

CHALLENGES

Indian municipalities are facing the challenges of growing population, urban expansion, increasing power tariffs and acute water shortage. At present only about two-thirds of the urban population has direct access to clean, affordable and reliable drinking water services. At the same time, municipal water utilities in India spend upwards of 60 percent of their budgets on energy used for water pumping. The Confederation of Indian Industry (CII) estimates that the typical Indian municipal water utility has the potential to improve water pumping system efficiency by 25 percent. Municipal officials are often aware of the opportunities for making bulk water supply and street lighting systems more efficient, however for the most part they simply lack the means to take advantage of these opportunities.

BACKGROUND

The Andhra Pradesh Urban Services for the Poor (APUSP) program is a partnership between the government of Andhra Pradesh, a state in South India, and the UK Department for International Development (DFID), that aims to achieve a sustained reduction in the vulnerability and poverty of the state's urban poor. The APUSP program began in April 1999 with financial commitment from DFID for a period of seven years. It covers 118 towns across the states, 32 of which are Class I (towns with a population exceeding 100,000).

The Alliance entered into a partnership with APUSP to disseminate the concept of Watergy to municipalities under the purview of APUSP, and to leverage DFID funding for municipal projects, thus gradually disseminating Watergy concepts to all municipalities in Andhra Pradesh.

The Alliance and APUSP selected two pilot towns – Vizianagaram Municipal Council and Karimnagar Municipal Council – to demonstrate the benefits of the Watergy approach. As part of this exercise, the Alliance coordinated water and energy audits of the

Key Results

- Energy Savings 101 MWh/yr
- Cost Savings \$63,700/year
- Investment: \$24,363
- Established an Energy Management Cell at the Andhra Pradesh Urban Services for Poor

municipal bulk water supply systems in these two towns. APUSP committed to fund the implementation of capital intensive measures through its a program that aims to improve the sustainable provision and delivery of basic urban services to the poor. This includes improvements to water supply, sanitation, solid waste management and drainage infrastructure, roads, footpaths and street lighting equipment.

OBJECTIVES

The main objectives of the partnership with APUSP are to:

- Disseminate the Watergy concept to all 32 towns covered by APUSP and extend it to all municipalities in the state of Andhra Pradesh.
- Build technical and managerial capacity at APUSP and set up an Energy Management Cell, which will act as a state resource center for assisting municipalities in undertaking water and energy audits and implementing energy savings measures.
- Demonstrate the benefits of Watergy projects to APUSP by carrying out two municipal water and energy audits, identifying energy and cost savings opportunities, and assisting APUSP in the implementation of proposed energy savings measures.

APPROACH

In response to the urban water and energy challenges faced by municipalities in developing countries, the Alliance has developed sustainable 'Watergy' solutions, which emphasize the important nexus between municipal water and energy use. By taking advantage



Alliance to Save Energy WATERGY CASE STUDY Vizianagaram, India



of untapped energy and water efficiency opportunities in their water systems, municipalities can optimize energy use and improve water services while reducing water wastage and ultimately, costs.

In May 2003, the Alliance undertook a scoping mission to Vizianagaram city, which has a population of nearly 200,000. In August 2003 the Alliance followed up with energy audits of Vizianagaram Municipal Council's (VMC) bulk water supply and street lighting systems and proposed low/no cost and high cost energy savings measures. The implemented measures would yield the municipality an annual cost savings of US\$ 1 million at an initial investment of US\$ 43,500.

RESULTS

Soon after the Alliance submitted the final audit report to VMC, they began implementing the suggested energy efficiency measures. To date, VMC has implemented eight out of ten measures recommended in the audit report and implementation of the remaining two measures is underway. As a result, VMC is already accruing an annual energy savings of about 101 MWh and an annual cost savings of about US\$ 63,700. The energy savings have reduced VMC's annual energy bill for water pumping by 18 percent, and will result in a reduction of 600 metric tons of CO₂ emissions annually. The simultaneous reductions in municipal water waste, through more effective supply and distribution, will allow the municipality to deliver water to more homes.

With the Alliance's technical advice VMC has also passed a Municipal Order for inventory control for the procurement of energy efficient street lighting equipment.

The Alliance helped established an Energy Management Cell (EMC) at APUSP which serves as a state resource center for energy efficiency best practices. Based on Watergy concepts, APUSP's EMC has published a handbook titled 'Energy Efficiency Action Plan' and has distributed it to all 118 municipalities in the state. APUSP's guidebook

projects a state wide annual cost savings potential of US\$ 7.7 million, with an investment of US\$ 4.8 million, by the implementation of no/low cost energy savings measures alone. The payback for these measures is only 7.3 months. To sustain statewide efforts in water and energy efficiency, APUSP has currently invited an Expression of Interest from technical consultants and energy auditors that are interested in undertaking energy audits at municipalities in Andhra Pradesh.

For More Information

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Last update: April 2005

This work was funded by the U.S. Agency
for International Development



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