A PROGRAMME FOR THE REPLACEMENT OF INCANDESCENT BULBS WITH COMPACT FLUORESCENT LAMPS IN THE DOMESTIC ELECTRICITY CONNECTIONS OF KARNATAKA

-- ANNEXURE: SOME RECENT PROGRAMMES --

The implementation package for the replacement of incandescent bulbs compact fluorescent lamps designed for Karnataka is not unique, as there are other joint utility-consumer-manufacturer-funding agency projects for this type of efficiency improvement. Two such projects -- one in Mexico and the other in Poland -- have been advanced by the Global Environmental Facility programme of the World Bank. They are described below.

Mexico High Efficiency Lighting Pilot Project: This project aims to reduce the electricity demand by financing the replacement, over a period of three years, of 3 million IBs with CFLs in two large cities (Monterrey and Guadalajara). The CFLs will be manufactured by private firms and installed by private contractors, but personnel from the main public electric power utility will supervise the project. The initial cost of the CFLs will be borne by the donor agency, but this will be amortized over three years through monthly payments by the consumers. (The seed funds thus recovered could then be utilised for other projects). As the interest rates in Mexico have, until recently, been higher than that at which CFLs have been adopted in developed countries, consumers would find it difficult to undertake retrofitting without the assistance of such a loan-replacement programme.

Since the demand for electrical services has been rising (at the rate of 6% per year) and the cost of generation is high ($1,000/kW for new plants), the importance of the programme is related to the amount of electricity saved. A single replacement of a 75 W IB with an 18 W CFL results in a total saving of 570 kWh over the life (10,000 hours) of the CFL. This implies a saving of 650 kWh at the busbars (assuming transmission and distribution losses of 12.3%). Further, as about 80% of Mexico's power generation is thermal, a reduction in electricity demand would reduce thermal generation and its contribution to emission of greenhouse gases. There are, however, technical risks relating to the standardization of the bulb sockets and the effect of voltage fluctuations on the life of the CFLs, which must be addressed during product specification.

Manufacturer's Wholesale Cost Reduction Plan for Compact Fluorescent Lamp Dissemination in Poland: This project consists of a grant to a manufacturer of CFLs -- Philips Lighting Poland (PLP) -- to implement a cost reduction plan in order to reduce the wholesale price of CFLs. PLP and its dealers (wholesale distribution companies, private manufacturers and a few large retailers) will be required to pass the incentive amount (financed by the grant) to the retailers, who in turn, reduce the selling price for the consumers. The project goal is to replace rapidly (over a two to six month period) 850,000 IBs with CFLs in the residential and commercial (professional) sectors, at a subsidy of $5 per CFL. PLP will commit some of its own funds for additional programme costs such as monitoring sales and introducing specialized product packaging. The project will be implemented by PLP and the Gliwice Distribution Co. with the assistance of the non-profit NGO Polish Foundation for Energy Efficiency.

As with the Mexican project, the benefits resulting from the programme are reduction of electricity demand and the consequent reduction in CO_2 emissions associated with Poland's coal-fired thermal power plants, as well as the spread of information regarding CFLs from the publicity campaign. Potential problems include technical risks (similar to those mentioned above) and administrative/market risks, such as ensuring that the price-discounts which are "passed through" by PLP are not captured by wholesalers or retailers.

Malaysia Compact Fluorescent Lamps Dissemination Programme: The Malaysian Kuala Lumpur Electricity Utility has embarked on a demand-side management programme by setting up a subsidiary company to disseminate efficiency-improvement end-use devices. For instance, the subsidiary purchases compact fluorescent lamps for about US 10 per lamp from Philips and then retails them for about $12 to customers instead of the $16 price charged by Philips. They also offer the lamps to retailers at $11 on condition that they sell to customers at the $12 price.