

ACCELERATE YOUR **GROWTH** WITH OUR ENERGY EFFICIENCY SOLUTIONS



ECO DIVINE SOLUTIONS



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About us

Headquartered in Maryland, USA with operations in India, EDS is a team of passionate and experienced engineers and management professionals who believes that nature is the ultimate source of energy.

Committed to serve our clients and society and to improve the industry with innovations, breakthroughs and general awareness, we are a rising name in energy sector. With experience and lessons learned in the field, we make sure we only provide best services to our clients.

For an industrial or commercial activity, the energy cost forms a major percentage of total costs and has a major impact on the bottom line of the enterprise. EDS is an expert in enhancing energy efficiency of an existing unit and setting up an advanced custom designed energy solution for a new unit.

EDS analyses your complete process including electrical load, qty. and type fuel consumption, steam output & temperature requirement etc. in order to understand efficiency losses and design system in order to reduce the same or provide an alternate source of energy to enhance the overall system efficiency.

Our solutions for energy efficiency are not only limited to power, fuel, water consumption but also focuses on process re-engineering, operational aspects, adaptation of clean energy technologies, waste heat recovery and utilization of waste in energy production.

Save Power

EDS can optimize overall power consumption by replacing or integration of new power generation system with your existing one. The cost of power can be substantially reduced by up to 70%, this can be done by implementing various solution such as:



Solar Power System (On-Grid & Off-Grid) provides free power during the entire life cycle of the equipment. Depending on the availability of space, solar power produced can either be used Off-Grid (captive usage) or excess can be evacuated to On-Grid creating an additional source of revenue. Additionally, this system is absolutely clean, reduces CO₂ footprint and provides eligibility to carbon credits. Various direct and indirect incentives are available from government for its implementation.



Waste to Energy System is a solution wherein Syngas module can be integrated with an existing diesel genset whereby diesel consumption can be reduced up to 80%. The input to operate this system can be Biomass and RDF (refused derived fuel). This Syngas is also an alternative fuel for Natural gas fired genset. The cost of Syngas is substantially lower as compared to Natural gas or diesel. The power production cost reduces drastically with EDS designed solution.

Save Water

EDS has vast experience in providing solutions to cool fluids and gases of any kind with ambient air thereby saving 100% water. Water is a depleting resource and has a substantial cost for industrial use wherein millions of gallons of water is required for cooling purpose.



Air Cooled Heat Exchanger (ACHE): Our capability and experience in designing and implementing ACHE is unmatched. ACHE is a proven technology which has been implemented and integrated with 1000s of MW engines globally. Our ACHE system can be integrated with any make and size of engines such as Wartsila, Caterpillar, Cummins, MAN, Jenbacher, Rolls Royce, Duetz and many more. Replacing water cooled system with ACHE not only saves 100% water but reduces maintenance cost and down time by up to 95%.



Save Fuel

Fossil fuel such as Coal / Diesel / HFO has a massive application mainly for heating and power in the industry across the globe. Not only these fossil fuel are expensive but are polluting our environment in an unrepairable manner. Regulatory agencies across the globe are in a process to ban fossil fuel for industries especially located in the city vicinity.

EDS can provide solution to replace coal / diesel / HFO with a cheaper and cleaner resource such as:



Bio-Coal or also known as Green Coal is made from biomass that can be acquired from forest and agricultural waste. Calorific value of this product ranges from 4000 ~ 5000 kcal/kg depending on the type of biomass.



Biomass Briquettes / Pellets are also made from forest and agricultural waste but with a simpler process. Calorific value ranges from 2800 ~ 3500 kcal/kg. RDF (refused derived fuel) Pellets / Fluff is made from organic & inorganic waste that is acquired or segregated from municipal solid waste (MSW)



Utilize Waste

Solid Waste is a global menace and a major environmental threat if not scientifically processed, whether it be agricultural residue waste or municipal solid waste.

EDS specializes in designing, integrating and implementing Waste to Energy system across the globe.

Our solution is designed to utilize solid waste such as Biomass, Forest Waste, Agricultural Residue Waste, Organic and Inorganic Waste derived from Municipal Solid Waste as fuel to derive desired form of output such as Bio-Coal, Briquettes & Pellets, Syn Gas for heating and power generation.

Waste is subjected to high temperatures in an anaerobic environment to get the desired output without creating any environmental hazards while processing of waste or in its end-product.

This system is cost-effective and provides savings with different mediums of output desired, such as;

- In case of electricity production, the power generation cost can be as low as 70% of the existing purchase from grid.

from grid.

- Syngas application leads to efficient heating due to its modulation in burning to provide up to 30% benefit. Such requirement can be pre-programmed with a PLC based system. Syngas for its low production cost can be used to produce electricity with gas engine / used for process heating / used for boiler- steam or hot water application / cooking gas

- Fuel made out of this waste in the form of pellets / briquettes and can be used to produce chilled water enabling the end user to save up to 50% on operation cost as compared to conventional electric chillers. EDS can design and build such application to cater need of 7°C chilled water for HVAC or upto -45 °C in case of sub-



Project Finance

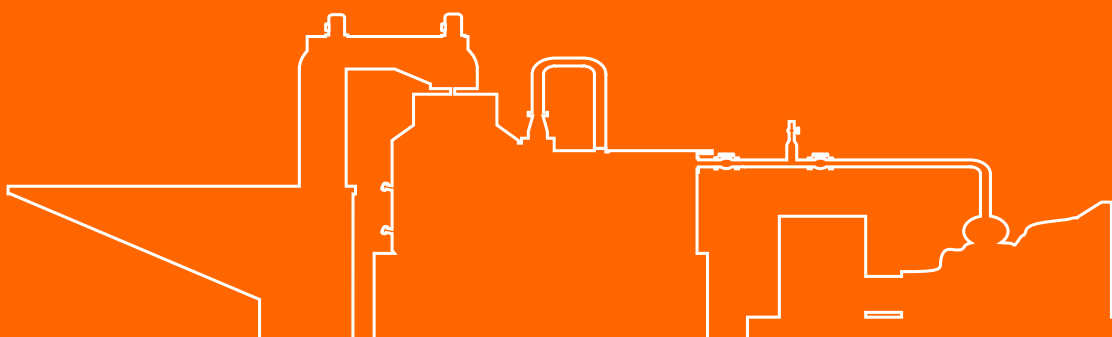
EDS not only stresses on energy efficiency but equally important is financial efficiency of any equipment or any process or project. EDS being a team of engineers and management professionals deeply understands the importance economic viability and therefore it incorporates the same in all its solutions. We help our customers to raise finance from various sources not limited to banks but private funding too.

- Project finance appraisal with Banks / NBFCs / PVE
- Zero collateral finance for small to medium size solar power plant
- Detailed Project Report (DPR) preparation;
- Project Techno-Economic Viability & IRR evaluation report;
- CFA / Subsidy / VGF / Incentive appraisal with Govt. and regulatory bodies.

Benefit Matrix

Here are the benefits shown for the solutions provided by EDS. From an end user perspective, the matrix given below highlights the kind of benefit that can be reaped. We would be glad to draw a feasibility report to better analyze ROI & profitability on OPEX

with existing setup		with EDS solutions
100% OPEX <i>coal / wood fired</i>	Boiler	70% OPEX 30% <i>saving</i>
100% OPEX <i>electric chiller</i>	Chiller	50% OPEX 50% <i>saving</i>
100% OPEX <i>grid power + diesel genset</i>	Power	30% 70% <i>saving</i>
Heavy expense <i>pollution of land, water & air</i>	MSW	Revenue Model <i>sale of pellets / power</i>
Forest & Agri waste <i>pollution land, water & air</i>	Biomass	Revenue Model <i>pollution fee power / gas</i>



Solar Power

Solar insolation has tremendous energy that can be harnessed and freely available.

EDS provides turnkey solution for solar power on domestic, commercial and industrial scale.

Solar equipment are built for its durability with a life cycle of 25 years. This power can be used for off-grid (captive usage) & can be connected on-grid.

Various power purchase agreements are also available by the government country wide.

DIY (do it yourself) units are also available from 0.5 kW to 3 kW. We are know for best quality at competitive price

Higher capacity systems are also built by us from 5 kW to 80 kW and in multiples to cater need for up to 500 kW. Large power plants are available with central inverter.



Waste to Energy

Convert biomass (agriculture waste) / organic waste / food waste / municipal solid waste . forest waste to SYN (synthesis) gas with our gasification system

SYN gas can be used instead of LPG or Natural gas.

Generate Low cost electricity (lower than grid)

Electricity generation system from 15 ~ 1000 kW

Generate hot water / steam by retrofitting on your existing boiler
Non electric air-conditioning available from 50 TR to 3000 TR
Tar and Char are by-products upon gasification than can be sold in open market



Heat Transfer

Air cooled heat exchanger used in process industry saving 100% water consumption.

Engine manufacturers such as Wartsila, Rolls Royce, Caterpillar, Cummins, Dutez etc use these as remote radiators to cool jacket water and lube oil.

Evaporator for cold store industry with better efficiency and optimum usage are minutely designed by our team.

Design, supply, installation and commissioning of complete system under one roof.

Manufacturing facilities are in Europe, Canada and India



CHP

Combined heat and power (CHP) has vast application in industry and commercial sector.

Waste heat from engine exhaust, furnaces, gas turbine etc is utilized to convert into other form of thermal energy.

EDS specializes in design, supply, installation and commissioning of such projects. From hot flue gases, we expertise in generating chilled water that can be used for industrial process or air conditioning plants.

Since energy production machines have certain efficiency < 45%, we combine systems to enhance efficiencies up to 85% TIAC (turbine inlet air cooling) is a niche sector that EDS specializes in. Our design and system shall augment power recovering 30% power lost by end users due to tropical / hot climatic conditions.



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