



Confederation of Indian Industry

# CLEAN TECH EXPO - 2019

16-18 September 2019 : HICC, Hyderabad

CLEAN TECH EXPO 2019

PRODUCT PRESENTATIONS



# 1. Saint Gobain - Performance Ceramics and Refractories



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# Products to increase efficiency of burner system



Spyrocor Inserts



Recuperator



Spyrocor Inserted in U-Radiant tube



Heatcor Burner

## **INTERESTED SECTORS:**

- ▶ Steel Industry- Cold Rolling mill (CRM)/ Coating mill: Continuous Annealing Furnaces (CAL)/ Continuous Galvanizing Furnace (CGL)
- ▶ Steel Wire Industry- Zinc Bath
- ▶ Alumina Industry- Alumina Bath
- ▶ Automobile components: Bearing Industry- Heat Treatment Furnace division
- ▶ Burner system OEMs
- ▶ Heat Treatment Furnace OEMs
- ▶ Steel plant engineering manufacturers

## **KEY IMPACT OF PRODUCTS:**

Saint Gobain's Ceramic components in burner system provide following benefits to the furnace:

- Increase throughput
- Decrease maintenance
- Reduce emissions
- Save energy



## 2. E View Global Pvt Ltd



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## About

- ▶ An organization of Techno-commercial people M. Tech from MIT USA, M. Tech IIT Kanpur, PG from IIFT Delhi, having an industry experience ranging from 14 years to 22 years.

## Product details:

- ▶ **Brilantor:** Brilantor (under patent process) is the most advanced daylighting solution available. It is the only product which is 4000 X 600 X 300 (length X width X height in mm). The dome comes with 230 diamond shaped Fresnel for higher light collection. It is installed in non-false ceiling areas where the user is looking for Bright light.
- ▶ **SkyPipe:** SkyPipe has been custom designed for false ceiling areas. The size range starts from dome Dia of 100 mm up to 800 mm. The tube size is determined based on the gap between final roofs to the false ceiling. We provide a choice of various diffusers, based on the best fitment and interiors and users choice.
- ▶ **LightBall:** LightBall is designed to give maximum light to non-false ceiling areas of any height. The size range start from dome Dia of 100 mm to 1850 mm.
- ▶ **Turbo Ventilator:** These ventilators are demanded at varied commercial as well as residential places for exhausting stale and hot air from buildings.
- ▶ **Energy Smart Sensing Solution:** We harness the day light, brought indoors through above daylighting products by integrating the artificial lights with our state of the art smart sense solution. This is achieved without any human intervention, thus **saving power cost on Lighting.**



### Key features/ Impacts of the products:

- ▶ Natural light which is good human body
- ▶ Easy Installation
- ▶ Minimum maintenance
- ▶ Long life, Energy saving
- ▶ 100% customization for the matching authentic of the structure
- ▶ Effective in releasing hot air and fumes from the shed without maintenance
- ▶ No human intervention required
- ▶ Option of motion sensor integration

### Potential saving/Investment or payback:

- ▶ Less dependency on the artificial source of energy during day time
- ▶ Environment friendly as it reduces the consumption of fossil fuels
- ▶ Reduce cost of electricity
- ▶ As being UV and IR resistant, only good light for human body is illuminated inside



### 3. Amnyk India



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Typically, an A/C & Refrigeration Systems will lose 7% of its efficiency in its first year, 3-5% in the second year, and 2% every year afterwards due to “ OIL FOULING”.

#### MAX R 100 Benefits :

- ❖ Restores the lost efficiency
- ❖ Enhances heat transfer capacity of the evaporator and condenser.
- ❖ Set Point will be reached quickly
- ❖ Reduces compressor running time resulting energy saving.
- ❖ Energy Savings from 10% to up to 25% .
- ❖ MaxR100 can be used from 1.5 TR Split unit to Any Capacity of HVAC systems including centralized / INDUSTRIAL Chillers of all types.
- ❖ A minimum 10 % energy savings are guaranteed.
- ❖ Typical ROI will be less than 12 -14 months ( Depending up on running hours)
- ❖ Focused Sectors for MAXR100 – IT Parks/Hotels/Hospitals/ Manufacturing / Process Industries, Cold Storages/Malls/ Show Rooms/ Commercial Buildings etc.



**MAXR100 – Active Refrigerant additive for removing Oil Fouling in HVAC systems and reduce energy consumption of the systems.**

# 4. Opel Energy Systems Pvt. Ltd.



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# INDUSTRIAL WASTE HEAT SOURCES



We save energy for nation...

**Boiler / Oil heater Exhausts**

**Burner Exhausts**

**Baking Oven Exhausts**

**Melting / Heat Treatment Furnaces**

**D.G. Sets / Turbine Exhausts**

**Paint Shop Exhausts**

**Chemical Reaction Heat Exhausts**

**Any Process Heating Exhausts**

# Heat Recovered can be used for

*We save energy for nation...*

**To Generate Hot water**

**Process Hot Air**

**Thermic Fluid oil heating**

**Steam Generation**

**Chilling Effect ( Absorption / Adsorption )**

**Electricity Generation ( ORC )**




## 5. Vermigold Ecotech Pvt Ltd




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- Provide professional, state-of-the art solutions for organic waste management with a commitment towards excellence
- Company was formed to specifically address the need for an innovative and technologically sound provider of Environmentally Sound Technologies (EST)
- Global award winning solutions deliver real benefits to the end user and the environment



**Recipient of prestigious Energy Globe Award**  
For offering the most innovative waste management application.



**Only Indian company to be featured on United Nations Environment Program (UNEP) SCP database of environmentally responsible system suppliers.**



**Winner of prestigious Australian Good Design Selection award**  
For design engineering excellence.



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Recipient of Energy Globe Award



Recipient of Yes Bank Eco-Corporate Award



## Vermicomposter - System Components



Organic Digester



Composting Worms



Shredder

### Platform Of Choice

- India's only Global Award Winning Waste Management System
- Compact – Minimal footprint required. No nuisance operation
- Lowest operating costs. Minimal Power Consumption. No heating.
- 90% Waste Reduction. High nutrient vermicompost & liquid fertilizer generated that can be used for gardening.
- Marketable "Green" approach to on-site management of waste
- An elegant urban solution for hygienic waste management

### Applications

Corporate Canteens, IT Parks, Residential Apartments, Hotels, Educational Institutes and all generators of organic waste between 50Kg/day to 2000 Kg/day



## 6. Oorja Energy Engineering Services Hy Pvt Ltd

Oorja  
energy engineering



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## CLEANTECH INFRASTRUCTURE SOLUTIONS

**Solar Process Heat in**  
Automotive,  
Food &  
Beverages,  
FMCG, Dairy,  
Biotech

**Waste Heat Recovery in**  
Cement, Iron &  
Steel, Paper &  
Pulp

**Solar Drying in**  
Thermal Power,  
Cement.

INDUSTRIAL

**Radiant Cooling in**  
Large Commercial, IT  
Parks, Airports, Govt.  
and Educational  
Institutions

**Structure Cooling in**  
Small Commercial,  
Educational, Govt.,  
Shop floors

**Geothermal &  
Radiant Heating in**  
Military Barracks,  
Aircraft Hangars.

BUILDINGS

**Oorja**  
energy engineering

Oorja is a Cleantech Heating & Cooling company focused on providing sustainable solutions for industrial and commercial heating & cooling.

Our vision is born out of not just the energy issues, but also the environmental problems faced by us due to continuous burning of fossil fuels for our energy needs.



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## OORJA ENERGY PRODUCTS

### SOLAR HEATING

- PTC 72 (Parabolic Trough Collector)
- PTC 18 (Parabolic Trough Collector)
- Compound Parabolic Collector 150
- XCPC 1808

### SAVINGS

- 35 % savings on operational cost on using Radiant Cooling and Heating.
- Reduction in consumption of fossil fuel based heating by using Solar Heating.
- Payback <2 years.

### RADIANT

- Panel Cooling & Heating
- Baffle Cooling & Heating



# 7. Ren En Gen Solutions Pvt Ltd



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# EPC of Solar Power Projects.



Energising Mankind, Worshipping MotherEarth™  
www.ren-en-gen.com



## REG™ KONARK - Solar Power Plants (MW)



### REN-EN-GEN Offers:

- Consultancy Services
- Project Financing
- Engineering, Procurement & Construction

### Benefits

- Long term PPAs backed by state / central utilities assure the investment returns
- Accelerated depreciation of up to 90% on capital investment
- Tax holiday (10 years with MAT\*)
- Third party PPAs can fetch attractive returns on rising tariffs
- 25 years of plant life with minimal operating costs



Energising Mankind, Worshipping MotherEarth™  
www.ren-en-gen.com



## REG™ ADITYA - Solar Industrial Power Solutions



### Applications

- Industrial Units
  - Foundry / Steel / Mechanical
  - Electronics / Electrical
  - Plastic & Rubber / Chemical
  - Automobile & Ancillaries
  - Textiles / Food / Sugar
- IT Parks

### Features

- Range - 50kW to 500kW
- Customised Solutions (On grid / Off grid / Thermal / Hybrid)
- Low Operating Cost
- Quick Installation
- Low Maintenance



Energising Mankind, Worshipping MotherEarth™  
www.ren-en-gen.com



## REG™ RAVI - Solar Commercial Power Systems



Range - 10kW to 100kW

### Applications

- Commercial Complex
- Malls & Multiplex
- Hotels & Restaurants
- Hospitals
- Petrol Pumps
- Educational Institutes / Hostels
- Mobile Towers
- Rural Non-electrified Areas
- Residential Buildings
- Bungalows / Row Houses / Farm Houses
- ATMs
- Toll Plaza

## REG™ ARUN - Solar Roof Top Residential Systems



Range - 1kW to 10kW

[www.ren-en-gen.com](http://www.ren-en-gen.com)



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700 kwp Rooftop Power Project at Guwahati Railway Station, Guwahati, Assam.



600 kwp, Ground Mounted Project at Central Electronics Ltd (CEL), Sahibabad, UP.



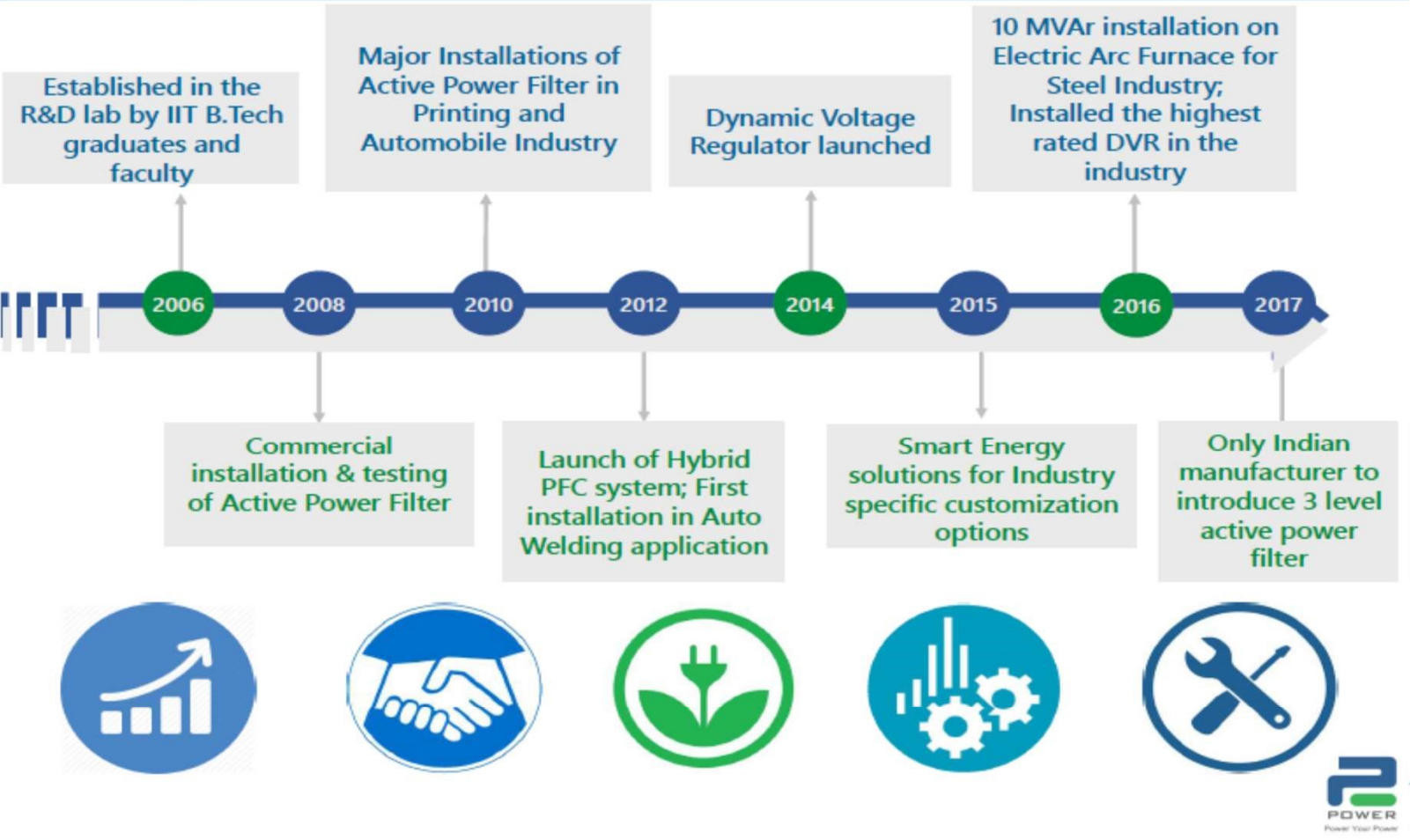
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## 8. P2 Power Solutions Pvt Ltd



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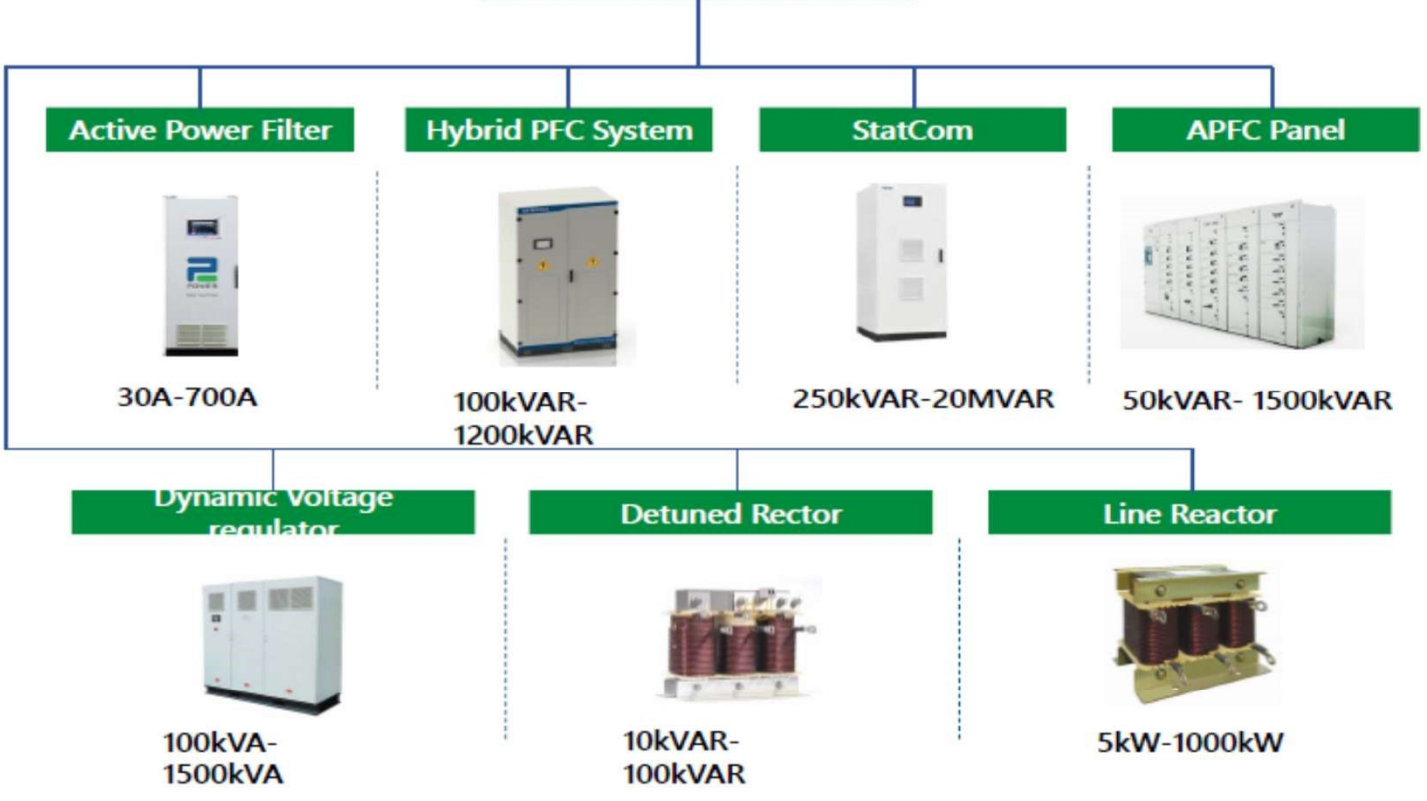
# Our Progress



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# Our Range of Products

## Power Quality Solutions



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# 9. Elmeasure India Pvt Ltd



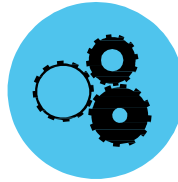
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# SOLUTIONS



## ENERGY MANAGEMENT SYSTEM

Energy billing | Energy audit



## PROCESS MANAGEMENT SYSTEM

Textile | Engineering | Cement | Food



## STREET LIGHT MANAGEMENT SYSTEM

Street light | Home automation



## WATER MANAGEMENT

Residential | Commercial



## PUMP AUTOMATION SYSTEM

Remote | Water | Gated community



## BREAKER STATUS MONITORING

Airports | Industries



## DATA CENTER MANAGEMENT

IT Infrastructure

# SMART MONITORING



Smart Basic Meters

DC Energy Meter

Digital Multifunction Meter

Generator Monitoring Unit

Branch Circuit Monitor



High Profile Multifunction Meter  
Power Quality, Demand Monitor/Controller, Load  
Manager

Motor Protection System

Energy & Process Controller

Earth Leakage Relay

Power Factor Controller

AC & DC Power Analyser

# SMART RESOURCES

# SMART NETWORKING



Prepaid / Postpaid Meter

Automatic Changeover with Current Limiter

Portable Power Analyzer

Portable Power Quality Analyzer

Automatic Transfer Switch



Gateway

Converter

# SMART CONTROLLING

# 10. Xero Energy Engineering Solutions Pvt Ltd



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$$92\% \times 95\% \times 97\% = 85\%$$

**EC+**

### Axial Fans With induction/PM Motor & VFD

- Highest “wire to air efficiency” of 80-85%.
- Single Fan max Air flow of up to 150,000 CFM at 1000 Pa.
- Noise levels at par or less compared with plug fans or EC fans.
- “Wire to air efficiency” improvement of up to 50% in the fan system of a typical AHU.
- Efficiency improvement gets further enhanced at part loads.
- **Single Fan** decreases system complexities and maintenance complexities.
- Maintenance complexity reduction: replace / repair only that component that has issue.
- Seamless integration to any BMS communication protocols: BACNet IP, Modbus, Metasys, Profibus etc.



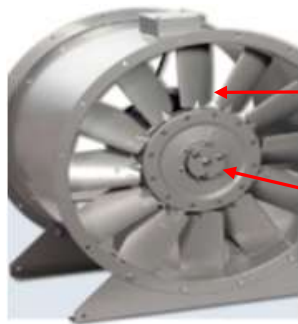
**68%**  
**EC**

### Plug Fans With Integrated EC Motor & Speed Controller

- Very similar to plug fans with external motor and speed controller. “Wire to air efficiency” of 62-68%.
- Single Fan max Air flow up to 10,000 CFM @ 500 Pa.
- Used in low pressure HVAC systems.
- For higher airflow above 10,000 CFM, multiple EC fans are needed. Each of the fans need individual speed controller.
- **Multiple fans** Increases system complexities and maintenance complexities.
- Typical fan system efficiency (fan + motor + speed controller) : 62-68%
- Maintenance complexity: Only replacement no repair.
- Integration to BMS requires additional gateway and controls.

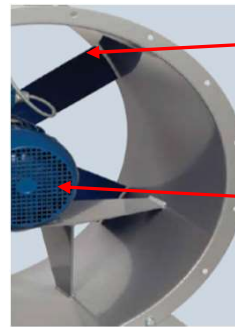
## DESIGN COMPARISON

Conventional Axial Fan Typical Aerodynamic Efficiency: 80%



Standard Impeller Design

'Flat' Hub



Large Tip Clearance

Foot Mounted Motor

- Fan directly coupled to EC motor. No belt losses.
- Can deliver moderate air flow at low pressures up to 2000 Pa.
- Typically used in low pressure HVAC systems.
- Typical fan system efficiency (fan + motor + VFD) : 70-75%.

## Introducing the ZerAx® EC+ High Efficiency Axial Fan



### Unique Impeller Design

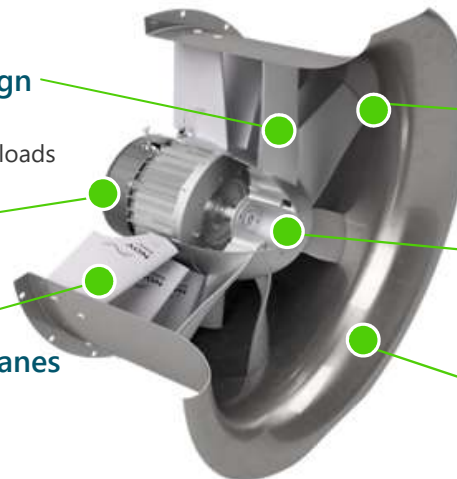
Efficiency – pressure  
Maintains efficiency at part loads

### Motor & drives

Efficiency at part loads  
Can use EC or PM Motor

### Downstream Guide Vanes

Efficiency – pressure  
Reduces Turbulence Losses



### Minimum Tip clearance

Efficiency – noise reduction  
Reduces Turbulence Losses

### Hub

Efficiency – pressure  
Aerodynamic Design

### Inlet Cone

Efficiency – noise reduction  
Air introduced into the fan smoothly

# 11. Eco Green Systems LLP



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## Company Profile:

- Founded in 2014 by qualified Energy Professionals
- Provider of Sustainable Innovative Solutions in Water & Energy Efficiency
- Leading manufacturer of **ECOMax-HE®** Automatic Tube Cleaning System & **ECOMax-CT®** Electrolytic CT Water Treatment System

## Awards & Recognitions:



Top 20 ICT Start-up by Hon. Cabinet Minister Mr. Ravi Shankar Prasad



Best Energy Start-up AEE, USA Western India Chapter

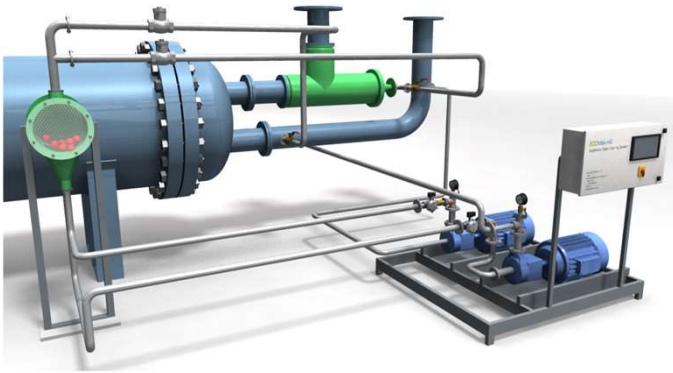


ABP News Award



## Products:

### ECOMax-HE<sup>®</sup> Automatic Tube Cleaning System



#### Benefits:

- Results in up to 20% energy saving in HVAC chillers
- Up to 3% improvement in power output in case of Power Plants
- Improves condenser tube life
- Avoids costly shutdown and downtime
- Very cost effective, usually offers a payback of less than 1 year

### ECOMax-CT<sup>®</sup> Electrolytic CT Water Treatment System



#### Benefits:

- Zero Chemicals, Green technology
- Reduces blow down water consumption up to 80%
- Results into Energy Saving, in case of ZLD plants
- Reduces corrosion in the Cooling Circuit
- Extends life of the Cooling Towers

# 12. Thermin Power Systems Pvt. Ltd.



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## ▶ **About the company**

- ▶ Conduct thermal energy audits
- ▶ Design, Manufacturing, Erection and commissioning of thermal equipment
- ▶ Core Business: Waste Heat Recovery & Efficiency upgradation projects

## ▶ **Product Range**

- ▶ Boilers
- ▶ Heaters
- ▶ Heat Exchanger
- ▶ Hot Water Generator
- ▶ Waste Heat Recovery Boiler
- ▶ Thermic Fluid Heater
- ▶ Pressurised Deaerator Tanks
- ▶ Economisers
- ▶ Air and Water Preheater
- ▶ Superheater & Boiler Spare





IBM, Rudrapur, India



POSCO Steel –Maharastra, India



Posco Steel-CAL Line, MH, India



Waste Heat Recovery Incinerator WHRB



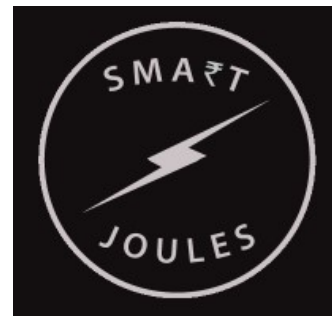
HAAT Incinerator-Banglore, India



Quippo, Ahemdabad, India



# 13. Smart Joules Pvt. Ltd.



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## JoulePAYS

Single Pay-As-You-Save (PAYS) Agreement



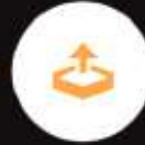
### Energy Savings

Guaranteed Energy Savings



### Investment

0 Client Investment



### Technology

Continuous Energy Optimization



### Revenue

Smart Joules Gets Fixed % of Savings





### Reliable & Secure

system capable of monitoring and controlling anything from anywhere at anytime



### Universal Compatibility

enhancing capabilities of existing systems



### Scalable & Redundant

architecture with distributed computation and memory



### Aesthetics for Wow

good looking hardware and user interface



### Joule Recipes

to enable network effects in efficiency by aggregating collective industry intelligence



### Self Diagnostics

for minimum maintenance and down time



### Intuitive, Interactive

and cross-platform design to draw in human participation



### Joule Mind

for evolutionary intelligence based on data



DeJoule is Smart Joules' continuous energy optimization technology that comprises a scalable web-based architecture, low cost and high-performance IoT hardware, intuitive user interface and a powerful data processing engine pre-configured with Joule Recipes (energy saving algorithms) designed by industry-leading energy engineers.

Color coding stages for phase of development:

- ..... Delivered
- ..... Under development
- ..... Planned



# 14. Instamod Airpipe Private Limited



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## ► Product Features

<b>Zero Leakages</b>	“AIRPIPE” pipe and fittings which are made of Aluminum, the system ensures that there are no leakages from the piping and the components translating into a 10 years zero leak guarantee.
<b>Corrosion resistant</b>	Corrosion proof aluminum alloy piping. The Pipe material has been engineered so as to counter the common problem of corrosion which results in scaling and porosity resulting in pressure drop and leakages.
<b>Minimum Pressure Drop</b>	Minimal pressures drop by the virtue of long lasting internal smooth surface (RA value: 0.3 Micron) of the pipe resulting in laminar flow as compared to the turbulent flow of the mild steel pipe material. This results in huge energy savings (6% per Bar of $\Delta p$ ).
<b>Modular System</b>	AIRPIPE Aluminum Piping system is modular & scalable to keep up with your expansion plans and layout changes. Reusable fittings ensure Flexibility of piping layout and higher return on investment.



**Thank you!**

The slide features abstract blue geometric shapes on the left and right sides. On the left, there is a solid light blue trapezoidal shape. On the right, there is a complex arrangement of overlapping translucent blue triangles and polygons in various shades, ranging from light sky blue to dark navy blue.