GLOBAL WARMING: A SERIOUS THREAT TO THE ENVIRONMENT

With India in a major growth and development phase, it is imperative that companies engaged in power production, cement generation and similar C02-generating activities take steps to curb GHG emissions. Industry sources inform that "Coal-based or fossil-fuel based plants are the major contributors to GHG emissions." Typically, the perception is that environment friendly technologies need sops like government subsidies to enable them to become viable. However, Transparent is a company that would like to set this straight. Explains BG Kulkarni, Director (Sales and Marketing), Transparent Energy Systems Pvt. Ltd.: "Contrary to popular belief, environmentally clean solutions are actually more cost-effective than traditional methods of generating power. The entire Transparent team believes that true innovation has to reduce costs, convert wide range of opportunities into techno-economically feasible solutions, and increase the customer confidence. With robust innovative technology, it is possible to increase the overall efficiency of the project, at the same time reduce the CO2 emission." Kulkarni further adds that "the innovation must make business sense and such that it can be immediately exploited commercially."

Mr. Kulkarni illustrates this point with the help of some statistics (see adjoining figure): In the last 3 years, the sales and services related to sustainable eco-friendly technologies accounted for nearly 70% of the Transparent's revenue. This translates into exactly what Mr. Kulkarni is pointing to, namely, that it is possible to build a profitable enterprise by exploiting the capabilities of such technologies. This is also reflected in the potential carbon credit earnings for the various customers of Transparent: in the past 4 years, its customers have received close to Rs. 15.5 crores per year of potential carbon credits.

Waste Heat Recovery Thermic Fluid Heater in Cement Plant

Mr. B.G. Kulkarni, says, "There was a time when Waste-heat recovery (WHR) remained unexploited due to constraints like space availability, lack of imagination, lack of enterprising ideas etc. Over the years, Transparent has changed that perception using its innovative abilities and customized solutions. We have surmounted the technological challenges and now have made it a commercially viable proposition. Therefore, such technology makes immense business sense, at the same time, contributes to reduction of global warming." It is this spirit of Transparent that has enabled the company to secure a large number of patents, with many more pending, that have wide ranging applications.

One of the major incentives for turning to such technologies is the Carbon Credits benefits. A project complying with the norms set forth in the Kyoto protocol gets Clean Development Mechanism (CDM) benefits. The carbon credit has been introduced post Kyoto conference to incentivize the companies reducing the emission of CO2 and is now a full-fledged global trade. One credit is equal to one tone of CO2 emission reduced and the companies can actually earn some revenue out of the reduction of CO2.

Transparent has made a concerted effort towards using technologies that help reduce global warming. For instance, last year it introduced a range of Air Cooled Steam Condensers ideally suitable for use in power plants which face acute water shortage. These systems are used for condensing, exhaust steam from turbine and other processes in large power plants as well as in small condenser systems for waste incineration installations and compressor drives in every climatic zone of the world. This helps save water, without the hassle of water treatment.

Thus, it enabled harnessing many opportunities that can convert waste heat into power which otherwise would have remained on paper.

EARN THROUGH PERFORMANCE!

TESPL takes lead in 'performance contracting' in energy conservation projects.

Transparent group of companies have been known to pioneer innovations in the energy conservation area, and have several patents and innovations to their credit. However, the company is not only innovating on the technical front, but also on the business strategies front by introducing concepts that are sure to be recognized in the industry. This concept is that of 'performance contracting'.

Under this type of contract, TESPL offered a reknowned glass manufacturer a 'Build-Own and Operate' type of a Waste Heat Recovery System (WHRS). TESPL put up its own WHRS at the source of waste heat and generated steam and sold back to original manufacturer. The manufacturer purchases this energy, generated from the already running equipments that are generating waste heat, without investing into the setup of WHRS or having to be concerned with the operations and maintenance of WHRS. There are many usable forms of energy output like hotwater electricity, hot oil, refrigeration that Transparent can offer through performance contracting.

Though this concept is recognize in IT sector, with some of the larger companies already undertaking performance based contracts, in energy generation field, no energy equipment manufacturer has so far ventured to work on this kind of assured performance guarantee basis in India. TESPL has been successfully operating such project since more than year. Many more substantial big projects of this kind are in offing. The uniqueness of such Performance Contracting is that it not only can be modeled to provide a customized solution to a customer, but it can also be modeled on suitable economic and operational terms, providing wide flexibility to user as well as manufacturer of Waste Heat Recovery System. TESPL has certainly set an innovative trend in Indian energy generation sector.

Making a viable Business Model out of protecting the Ecosystem

There is a wide choice when it comes to where India chooses to source its energy from, but it seems many are content simply with the fast-depleting conventional sources of energy instead of trying to explore other sources. Transparent has always 'stood out' with its innovative thinking and creative solutions to traditional problem.

Consider the following facts: Agriculture and Forestry play a predominant role in the rural areas of India. Every day, tons of crop residue and waste from industries such as agro-industry and food processing industries like fruits and vegetable processing, dairy, sugar mills, hotels, slaughter houses, fisheries etc. is generated. However, this waste is not being utilized efficiently and sometimes this biomass is burnt at the source itself without further utilization, when it can be potentially used as a source of renewable energy of higher quality. Also, from urban areas huge amount of domestic sewage and Municipal solid waste is generated. Management of this waste and its effective processing or utilization of this waste is a major task.

Waste Heat Recovery Boiler - Cement Plant

There is enormous potential of generating biogas from such various types of waste biomass. The production of Biogas from this waste Biomass is its most effective utilization as a source of higher quality renewable energy. Biogas technology may have the potential to short-circuit the 'energy transition' from biomass to 'modern' fuels.

Recognizing this potential, and also seeing its social benefits, Transparent has recently formed an alliance with a German company called Bioenergie Beratung Bornim GmbH which is exclusively working in the field of Biomass Gasification Systems. Even in this area, Transparent uses innovative technology like Biomass Fermentation technology to produce Biogas having Methane, similar to Natural Gas, instead of the conventionally used Pyrolysis technique for biomass gasification. This method itself lends to several advantages. For example, Transparent can use this Biogas in gas engines for power generation with solid residue as compost.

Hence there is almost complete utilization of Biomass and there is no biomass waste disposal issue

Among various technologies available for biogas generation, anaerobic digestion / fermentation technology is the most promising one for complete utilization of energy available in the waste biomass. The controlled fermentation of waste biomass can give us better yield and quality of biogas.

GROWTH THROUGH ECO-FRIENDLY INNOVATIVE TECHNOLOGY

Transparent Energy Sytems Pvt. Ltd., with its pioneering customized integrated energy and water conservation projects, has been taking great strides in the industry. In the last two years, Transparent has, to its credit, several successful projects, with many of them setting industry benchmarks on efficiency and water conservation parameters. Transparent has also entered into strategic partnerships with global firms with the aim of providing technologically superior solutions that offer greater efficiency and energy savings.

Partnership with internationally acclaimed and well known Lamont Group

Transparent added yet another feather in its cap by entering into license and know-how agreement with world-class engineering company Lamont kessel GmbH and Co. Kg. Lamont is a pioneer in the Industrial Boilers and Heat Exchange Plants. With special know-how of heat recovery and particularly of burning fuels like Biomass and Refuse, Lamont design covers electrical power generation plants from 500 KW to 175 MW which also covers any other conventional fuel. Lamont has varied experience in wide range of applications like power generation projects and large capacity boilers in captive power projects, sugar, textile and all basic industries.

B.G. Kulkarni, Director (Sales and Marketing) described the partnership as a "major achievement" for the company. "The Lamont brand has been known the world over for its superior and efficient technology. We are proud to be their partners and would benefit from Lamont's experience of more than 26000 installation references spread over the world."

With this partnership, Transparent is poised to enter into mega projects of electricity and energy generation field.

According to the agreement, Lamont makes available a license to Transparent to cover future experience, construction, calculation, manufacture, sale and erection of Lamont hot water boilers and thermal fluid heaters for all purposes in India.

Lamont Horizontal Compact Boiler

Partnership Bioenergie Beratung Bornim B3, GmbH -Germany

Recently Transparent has entered into a technical collaboration and knowhow with Bioenergie Beratung Bornim B3 GmbH, a German design and consultancy company that is expert in the area of a wide range of bio-energy based projects. Effective Biogas utilization, extending existing biogas plants (capacity expansion), performance improvements, tests, bio-ethanol from Cellulosic biomasses, biodiesel production are some of the activities that B3 is expert in. With Bioenergy being one of the effective renewable and non-polluting sources of energy, the partnership is in tune with the overall business philosophy of producing sustainable eco-friendly as well as commercially and socially viable technology.

Successful executions of path-breaking projects

The company has successfully installed and commissioned a waste heat recovery based 2.3 MW power generation plant at KCP Cement, Macherla, AP. The power plant uses indigenous patented technology for the power generation. The plant has been commissioned and is operating smoothly since April 2007.

The technology is perfectly suitable for heavy dust laden gases, is user friendly and highly cost - effective. In the cement industry, power cost constitutes 25 to 40% of the cement production cost, depending on the cost of power available in India. All cement plants reject large amount of heat energy as well as wastage of raw material. Transparent has come up with a system that taps this waste heat and converts it into usable power. A system like this was eagerly awaited by the industry. The key challenge in this unique technology breakthrough is that of making it a 'techno-commercially' feasible system. Transparent has just done that.

Ajit Apte, Director Engineering and Sales, Transparent, says: "Power is a major cost for the cement production. Considering the amount of cement being consumed and the corresponding power requirement, there is a lot of need as well as scope to cut power costs further to improve the profits. The waste heat emitted in the cement manufacturing process is used for power generation." Transparent has designed, manufactured and successfully installed the system in a record time of 14 months which is significantly lower than the industry average of around 17/18 months. "Total power costs of the cement plant can come down to just 35% with Transperant's power generation system installed", says Mr.Apte, himself an IITian.

Transparent Energy installs first of its kind combined cycle power generation system in India on Gas Fired Reciprocating Engines

The successful installation and commissioning of the unique power generation system - first of its kind in India - for Gas Fired Reciprocating Engines has been completed. The client now generates 1.4 MW gross of extra power, recovered from the waste-heat generated by the power plant itself. The power plant was generating 18 MW. Thus the power generation has increased by around 9%. Transperant's system recovers and converts the low-grade heat emitted as waste into reusable power. The main challenge in such a project is the conversion of low-grade heat (low-temperature heat) to useful power and at the same time, make the whole project techno- commercially feasible. Commissioning within 12 months period is possible in this kind of project. This power generation project will help improve the generation without having to spend any additional fuel for the additional power generation. Same technology can be used equally effectively on heavy fuel fired or diesel fired engines too.

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