

GIZ's Indo-German Energy Programme (IGEN)

Energy Efficiency Initiatives in India Activities & Impacts

Energy Efficiency in India





The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Established on 1 January 2011, GIZ brings together under one roof the long-standing expertise of DED, GTZ and InWEnt.

Our registered offices are in Bonn and Eschborn in Germany.

Working efficiently, effectively and in a spirit of partnership, we support people and societies in developing, transition and industrialised countries in shaping their own futures and improving living conditions.



Purpose of the organisation

GIZ's purpose is to promote international cooperation for sustainable development and international education work.

As a 100% federally owned, public-benefit enterprise, we support the German Government in achieving its development policy goals.







GIZ worldwide

- GIZ operates in more than 130 countries worldwide.
- In Germany we maintain a presence in nearly all the federal states.
- GIZ employs approximately 17,000 staff members worldwide, more than 60% of whom are local personnel.

In addition there are:

- 1,135 technical advisors
- 750 integrated and 324 returning experts
- 700 local experts in partner organisations
- 850 weltwärts volunteers











GIZ worldwide



Indo-German Energy Programme (IGEN)

- GIZ together with KfW Entwicklungsbank jointly implement the Indo-German Energy Programme (IGEN).
- The broad focus of IGEN is to support the implementation of the Energy Conservation Act.
- The Act positively intervenes at all levels of society, such as energy-intensive large industries, manufacturers of household appliances and industrial equipment, residential households as well as engineering consultancy firms.
- The bilateral cooperation involves local and international professionals and supports



Federal Ministry for Economic Cooperation and Development

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

















Implementation of Energy Conservation Act Perform Achieve Thermal Trade Power Scheme Plants

EE in



Energy Symposium & IGEF

Clean Development Mechanism

EE in the Building sector: Trigeneration

KAEFER GIZ PPP



Indian Energy Conservation Act (EC)

- EC Act enacted in October 2001
- Five major provisions of EC Act relate to
 - Designated Consumers,
 - Standard and Labeling of Appliances,
 - Energy Conservation Building Codes,
 - Creation of Institutional Set up (BEE) and Establishment of Energy Conservation Fund
- Develop policy and strategies with a thrust on self regulation and market principles, within the overall framework of the EC Act with the primary objective of reducing energy intensity of the Indian economy.



Implementation of Energy Conservation Act Perform Achieve Trade Scheme Excellence Enhancement Center Energy Symposium & IGEF Clean Development Mechanism EE in the Building sector: Trigeneration

KAEFER GIZ PPP

Energy Consumption (MToE)Share Among DCs



Perform, Achieve & Trade (PAT)

- Executed under the National Mission of enhanced Energy Efficiency with BEE
- The market based mechanism to enhance cost effectiveness of improvements in EE in energy intensive industries through certification of energy saving which can be traded.
- 9 designated consumers selected (Thermal Power Plants, cement, steel,..)
- Individual targets for different industries has been set and first phase will be launched in April 2011

Implementation of Energy Conservation Act Perform Achieve Trade Scheme EE in Thermal Power Plants

Excellence Enhancement Center



Clean Development Mechanism EE in the Building sector: Trigeneration

KAEFER GIZ PPP



EE in Thermal Power Plants

- Phase I (2007-2010)
 - Mapping of 85 thermal power generation units
 - compared design status and the actual operating status: Gross heat derivation up to 20%
 - Potential CO2 emission reduction: 10 mio. Tons
 - Phase II (2011-2013)
 - Performance optimization of Thermal power stations
 - Introduction of power plant optimization software in 15 stations & training
 - Establishment of 4 model power plants

Implementation of Energy Conservation Act Perform Achieve Trade Scheme





Clean Development Mechanism



KAEFER GIZ PPP



Excellent Enhancement Center (EEC)

- Establishment of best practices platform in the energy generation sector
- Institutional framework comparable to industry associations
 - Focused on energy efficiency, advanced solutions regarding technology, processes and personal skills
- Will function as a pace maker and know how hub in the power generation service
- Set up planned in mid of 2011

Implementation of Energy Conservation Act Perform Achieve Trade Scheme Excellence Enhancement Center Energy Symposium & IGEF Clean Development Mechanism EE in the Building sector: Trigeneration

KAEFER GIZ PPP



IGEF dialogue and IGEF projects

Indo German Energy Forum (IGEF)

- Initiated in 2006 by German Chancellor and Indian Prime Minister as an open political dialogue on energy
- Main political Stakeholders
 - Government of India
 - Ministry of Power (MoP, Chair)
 - Ministry of New and Renewable Energy (MNRE)
 - Department of Science and Technology (DST)
 - Federal Government of Germany
 - Ministry of Economics and Technology (BMWi, Chair)
 - Ministry of the Environment, Nature Conservation and Nuclear Safety (BMU)
 - Ministry of Economic Cooperation and Development (BMZ)
 - Ministry of Education and Research (BMBF)



Implementation of Energy Conservation Act Perform Achieve Trade Scheme Excellence Enhancement Center

Energy Symposium & IGEF Clean Development Mechanism EE in the Building sector: Trigeneration

KAEFER GIZ PPP



IGEF dialogue and IGEF projects



IGEF – Tasks and Objectives

- IGEF shall promote cooperation in
 - energy security
 - energy efficiency & renewable energy
 - investment in energy projects
 - collaborative research and development

IGEF shall promote and involve the private sector

- The private sector is invited to participate in and should clearly benefit from the IGEF
- The objective is to develop joint cooperation projects between German and Indian institutions or – even more desired – between the private sector of both countries

Implementation of Energy Conservation Act Perform Achieve Thermal Trade Scheme

EE in

Power

Plants

Excellence Enhancement Center



Clean **Develop**ment Mechanism

EE in the Building sector: Trigeneration

KAEFER GIZ PPP



Clean Development Mechanism

- **Developing New Simple CDM Methodologies for**
 - Agriculture pump set
 - Star rated appliances
- CDM PoA Bachat Lamp Yojana
 - Technical documentation
 - Monitoring and verification
 - Establishing Coordinating & managing entity





Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

aiz





Trigeneration: Stakeholders

The Ministries

- Ministry of Power (MoU)
- Federal Ministry of Environment (BMU)

Implementation

- Bureau of Energy Efficiency (BEE)
- German International Cooperation (GTZ)

Beneficiary

- Jai Prakash Narayan Apex Trauma Center (JPNATC)
- Service provider & Consultant
 - Green Power International Pvt Itd (GPIPL)
 - Dalkia Energy Services Limited (DESL)



Main Components of Trigen:







Applications areas of Trigen:

All buildings and industries which use simultaneous electricity, heating and cooling

Hotels, Hospitals

Airports, Industries

BPO/IT/Data Centers

Shopping Malls, Residential Societies







The Pilot Project

- Electricity: 347 kW
- Cooling: 365 TR (105-VAM)
- Heating: ~20 kW (kitchen/laundry)

Payback ~ 2 years Annual savings ~2 Cr



Segments with Gas Available and proposed (MW)







Public Private Partnership Project

- Energy-Efficiency moving India's SMEs towards a sustainable future
- Main Partners



Third Partners







The drying Process







The digester









Potential

- 568 units (7.40MT/Yr) in India
- Top five producers accounting 25% of total capacity
- 25% of manufacturing costs are energy costs
- Energy saving potential approx. 30%
- Muzaffarnager itself has around 29 units

Jens Burgtorf (Director IGEN)

Indo-German Energy Programme German International Cooperation (GIZ) Bureau of Energy Efficiency, Ministry of Power, Gov. of India Sewa Bhawan, R. K. Puram, New Delhi, India Phone +91-11-26194504, Fax +91-11-26193464 jens.burgtorf@giz.de

Jakob Brueckner

Technical Expert, Indo-German Energy Programme German International Cooperation (GIZ) Bureau of Energy Efficiency, Ministry of Power, Gov. of India Sewa Bhawan, R. K. Puram, New Delhi, India Phone +91-11-26194770, Fax 91-11-26193464 jakob.brueckner@giz.de

ooking forward to you

cooperation!