

*First Prize*

*Manufacturers of  
BEE Star Labeled Appliances  
(Distribution Transformer)*

**TOSHIBA TRANSMISSION AND  
DISTRIBUTION SYSTEMS (INDIA)  
PRIVATE LIMITED**  
Medak Distt (Telangana)

*Unit Profile*

Toshiba Transmission & Distribution Systems (India) Private Limited (TTDI), 100% subsidiary of Toshiba Corporation, Japan, is an ISO 9001: 2008, ISO 14001: 2004 and ISO 18001: 2007 certified organization and pioneer in the field of Design, Manufacture, Testing of Ultra High Voltage (UHV), Extra High Voltage (EHV) Power Transformers, Medium Power & Distribution Transformers and EHV & Medium Voltage (MV) Switchgear Products.

TTDI product portfolio includes CRGO and Amorphous Metal core Distribution Transformers, Dry Type Cast Resin Transformers, UHV & EHV Power Transformers and Reactors, Gas Insulated Switchgear, Solid Insulated Switchgear, Surge Arrestors, Instrument Transformers, Control and Relay Panels, Indoor and Outdoor Type Vacuum Circuit Breakers, SF6 Circuit Breakers, Compact Substations and Vacuum Interrupters.



TTDI was established in 1973 and having State of Art manufacturing facilities at Rudraram (V), Pantancheru (M), Medak District, Telangana State, for manufacturing of its entire range of products and manufacture every component in-house from wires, fabrications for transformers and processing of insulating oil, which ensures high quality and quick delivery. TTDI in-house testing laboratories are accredited to NABL (National Accreditation Board for Testing Laboratories) as per ISO 17025: 2005.

TTDI will emerge as the global production hub of Toshiba Corporation to cater Power Transmission and Distribution Equipment and component requirements across the world and supplies customized products to almost all state distribution companies or Utilities in India and exported to various developed & developing countries like Australia, Italy, Greece, United Kingdom, Germany, Brazil, Kenya, Uganda, Nigeria, Ethiopia, Mauritius, Seychelles, Ghana, Bangladesh, India, Philippines, Sudan, Tanzania, UAE, Iraq, Hong Kong, Cyprus and Egypt.

### *Energy Consumption Details*

Sl. No.	Particulars	FY 2009-10	FY 2010-11	FY 2011-12
1	Purchased Units	24714663	25563231	18785214
2	Own Generation Units (Diesel Gen-set)	957180	519863	710170
	<b>Total Consumed units</b>	<b>25671843</b>	<b>26083094</b>	<b>19495384</b>

### *Energy Conservation Measures*

- Replacement of 7-Tank Process with Auto Shot Blasting in tank fabrication
- Energy saving welding machines are procured in place of conventional high power consuming welding machines
- Reduction of surface heat losses in all heat exchangers of ovens / furnaces by providing Rock wool insulation / replacement of damage insulation.
- Compressors power is reduced through continuous monitoring and arresting of leakages.
- Replacement of Diesel Fired Burner with LPG Fired Burner.
- Replacement of MH Lamps with MV Lamps & LED Lamps for street lights
- Timers are provided for street lights and they operate automatically depending on set time.

- Sub-Meters have been fixed on load side for majority of equipment, to have machine wise study.
- Continuous feedback & analysis on Energy performance reports such as Plant Energy Performance, Specific power consumption etc., which has resulted in to improvement in effective utilization of Heating Equipments.
- Made a policy to procure only energy efficiency motors in place of conventional motors.
- Creating Energy awareness among the employees.
- Almost Unity Power factor is maintained in the plant.

### *Energy Saving Projects*

TTDI has taken up Energy conservation with a motto of saving Earth and is given equal importance with production, Quality and Safety. A Certified Energy auditor cum Lead Auditor of Energy Management systems (ISO 50001:2011) is working dedicatedly towards Energy conservation.

In order to mitigate climate change, TTDI is continuously striving to use renewable energy for wider range of its operations. As a part of corporate social responsibility TTDI has decided to replace part of the conventional energy with non-conventional energy, which is clean and green in nature. To Start with, we have adopted following environment friendly projects, including bio mass gasification plant:

- 1) 500 kW Solar Roof top Power plant is initiated and decided to own the plant. Erection and commissioning is under process in one of company works unit. 300 kW Solar power plant has already been commissioned and is under trial runs. Balance 200 kW Plant is expected to be commissioned by the end of December 2015. About 7.4 Lac Units per annum is expected to generate from this plant. The plant is expected to reduce Carbon dioxide emissions by about 590 Tons/Annum, which is a global saving.
- 2) TTDI has taken initiative in purchase of solar power from third party through open Access system and entered into power purchase Agreement for purchase of about 18 Million Units per annum. Company Plant has been erected, commissioned and synchronized with grid to consume that solar energy by end of December 2015. By purchasing solar power, TTDI will be the part of reducing 14400 Tons of Carbon dioxide emissions per annum.
- 3) Introduction of Bio-Mass gasification plant is another initiative. This is a major process modification, which is taken up for replacement of LPG with Producer gas and will be used for thermal applications in the ovens of painting section. The main intent of this project is to utilize the agro waste material (Briquettes) and eliminate the dependency on exhaustible fuel which is LPG. This project

will eliminate the usage of LPG by 180 Tons/Annum. Plant Erection is completed. This project being carbon neutral will result in reduction of Carbon dioxide emissions by about 1000 Tons/Annum.

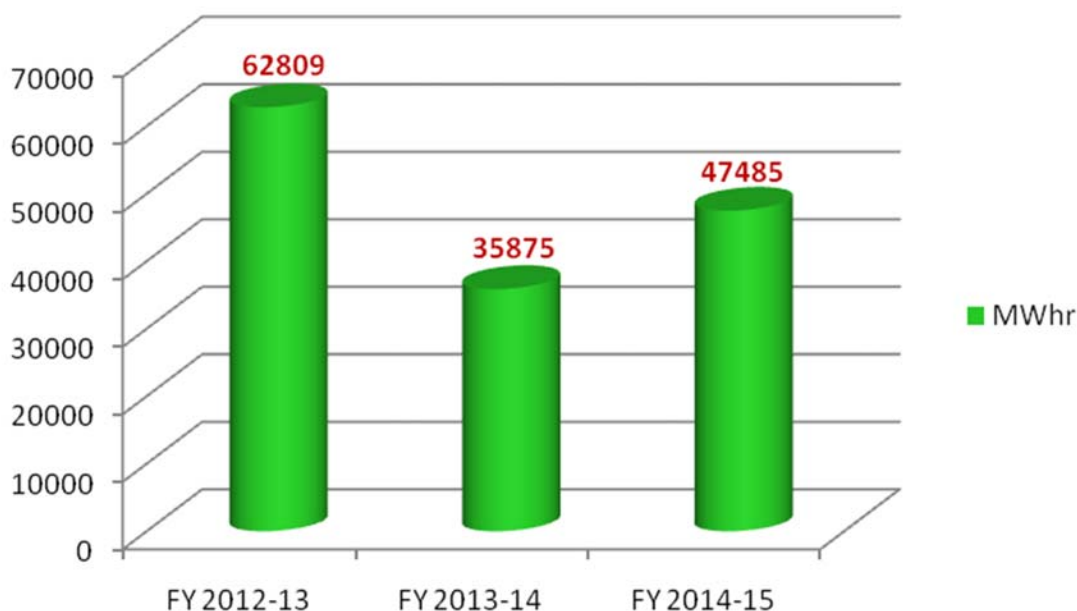
To Sum up, TTDI global contribution would be about reduction of 16000 Tons of Carbon dioxide emissions for the next year 2016 and would continue in the successive years.

Toshiba-TTDI in long term is in the process of introducing Energy Management System, ISO 50001:2011, which will help in continuous reduction of power consumption.

### *Energy Conservation Achievements*

The below chart depicts about TTDI's achievements on Energy Conservation

#### **Energy Savings in MWhr by DISTRIBUTION TRANSFORMERS**



#### **Note:**

- 1) The above figures on energy savings have been arrived based on the the actual supply of 3 STAR, 4 STAR & 5 STAR labeled Distribution Transformers to various customers across India, during respective financial years.

Apart from the above, TTDI has supplied more than 82,000 No. Amorphous Metal Core distribution Transformers, known as high energy efficient when compared to other conventional CRGO core Transformers, to various customers in India & abroad.. All these transformers are part of the distribution networks of various State Electricity Boards (SEBs) and have yielding cumulative energy savings throughout its life.

Further, TTDI has always been in the forefront for promoting energy efficiency and analysis of equipment on the Life Cycle Cost basis. TTDI is all set and poised to bring - in a revolution in the field of making more and more Energy Efficient Transformers by usage of most advanced Materials. Driven by the ambition to meet the ever - changing requirements of the market, TTDI intends to reinforce its dedicated base of Research & Development to launch newer & improved versions of Transformers, which will prove to be economical in terms of cost and energy and provide total satisfaction to the end users.