Dissemination of Knowledge on Decarbonisation and Energy Efficiency Technologies through the IDEEKSHA Portal

Presented by
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04th June 2024
'Idam' in Sanskrit translates to 'this', referring to 'this Earth' or 'this time' and thus, by extension, 'this Earth at this time'. Our logo has the Earth at its centre, surrounded by the five basic elements in Vedic philosophy called the Panchamahabhutas, namely, air, fire, water, earth, and space. The fins connecting these elements represent the continuous churning of the Earth ensuring that it always remains stable, reflecting our ethos of steadily and realistically working towards a stable and sustainable earth.

Idam Group consists of Idam Infrastructure Advisory Pvt. Ltd., Enfragy Solutions Pvt. Ltd., and Wattguru.
Industrial Decarbonization

Industries are vital to the global economy, providing essential energy and materials.

Over 30% of global greenhouse gas emissions come from fuel combustion and industrial processes, out of a total of 51 gigatons of CO2 equivalent.¹

Industrial transformation is crucial for achieving a net-zero world due to significant emissions.

While progress has been made in decarbonizing the energy sector, many industries are still transitioning to a low-carbon future.

Five heavy industries - cement and concrete, iron and steel, oil and gas, chemicals, and coal mining - collectively accounting for 80% of all industrial emissions².

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Pathways for Decarbonization

**Energy Efficiency**
- Improving the efficiency of energy use to reduce overall energy consumption and emissions.

**Electrification**
- Shifting from fossil fuel-based energy sources to electricity from renewable sources.

**Low Carbon Fuels**
- Utilizing fuels with lower carbon content, such as biofuels and green hydrogen.

**Circular Economy**
- Circular economy principles in industries are a potent pathway for decarbonization, emphasizing resource efficiency, waste reduction, and material reuse to mitigate emissions significantly.

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Idam Infrastructure Advisory Pvt. Ltd.

**About Idam**

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**Overview**

**Mission**
• Mission is to enable a carbon-minimal world through our products and services

**Vision**
• Be among the top 3 companies providing carbon-minimizing services in India.
• Expand our geographical presence in at least three continents.
• Gain 25% of our total revenue from innovative international projects.

**Idam Group**
Idam Group consists of Idam Infrastructure Advisory Pvt. Ltd., Enfragy Solutions Pvt. Ltd., and Wattguru.

**Idam**
- Distributed Renewable Energy
- Electricity Markets & Regulatory
- Energy Transition
- Industrial Decarbonization

**Enfragy**
- Geomatics

**Wattguru**
- Information Technology
- Decarbonization Technology Assessment
- Sectoral Decarbonization Roadmaps
- Science Based Targets
- Energy and Water Audit Services
- Carbon Footprint Project Design and Implementation Support
- Techno-Commercial Feasibility Study
- Risk Assessment and Due Diligence

**Necessity of Digital Platform**

**Challenges face by Industries**

- Outdated technology hindering adoption of sustainable practices
- High Dependence on Fossil Fuels
- Limited access to financing for green initiatives

**Role of IDEEKSHA in addressing challenges**

- **Resource Hub**
  • IDEEKSHA serves as a resource hub, providing information, tools, and best practices to help industries overcome barriers related to technology adoption and transitioning to cleaner energy sources.

- **Training and Workshops**
  • Online/Offline sessions tailored to industry needs cover topics like energy audits, renewable energy technologies, PAT scheme, IEED technologies, etc.

- **Tools and Calculators**
  • Interactive tools help industries estimate cost savings and emissions reductions from different measures.

- **Success Stories**
  • Highlighting successful industries initiatives inspires others to take similar actions.

- **Access to Funding**
  • IDEEKSHA connects businesses with funding opportunities and financial institutions that support green initiatives, enabling them to access the necessary capital for implementing sustainable practices and technologies.

- **Networking**
  • Industries can connect with peers and experts through discussion forums and networking events.
Industries are the backbone of the global economy, providing essential energy and materials required for modern society's sustenance and growth.

Emissions from fuel combustion and industrial processes account for over 30% of global GHG emissions (out of a global total of 51 Gt of CO$_2$ equivalent).

The industrial transformation is vital for reaching a net-zero world, given industries' significant emissions.

Though progress has been made in decarbonizing the energy sector, many industries are still charting their paths to a low-carbon future.

Five heavy industries—cement and concrete, iron and steel, oil and gas, chemicals, and coal mining—collectively account for 80% of all industrial emissions.

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2. Fostering Effective Energy Transition 2022 Edition, World Economic Forum

**Pathways for Decarbonization**

- **Energy Efficiency**
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  - Circular economy principles in industries are a potent pathway for decarbonization, emphasizing resource efficiency, waste reduction, and material reuse to mitigate emissions significantly.

**Cross Cutting Activities**

- **Green Financing**
  - UK India Knowledge Forum / Investment Promotion
  - Gender and Social Inclusion

**Intermediate Outcomes**

- **Policy Products and Tools**
- **Robust project pipeline**
- **Commercial & Knowledge Partnership**
- **Innovation**

**Outcome**

- **Improved investment environment through policy adoption, investment mobilisation & enhanced knowledge and skills**
- **New partnerships between India and international institutions**

**Impact**

- Increased investment to support energy security & economic growth that is inclusive, low carbon, supports poverty reduction & climate action
- Increased trade, investment & relationships between India and UK
IDEEKSHA Platform

Necessity of IDEEKSHA Platform

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  - Industries can connect with peers and experts through discussion forums and networking events.

**Challenges faced by Industries**

- High dependence on fossil fuels
- Outdated technology hindering adoption of sustainable practices
- Limited access to financing for green initiatives

**Role of IDEEKSHA in addressing challenges**

**The objectives of the IDEEKSHA Platform are to:**

<table>
<thead>
<tr>
<th>Objective</th>
<th>Description</th>
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<tbody>
<tr>
<td>01</td>
<td>Provide links to data sources and knowledge repositories to support knowledge translation</td>
</tr>
<tr>
<td>02</td>
<td>Organize sector/industry specific workshops/seminars/webinars to enhance EE measures</td>
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<tr>
<td>03</td>
<td>Enable knowledge and commercial partnerships</td>
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<tr>
<td>04</td>
<td>Exchange of knowledge and information to enhance peer to peer learning</td>
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<tr>
<td>05</td>
<td>Exchange of energy management best practices across sectors</td>
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<tr>
<td>06</td>
<td>Facilitate access to tools, technologies, and technology providers in India and globally</td>
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</tbody>
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[https://www.ideeksha.in/](https://www.ideeksha.in/)
Features of IDEEKSHA Platform

### 10 Energy Intensive Sectors Covered

- Aluminium
- Pulp & Paper
- Textile
- Refinery
- Cement
- Chlor Alkali
- Iron & Steel
- Fertiliser
- Sugar
- Tyre Manufacturers

### 8 Features of IDEEKSHA Platform

1. One-stop shop for all IEED needs
2. Access to tools, technologies, and technology providers in India & globally
3. Dedicated tab on Govt. of India’s Global Commitments
4. Collaboration facility – Technology, Discussion Forums and Blogs
5. Secure and quick user registration
6. Dedicated tab for Gender Equality and Social Inclusion in hard to abate sectors
7. Access to IEED Newsletters, Events, Workshops, Study Tours, Webinars
8. Robust system to ensure quality content
# Glimpse of Technologies cover under IDEEKSHA

## Aluminium
- **Mechatherm**
  - Aluminium cast house solutions
- **Altek**
  - Salt Slag Recycling Solutions

## Iron & Steel
- **Nippon Steel Engineering**
  - Coal Moisture Control (CMC) system (Top Charged)
- **Steel Plantech**
  - Coke Dry Quenching (CDQ)
- **Hexigone Inhibitors Ltd**
  - Corrosion Inhibitors
- **Chugai Ro Co., Ltd.**
  - Regenerative Burner Total System for reheating furnace

## Pulp & Paper
- **RPS Precision Engineering**
  - Axis milling and machining of bespoke components
- **Paper Industry Technical Association (PITA)**
  - Combined Heat & power (CHP)
- **Schaeffler**
  - Custom bearings solutions for Paper and Pulp industry
- **Lundberg**
  - Digester Heat Recovery System

## Cement
- **Cambridge Electric Cement**
  - Combined Recycling Process
- **Coomtech**
  - Drying Technology
- **Material Evolution**
  - Geopolymer Technology for Producing Low Carbon Cement
- **Cinar Limited**
  - Increase of Alternative Fuel and Raw (AFR) Material Utilization

## Chlor Alkali
- **INEOS**
  - Bichlor Electrolyser (Zerogap Electrolyser)
- **Thyssenkrupp nucera**
  - Bipolar Membrane (BM) Single Element Technology
- **Alfa Laval**
  - High-performance Heat Transfer components for Chlor-Alkali production
- **Covestro**
  - Oxygen Depolarised Cathode (Membrane Process for Energy Savings Chlorine Production)

## Sugar
- **T&L Sugars**
  - AI Based Technology
- **Ragus Sugars (Manufacturing) Ltd**
  - Bagasse based citric acid
- **British Sugar**
  - Air-blast oil cooler (Reduction of borehole water abstraction)
- **Kapwell UK**
  - Falling Film Evaporator

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For more information, visit: [https://www.ideeksha.in/](https://www.ideeksha.in/)
The IDEEKSHA Platform was developed under the ASPIRE programme in collaboration with BEE.

The IDEEKSHA platform serves as a one-stop-shop for all IEED needs of Indian energy-intensive sectors.

It hosts a database of proven and emerging technologies and their providers available in India and globally.

The objectives of the IDEEKSHA Platform are:

1. Provide links to data sources and knowledge repositories to support knowledge translation.
2. Organize sector/industry-specific workshops/seminars/webinars to enhance EE measures.
3. Exchange of knowledge and information to enhance peer-to-peer learning.
5. Enable knowledge and commercial partnerships.
6. Facilitate access to tools, technologies, and technology providers in India and globally.

For more information, visit https://www.ideeksha.in/
Outcomes of IDEEKSHA


7 domestic sectoral learning study tour for Aluminium, Cement, Iron & Steel, Textile, Pulp & Paper, Chlor-Alkali, and Sugar sectors

Deployment of technical reports and energy toolkit to support companies to plan market entry in India

Summary report of workshops & study tours and deployment of toolkit to support industries
Key Achievements

A similar approach can be adopted by other Developing Economies

24 International IEED companies showcased their technology/solution during sectoral workshops

7 B2B partnerships under development between UK firms and Indian industries

Capacity building of 660 stakeholders (including 30 women)

4 Newsletters covering international case studies and best practices in IEED technologies/solutions

Access to technology longlist of 70+ UK/International companies

70+ UK/International companies

Capacity building of 660 stakeholders (including 30 women)

24 International IEED companies showcased their technology/solution during sectoral workshops

7 B2B partnerships under development between UK firms and Indian industries

4 Newsletters covering international case studies and best practices in IEED technologies/solutions
The Road Ahead

Introduce a New Functionality on Knowledge Sharing of information about Carbon Credit Trading Scheme

Update Information on Existing Sectors Covered under IDEEKSHA Platform

Technical information on Renewable Energy (linkage with proposed RPO compliance portal)

Include Industrial Sectors from Newly Notified Designated Consumers under BEE PAT scheme

Update Information on Existing Sectors Covered under IDEEKSHA Platform
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