

**Advancing Methane to Markets
Partnership – Issues, Opportunities
& Programs**

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**MTM CONFERENCE
Organized by : FICCI
Parallel Sector Workshop –
LANDFILLS
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History of USAID/India's Energy/Environment Programs

- ❖ 1960s/70s: construction of 15 thermal power plants and several hydro projects.
- ❖ 1980s: moved on to science and technology development in the eighties.
- ❖ 1990s: focused on privatization and technology commercialization in the early nineties.
- ❖ 1998: GHG emissions reductions in the energy sector - main focus since the sanctions.
- ❖ Today: electricity distribution reform, water-energy, methane-to- markets, green buildings, municipal services

KEY PROGRAMS IN ENVIRONMENT & ENERGY

- ❖ **ENERGY EFFICIENCY**
- ❖ **CLEAN COAL**
- ❖ **WATER- ENERGY NEXUS**
- ❖ **POWER DISTRIBUTION**
- ❖ **DISTRIBUTED GENERATION**
- ❖ **GREEN BUILDINGS**
- ❖ **SUSTAINABLE BUSINESS
DEVELOPMENT**

Industrial & Hazardous Waste Management

❖ Major issues in India

- 30 million tons of waste generated apart from fly ash (2003 data)
 - ❑ 8 million tons of hazardous waste

❖ Key issues

- Lack of secure landfills and Treatment, storage and disposal facility (TSDF)
 - ❑ Only 11 TSDFs in India
- Lack of incineration facilities
- Lack of waste handling and management systems

- ❖ ***"An unconcerned and basically bureaucratic monitoring agency coupled with ill-equipped and ill-trained environmental authorities have compounded the gravity of the waste problem. A clean break with the past is therefore required". - High Power GoI Committee on Hazardous Wastes, March 2001***

Landfills - Truisms

- ❖ All landfills eventually leak, and all landfill liners eventually fail**
- ❖ Movement from landfill solutions to clean production**
- ❖ E-wastes – a challenge to land-fill planners**

Industrial & Hazardous Management

❖ Opportunities

- Technical assistance in designing & operation of landfills**
- Technologies for waste minimization and recycling & related services**

Hazardous waste disposal industry in the industry sector is worth about \$200 million

Water pollution and treatment

- ❖ **Non availability of water to industry in India**
- ❖ **Water pollution**
 - **Industrial water pollution**
 - ❑ **Only 60% industrial effluents of large & medium scale industries are treated (PCB Data)**
 - **Municipal water pollution**
 - ❑ **25% water in metro municipalities treated and less than 5% reused**
 - ❑ **Other municipalities and towns very little or no treatment**
- ❖ **Potential opportunities**
 - **Water treatment technologies for industries and municipality**
 - ❑ **Membrane technologies / bio reactors**

Water pollution and treatment..

❖ Potential Opportunities..

- Technologies for recycling of water and zero discharge options in industry / municipality**
- Bio – gas generation through anaerobic treatment of municipal / industrial waste water**
- Technologies for handling membrane waste water**
- Water saving devices and equipment**

LANDFILL GAS

- ❖ **MSW Characteristics**
- ❖ **Anaerobic Process**
- ❖ **CO₂ Leaching**
- ❖ **Methane migration**
- ❖ **Recovery and Use**

USAID – MTM GRANTS

❖ SANKALPA TRUST

- Development of horizontal plug flow biogas digester.**
- Utilization of water hyacinth, agricultural wastes, village wastes**
- Location: Eastern India**
- Project cost: US \$ 186,285**
 - ❑ USAID grant: \$ 94,807**
 - ❑ Grantee cost share: \$ 91, 478**

USAID – MTM Grants (contd.)

❖ URS Group Inc.

- Program to screen, identify and implement Landfill Gas-to-Markets
- Conceptual design basis of a municipal SW methane extraction and utilization program
- Dissemination of technical, legal and financial lessons of the ongoing Gorai Landfill Gas Management Project, Mumbai
- CBM and directed inspection & maintenance for Oil & Gas sector
- Project Cost: US \$ 416,500
 - ❑ USAID grant: US \$ 250,000
 - ❑ Grantee cost share: US \$ 166,500

USAID - MTM Grants (contd.)

❖ Intl. Institute for Energy Conservation

- **Technical, financial and institutional demo of anaerobic digestion technology for dairy wastes**
- **Distributed Generation**
- **Project elements: energy savings, electricity sale, fertilizer sales and methane emission off-sets**
- **Project Costs: US\$ 235,700**
 - ❑ **USAID grant: US\$ 106,700**
 - ❑ **Grantee share: US\$129,000**

USAID - MTM Grants (contd.)

❖ Society for Development Alternatives

- **Demonstrate the potential of “Gaushals” as a center of methane-powered energy services**
- **Biogas plants in 3 Gaushals (45-90 Cu.M)**
- **Energy services: water pumping, chilling plant, flour mill, irrigation**
- **Project Cost: US\$ 166,859**
 - ❑ **USAID grant: US\$ 98,435**
 - ❑ **Grantee share: US\$ 68,424**

THANK YOU