. petrol stations).

For coastal oil and gas facilities including terminals, jetties and marine supply bases, additional information may be found in the CDC Sector Profile: Infrastructure. For additional consideration of power generation risks and impacts, refer to the CDC Sector Profile: Power generation, transmission and distribution.

2. KEY ENVIRONMENTAL AND SOCIAL ASPECTS

This section outlines some of the specific risks and impacts that emerge from poor ESG practices. Weak management of these aspects may lead to reputational damage, have an impact on a company's capacity to raise funding (debt and equity) and, more broadly, negatively impact a company's financial performance. Conversely, sound environmental and social (E&S) practices are likely to improve a company's reputation, access to investors and overall performance.

2.1 Management commitment, capacity and track record (CCTR)

Companies need management's commitment and sufficient capacity to ensure that the necessary resources are available for sound E&S management. Refer to CDC Guidance: Assessing Companies' Commitment, Capacity and Track Record.

2.2 Environmental and social management system (ESMS)

Companies should develop and implement an ESMS commensurate with the level of risks and impacts associated with its activities. For further advice refer to CDC E&S Briefing Note: Environmental and Social Management Systems (company-level).

Decommissioning, closure and post-closure activities should be considered as these can significantly affect final operation costs. Companies should develop and implement a closure plan to ensure that both immediate and long term environmental, physical and community risks are mitigated (e.g. drill pits should be closed no longer than 12 months after the end of operations with careful prior consideration given to disposal of drilling waste).

Of particular concern in decommissioning oil and gas operations are the risks associated with contaminated land through known or unknown spills or leakage of fuels, remnant fuels in physical infrastructure or fire/explosion hazards. Any remnant fuels as liquids or in contaminated soils would require disposal as hazardous waste. Physical risks and environmental risks associated with dismantling or disposal of large-scale infrastructure such as oil rigs (e.g. disposal of deep sea rigs) or tank farms would also require attention to remnant hazardous materials. Companies should consider that it is very rare that an oil and gas operation can be left in a 'walk away' state. Internationally recognised standards and guidelines issued by the international maritime organisation (IMO) should be followed for decommissioning of all off-shore facilities. For further guidance refer to the General and the Industry Sector Specific World Bank Group EHS Guidelines.

2.3 Labour and working conditions

Note – Occupational health and safety is covered separately below.

Risks for the business	• Companies may face prosecution or fines (or have their licences removed) if they fail to comply with labour laws and regulations. • Financial, reputational and legal risks, lower production efficiency, and reduced product quality and profitability can result from poor OHS practices, as can low morale, industrial action, high staff turnover and deterioration of employees' health (e.g. excessive working hours). • Higher costs can be incurred to recruit and train new workers if turnover is high due to poor labour standards and working conditions.
Opportunities for the business	• Costs can be managed and productivity enhanced by upholding good labour and working conditions. Doing so can also help attract and retain motivated and competent workers.

Wages and working hours: Workers in the oil and gas sector are generally well paid compared to other industries, but there can be significant wage discrepancies depending on the nature of work, skill levels, and nationalities. This is a significant risk in emerging markets or where local contractors are involved. Workers should be paid at least the minimum statutory wage for the sector.

The sector typically involves long working hours in remote areas. Working hours should not exceed applicable laws and sector regulations/agreements. Companies should not use third party contractors as a means of exceeding working hour regulations or avoiding minimum wage payments.

Freedom of association and collective bargaining: Relations with unions and the rights of workers to enter free and voluntary collective bargaining arrangements with management (and the rights to form unions and to strike) may be an issue in this sector. There have been many cases where the principles of freedom of association have not been respected. State interference and restrictive legislation can also be an issue in the oil and gas industry, particularly in emerging markets. Adopting international good practice in this area can help to manage costs relating to recruitment, training and talent retention, and enhance productivity.

Accommodation: Many oil and gas extraction and refining processes take place in remote or off-shore locations and
workers often need to spend extended periods of time away from family and community. Where the company undertakes to provide worker accommodation (either directly or through contractors), they should include the provision of basic services. The company should develop and implement policies on the quality and management of the accommodation in accordance with the principles included in IFC Performance Standard 2: Labor and Working Conditions and IFC and EBRD Guidance Note on Workers' Accommodation. Companies should develop and apply family-friendly employment policies. Good practice in this area can help to manage costs relating to recruitment, training and talent retention, and enhance productivity.

For further general guidance on Good International Industry Practice (GIIP) relating to labour standards and working conditions, in line with the International Labour Organization's (ILO's) Core Conventions, refer to CDC E&S Briefing Note: Labour Standards, and IFC Good Practice Note: Non-Discrimination and Equal Opportunity.

2.4 Occupational health and safety (OHS)

Risks for the business	• Companies may face prosecution or fines (or have their licence revoked) if workers or contractors are injured or killed. • Damage to/loss of the company's assets, loss of production, loss of clients/business, increased insurance premiums and legal claims (both in the short and long term) can result from poor OHS practices. In this sector, effective emergency preparedness and response systems (e.g. oil spill prevention and containment) are critical from both an environmental and social perspective to avoid major fines, liabilities and reputational risks. • Low workforce morale and erosion of trust can lead to higher staff turnover, lower productivity, additional training and recruiting costs, and reputational damage.
Opportunities for the business	• Proactively involving workers and contractors in key decisions can help to identify and maintain good OHS practices and improve their acceptance if new or significantly different to previous practices. • Productivity can be improved and insurance premiums for workers' and compensation payments can be reduced.

OHS is an important consideration for any business regardless of sector. All companies must have in place appropriate OHS and emergency preparedness and response management systems, commensurate with the level of risks. This is crucial for the oil and gas industry as an accident could have major impacts on workers, local communities and the environment.

If contractors are involved in operation and maintenance activities, companies should implement measures to ensure contractors work in accordance with applicable regulations and GIIP. Such measures should be covered in companies' OHS and emergency preparedness and response management systems.

Specific OHS risks in the oil and gas sector can include those in connection with:

a) Onshore oil and gas developments.

OHS risks during onshore oil and gas development include:

- Physical hazards (e.g. well blowouts, falls from height, hazards related to use of large-scale fixed and mobile equipment, transportation of personnel and product, work in confined spaces and use of high pressure equipment).
- Chemical hazards (e.g. exposure to toxic oil and gas fumes such as hydrogen sulphide, fuels, corrosive or oxidizing or reactive chemicals, or gases used or generated during extraction and refining).
- Exposure to heat (e.g. from working in close proximity to hot drilling and extraction equipment).

- Exposure to noise and vibrations (e.g. from flare stacks and field related vehicle traffic).
- Exposure to natural radioactive material (e.g. in sludges in process piping or production vessels).
- Exposure to adverse weather conditions as global exploration shifts towards remote locations with extreme weather patterns.
- Remote locations may require significant travel by potentially dangerous means.
- Remote working locations may lack basic infrastructure.
- Fire and explosion risks from working with highly flammable substances.
- Security, as oil and gas operations are typically heavily protected in order to prevent theft, sabotage and terrorism.

For further sector-specific guidance, refer to the World Bank Group EHS Guidelines for Onshore Oil and Gas Development.

b) Offshore oil and gas developments

OHS risks during offshore oil and gas development can include those in connection with:

- Physical hazards (e.g. well blowouts, injury, man overboard incidents or death due to falls from height or working in slippery or unstable environments (high wind), transportation of personnel by helicopter or boat, transfers by crane, ship collisions, and work in confined or insecure spaces).
- Chemical hazards (e.g. exposure to toxic oil and gas fumes such as hydrogen sulphide, fuels, corrosive or oxidizing or reactive chemicals, or gases used or generated during extraction and refining).
- Exposure to heat (e.g. from working in close proximity to hot drilling and extraction equipment).
- Exposure to noise and vibration (e.g. from flare stacks and field related vehicle traffic).
- Exposure to natural radioactive material (e.g. in sludges in process piping or production vessels).
- Exposure to adverse weather conditions as global exploration shifts towards remote locations with extreme weather patterns.
- Remote working locations may require significant travel by potentially dangerous means.
- Fire and explosion risks from working with highly flammable substances.
- Security, as oil and gas operations are typically heavily protected in order to prevent theft, sabotage and terrorism.
- Working in remote locations which often lack basic infrastructure. Appropriate evacuation measures should be in place, and off-shore oil and gas operations require the provision of temporary refuge or safe havens in case of emergency. There should also be well-equipped first aid kits and trained staff for pre-hospital care, and there must be enough fire resistant life boats available for the entire workforce to use if evacuation is required.

For further sector-specific guidance, refer to the World Bank Group EHS Guidelines for Offshore Oil and Gas Development.

c) Liquefied natural gas (LNG) facilities

OHS risks during operation of LNG facilities, including transportation of LNG, can include:

- Physical hazards (e.g. shipping of LNG by tankers or carriers and risks associated with loading and working in confined spaces such as storage tanks).
- Rollover if LNG settles into layers of different densities within the storage tank, causing pressures which could result in structural damage if not vented.
- Contact with cold surfaces.
- Chemical hazards (e.g. exposure to toxic oil and gas fumes such as hydrogen sulphide, fuels, corrosive or oxidizing or reactive chemicals, or gases used or generated during extraction or refining processes).
- Exposure to adverse weather conditions as global exploration shifts towards remote locations with extreme weather patterns.
- Remote locations may require significant travel by potentially dangerous means.
- Fire and explosion risks from working with combustible gases and liquids.
- Security, as LNG operations are typically heavily protected in order to prevent theft, sabotage and terrorism.

For further sector-specific guidance, refer to the World Bank Group EHS Guidelines for Liquefied Natural Gas (LNG) Facilities.

d) Processing of natural gas and refining of oil products

OHS risks during processing of natural gas and/or refining of oil can include:

- Physical hazards (e.g. complex chemical reactions and use of hazardous materials resulting in the need for process safety programs).
- Oxygen deficiency due to the potential release or accumulation of nitrogen.
- Chemical hazards (e.g. possible inhalation of, or skin contact with, hydrofluoric acid, carbon monoxide, methanol and hydrogen sulphide).
- Exposure to noise and vibration (e.g. from compressors and pipes).
- Fire and explosion risks from working with highly flammable substances.
- Security, as natural gas and oil refining operations are typically heavily protected in order to prevent theft, sabotage and terrorism.
- Working in remote locations which often lack basic infrastructure. In the case of offshore developments, appropriate evacuation measures should be in place and temporary refuge or safe havens should be provided in case of emergency. There should also be well-equipped first aid kits and trained staff for pre-hospital care and there must be enough fire resistant life boats available for the entire workforce to use if evacuation is required.

For further sector-specific guidance, refer to the World Bank Group EHS Guidelines for Natural Gas Processing and for Petroleum Refining.

e) Storage and distribution of oil and gas products

OHS risks arising from the storage and distribution of oil and gas whether by road, or sea, or in pipelines, as well as the sale of fuels through retail petroleum networks, can include:

- Physical hazards (e.g. work in confined spaces such as storage tanks where accumulation of gas may be fatal, containment areas, or stormwater/wastewater infrastructure).
- Road safety.
- Hazardous substances (e.g. skin contact with fuels or inhalation during fuel loading and unloading).

- Risk of electrocution (e.g. excavation, construction or repair of gas or fuel distribution pipelines may result in worker exposure to existing underground or surface utilities such as electricity transmission lines).
- Fire and explosion (e.g. from working with highly flammable substances).
- Security (tank farms may be classified as national security assets and thus heavily secured to prevent theft, sabotage and terrorism. Measures should be implemented to ensure that security forces are appropriately trained in the use of force and respect workers' rights).

For further sector-specific guidance, refer to the World Bank Group EHS Guidelines for Crude Oil and Petroleum Product Terminals, for Retail Petroleum Networks and for Gas Distribution Systems.

For further general guidance on GIIP relating to OHS, refer to CDC E&S Briefing Note: Occupational Health and Safety, IFC Performance Standard 2: Labor and Working Conditions, World Bank Group General EHS Guidelines and CDC Good Practice: Preventing Fatalities and Serious Accidents.

2.5 Resource efficiency and pollution prevention

Risks for the business	• Fines and penalties can be imposed for non-compliance with national pollution prevention standards, especially for air emissions (e.g. flaring) and hazardous materials/waste management. • Fines, penalties, remediation and compensation costs for any oil spills during operation. Note that oil spills in this sector may be caused by oil theft activities, particularly by sabotaging/drilling oil pipes (which can cause major pollution). • Excessive expenditure on energy and water supply. • Excessive expenditure on management of emissions, solid waste and wastewater quality costs and spill containment and remediation. • Financial and legal liabilities and reputational risks arising from inappropriate closure/dismantling of facilities or site remediation (e.g. due to historic oil spills).
Opportunities for the business	• Lower operating costs, reduced environmental footprint and better preparedness for resource shortages or increased cost of resources can result from adopting energy and water efficiency and cleaner production measures. • Future proofing against potentially costly regulatory changes such as the implementation of a carbon tax. • Participation in carbon/Clean Development Mechanism markets if the opportunity arises. • Where possible, applying feasible alternatives to use waste gas can avoid the need for flaring and create positive financial (e.g. reduced expenditure linked to carbon taxes) and reputational effects.

a) Onshore oil and gas development

Energy efficiency: Companies should always consider energy efficiency measures as this could have a substantial positive impact on their revenues by increasing the net energy conversation ratio (i.e. energy output per unit of energy/fuel input). Moreover, air emissions regulations are generally becoming more stringent globally. Companies should be mindful of this trend and explore business opportunities associated with the use of cleaner technology/energy efficiency measures (e.g. selling carbon emission reduction credits and/or accessing grants from international climate change funds).

Air emissions: This should be a key focus for the sector, which is a major producer of air emissions. Emissions come from exhaust gases from power generation or water injection, the flaring and venting of gas, and fugitive emissions. Flaring is a significant source of greenhouse gas (GHG) emissions and it is recommended that companies should follow international best practice standards to prevent or minimise flaring. Continuous venting of associated gas is not considered good practice and should be avoided.

In the case of expansions/upgrades to existing plants (using pre-owned machinery or retrofitting equipment), achieving alignment with GIIP may require additional time and resources. Companies and their investors should set realistic timelines and give adequate consideration to how best available techniques (BAT) for management of emissions can be applied. The European Integrated Pollution Prevention and Control Bureau (IPPC) offers guidance on BAT for emissions control through its Directive and the associated industry specific BAT reference documents (BREFs).

Water management: Oil and gas extraction plants may require cooling water for their operations. The heated water is normally discharged back to the source body (i.e. river, lake, estuary, or the ocean). In these cases, a detailed assessment of the impacts associated with discharge should be conducted as this may generate major impacts on the receptor (e.g. river, ocean).

Hydraulic fracturing or ‘fracking’ is the process of blasting large amounts of water, sand and chemicals down drill pipes deep underground to release gas trapped in shale rock. This process uses a significant amount of water and methods for reuse of fracking wastewater should be promoted. Surface use of untreated fracking wastewater should be discouraged to avoid potential pollution.

Oil and gas reservoirs often contain water which is brought to the surface as the reserve is tapped. This ‘produced water’ contains a complex mix of naturally occurring and process chemicals and is a significant source of wastewater in the sector. Opportunities to reduce quantities of ‘produced water’ through sound well management, co-disposal to the reservoir, or use by other industries should be investigated.

Water is also used in testing for pipeline and equipment leaks. Often, chemical additives are used to prevent corrosion or assist in leak identification. Due care should be taken in the disposal of test water to prevent pollution of underground or surface water sources. Other wastewater arising in the industry comes from sewerage plants, drainage waters, tank bottom water, fire water and equipment cleaning, all of which are likely to contain oily residues.

Companies should explore opportunities to reduce water consumption (e.g. by the use of closed-loop water systems). This is particularly relevant when water consumption is significant or water availability is restricted. Water use efficiency measures can potentially reduce the amount of wastewater generated by the plant, and wastewater treatment costs and/or discharge fees.

Waste management: Solid waste streams specific to onshore oil and gas development activities include drilling fluids and drilled cuttings (containing additives for weight and thickening), produced sand (generally contaminated with hydrocarbons), completion and well workover fluids (including chemical additives as well as oils or solid materials), and naturally occurring radioactive materials (NORM) which may occur as sludges in process piping or production vessels. All require specific care in disposal to prevent environmental contamination or community health risks.

If emergency response and spill containment or clean-up has occurred, care should be taken in the disposal of clean up materials which are also classified as hazardous waste.

Where even relatively small volumes of potentially hazardous wastes are generated (e.g. process wastes described above or used machinery oils, lubricants, solvents, paints or cleaners and their containers) the company must ensure that these are stored, handled, transported and disposed of in accordance with GIIP, to prevent environmental contamination or danger to handling workers or communities nearby. Many emerging market countries have both guidelines and facilities for the collection and disposal of used oil. There may also be specific license requirements for hazardous waste handling contractors and disposal-permit requirements at registered landfills. Stringent regulations apply for transboundary movement of hazardous waste by land or sea (see the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal).

For further sector-specific guidance, refer to the World Bank Group EHS Guidelines for Onshore Oil and Gas Development.

b) Offshore oil and gas development

Energy efficiency: See ‘a) Onshore oil and gas development above.

Air emissions: See ‘a) Onshore oil and gas development above.

Water management: Offshore oil and gas extraction facilities also require cooling water for their operations. The heated water is normally discharged back to sea, but careful consideration should be given to disposal depth and the use of anti-fouling chemicals to minimise negative marine environment impacts.

Oil and gas reservoirs often contain water that is brought to the surface as the reserve is tapped. This ‘produced water’ contains a complex mix of naturally occurring and process chemicals and is a significant source of wastewater in the sector. Opportunities to reduce quantities of ‘produced water’ through sound well management, co-disposal to the reservoir or use by other industries should be investigated.

Filtered seawater is also used to test offshore equipment and marine pipelines. Chemical additives are often used to prevent corrosion or assist in leak identification. Minimisation of testing water can be achieved by testing equipment at an onshore site prior to sending it offshore, by the reuse of water for multiple tests, or through the careful selection of chemical additives. Any marine disposal of test water should be undertaken in accordance with a test water disposal plan. Other wastewater arising in the industry includes desalination brine, sewage, food waste, bilge waters, storage displacement water and deck drainage water, all of which are likely to contain oily residues.

Waste management: Solid waste streams specific to offshore oil and gas developments include drilling fluids and drilled cuttings (containing additives for weight and thickening), produced sand (generally contaminated with hydrocarbons), completion and well workover fluids (including chemical additives as well as oils or solid materials) and naturally occurring radioactive materials (NORM) which may occur as sludges in process piping or production vessels. Most wastes should be shipped to shore for treatment and require specific care in disposal to prevent environmental contamination or community health risks. Where discharge to sea is the only option, detailed disposal plans should be prepared in advance with specific attention on to pre-treatment, dispersion patterns and environmental risk.

If emergency response and spill containment or clean-up has occurred, care should be taken in the disposal of clean up materials, which are also classified as hazardous waste. All offshore facilities are required to develop a detailed spill prevention and control plan.

Where even relatively small volumes of potentially hazardous wastes are generated (e.g. process wastes described above or used machinery oils and their containers) the company should ensure that these are stored, handled, transported and disposed of in accordance with applicable local and international laws and regulations and GIIP. Stringent regulations apply for transboundary movement of hazardous waste by land or sea (see the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal).

For further sector-specific guidance, refer to the World Bank Group EHS Guidelines for Offshore Oil and Gas Development.

c) LNG facilities

Energy efficiency: See ‘a) Onshore oil and gas development’ above.

Air emissions: Major sources of air emissions arise from combustion sources for power and heat generation (dehydration and liquefaction activities, regasification), the use of compressors pumps and engines (boilers and turbines), flaring and venting of hydrocarbons, boil-off gas (stored LNG emits methane gas after liquefaction), and fugitive emissions. Flaring is a significant source of greenhouse gas (GHG) emissions and thus international best practice standards are recommended to prevent or minimise flaring. Continuous venting of associated gas is not considered current good practice and should be avoided.

In the case of existing plants or expansions/upgrades planning using pre-owned machinery or retrofitting equipment in order to achieve alignment with GIIP might require additional time and resources. Companies and their investors should set realistic timelines and give adequate consideration to how best available techniques (BAT) for management of emissions can be applied. The European Integrated Pollution Prevention and Control Bureau (IPPC) offers guidance on BAT for emissions control through its Directive and the associated industry specific BAT reference documents (BREFs).

Water management: Wastewater steams specific to LNG facilities include cooling water and cold water streams which result in significant water use and discharge streams. Heated water is normally discharged back to surface water. Careful consideration should be given to disposal depth, distance from other entry points and opportunity for rapid and maximum mixing and cooling.

Other wastewater includes sewage, drainage and storm-waters, firewater, wash waters and hydrostatic testing water, all of which are likely to contain oily or chemical residues.

Companies should explore opportunities to reduce water consumption (e.g. by use of closed-loop water systems). This is particularly relevant when water consumption requirements are significant or water supply is restricted. Water use efficiency measures can reduce the amount of wastewater generated by the plant and resultant wastewater treatment costs or discharge fees.

Hazardous material management: The storage, transfer and transport of LNG poses a risk of fire, explosion or accidental release through leaks or at transfer points. LNG is not flammable in liquid form but can cause flammable vapour clouds as it warms or under certain conditions.

Waste management: Solid waste streams specific to LNG facilities include general wastes from offices, packaging, servicing and machinery yards. Where even relatively small volumes of potentially hazardous wastes are generated (e.g. process wastes described above or used machinery oils and their containers) the company should ensure that these are stored, handled, transported and disposed of in accordance with applicable local and international laws and regulations and GIIP. Stringent regulations apply for transboundary movement of hazardous waste by land or sea (see the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal).

For further sector-specific guidance, refer to the World Bank Group EHS Guidelines for Liquefied Natural Gas (LNG) Facilities.

d) Processing and refining of oil and gas

Energy efficiency: See ‘a) Onshore oil and gas development’ above.

Air emissions: This should be a key focus for companies in this sector. Emissions come from exhaust gases (power generation), flue gases including particulate matter, fugitive emissions including VOCs (e.g. from joints, valves) and the flaring and venting of gas. Venting is an important part of crude oil refining as a way to safely dispose of vapour gases. However, it is a significant source of GHG emissions and it is recommended that companies follow international best practice standards to prevent or minimise flaring. Excess gas should not be vented and even emergency venting should be carefully considered.

Companies should always consider energy efficiency measures as they could have a substantial positive impact on their revenues by increasing the net energy conversation ratio (i.e. energy output per unit of energy/fuel input). Moreover, air emissions regulations are generally becoming more stringent globally.
Fund managers should be mindful of this trend when designing, financing and operating oil and gas extraction facilities. Fund managers should encourage companies to explore business opportunities associated with the use of cleaner technology/energy efficiency measures (e.g. selling carbon emission reduction credits and/or accessing grants from international climate change funds).

Water management: The largest volume of water use and effluent in the oil refining industry is ‘sour’ process water and highly alkaline process water. Other liquid effluent can arise from leaks and accidental discharge. Sour and alkaline process water requires careful treatment prior to discharge and generation should be minimised where possible.

Water is also used in testing for pipeline and equipment leaks. Chemical additives including dyes are often used to prevent corrosion or assist in leak identification. Due care should be taken in the disposal of test water to prevent pollution of underground or surface water sources. Other wastewater arising in the industry comes from sewerage plants, drainage waters, tank bottom water, fire water and equipment cleaning, all of which are likely to contain oily residues.

Fund managers should engage with companies to explore opportunities to reduce water consumption (e.g. by use of closed-loop water systems). This is particularly important when water consumption requirements are significant and/or water availability may be restricted. Water use efficiency measures will potentially have a positive effect in terms of reducing the amount of wastewater generated by the plant, and associated wastewater treatment costs and discharge fees.

Waste management: Hazardous wastes in the refining process include: spent catalysts, solvents, filters, oily sludges, used operational maintenance fluids and other materials. Where even relatively small volumes of hazardous wastes are generated (e.g. process wastes described above in addition to used machinery oils and their containers) the company should ensure that these are stored, handled, transported and disposed of in accordance with applicable local and international laws and regulations and GIIP. Stringent regulations apply for transboundary movement of hazardous waste by land or sea (see the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal).

If emergency response and spill containment or clean-up has occurred, care should be taken in the disposal of clean-up materials, which are also classified as hazardous waste. All offshore facilities are required to develop a detailed spill prevention and control plan.

For further sector-specific guidance, refer to the World Bank Group EHS Guidelines for Natural Gas Processing and for Petroleum Refining.

e) Storage and distribution of oil and gas

Energy efficiency: See ‘a) Onshore oil and gas development’ above.

Air emissions: This should be a key focus for companies in this sector. Emissions come from volatile organic compounds (VOCs) in storage through evaporation, from leakage or during operational activities. The natures of emissions arising from distribution depend on the transport means and include emissions from road, rail or shipping tankers.

Air emissions regulations are generally becoming more stringent globally. Companies should be mindful of this trend when designing, financing and operating oil and gas storage and distribution facilities. Companies should explore business opportunities associated with the use of cleaner technology/energy efficiency measures (e.g. selling carbon emission reduction credits and/or accessing grants from international climate change funds).

Water management: Wastewater includes process water such as tank bottom or pipeline draining water, contaminated stormwater runoff including leak and spill residue, or oil contaminated water from road or rail tanker washing areas. Other potentially harmful effluents come from shipping bilge water, which can contain significant quantities of oil. These types of effluents may require pre-treatment via oil traps with further on or off site treatment for chemical or biological contaminants depending on the discharge method (i.e. municipal system or surface water).

Fund managers should always engage with companies to explore opportunities to reduce water consumption (e.g. by use of closed-loop water systems). This is particularly important when water consumption requirements are significant or water availability is restricted. Water use efficiency measures can reduce the amount of wastewater generated and associated wastewater treatment costs or discharge fees.

Waste management: Wastes generated at terminals and tank farms, pipeline and distribution networks and from retail petrol depots include tank bottom sludge (from stationary tanks as well as transport tanker sludge), which needs to be removed occasionally to maintain product quality and storage capacity. Other waste includes spill clean-up materials, slurries, pipe cleaning piggots, oily rags and vehicle parts from vehicle maintenance yards.
Oily residues are classified as hazardous waste and must be managed through reprocessing or at licensed waste facilities.

Hazardous wastes in the refining process include spent catalysts, solvents, filters, and oily sludges, used operational maintenance fluids and other materials. Where even relatively small volumes of hazardous wastes are generated (e.g. the process wastes described above in addition to used machinery oils and their containers) the company should ensure that these are stored, handled, transported and disposed of in accordance with applicable local and international laws and regulations and GIIP. Stringent regulations apply for transboundary movement of hazardous waste by land or sea (see the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal).

For further sector-specific guidance, refer to the World Bank Group EHS Guidelines for Crude Oil and Petroleum Product Terminals, Retail Petroleum Networks and Gas Distribution Systems.

For further general guidance on GIIP relating to resource efficiency and pollution prevention, refer to World Bank Group's Global Gas Flaring and Voluntary Reduction Standard, CDC E&S Briefing Note: Resource Efficiency, CDC E&S Briefing Note: Pollution Prevention, IFC Performance Standard 3: Resource Efficiency and Pollution Prevention and the World Bank Group General EHS Guidelines.

2.6 Community health, safety and security

Risks for the business	• Social licence to operate can be put at risk if social impacts and/or community relations are not well managed (e.g. tensions caused by impacts on ecosystems such as water, or insufficient engagement of local communities prior to Project construction). • Surrounding communities can be exposed to health and safety risks from physical hazards, air emissions and waste generation from oil and gas extraction, processing, storage (e.g. tank farms) and distribution. • Transportation of fuels by public road, rail or shipping can create safety risks for other public users. • Financial and reputational costs to business, should accidents or spills occur. • Indirect risks to communities may arise from the immigration of labour and the opening up of previously remote and inaccessible areas due to resource or infrastructure development. • Security risks for local communities if company security and protection forces use excessive force or are intimidating and aggressive. • Maintaining good relations with local communities can help to manage their expectations and identify concerns, saving time and costs. • Reputational damage and significant costs can be incurred to address social opposition and criticism due to perceived health and safety risks, conflicting or non-transparent land access practices, or unclear revenue flows from drilling and processing operations, particularly if there is little local benefit. • Reputational damage and loss of licence to operate if excessive, intimidating or aggressive force by security personnel is used against communities.
Opportunities for the business	• Building relationships with local communities may lead to increased production through access to a better or bigger potential labour pool. • A good relationship with local communities can significantly reduce theft of oil and security risks.

Community health, safety and security issues are a particularly important for the oil and gas sector. The key community health, safety and security risks and impacts associated with this sector include:

Emergency preparedness and response: Companies must implement emergency preparedness and response systems to respond to accidents associated with the company's activities in a manner appropriate to prevent and mitigate any harm to people and/or the environment**.** Companies should develop these systems in collaboration with appropriate and relevant third parties (e.g. local authorities). Emergency preparedness focused on protecting local communities both onshore and in coastal areas should be a priority.

Safety: Oil and gas operations can pose safety risks to local communities through exposure to spills, fire or explosions. The use of large-scale heavy equipment on local roads creates traffic threats. The development of oil wells, gas extraction and refinery facilities and the associated distribution infrastructure such as pipeline networks can also generate risks. Design and operation of local retail petrol stations should focus on community protection from fire/ explosion risks and the prevention of underground leaks or surface spills which could contaminate local water sources. The establishment of offshore oil and gas operations can interfere with other economic activities such as fishing. If significant impacts are anticipated, it is advisable for the company to appoint a community liaison or fishing liaison officer to manage access limitations and exclusion zones.

Health: Oil and gas extraction and processing facilities should not expose local communities to hydrogen sulphide emissions or contaminate local water bodies with hydrocarbons. Companies should design, locate and prevent or minimise health impacts for nearby communities.

Security: Oil and gas operations are strategic national resources and are often heavily protected to prevent theft, sabotage and terrorism, or for other safety reasons. Where security staff are employed, companies should be guided by the principles of proportionality and good international practice and by applicable law in relation to hiring, rules of conduct, training, equipping, and monitoring of such workers. Particular attention should be paid to potential human rights violations from terrorism and sabotage and the risk of security forces contributing to social conflict and unrest in nearby communities. Such principles include practices consistent with the United Nation's (UN) Code of Conduct for Law Enforcement Officials and UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials.

Noise and vibrations: Oil and gas extraction operations can generate significant noise and vibrations as a result of seismic exploration, drilling for oil, high pressure pumping of water underground and the flaring and refining of fuel. Noise/vibration prevention and control measures should be implemented (e.g. selecting equipment with lower sound power levels and siting plants away from community areas) to minimise impacts on nearby communities.

Indirect impacts on local communities: Oil and gas extraction facilities are often located in remote areas. Their establishment and operation requires the development of large-scale infrastructure such as access roads, waste disposal sites, water abstraction, and workforce accommodation. An influx of workers can pose risks to local communities through exposure to communicable diseases and increase competition for natural resources (e.g. water, fire wood, and arable land for food). Conflict can arise between local and migrant labour if there is a perceived lack of local economic benefit, or if local labour has been marginalised or migrant labour has been relocated without family.

For further sector-specific guidance refer to the applicable World Bank Group EHS Industry Sector Guidelines and IPIECA - The global oil and gas industry association for environmental and social issues.

For further general guidance on on GIIP relating to community health, safety and security, refer to CDC E&S Briefing Note: Community Health, Safety and Security and IFC Performance Standard 4: Community Health, Safety and Security, UN Code of Conduct for Law Enforcement Officials, UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials and the World Bank Group EHS General Guidelines.

2.7 Land access, use and acquisition

Risks for the business	• Poor community relations can undermine the company's license to operate. • Securing land and resource rights can take a long time and involve significant costs, particularly if resettlement of people or economic displacement of communities is required. • Reputational damage and significant management costs might be incurred if there is social opposition and criticism due to inadequate land purchase/access or acquisition practices (e.g. lack of transparency around allocation of resource claims or unresolved historic land claims). Risk of a Project being perceived as a 'land grab'. • Maintaining good relations with local communities will help manage expectations and identify concerns (e.g. access to water and other ecosystem services) saving time and avoiding unnecessary costs.
Opportunities for the business	• Well-managed land access and acquisition processes developed through consultations and a positive relationship with local communities can lead to increased production through access to a better/bigger potential labour pool.

Oil and gas developments require access to and/or acquisition of plots of land, which can result in temporary or permanent physical and economic displacement of communities. As oil and gas resources are important to national economies, expropriation processes could be triggered. Generally companies and governments will seek to negotiate with Affected Communities before triggering an expropriation process. The company should include robust and long-term community engagement processes when planning the development and expansion of oil and gas facilities and during the Environmental and Social Impact Assessments (ESIA), in order to gain broad community support and adequate compensation and avoid long-term impoverishment.

If a company is considering acquiring a well-established oil and gas operation and not expanding the facilities and associated infrastructure footprint, the risks outlined here are likely to be less significant. However, the risks should still be actively managed by the company, as there may be legacy land issues to be assessed and resolved.

Land rights: Depending on the type of and location of the oil and gas facility, development and construction activities typically require large-scale land clearing for the extraction area itself, as well as for refineries, tank farms and pipeline networks. In addition, land is required for associated infrastructure such as buildings, roads, construction camps, workforce accommodation sites, water management structures, power plants, transmission lines and access corridors.

It is crucial to ensure that the oil and gas company has, or is in a position to, negotiate necessary legal rights to access, extract and use the resource, and other related resources (e.g. water for processing, land for associated infrastructure). Additionally, land tenure and rights of use in emerging markets can be confusing and complex due to inadequate regulation, customary/traditional land tenure and use, and the presence of communities which occupy and use lands but without a recognisable legal right or claim. Legislation governing oil and gas

development in some emerging markets may give preference to these industries over other development plans due to the high potential revenue streams, which can lead to conflict between land users. National expectations over anticipated revenue flows can also generate local hostility and governance challenges for oil and gas companies. Oil and gas companies may need to engage external experts to assist them with the land access and/or acquisition process.

Community relations: It is critical for companies to develop and maintain good relations with local communities. Sufficient time and resources should be made available to consult with Affected Communities in a culturally appropriate manner. Efforts should be made to accommodate their needs and reasonable requests, but it is also important to manage local communities' expectations and take into account precedents that may have been set. Mechanisms should be in place or established to hear grievances and address complaints.

Economic displacement and resettlement: In some cases, people living on or near the resource may be subject to involuntary economic displacement (e.g. due to the loss of crops or arable land) and/or physical displacement (i.e. resettlement). If resettlement cannot be avoided the company must properly compensate the Affected Communities and help them improve or restore their standards of living and livelihoods, to avoid incurring additional costs, loss of license to operate and reputational damage.

Support for local facilities and infrastructure: Companies may be asked to support community development or to provide public services (e.g. construction or running of schools, clinics or other local services). These efforts should not be used to trade off impacts that could have been avoided, reduced or mitigated. It is important to follow the mitigation hierarchy (avoid, reduce, mitigate and fully compensate). Ultimately, the goal is to ensure that community impacts are addressed in the first instance and to deliver additional mutually beneficial support thereafter.

If a company is considering acquiring a well-established oil and gas operation, and not expanding the extraction/ associated infrastructure footprint, the risks described above are likely to be less significant (but still need to be managed by the company since there may be legacy issues, particularly around site contamination, that need to be resolved).

For further general guidance on GIIP relating to land access and acquisition, refer to CDC E&S Briefing Note: Land Acquisition and Involuntary Resettlement and IFC Performance Standard 5: Land Acquisition and Involuntary Resettlement.

2.8 Biodiversity conservation and ecosystem services

Risks for the business	• License to operate can be put at risk from negative impacts to local biodiversity, including ecosystem services used by local communities. • Reputational damage from operations and practices that directly or indirectly (e.g. via associated facilities) damage biodiversity (e.g. oil spills in marine or coastal areas, or accessing remote areas of high conservation value). • Reputational damage and potential interruption of business activities from poor interaction with local communities (e.g. through changes in the availability or quality of water). • Delays and additional costs from investments that affect protected

	areas or species and/or critical habitats or endangered species (e.g. development and implementation of biodiversity offsets).
Opportunities for the business	• Increased production/productivity via better management and sustainable access to, and use of, natural resources (especially water). • Potentially, reputational benefits where proactive management of biodiversity aspects occurs.

Oil and gas development companies are seeking to exploit more remote and challenging areas, causing increased threats to biodiversity. This has led to increased focus from regulators, buyers, shareholders, investors, NGOs and civil society on the biodiversity impacts generated by the oil and gas sector.

As with other E&S risks and impacts, companies should always adopt a mitigation hierarchy - to anticipate and avoid, or where avoidance is not possible, minimise, and, where residual impacts remain, compensate/offset for risks and impacts to the environment. This hierarchy of conservation measures aims to direct primary production to areas with the least biodiversity value. It should be noted that typically, impacts on areas with high biodiversity values (e.g. protected areas) will require additional permits, longer planning and permitting timelines and more expensive management measures. Therefore, avoiding impacts on such areas will reduce the costs associated with environmental management measures.

Habitat degradation and destruction: Habitat degradation and destruction is one of the most significant potential threats to biodiversity associated with oil and gas activities. Depending on the type and location of the oil and gas activity, varying degrees of land clearing and population immigration will result, both of which may extend beyond the immediate footprint of the operation e.g. through access roads, water and power supply infrastructure, workforce accommodation, and distribution networks by pipeline, road, rail or ocean.

It should be noted that in this sector there can be a strong relationship between oil theft and impacts on biodiversity and ecosystem services. Oil theft can cause significant spills/discharges (e.g. in some regions, local communities drill oil pipelines to steal oil which leads to significant soil and water pollution). Companies should implement measures to minimise oil theft/bunkering as this will both benefit the company and protect the environment.

Impact on ecosystem services: Oil and gas operations can also affect the provision of ecosystem services including: (i) soil formation and nutrient cycling; (ii) the provision of freshwater to local communities; (iii) impacts on sea water/fish; (iv) protection from natural risks; and (v) sacred sites and areas of importance for recreation and aesthetic enjoyment.

If significant impacts on biodiversity and/or ecosystem services are likely, companies should specifically assess the potential impacts and implement biodiversity management systems and plans to avoid any risks in accordance with the mitigation hierarchy. Where biodiversity impacts cannot be mitigated, an offset program may be required. Some leading oil and gas operations have committed to biodiversity offsetting where negative impacts to biodiversity from their operations are unavoidable and irreversible. For additional information and case studies on biodiversity offsetting by mining companies refer to the Business and Biodiversity Offsets Programme (BBOP).

For further sector specific guidance refer to IPIECA - The global oil and gas industry association for environmental and social issues.

For further general guidance on GIIP relating to biodiversity conservation and ecosystem services, refer to CDC E&S Briefing Note: Biodiversity and Ecosystems Services and IFC Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.

3. BUSINESS INTEGRITY CONSIDERATIONS

Fund managers should ascertain and continue to ensure that every company (regardless of sector) complies with the fund's business integrity requirements. For further information see Governance and Business Integrity.

3.1 Business integrity issues specific to the oil and gas sector

Corruption risks are particularly high in the oil and gas sector. Even perceived unethical behaviour is a significant risk for companies and investors. In addition to standard business integrity concerns, risks that are particularly relevant for the oil sector include:

- Contract and license acquisition.
- Local content requirements or requests to consider specific third-party agents, vendors or employees.
- Joint ventures with state-owned entities.
- Payments to the government (in cash or in kind).

Companies should operate transparently and have robust systems to manage and oversee interactions with local and national government officials, particularly around licensing. Third parties are a known risk in the sector and companies may be asked by officials to consider specific agents, vendors, and employees. Thorough screening procedures must be in place to prevent risks in procurement and hiring and to ensure the company only works with the best partners possible.

4. ADVICE FOR FUND MANAGERS

See also CDC Environmental and Social Checklist and CDC Governance and Business Integrity Checklist and ESG in the Investment Cycle.

4.1 Sector risk overview

The oil and gas sector intrinsically involves potentially complex, significant and diverse ESG risk and impacts that are likely to have material implications for long-term shareholder value. Therefore, ESG matters will normally be a significant element of due diligence, investment structuring and ongoing ownership and monitoring. Fund managers should give serious consideration to using independent ESG experts to support them in transactions in this sector.

It should be noted that corruption risks are particularly high in the oil and gas sector, and even the perception of unethical behaviour can create significant risk for companies and investors.

Additionally, fund managers should bear in mind that the sector is under increasing scrutiny from regulators, buyers, stakeholders in the supply chain, consumers and NGOs in relation to ESG issues.

4.2 Scoping considerations

In addition to the aspects highlighted above linked to the company's assets, activities and workers, fund managers should take into account the following during the life of the investment, from screening to exit:

- ***Associated facilities:*** (e.g. gas pipes, oil pipes or terminals not operated or owned by the oil and gas company but necessary for the company's activities to be feasible and which would have not been constructed or expanded if company's operations did not exist).
- ***Contractors:*** Whose operations present significant E&S issues, which could have an impact on the business (e.g. logistics companies or security providers).
- ***Supply chains:*** Where these present significant E&S risks. Even where a company cannot directly address risks because it lacks leverage or commercial influence, it is important that fund managers are aware of the risks. For further guidance refer to CDC E&S Briefing Note: Supply Chains.
- ***Decommissioning, closure and post closure activities:*** Should be considered as these can have significant impact on final operation costs and lead to liabilities (e.g. liabilities related to soil remediation/clean-up). Investors should assess the detail, relevance, adequate financial provision and completeness of closure plans to ensure that both immediate and long term environmental, physical and community risks are mitigated. Of particular concern in decommissioning oil and gas operations are the risks associated with contaminated land through known or unknown spills, leaks of fuels or remnant fuels in physical infrastructure, and the risk of leaks or fire/explosions. Fund managers should be aware that it is very rare that an oil and gas operation can be left in a 'walk away' state.

4.3 Situations requiring extra attention

Extra attention, longer timescales, more intensive ESG due diligence and ongoing company engagement may be required in more complex situations. This may involve engaging consultants (see CDC Guidance: Working with Consultants) to conduct a gap analysis against the applicable

local and international E&S standards (e.g. IFC Performance Standards and World Bank Group EHS Guidelines).

Examples of activities or situations in this sector requiring extra attention include:

- Greenfield oil and gas development/major expansion Projects where the scale of the operation has major pollution potential and/or where the site is in a sensitive location (e.g. close to ecosystems services used by local communities, or protected/critical natural habitats).
- Developments or activities associated with physical and/or economic displacement of local communities.
- Projects/activities in locations presenting high security risks.
- Water-intensive gas extraction operations, particularly in water scarce areas, and especially if there is the potential for competition/conflict with other water users, such as the agricultural sector or local communities.
- Small-scale oil refineries and fuel and gas distributions services which typically occur alongside large-scale oil and gas operations in emerging markets: The presence of small-scale activity is often associated with significant E&S challenges such as poor environmental, health and safety practices, heightened security risks to neighbouring communities and operations, child and forced labour, inequitable distribution of benefits in communities and the illegal trade of oil and gas. The challenge for large companies and their investors is to proactively address and work towards legitimising an activity in order to minimise security, health and safety, and reputational risks to large-scale oil and gas operations. They should also minimise any other surrounding and sometimes directly associated environmental damage and community impacts. (e.g. as seen in the Niger Delta).
- Inappropriate emergency preparedness and response systems: All oil and gas facilities establish and maintain a high level of emergency preparedness, including identification of worst case scenarios and the creation of designated emergency response teams. Evacuation plans including escape routes, and containment strategies and equipment should be regularly evaluated and tested.
- Oil and gas development in countries with complex or controversial ESG issues, or which have attracted international concern, particularly regarding revenue transparency, or high terrorism and sabotage risks.
- Transactions/geographies with high business integrity risks. It should be noted that corruption is considered especially endemic in the oil and gas sector, and even the perception of unethical behaviour can be a significant risk for companies and investors.
- Any other activities/Projects involving involuntary economic and/or physical displacement of communities or significant adverse impacts on biodiversity or ecosystem services, Indigenous Peoples, cultural heritage, or local communities.

5. STANDARDS, GUIDELINES AND OTHER RESOURCES

For authoritative guidance, fund managers should consult the applicable IFC Performance Standards and World Bank Group EHS Guidelines.

5.1 Applicable IFC Performance Standards

The IFC Performance Standards most commonly applicable to investments in this sector are:

- IFC 2012 Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts.
- IFC 2012 Performance Standard 2: Labor and Working Conditions.
- IFC 2012 Performance Standard 3: Resource Efficiency and Pollution Prevention.
- IFC 2012 Performance Standard 4: Community Health, Safety and Security.
- IFC 2012 Performance Standard 5: Land Acquisition and Involuntary Resettlement.
- IFC 2012 Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.

In addition, other IFC Performance Standards may be applicable depending on the specific characteristics and locations of a company's operations. The screening stage of the fund manager's ESG due diligence should always include a routine check for the potential presence of significant impacts covered by IFC Performance Standards.

5.2 Applicable World Bank Group EHS Guidelines

The most relevant World Bank Group EHS Guidelines in this sector are:

- World Bank Group General EHS Guidelines.
- World Bank Group EHS Guidelines for Onshore Oil and Gas Development.
- World Bank Group EHS Guidelines for Offshore Oil and Gas Development.
- World Bank Group EHS Guidelines for Liquefied Natural Gas (LNG) Facilities.
- World Bank Group EHS Guidelines for Natural Gas Processing.
- World Bank Group EHS Guidelines for Petroleum Refining.
- World Bank Group EHS Guidelines for Crude Oil and Petroleum Product Terminals.
- World Bank Group for Retail Petroleum Networks.
- World Bank Group EHS Guidelines for Gas Distribution Systems.
- World Bank Group EHS Guidelines for Shipping.
- World Bank Group EHS Guidelines for Railways.

5.3 Additional references, standards and guidelines

- The European Integrated Pollution Prevention and Control Bureau (IPPC) - BAT reference documents (BREFs).
- IPIECA - The global oil and gas industry association for environmental and social issues.
- UN Code of Conduct for Law Enforcement Officials.
- UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials.
- Voluntary Principles on Security and Human Rights.

- The recommendations of the Energy and Biodiversity Initiative and the Joint Nature Conservation Committee Guidelines for the offshore industry (for protecting marine animals).
- The World Bank Group's Global Gas Flaring and Venting Reduction Voluntary Standards.
- Social Accountability International's SA8000.
- Emergency Response for Maritime Operations.
- International Association of Oil and Gas Producers.
- International Labour Organization: Occupational Safety and Health in the oil and gas production and oil refining sector.
- WWF/DEG Water Risk Filter.
- The Extractive Industry Transparency Initiative (EITI).
- The Open Contracting Platform.
- Natural Resource Governance Institute.