



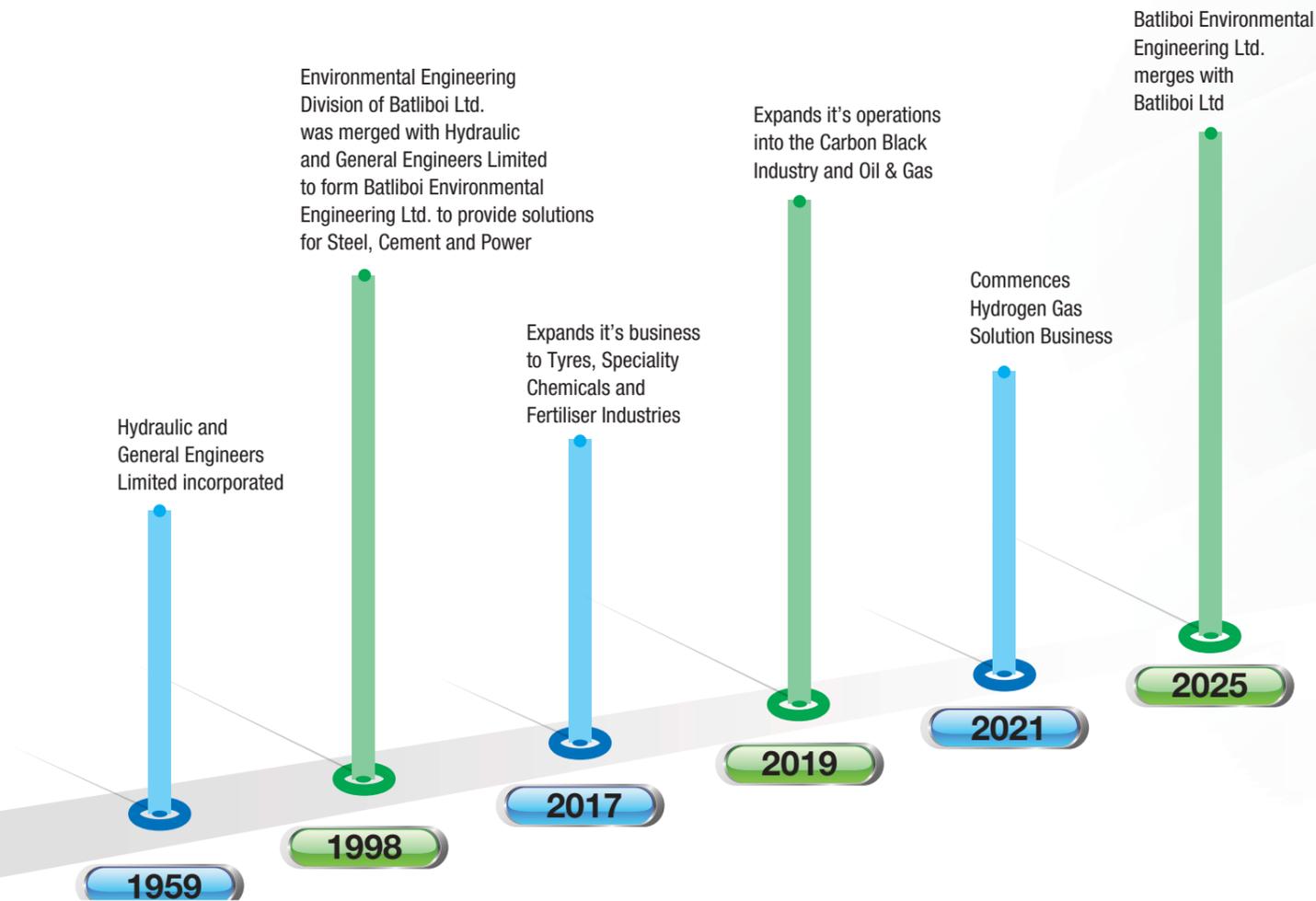
Environmental Engineering Group

Progressing towards  
clean and green  
environment

Join forces  
with **Batliboi...**



and win the war against  
pollution for creating  
a **GREENER** tomorrow



We see environmental engineering as a key component of industrialization. A means of ensuring a cleaner and Greener tomorrow. With over six decades of extensive experience, over 200 successful projects and blue chip clients to vouch for our expertise in preserving the environment, Environmental Engineering Group (EEG) spearheads in providing high performance solutions to overcome the toughest challenges in environmental engineering in the domestic and international market.

**Environmental Engineering Group (EEG) is actively involved in design, selection, engineering, fabrication, supply, installation & commissioning of Air Pollution Control equipment & systems, Industrial Fans and Hydrogen Gas Solutions.**

**Industrial Fans Division (IFD)**

IFD markets primarily wide range of Centrifugal Fans and Blowers of Light, Medium and Heavy-Duty Constructions. Batliboi Fan is a leading and reputed brand particularly for critical applications of Boiler, Iron & Steel Plants and Tyre Manufacturing Plants. IFD specialises in custom design, manufacture and testing of fans to suit every Industrial application. Fans are selected and designed for low energy consumption, low noise level and high running life with flexibility to suit layouts. IFD ensures its strong commitment to maintain quality levels at every stage of manufacturing and logistics till reaching to site.

**Air Pollution Control Division (APC)**

APC Division fulfils the entire air pollution control requirements from a single source – designing, sizing, engineering, manufacturing installation and commissioning of dry and wet type of pollution control systems such as dedusting systems, dust/fume extraction systems, gas cleaning & scrubbing systems together with auxiliary equipment.)

**Hydrogen Gas Solutions (HGS)**

To achieve the vision of Greener Tomorrow, APC division started this division for providing Hydrogen Gas Solutions for Industrial Applications such as On-site generation solution and Engineering Support Services for Green & Grey Hydrogen.

Today Environmental Engineering Group is a familiar name in diverse industries like Iron and Steel, Cement, Power Stations, Sugar, Tyre, Chemicals, Fertilizers, Petrochemicals and a host of others. Environmental Engineering Group has Pan India Sales and Service Network with trained personnel.



# Industrial Fans Division (IFD)

A Complete Industrial Fan Solution Provider

Industrial Fans Division (IFD) is committed to supply Industrial Fans customised for every Industrial application having requirement of handling Air or Gas Fumes with high amount of dust (either abrasive or sticky) at much higher temperatures. For individual requirement covering all possible combination of low to higher operating temperatures, the most optimum fan is selected out of various alternatives, on advanced software.



- 1) Large ID Fan for Sugar Plant Boiler
- 2) ISO 9001, ISO 14001 (Environmental Systems) and ISO 45001 (Occupational Health & safety Systems) certified Shop at Udhna, Gujarat State, India
- 3) DIDW ID Fan for Waste Recovery Boiler

- 4) Supply Air Fan for Ventilation System
- 5) Exhaust Air Fan for Ventilation System
- 6) Set of Fans under dispatch
- 7) Customized Spare Rotor with Anti-Wear Protection
- 8) High Pressure PA Fan

## Range of Products

- ◇ Volume Flow up to 12,60,000 CMH.
- ◇ Pressure up to 2500 mmwg.
- ◇ Temperature up to 500 deg C continuous.
- ◇ Medium Handled: Air/Gas/Fumes with high amount of abrasive or sticky dust.
- ◇ MOC: Carbon Steel, Alloy Steel, SS 304, SS 316L, SS 321, Duplex Steel, Corten Steel, FRP, Rubber lined.
- ◇ Gas Tight Design with various options of Shaft Seal.
- ◇ Anti-Wear Impeller Protection such as Hard-Faced Wear Plates, On Line Impeller Cleaning system.
- ◇ Designs for Concrete Foundation on Ground, Elevated Concrete Floors, Steel Platforms with or without Vibration Isolators.
- ◇ Package Fan Units along with all connected accessories, Silencers, Filters, Piezometric Ring, Drives, Electricals, Automated Fan Controls, Various Speed Controls, RTD, VMS, Lub Oil System, Anti Rotation Device, Brake, Slow Turning Mechanism, Complete Ducting including Installation, Commissioning and Testing at Site (excluding Civil Work).
- ◇ Retrofit Solutions for Capacity Expansion or Improvement of Energy Efficiency:
  - a) Changing only impeller and retaining balance complete fan unit.
  - b) Changing Rotor Assembly and retaining balance complete fan unit.
  - c) Changing complete fan and motor and retaining foundation.
  - d) Changing complete fan and motor and modify existing foundation.

## Features

- ◇ As per Venti-Oel de-Germany design.
  - ◇ Customized Designs to suit wide range of applications (Process and Auxiliary Fans):
    - a) Boiler (CFBC, Spent wash, TG, AFBC, Waste to Energy etc.)
    - b) Food & Agro Industries
    - c) Core Sectors of Power, Steel and Cement
    - d) Oil & Gas
    - e) Fertilizer & Chemical
    - f) Tyre and Black Carbon
  - ◇ 100% Fans are assembled and run tested. Performance Test as per IS/ISO/AMCA standards.
  - ◇ Quality Tests: Raw Material Physical & Chemical, Shaft UT, MPT, DPT, RT, Hardness, PMI, Casing Leak Test etc.
  - ◇ Various Types Surface preparations and Painting Schemes to suit specifications/applications.
  - ◇ Dispatches in fully assembled, partly assembled and loose condition with requisite Packing Schemes.
  - ◇ Manufacturing base in Gujarat, Maharashtra and West Bengal.
  - ◇ Specific Technical Documentations, certifications, CFD Analysis, Seismic Analysis in special cases.
  - ◇ Approval by all major Consultants (Mecon/CET, Lloyds, Avant-Garde, MN Dastur, Holtec, EIL, PDIL, NTPC, Tata Projects, IPS Engg, VSI & all Sugar Federations).
  - ◇ Site Services on short calls for Troubleshooting and assistance during Installation, Commissioning & Testing at Domestic as well as Overseas locations.
- Exports to South America, Africa, Middle-East, South-East and Australia continents.

# Air Pollution Control

A Complete APC Solution Provider from Concept to Commissioning

Our APC technology offers a variety of designs, both custom and pre-engineered, to meet specific needs. Each system is designed for cost effective, reliable performance and to meet the pollution control standards.



- 1) Pulse Jet Bag Filter
- 2) Ventury Scrubber
- 3) Furnace Fume Extraction System
- 4) Furnace Fume Extraction System
- 5) Bag Filter for Carbon Black Collection
- 6) Cartridge Filter
- 7) Ventury Scrubber
- 8) Tar Electrostatic Precipitator (WESP)
- 9) Wet ESP for pitch tar separation from Furnace Gas
- 10) Wet FGD
- 11) Electrostatic Precipitator
- 12) Tar Electrostatic Precipitator (WESP)

Environmental Engineering Group has provided Dust / Fume Extraction Plants for Ferrous & Non Ferrous Industry, Fume Scrubbing System for Electronic & Optical fiber Industry, Dust/Fume Cleaning System for Chemical, Paper, Fertilisers, Carbon, Pulp and Pharmaceutical & other Industries, Dust extraction System for Cement Plants.



Our designs are based on know-how from:

## ESC Umwelttechnik, GmbH, Germany for Electrostatic Precipitators.

The know-how is based on experiences of over 25 years on a wide range of applications. The operational temperature is up to 440 deg C and guarantees clean dust concentrations of less than 5mg/ Nm<sup>3</sup>.

## Beltran Technologies, USA for Wet Electrostatic Precipitators.

The important design features are :

- i) Lead free design
- ii) Square tube collection design which ensures no wastage of space.
- iii) Shorter collection tube length - easier to maintain alignment and washing.
- iv) Rigid mast unbreakable electrodes with rigid bottom frame.
- v) Specially designed ioniser rods for efficient corona generation.
- vi) Insulated support insulators on the exterior ESP casing.

## Wheelabrator, USA for Bag Filter Systems

The Bag Filters have a unique design feature of snap ring bag fixing. This feature eliminates cumbersome arrangement of bolting & clamping and prevents the filter bags from falling. The other advantage is that the bags can be accessed from the clean air side.

## NOx and SOx removal from Flue gases

Environmental Engineering Group offers systems for removal of NOx and SOx from process flue gases. Guaranteed off-gas values, adaptable availability, as well as gas quantities from 500 to 500,000 Nm<sup>3</sup>/h, are convincing arguments. Components, such as SO<sub>2</sub>, HCl, and HF are just as efficiently separated as NOx, heavy metals, dioxins and furanes.



### Wet Processes

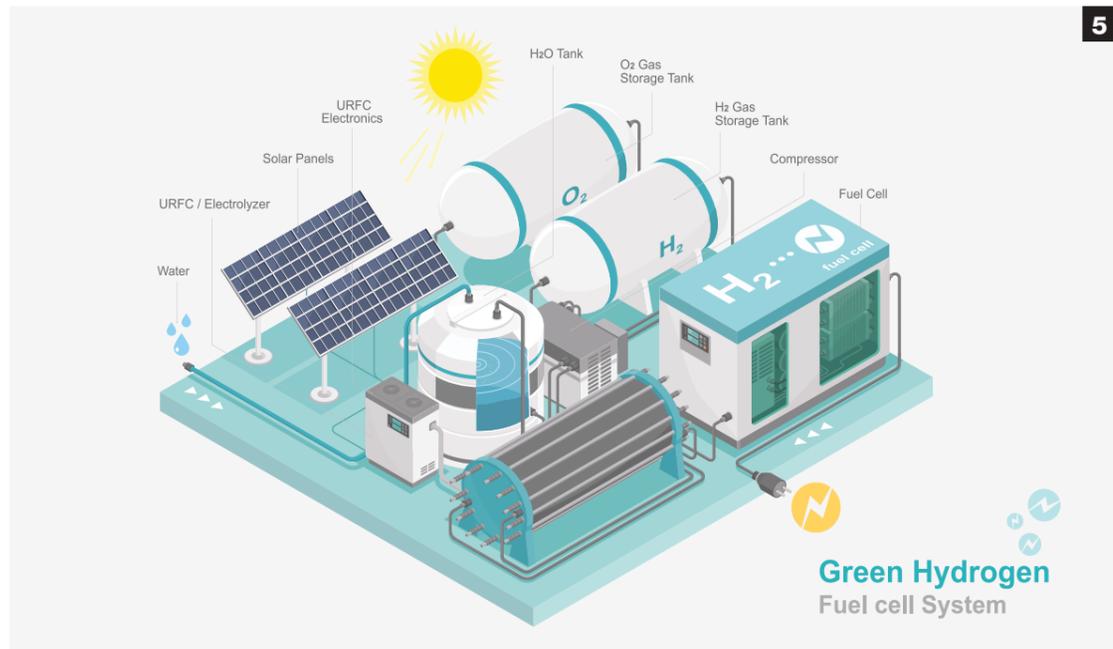
Quench, Wash and Absorption Tower – These technologies were conceived for sulphuric acid installations, even before environmental protection became a duty at every level. At the same time, tailored absorption media are used according to requirement. SUPER-Technology-SO<sub>2</sub> – elimination through H<sub>2</sub>O<sub>2</sub> dosage with immediate extraction of up to 60% sulphuric acid in large-scale application.



### Dry Processes

Dry Adsorption and Quasi-Dry-Process – A combination of dust removal, pollutant transposition and adsorption with the addition of various adsorbent materials. These procedures thus have an enormous spread of utilization possibilities. Activated Carbon Filter-adsorption of dioxines, furanes, and heavy metals by active carbon.

# Hydrogen Gas Solutions



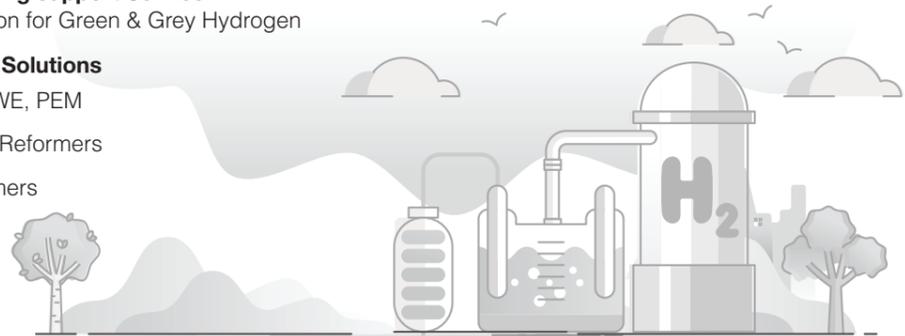
Environmental Engineering Group provides Hydrogen Gas Solution for Industrial applications such as:

**Design & Engineering support Service**  
For on-site generation for Green & Grey Hydrogen

**On-Site Generator Solutions**

- ◇ Electrolyser – AWE, PEM
- ◇ Steam Methane Reformers
- ◇ Methanol Reformers

- 1) Alkaline Water Electrolyser – Split Mount
- 2) 50 Nm<sup>3</sup>/h SMR
- 3) 200 Nm<sup>3</sup>/h SMR
- 4) 300 Nm<sup>3</sup>/h Methanol Reformer
- 5) Green Hydrogen Fuel cell System



Other **Green technologies** available with **Batliboi Group of Companies** to support the vision of **Greener Tomorrow**

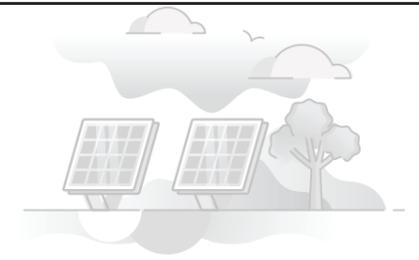
## Services in Solar Energy



**Installation of Roof Top System**

In India, BREN SOL is one of the most chosen companies for solar energy solutions catering in residence, small & large industrial and commercial businesses, government and educational institutions. We provide the best in-house solar power solution combined with world-class technology. We consider customer satisfaction as our main aim and constantly research for giving our best. If you are looking for solar power solutions, call us now and get a full-fledged solution for your space.

- ✓ Operation & Maintenance of Solar Power Plants and their Substation
- ✓ Installation of Roof Top & Ground Mounted Solar Systems
- ✓ Project Support for OEMs Solar Power Plant development
- ✓ Industrial Renewable Solution for Hot Water Storage Plants



## Services in Wind Energy



**Operation & Maintenance of Windmill Substation**

We are EA grade license holders, which authorises us to extend Operation & Maintenance services to Windmill Substation and Grid maintenance. In addition, with our constant liaisoning with respective State Electricity boards, we ensure optimum performance of Substation.

**Reclamation Services**

We offer Techno economical solutions for the Refurbishment of Windmill Major components like Blades, Nacelle body, Gearbox, Hydraulic units, Transformers, Controllers, Generator and other accessories of Wind Turbine Generators which offers huge savings from procurement of new components.

- ✓ Operation & Maintenance of Wind Turbine Generators and their Substations
- ✓ Wind Turbine Generator Erection
- ✓ Technical Due Diligence



**Erection of Wind Turbine Generators**

BREN SOL is involved at various project sites with major OEMs like "Gamesa Wind Turbines Private Limited" and "Regen Power Tech Private Limited" in

- Windmill Tower Assembly and Erection
- Windmill Nacelle Assembly
- Rotor & Blade Assembly and Erection

We have the experience of erecting 200 MW of Wind power till date.

# Industrial Fans

## Some of our Major Industries / Customers

INDUSTRY	CUSTOMERS
<b>Iron &amp; Steel</b>	<ul style="list-style-type: none"> <li>Tata BSL ■ JSW Group ■ SAIL ■ JSPL ■ JSL ■ Jindal SAW ■ John Cockerill India Ltd</li> <li>Danieli India Ltd ■ Rungta Mines ■ Danieli Corus ■ Supersmelters ■ Hindalco Industries</li> <li>Welspun Metallica Ltd ■ NALCO ■ Sunflag Iron &amp; Steel Co. Ltd ■ Jai Raj Ispat ■ SMW Ispat</li> <li>AMNS</li> </ul>
<b>Cement</b>	<ul style="list-style-type: none"> <li>Adani (ACC, Ambuja) ■ India Cement ■ Shree Cement ■ Gujarat Sidhee Cement</li> <li>Shah Cement ■ Tororo Cement ■ Birla Corp Maihar Cement ■ FLSmidth, Beumer India</li> <li>HWI, Melwa Cement ■ Sagar Cement ■ JK Cement ■ Dalmia Bharat Cement</li> <li>RCCPL Mukutban ■ Ramco Cement ■ NUVOCO Vistas ■ Magalam Cement</li> </ul>
<b>Boiler OEMs</b>	<ul style="list-style-type: none"> <li>Isgec ■ TBWES ■ Thermodyne ■ Thyssenkrupp Industries ■ Sitson India ■ Uttam Energy</li> <li>Bajaj Power ■ SS Engineers ■ Uttam Sucrotech ■ Hitech Engineering</li> <li>Walchandnagar Industries ■ Industrial Boilers ■ Greenesol Power Systems Pvt Ltd</li> <li>Pressure &amp; Process Boiler ■ Ashwini Engineering ■ Fives-CAIL KCP</li> </ul>
<b>Power</b>	<ul style="list-style-type: none"> <li>GE Power ■ BGR Energy ■ Abellon Clean Energy</li> </ul>
<b>Fertilizers &amp; Agro</b>	<ul style="list-style-type: none"> <li>Deepak Fertilizers ■ RCF ■ SRF ■ Coromondal International ■ GSFC ■ Tata Chemicals</li> <li>Kothari Petrochemicals ■ CPCL, Baramati Agro ■ HL Agro ■ Thirumalai Chemicals</li> </ul>
<b>Tyre &amp; Black Carbon</b>	<ul style="list-style-type: none"> <li>CEAT ■ Apollo Tyre ■ JK Tyre, Goodyear ■ BKT ■ Tire &amp; Rubber Company</li> <li>Phillips Carbon Black ■ Epsilon Carbon</li> </ul>
<b>Dryer OEMs</b>	<ul style="list-style-type: none"> <li>Madhu Silica ■ Detox India ■ SDM Engineers &amp; Consultants</li> </ul>
<b>Pharma</b>	<ul style="list-style-type: none"> <li>Lyfius Pharma Pvt Ltd ■ Shreas Industries</li> </ul>
<b>Ventilation System</b>	<ul style="list-style-type: none"> <li>Cube Constructions ■ Purvi Engineers ■ Pneumatic Engineers</li> </ul>

## Some of our Major Export Projects

CUSTOMERS	PROJECTS / INDUSTRY
<b>Isgec Heavy Engg</b>	<ul style="list-style-type: none"> <li>SCOUL – Uganda ■ Kakira Sugar – Uganda ■ Butali Sugar – Kenya, City Group ■ KMRI – Sri Lanka</li> <li>Shuh Shing Edible Oil Ltd – Bangladesh ■ Dangote Rice ■ Sunti Golden Sugar – Nigeria</li> <li>Zanzibar Sugar ■ PT Barata ■ PT SMS ■ PT GMP ■ PT PSMI – Indonesia</li> <li>Star Trading – Thailand ■ Durrah Sugar Refinery ■ Tanveer Foods ■ Cosumar Sunabel ■ Kibos Sugar</li> <li>Bidco Uganda, S Bang – Thailand</li> </ul>
<b>Thermax Babcock &amp; Wilcox</b>	<ul style="list-style-type: none"> <li>Savannah Sugar ■ Dangote Cement – Nigeria ■ Dangote Industries – Tanzania</li> <li>Victoria Milling Company ■ URC ■ Emperador Distillers Inc ■ Bataan 2020 Inc – Philippines</li> <li>Mitr Phol ■ Thai Alcohol ■ Areva, Korach Industry ■ Thai Acrylic Fibre</li> <li>Gulf Chana Green – Thailand ■ Zuker – Mexico ■ Devki Energy Co – Kenya ■ Omnicane – Mauritius</li> <li>PT Eco Oils ■ PT Indonesian Marine ■ PTPN XI ■ PT Rejoso Manis Indo – Indonesia</li> </ul>
<b>Walchandnagar Industries</b>	<ul style="list-style-type: none"> <li>Ingineio Providencia – Columbia ■ Busia Sugar Industries Ltd – Kenya</li> <li>Tendaho Sugar Factory – Ethiopia ■ Liansu Holding SA Lacabana – Columbia</li> </ul>
<b>Thermodyne Technologies</b>	<ul style="list-style-type: none"> <li>P.T. Dharmapla – Indonesia ■ Biogas Energo LLC – Ukraine ■ GA Expertise Inc – Honduras</li> <li>Coto ■ Agrialim, Agrosa – South America ■ Olam ■ Saraff Global – Thailand</li> </ul>
<b>Danieli Corus BV Netherlands</b>	<ul style="list-style-type: none"> <li>ALCOA – Australia</li> </ul>
<b>Thyssenkrupp India</b>	<ul style="list-style-type: none"> <li>Gulf Cement Co ■ Ras Al Kaimah – UAE ■ Shah Cement – Bangladesh</li> </ul>
<b>Cement</b>	<ul style="list-style-type: none"> <li>SMC ■ Northern Cement Co. ■ Lafarge – Philippines</li> </ul>
<b>Others</b>	<ul style="list-style-type: none"> <li>Furnace Fabrica – Ruez Sulphate – Saudi Arabia ■ JFE Meranti – Myanmar</li> </ul>

# Air Pollution Control

## Some of our Major Domestic Projects

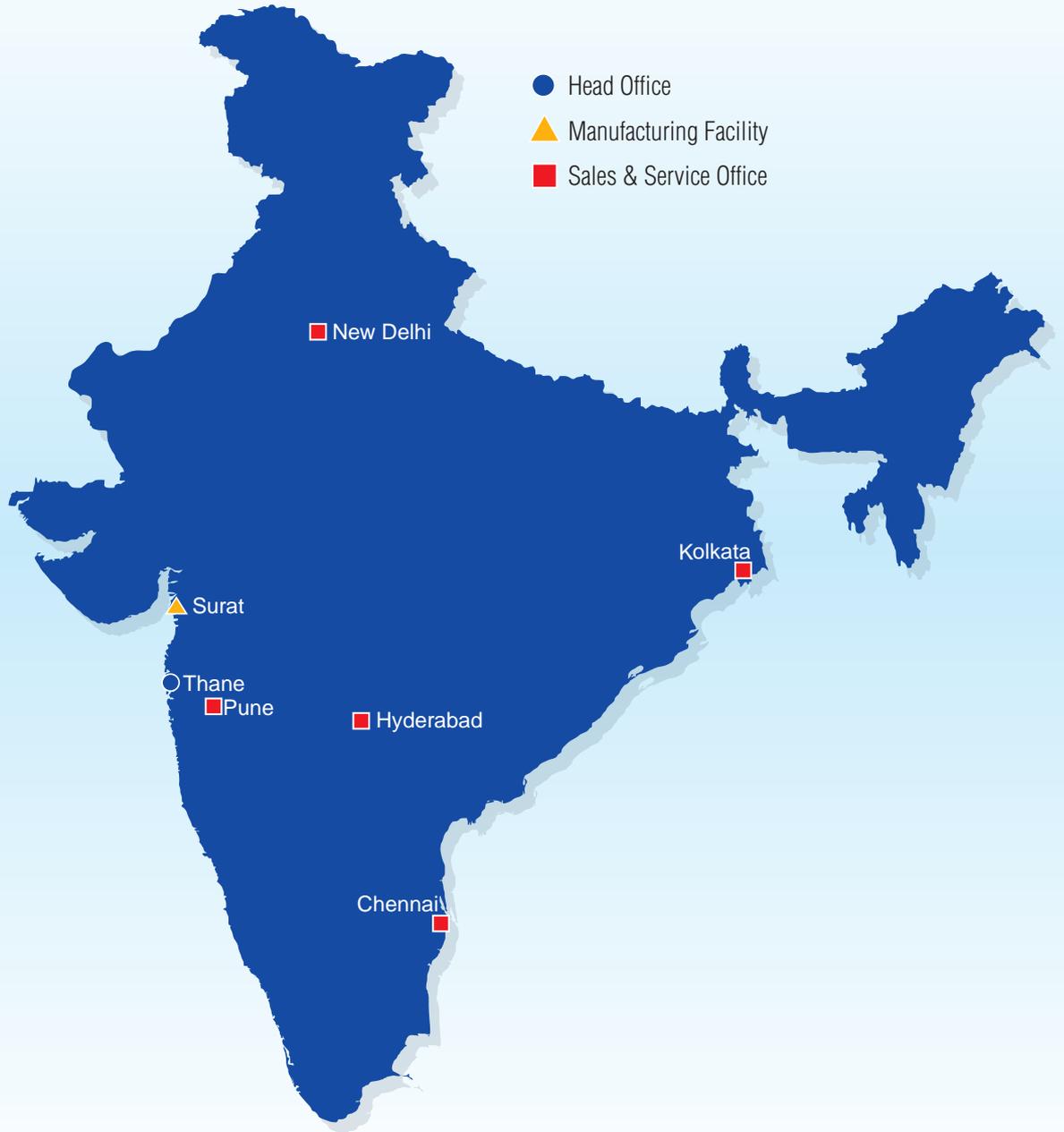
PROJECTS	INDUSTRY / CUSTOMERS
<b>Kiln / Raw Mill, Alkali Bypass, Gas Cleaning system with GCT, ESP and Cooler Bag House</b>	<ul style="list-style-type: none"> <li>Rotary Tech Cement ■ My Home Cement ■ Hetauda Cement</li> </ul>
<b>Primary &amp; Secondary EAF / Ventilation</b>	<ul style="list-style-type: none"> <li>Adhunik Steel ■ JSW Salem ■ SLR Metalliks ■ Rashmi Metals</li> </ul>
<b>350 TPD Sponge Iron Kiln Gas Cleaning system with GCT &amp; ESP Bag Filter system</b>	<ul style="list-style-type: none"> <li>MGM Steel ■ Jaiswal Nico ■ Monnet Ispat</li> </ul>
<b>Furnace Fume Extraction system with Bag Filters, Fans</b>	<ul style="list-style-type: none"> <li>Jindal Stainless Steel ■ Siemens VAI ( Primetals) ■ Shakambari Ispat</li> <li>Bhusan Steel ■ Arjas Steel ■ Tata Metatalikcs ■ Rungta Mines</li> <li>Jaira Ispat</li> </ul>
<b>Fume Extraction system and Dedusting system for SAIL, NALCO &amp; BHEL Dry Scrubbing system</b>	<ul style="list-style-type: none"> <li>JSW ■ AMNS ■ SAIL ■ NALCO ■ BHEL ■ HZL</li> </ul>
<b>Cast House &amp; Stock House Fume Dedusting system</b>	<ul style="list-style-type: none"> <li>Bhushan Steel ■ JSW, Dolvi/ Bellary ■ Jindal Stainless</li> </ul>
<b>Dust Collection system</b>	<ul style="list-style-type: none"> <li>Tyre Industries ■ Steel Industries ■ Cement Industries</li> <li>Power &amp; Process Industries</li> </ul>
<b>Ventury Scrubbing system</b>	<ul style="list-style-type: none"> <li>Sugar Industries ■ Steel and Process Industries</li> </ul>
<b>Dust Extraction System</b>	<ul style="list-style-type: none"> <li>RMHS ■ Pellet ■ LCP &amp; Stock house of JSW</li> </ul>
<b>Fume Extraction System (Scrubber)</b>	<ul style="list-style-type: none"> <li>HSM at JSW, Dolvi</li> </ul>
<b>Fume Extraction System</b>	<ul style="list-style-type: none"> <li>Lime Calcination Plant of JSW, Dolvi ■ JSW Bhushan</li> </ul>
<b>Bagfilters System</b>	<ul style="list-style-type: none"> <li>Steel ■ Cement ■ Process Industries ■ Carbon Black Plant – EPSILON Carbon, Bellary</li> </ul>
<b>Bagfilters for Tyre Industry</b>	<ul style="list-style-type: none"> <li>Tyre Plants – CEAT ■ ATC ■ Goodyear ■ BKT ■ Appolo</li> </ul>
<b>Bagfilter System</b>	<ul style="list-style-type: none"> <li>RMHS 1 ■ Tatametaliks</li> </ul>
<b>Process BF</b>	<ul style="list-style-type: none"> <li>Petrochemical Industries – HPCL ■ MRPL ■ IOCL ■ BPCL ■ GAIL – EIL</li> </ul>
<b>DE system</b>	<ul style="list-style-type: none"> <li>L &amp; T NMDC</li> </ul>
<b>Coke-oven By-product Gas Cleaning</b>	<ul style="list-style-type: none"> <li>Graphite India ■ Sanvira Tech LLC</li> </ul>
<b>Rawmill Klin ESP to Pulse Jet BF conversion</b>	<ul style="list-style-type: none"> <li>CCI ■ Rajbhan</li> </ul>
<b>Waste to Energy</b>	<ul style="list-style-type: none"> <li>CNI Martin</li> </ul>

## Some of our Key Export Projects

PROJECTS	CUSTOMER
<b>Complete Raw Mill / Kiln Gas Cleaning system with Bag Filters, ESP, Fans</b>	<ul style="list-style-type: none"> <li>Nairobi Cement, Kenya ■ Mombasa Cement, Kenya</li> <li>Tororo Cement, Uganda</li> </ul>
<b>ESP</b>	<ul style="list-style-type: none"> <li>Mvance Engineering Sdn Bhd</li> </ul>
<b>Palm Mill Boiler Flue Gas Cleaning System</b>	<ul style="list-style-type: none"> <li>Malaysia</li> </ul>
<b>Dust Extraction System</b>	<ul style="list-style-type: none"> <li>MG Converter – Jindal Saw – Abu Dhabi, UAE</li> </ul>
<b>Raw Mill Kiln RABH System</b>	<ul style="list-style-type: none"> <li>Hetauda Cement – Nepal</li> </ul>



# Our Network



creating a  
**GREENER** tomorrow

## **Batliboi Ltd.**

### **Environmental Engineering Group**

(Formerly known as **Batliboi Environmental Engineering Ltd.**)

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### **Branches**

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[www.batliboi.com](http://www.batliboi.com)

### **Global Associates**

Thailand > RENEWSYS

Malaysia > OkuTech Sdn Bhd

Philippines > Euroman Emkay Asia Trade Co