

Sustainability in oil, gas and petrochemicals

DELIVERING INNOVATIVE SOLUTIONS THROUGH LEADING-EDGE EXPERTISE GLOBALLY

How we can help

In the oil, gas and petrochemicals arena, sustainability is now a mainstream consideration in the operations of major corporations and in the approval processes for new projects. We have four dimensions that enable us to deliver successful sustainable projects:

- Technical – we have 1600 oil and gas experts worldwide.
- Commercial and economic – we have proven commercial and economic experience.
- Environmental – we are one of the world's leading environmental consultants.
- Social – working in 140 countries we have unparalleled understanding of local and social issues across all sectors.

Adding value

- We instil our PRIDE values (Progress, Respect, Integrity, Drive and Excellence).
- We follow our CLASS principles (Communication, Leadership, Assurance of Quality, Supervision and Staff Competence).
- Delivering social, environmental and economic benefits.
- Global best practice from landmark projects, through recognised experts.
- Acclaimed for our sustainability credentials.
- Enhancing safety and reliability.
- Increasing process efficiency.
- Reducing carbon emissions eg eliminating flaring and leaks.
- Improving productivity eg enhancing oil recovery.
- Proven track record of award-winning projects.

Our commitment

We work in partnership with our customers to incorporate sustainable solutions into all projects. As experts in design and project management, we look to include sustainable drivers at the conceptual, planning and feasibility stages of all projects, addressing the whole-life costs and impacts from a multidisciplinary viewpoint.

Tackling complex, interlinked challenges through our huge diversity of disciplines.

Sustainability in Mott MacDonald

We believe innovation enables sustainability. We help our clients by delivering solutions that are locally appropriate, economically durable, socially beneficial and environmentally responsible. Meeting the needs of a fast growing global population against increasing resource scarcity presents a continuous stream of new challenges. Resolving them demands ingenuity. We want to harness the opportunities sustainability offers to add value for our clients, communities and our business.

Governance

Mott MacDonald has a Group sustainability manager who is supported by a strong team of professionals with the brief to drive forward our sustainability agenda, addressing our operations, developing services and raising our profile. Mott MacDonald is committed to human rights and has policies on welfare, ethics, gifts and hospitality, and facilitation payments.

Community and society

We are committed to making a positive contribution to the welfare of the communities, environment and marketplace in which we operate. Our approach embraces ethical values, community responsibilities, social impacts, sustainability, protection of the environment, prudent use of natural resources, economic advancement and employment.

Through our Corporate Social Responsibility (CSR) programme we encourage our people to put forward ideas and ask for funds to support a project or activity that contributes to the local community.

We recently collaborated with the Mithram Society in Mulamthuruthy, India to build a specialist residential care home and school to support people affected by varying degrees of cerebral disabilities like autism and cerebral palsy etc. We provided funding as well as design, detailed engineering, procurement support and construction monitoring for the project, with the entire works being carried out using local materials and resources involving the local community.

People

With projects spanning 140 countries, our 16,000-strong workforce come from a diverse range of backgrounds, cultures and experience. Our staff have local insight backed by world class expertise that enables us to deliver excellence to all clients. As an equal opportunities employer, we are committed to providing career and development opportunities for all of our people through training programmes and mentoring. With regular resource, career and succession planning we ensure that our people always have growth opportunities.

Health and safety

For Mott MacDonald, safety is paramount. We are committed to the integration of health and safety into all areas of corporate activity in accordance with OHSAS 18001, to achieve zero harm and to implement a process of continual improvement in this. A high practicable standard of health and safety is always pursued throughout our operations.

Environment

We are committed to integrating environmental considerations in all areas of corporate activity and to implementing a process of continual improvement to encourage sustainable opportunities on all our projects. Our environmental management system is in compliance with ISO 14001 standard.

Local economic contribution

We contribute to the local economy by enhancing local revenues for the national economy. We provide employment opportunities to the local population in a global work environment. We are recruiting and training graduates across the world and helping local communities in exploring, utilising and optimising their natural resources.

Technical solutions

We provide technical solutions to ensure sustainable developments. We help our clients through projects such as flare reduction, waste management, improving process efficiency, enhancing oil recovery, enhancing safety and reliability of onshore and offshore structures and gas recovery projects.



Delivering social, environmental and economic benefits

Environmental and social impact assessments are essential components of sustainable development. Properly managed, oil and gas operations provide a number of benefits to the communities in which they operate by generating:

- Significant revenues for the national economy.
- Increasing local employment.
- Transferring technical and commercial skills and developing local capacity.
- Enhancing local infrastructure and improving the delivery of environmental and social benefits.

Enhancing safety and reliability

We are committed to managing and minimising risk in order to protect our customers, employees and environment. To promote a safe working environment we encourage the use of safety management programmes to highlight risks and hazards and prevent accidents. A good management system can also increase efficiency, improve productivity and quality of services.

We operate an integrated quality, environmental and safety management system which provides processes to help manage and minimise risk on projects including commercial, professional, technical and environmental risks as well as health and safety.



Increasing efficiency in LNG processing

Improving the energy efficiency of LNG plants is a major focus for operators.

The two major sources of CO₂ emissions in LNG plants are the acid gas removal unit and the flue gas from the gas turbines used for driving refrigerant compressors and electric power generation. The refrigeration and gas recovery power requirements can account for up to 90% of the plant fuel gas consumption. Therefore, the selection of the gas turbines and combustion efficiency has a direct impact on the overall plant greenhouse gas emissions. There are various technologies available to each segment of the LNG chain for minimising the greenhouse gas emissions.

Flagship projects

10 million man-hours without lost time incident (LTI), Qatar

We provided detailed design and engineering of the jetties for Qatar Shell's US\$18bn gas to liquids project. The project team achieved 10 million man-hours without LTI and LRQA and ISO 18001 certification.

Environmental engineer for major cross-country oil pipeline

We were appointed as lenders' environmental engineer for a major cross-country oil pipeline. Work included a due diligence study assessing multiple environmental and social impact factors pertaining to the offshore platforms, subsea pipeline and receiving terminal. We also provided a specialist review of the ecological impacts relating to marine crossings. Social experts reviewed resettlement action plans, the public consultation and disclosure plan and provided input on the environmental management system. Our team of specialists provided detailed reviews of environmental and social construction plans.

Eliminating gas flaring, Africa

Pioneering developments at Rabi oilfield in the African state of Gabon feature ingenious use of technology to bring the country both financial and ecological benefits, while contributing to Shell Petroleum's global goal – eliminating gas flaring. Rabi phase 3 project for Shell Gabon won Energy's Technology & Innovation Award and was runner up in the Institution of Engineering and Technology Innovation Award for Energy for 2006.

Destroying greenhouse gas, Japan

We designed an incinerator to destroy 360 tonnes per year of the chemical HFC-23, a potent greenhouse gas, thereby eliminating the release to the atmosphere of 4M tonnes of CO₂ equivalent per year. The scheme received financial credits under the Kyoto Protocol's Clean Development Mechanism.

Gas recovery, Nigeria

Plumes of burning gas were a common sight in oil production facilities, where gas was disposed of through flaring. In Nigeria this represented an annual loss of around US\$2.5bn, with nitrous oxide and sulphur dioxide contributing to rainforest damage, and CO₂ contributing to global warming.

We designed three facilities for gas recovery from the Cawthorne Channel, Awoba and Krakam oilfields. This included construction of three compressor plants to convert gas to liquid form, a booster compressor station and 71km of pipelines. The plants were prefabricated and delivered by barge to prevent harm to surrounding mangrove swamps. The facilities now produce liquid natural gas with a value of US\$600,000 per day for Nigeria's GNP. The project design has won the British Expertise Award as joint Large Consultancy Firm of the Year 2006 in the 'Tangible Visible Project' category.

Enhancing oil recovery, Oman

Petroleum Development Oman (PDO) is installing new separation and water injection facilities for pressure maintenance purposes to enhance the recovery of oil from the Nimr-C oilfield. The main objective of the project is to build new gathering facilities to process 55,000m³/day gross liquids, emulsion production of 7500m³/day and produce water of 40,000m³/d based on PDO's approved field development plan. We are providing detailed designs and engineering services for the new facilities.

To find out more see

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www.mottmac.com/oil-and-gas