This Eurosif sector report has been compiled with research by GES Investment Services. It describes the major environmental, social and governance (ESG) challenges facing the extractives industry as well as the associated risks and opportunities these pose for long-term returns.

EXTRACTIVES OVERVIEW

The importance of the extractive industries cannot be underestimated. This sector drives the global economy, supplying most of our consumer products and associated services. In 2009, sales from the world’s top five listed mining companies were about €147 billion, whilst the top five oil & gas producers sold product worth nearly €1 trillion (fig 1). The most important commodities extracted from beneath the ground, by order of revenue in 2009, included oil & gas, coal, copper, iron ore, gold, aluminium, phosphate, lead, zinc, nickel, platinum and diamonds. A range of other industrial minerals used in chemicals and construction industries are also extracted such as potash, gypsum, kaolin, salt and asbestos.

EXTRACTIVES TRENDS

The extraction of minerals and hydrocarbons exposes companies and communities to a range of environmental, social and governance (ESG) risks which need to be carefully managed. Contributing factors include: high energy and water use, extensive physical impacts, the presence of toxic metals and other chemicals, and involvement in politically unstable countries or conflict zones. In addition, project life cycles are long and complex, involving exploration, development, mining, production, refining and product transportation to markets. Many extractive sites also require long-term post-closure care.

Companies operating in developed economies, such as Norway, Greenland, the USA, Canada and Australia also encounter higher ESG risks when extracting arctic oil & gas, oil sands, minerals from indigenous lands, and oil & gas from deepwater. The most salient example from recent times was the April 2010 blow-out of BP’s Macondo oil well in the Gulf of Mexico. Due to the difficult operating conditions found 1500 metres deep, BP was unable to prevent the blowout and mitigate the resulting spill quickly enough. The financial impact on the company has also been significant. This experience illustrates why companies need robust, tailored safety and environmental engineering technologies and management systems in place in order to prevent incidents and minimise their impacts, both ESG and financial.

Despite the ESG challenges, there are reasons for optimism. According to the World Bank Extractive Industries Review, “extractive industries can contribute to sustainable development, when projects are implemented well and preserve the rights of affected people, and if the benefits they generate are well used.”

The following sections of this report summarise the key issues, risks and opportunities that extractive companies face, and provide examples of good practice with two case studies.

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**ESG ISSUES**

- The production and consumption of fossil fuels is the source of 60% of global greenhouse gas (GHG) emissions.\(^3\) Oil and gas production amounts to about 6%, metals extraction to 5% and coal mining to about 4% of total global GHG emissions.\(^4\)

- The highest upstream GHG emissions occur in coal mining, aluminium\(^5\) and steel production, and production of hydrocarbons from depleted reservoirs, oil sands, shales and coal.

- Extractive operations result in physical alterations to land, surface water and groundwater onshore, and to the seabed in offshore environments. They are also responsible for high water usage, noise and dust emissions, and introduction of non-endemic species,\(^6\) all of which can severely impact biodiversity and human health.

- Land subsidence around underground mines is a potentially major physical impact which can require the relocation of entire towns.

- The main wastes from mining are waste rock and process tailings. These can release toxic heavy metals, acid mine drainage, cyanide and other process chemicals into the environment, which endanger all forms of life. Large mines generate hundreds of thousands of tonnes of this material, which must be stored in properly engineered facilities.

- The key waste streams from oil and gas operations are drill cuttings, drill fluids and produced formation water (PFW), containing hydrocarbons, metals and other toxic chemicals, all of which can be deposited into the sea over the life of a project.

- The extractive sector can have a profound impact on socio-economic conditions and cultural life of local communities and even whole countries.

- The right to consultation and the right to free, prior and informed consent is an indigenous right that is now increasingly being recognized by national law, international norms and voluntary best practice standards and guidelines.\(^9\)

- The likelihood for human rights abuses is high where resources are extracted from conflict zones and areas depended upon by indigenous peoples and small-scale miners. The most controversial examples include “coltan” metals and diamonds from the Democratic Republic of Congo and oil from Nigeria.

- Extractive industry operations have high workplace fatality and injury rates.\(^10\) They also pose a health and safety risk to surrounding communities.

- Workplace health and safety hazards include extreme work environments, the handling of flammable, explosive or toxic materials and chemicals, and the presence of heavy metals and hydrocarbons.

- Community health impacts can result from metals, hydrocarbon and other chemical contamination of soil, water and air, especially around smelters, refineries and mines. These can be serious and long term, for example the impact of lead contamination on the neurological development of children.

- The relationship between corruption and natural resources can be explained in part by the wealth and power that the access to resource revenues may generate, and by the fact that many resource rich countries have weak institutions.\(^11\)

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\(^3\) Aluminium refining: 1% of global greenhouse gas emissions.


Companies that reduce GHG emissions will benefit from lower energy and carbon costs and enhanced reputation. They will also conserve valuable fossil fuel resources.

Extractive companies may have better opportunities for carbon capture and storage, although there remain technical and regulatory risks related to this disposal method.

GHG emissions from coal mining can be greatly reduced, and revenue gained, by recovering and selling coal mine methane.

Companies that manage their waste and emissions properly have less impact on the environment and local communities. Associated benefits include lower health- and security-related costs, and support for future project activities (ie. social license to operate).

Progressive rehabilitation during active operations results in a continued reduction in closure liabilities and less post-operational work. Using this approach, companies can also refine existing techniques and engage in rehabilitation related research and development.

Companies with robust anti-corruption policies and management systems help to break down bribery and corruption cycles and are best equipped to succeed in business.

Companies that are highly transparent can more easily demonstrate their non-involvement in bribery and corruption and show their economic contribution to the country.
Low impact construction and operations in a sensitive offshore environment

In 2003, mid-sized oil & gas company Apache Corporation (Apache) developed the Victoria and Double Island oil fields in a sensitive shallow water coral reef environment, off the Western Australian coast. The project involved laying two underwater pipeline bundles and installing two small offshore oil platforms.

The company went to considerable lengths in order to avoid environmental impacts from the project. The optimisation of the pipeline route and special work vessel procedures were two key measures put in place at the time to avoid damage to marine habitats. The seabed condition was verified by post-construction diver surveys. Workforce participation was encouraged in order to achieve the HSE goals for the project’s construction phase.

Apache used smaller size platforms, hence reducing its physical footprint. The company also adopted a zero discharge policy for construction and facility operations, involving shore-based processing and separation of the recovered well liquids, instead of higher-risk offshore processing. Oil-containing waste water was disposed of via deep-well injection at the shore base facility, rather than off to the sea.

Successful implementation of the project enhanced the company’s reputation, allowing it to gain approval for other similar projects. Apache received the Department of Industry and Resources’ Award for Environmental Excellence for the project, and was the only oil & gas company in to be a finalist in the Australian Prime Minister’s Environmentalist of the Year Award in 2003.14

Obtaining community consent in the Philippines

The Malampaya Project, an off-shore gas project operated by Shell Philippines Exploration (Shell), shows how costly community opposition can be avoided through securing and maintaining community consent. The company initiated the engagement with stakeholders in 1996, approximately two years before construction work began. The consent process employed the following four strategies:

- community outreach and interviews with key opinion leaders and decision makers;
- information, education and communication activities;
- perception surveys and participatory workshops as an introduction of the project; and
- participatory involvement in the formulation of environmental management plans.

The initial environmental assessments and community interviews resulted in a re-routing of the offshore pipeline in order to avoid impact on areas of rich biodiversity and indigenous ancestral waters. Throughout the project, the company continuously revised its public engagement plan to address concerns as they arose. To ensure ongoing acceptance of the project, Shell continues to support multi-stakeholder monitoring and grievance mechanisms during project operations. The company also operates social development programmes that provide services requested by the communities.

Shell estimated that while the community engagement activities cost €5 million, the company saved up to €58 million by avoiding delays. The company also gained reputational benefits, being awarded the World Summit Business Award for Sustainable Development Partnerships by the UNEP and the International Chamber of Commerce.15

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