

Sustainable Solutions for the **Global Chemical Industry**



A person wearing a blue shirt, dark shorts, and a white helmet is riding a bicycle on a wooden boardwalk. The boardwalk is made of light-colored wooden planks and has dark, curved railings on both sides. It curves along a body of water that reflects the sky and surrounding greenery. The water is calm, and the overall scene is peaceful and scenic.

**ERM's sustainability advice
is directly linked to our
clients' business objectives**

About ERM

Environmental Resources Management (ERM) is a leading global provider of environmental, health, safety, risk, social consulting and sustainability related services. We have more than 160 offices in over 40 countries and territories employing more than 5,000 people.

ERM is committed to providing a service that is consistent, professional and of the highest quality to create value for our clients.

Over the past three years we have worked for more than 50 percent of the Global Fortune 500 delivering innovative solutions for business and selected government clients helping them understand and manage the sustainability challenges that the world is increasingly facing.

For over 40 years we have been working with clients around the world and in diverse industry sectors to help them to understand and manage their environmental, health, safety, risk and social impacts.

Sector dynamics



Chemical Sector is a \$3 trillion industry that touches almost everything we do in our daily lives.



Chemical distribution is being transformed globally by the West fertilizer explosion creating responsible distribution programs around the world.



A growth rate of 10–12% per annum through 2017 is expected based on the increasing demand for chemicals across various sectors, as well as a growing middle-class population, rising disposable incomes and consumption. A rising trend in end consumption demand for paints, textiles, adhesives and construction is leading to substantial growth opportunities for chemicals companies.



Merger/acquisition and divestiture activity up 50% to all-time high levels.



Agrochemicals and specialty chemicals in particular, are key to the success of the chemical sector. Promoting a market for sustainable products is a top business priority in terms of sustainability especially the agrichem sector.



Shale deposit, natural gas and low oil prices create new energy solutions driving a surge in the chemical sector.







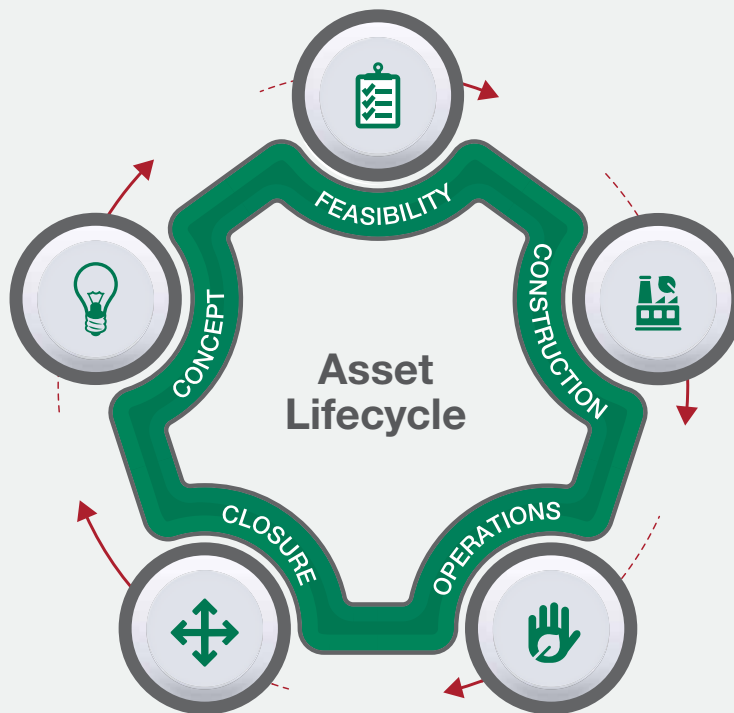
ERM across the chemical industries' asset lifecycle

Feasibility

- Environmental, social, health impact assessments and due diligence
- Resettlement plans and stakeholder engagement frameworks
- Sustainability master plans to improve socioeconomic performance across the lifecycle of the operation
- Adaptation issues to physical risks e.g., water stress, climate change, etc.

Concept

- Risk control strategies
- Identify community stakeholders
- Build credibility with community and regulatory stakeholders
- Map potential fatal flaws and other project constraints



Construction

- Permitting
- Design and implement detailed management plans to minimize sustainability risks and maximize opportunities
- Manage community interactions with construction workforces
- Monitor and audit environmental, social, health and safety performance

Closure and decommissioning

- Risk based exit strategies
- Develop sound closure goals
- Manage long term liabilities
- Help ensure sustainable transition for post closure communities
- Implement decontamination and demolition programs

Operations

- Implement and monitor environmental, health and safety management systems
- Behavioral safety programs
- Enhance productivity by improving sustainable performance
- Audits and interventions to improve environmental, social, health and safety performance
- Manage risk

Services we offer



Transaction Services

Providing critical, time-sensitive advice on the environment, social and related governance and sustainability risks and liabilities associated with mergers and acquisitions



Impact Assessment and Planning

Helping to deliver sustainable projects by managing environmental, social and health impacts



Sustainability Safety

Helping clients create a safer workplace



Performance and Assurance

Helping corporations reach their environmental, health and safety performance potential through operational improvement and cost optimization



Risk Management

Quantifying and managing the safety risks associated with hazardous installations and processes, with the objective of protecting people, assets and the environment



Air Quality and Climate Change

Proactively addressing challenges around air quality, carbon management, energy efficiency, and climate risk



Corporate Sustainability Strategy

Advising corporate leadership on their sustainability agenda



Information Solutions

Meeting clients' information needs through expertise in software solutions, configuration and deployment, and the environment



Contaminated Site Management

Creating strategies and implementing projects to support the life cycle of contaminated site mitigation from initial investigations and risk assessments to remediation

Key challenges faced by the industry

Resource and environment sustainability have remained as major areas of concern for the global chemical industry. Water management, environmental impact, raw materials, product sustainability, safety over lifecycle, and energy use have been reported as key issues that the industry has been facing globally.

Some of the common challenges faced by the chemicals industry include:

The impact of feedstock prices changing the global footprint of chemical companies

Increasing regulatory demands

Maintaining cost control

Non-technical risks delaying capital projects such as labor shortages and the increasing impact of community involvement

Safety programs not delivering the necessary changes in performance

Our value proposition

ERM partners with chemical industries to help them:

Enter New Markets

By geography, company and asset

Deliver Capital Projects

Efficiently, safely, compliantly, on time and on budget

Sustain Operational Performance Improvement

Seeking sustainable, safe, cost-effective, compliant operations

Develop Asset Retirement Strategies

Closure, decommissioning or divestment



Key issues that we help our clients address

Maximizing productivity and efficiency in a capital-constrained environment: data efficiency, system streamlining, resource efficiency, information solutions, and sustainable operational excellence.



Safety

Major incident and accident prevention, reducing likelihood of fatalities, improved risk management and control, design and implementation of project safety management systems



Water and Resource Management

Strategy, risk based approach, technical solutions, climate change adaptation



Social Issues, including Human Rights and Social Licence to Operate

Resettlement, stakeholder mapping and engagement, local economic development programs, strategy, community conflict resolution, infrastructure access



Merger and Acquisition and Project Finance

Buyer and vendor due diligence, transaction strategy to enhance/protect reputation, liability estimation, compliance assessments, material issue identification and quantification, financial modelling



Closure Strategy

Closure execution plans, closure risk assessment, community master plans, predictive modeling, financial provisioning, portfolio assessment, closure optimization through physical asset recovery



Product Stewardship

Managing risks and developing opportunities



Compliance and Governance

Increasing regulatory pressure and shareholder expectations leading to the critical importance of compliance and governance



Sustainability Strategies

Developing sustainability strategies and reports in accordance to GRI G4.0 framework

Contact information:

Jen Whitney

Global Chemical Sector Lead
jen.whitney@erm.com

Karl Enters

Global Product Sustainability Lead
karl.enters@erm.com

Hans-Bernd Brokamp

Global Chemical Sector
Capital Projects Lead
hans.brokamp@erm.com

John Hazard

NA Chemical Sector Lead
john.hazard@erm.com

Carlos Ferlin

LAC Chemical Sector Lead
carlos.ferlin@erm.com

Thomas Kustus

APAC Chemical Sector Lead
thomas.kustus@erm.com

Oliver Phipps

EMEA Chemical Sector Lead
oliver.phipps@erm.com



About ERM

ERM is a leading global provider of environmental, health, safety, risk, social, and sustainability related consulting services. We have more than 160 offices in over 40 countries and territories employing more than 5,000 people who work on projects around the world. ERM is committed to providing a consistent, professional, and high quality service to create value for our clients. Over the past three years we have worked for more than 50 per cent of the Global Fortune 500 delivering innovative solutions for business and select government clients helping them understand and manage the sustainability challenges that the world is increasingly facing.

For over 40 years we have been working with clients around the world and in diverse industry sectors to help them understand and manage their environmental, health, safety, risk, and social impacts. The key sectors we serve include oil and gas, mining, power, manufacturing, chemical, and pharmaceutical. All face critical sustainability challenges and our clients in these and many other areas rely on our ability to assist them to operate more sustainably which has a positive impact on our planet.