

**from phantom
savings to real
saving -
unleashing your
unrealised
Possibility**

Discovering the limit to Resource Value

Reduce the carbon, water and waste footprint of enterprises; work closely with enterprises to develop smarter, more resource saving solutions and discovering resource value through process optimisation, waste re-use, recycling and by-product synergy.

**boost
your triple
bottom-line**

Global challenges- local solutions



CLIMATE CHANGE



COLLAPSING FISHERIES BIODIVERSITY LOSS SOIL EROSION CROPLAND AND FOREST LOSS



MATERIAL AND WATER SCARCITY



GROWING WASTE



Climate change is the most potent game-changer for the current global economy

- ♦ Industrialization and growing consumption are generating increased demand for natural resources to power our industrial infrastructure also adding to pollution, and contributing to resource scarcity as well as faster exhaustion of easy to reach supplies. Hence, future extraction of these resources will be more difficult and costly.
- ♦ The scientific evidence suggests that human activity is contributing to climate change, which can alter rainfall, influence crop yields, affect human health, cause changes to forests and other ecosystems, and has a great impact on planets sustainability.
- ♦ In the current global setting, sustainability of industrial manufacturing activities are becoming multi-faceted, involving economic, social, and environmental concerns, apart from the ability to manufacture quality products at competitive prices.
- ♦ A number of enterprises are not using resources efficiently and there are plenty of opportunities for improvements, benefiting in terms of environmental, social and economic impacts
- ♦ In the current liberalized Indian economy, enterprises are under unprecedented pressure to improve its competitiveness apart from reducing environmental footprint for survival and growth.
- ♦ Clear and tangible improvements in resource efficiency and reductions in environmental impacts and cost reduction have been reported worldwide.



Vision

A centre of excellence for resource efficiency innovation, transformation and cleaner technology diffusion for supporting inclusive sustainable industrial development.

Mission

To pursue new knowledge and solutions on matters related to resource efficiency and cleaner technologies.

Values

Client Centric: Our approach is focused on client's unique needs, transforming practices and delivering workable solutions.

Excellence: We persistently create better ways of doing the things, provide innovative solutions and build clients capabilities for continual improvement.

Professional Expertise and standards: our expertise on resource efficiency is clients gain. We observe utmost professional and ethical standards, preserve client's confidence and secrecy.

Mandate

We help our clients to improve the resource efficiency and adopt cleaner manufacturing practices, to cultivate a transformational management in enterprises in order to become financially and environmentally more sustainable.

Integrated approach: we look at your entire production process including material flow and cost analysis, water consumption and cost analysis, energy management, waste assessment, heat recovery and Renewable energy application.

Best practice examples: find out from our consultants about the latest technologies that are just right for your industry.

Systematic process analysis: create a solid resource data base for future decision-making

Data Analysis: Gather and analyse data for evaluating your potential for efficiency improvement.

Training: Offer customised training on resource efficiency of production process and subsystems.

- ◆ **The concept of Resource Efficiency encompasses review of use of raw materials and energy, water, production of waste, adoption of energy efficient as well as renewable energy technologies, recycling of critical materials and cleaner technology innovations**
- ◆ **Optimized resource usage will boost environmental sustainability and economic growth while reducing resource use across variety of industrial segments.**
- ◆ **Resource Efficiency efforts can ensure security of supply of natural resources, lead to better control over potential risks related to supply security and price variability of materials and to limit environmental pollution risks and accidents.**
- ◆ **Further, cost reductions through resource optimization and innovation will pave way for fresh global market opportunities for Indian industrial sector, such as introduction of new products and services, and creation of new jobs.**

"We cannot continue to do what we have always done.....
If sustainability is to be achieved, we will have to rethink virtually all of our industrial processes."

- Edgar S Woolard
Former CEO of Du Pont

sustainability is balancing a company's financial, social and environmental performance

Energy efficiency complements resource efficiency

In many manufacturing units material costs are 30 to 80% of the cost of producing a product, far greater than labour and energy costs. Greater potential for cost savings is available through materials efficiency than energy efficiency alone or even labour reductions.

Manufacturers need to develop ultra-efficient processes and products that emit far fewer greenhouse gases as well as to manage potentially unpredictable supply chain risks.

"Organisations that effectively weaves resource efficiency into their core strategy and operations can drive revenue growth, cost reduction, better risk management and improved brand and reputation"

World Economic Forum

IREACT Services



Managing Resources for sustainability

We help companies to build well-designed sustainability portfolios into their day-to-day function related resource use, waste, developing internal documentation system for effective management review and reporting of critical resources for continual and sustained cost saving, improved profits & growth.

Proprietary benchmarking

Conducting in-plant assessment studies and develop accurate client specific resource efficiency performance benchmarks (KPI's) with respect to resources such as raw materials, energy, water and waste streams, in terms of quantification, cost etc., and to compare against peers with similar equipment and processes and subsystems.

Energy, Material, water and waste assessment programs

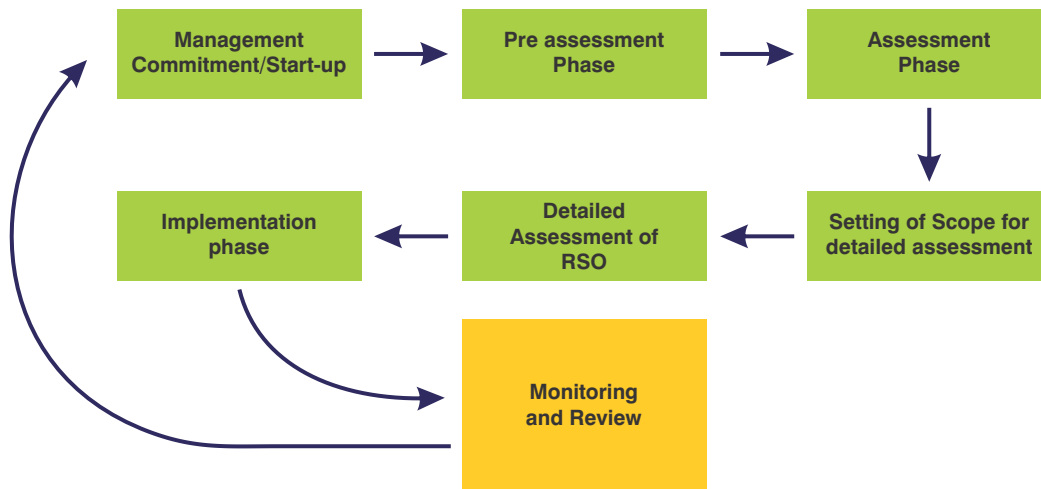
We help companies on achieving maximum energy and material efficiency, optimising utility equipment efficiencies, managing water and waste to capture economic and social benefits, by identifying optimum efficiency improvement solutions.

Investment Grade Resource Efficiency Audits and Project Management Consultancy Services

- ◆ Conducting detailed (investment grade) resource efficiency improvement studies through resource efficiency audits and recommendations assess barriers & risks, financial analysis, developing techno economic feasibility reports, bid documents and other project implementation documents.
- ◆ Value added service through PMC mode for the implementation of resource efficiency and cleaner technology measures and performance assessment of existing and new projects

Waste Water/Waste handling and treatment

We help companies to review and evaluate the entire value chain of existing waste water/waste handling and treatment utilities by optimizing all through the seven principles, to develop and refine better waste management strategies and best practices, , value addition of waste and waste to energy options .



IREACT - Approach and Methodology

- 1 • Identification of Resource saving opportunity
- 2 • quantification of cost saving and other environmental benefits
- 3 • Risk evaluation : Technical, environmental and safety
- 4 • estimation of investment cost ,Identification of funding source
- 5 • Techno economic feasibility & uncertainty analysis
- 6 • Preparation of Detailed Project report

IREACT Methodology for detailed assessment of Resource Savings Opportunities

Expert recommendations

We leverage our team's extensive experience evaluating equipment and processes, as well as best practices for optimised resource efficiency solutions, developing and implementing better housekeeping practices, publicity materials for employee's awareness creation and to inculcate behavioural and cultural values among employees for sustainable growth and programs for community engagements.

Production and product design and environmental footprint

We enable companies to identify and reduce a product's environmental footprint throughout its entire life cycle from raw materials to production, consumption, recycling, and reuse.

Renewable Energy Applications

We help clients with feasibility study; offer optimised recommendations and develop project implementation

documents including implementation assistance on renewable energy applications and waste to energy options.

Occupational Health and Safety Management

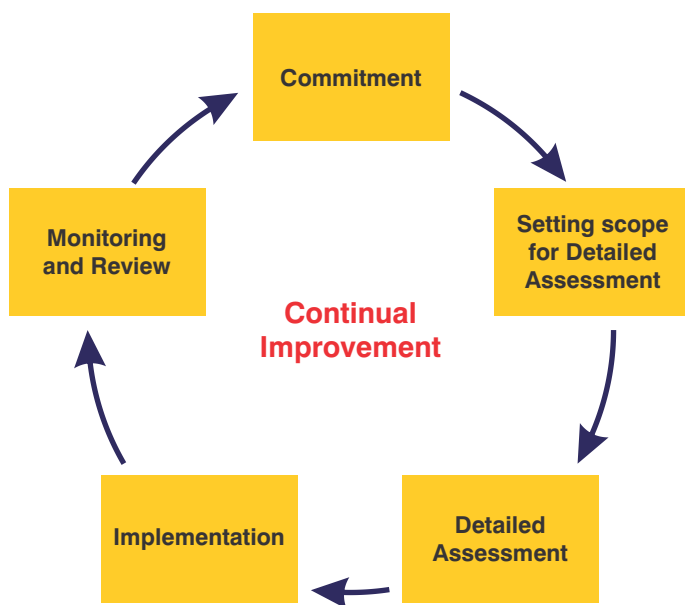
- ◆ Studies on occupational health, safety and environment management, and related to handling and disposal of hazardous wastes and other pollutants.
- ◆ Upgrading existing waste management plan and pollution control measures.

Support for Continual Improvement

- ◆ Long term assistance to companies on a continual retainership basis for implementing action plans, continual monitoring review of performance on a monthly basis and recommendations to avoid rebound effects.

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Adoption of Cleaner Technologies

- ◆ As clean technologies come down the cost curve, they are becoming increasingly disruptive to traditional business models.
- ◆ We help companies to understand how advances in clean technologies affect industry structure and competitive dynamics and to identify, evaluate, recommend and implement cleaner technologies in renewable energy and other resource efficient process and equipment system, and other emerging technologies appropriate to the client.

Research and demonstration Projects

We undertake specific research project of clients in resource efficiency, cleaner technology and waste management to identify options for more efficient and effective strategies covering improved efficiency , reuse , recycle and developing value added products from waste , after due waste assessment studies.

Training & Awareness Building

- ◆ Awareness raising, advocacy and demonstration of the benefits of resource efficiency and cleaner technology among enterprises with specific focus on MSME sector.
- ◆ Offer customized structured internal training and capacity building and assessing program for employees, on resource efficiency, production process and subsystems for effective change management.

Publications

- ◆ Publication of e-newsletter, Fact sheets, best practices, publicity materials, Handbooks and other technical resources and training materials relating to resource efficiency and cleaner technologies.
- ◆ Developing customized training and operation manual and other publicity materials for awareness creation among enterprises

Funding Options

Help the client to advice and access to funding opportunities and other innovative funding mechanisms

About SEEM and IREACT



The Society of Energy Engineers and Managers (SEEM) is a national professional body of certified energy managers and auditors in India. SEEM was created in 2005 as a NGO and a non-profit association governed by the laws applicable to charitable institutions for complementing the actions of government agencies.

SEEM evolved a novel initiative through its arm, "The Institute of Resource Efficiency and Cleaner Technology (IREACT)" to function as a clearing house on matters related to adopting resource efficiency and cleaner technologies in order to help industries to become more financially and environmentally sustainable.

SEEM having an expertise base of more than 600 practicing professionals spread across all states is a fully competent body for driving resource efficiency improvements and cleaner technology challenges with specific focus on industrial sector in India.

For more information :



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