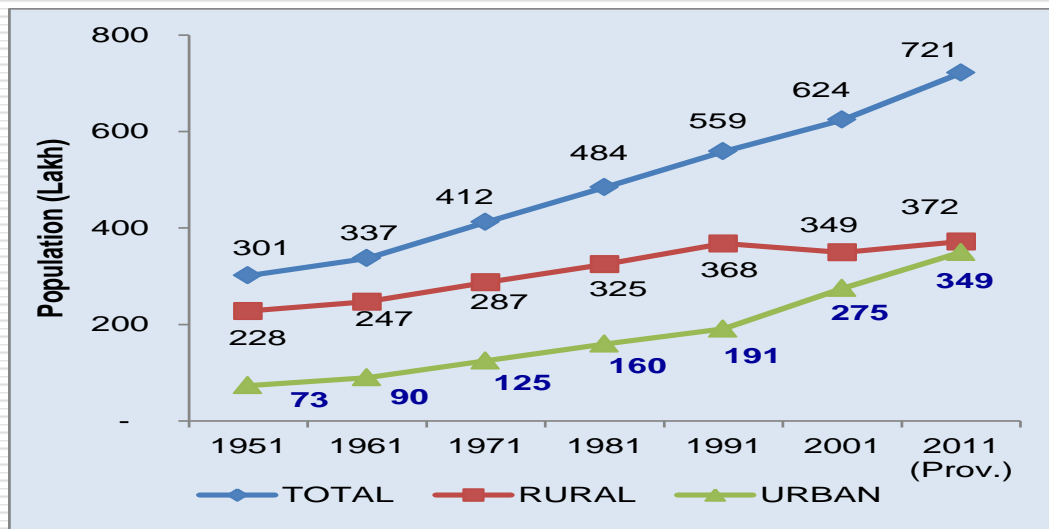


ENERGY EFFICINECY IN URBAN INFRASTRUCTURE



Urban Scenario - Tamil Nadu



- **Highly urbanized state, Urban population of 34.95 mn out of total population of 72.14 mn. (Censes 2011)**
 - **48.45% population resides in urban areas against national average of 31.16%**
 - **664 ULBs (12 Corporations, 124 Municipalities and 528 Town Panchayats)**
-

Tamil Nadu Urban Development Fund (TNUDF)

- ❑ Established as Trust in the year 1996 as dedicated Municipal Development Fund
 - ❑ Private Sector participants: ICICI Bank Ltd., HDFC Ltd. and IL&FS Financial Services Ltd.
 - ❑ Professionally managed and the operations are outsourced to Asset Management Company (TNUIFSL)
 - ❑ Operates lines of credit from World Bank, JICA and KfW
 - ❑ Loan assets (net) as on 31.03.2016 is Rs. 2142 Crores
 - ❑ Bonds Mobilized by TNUDF and Pooled Municipal Bonds by WSPF for Rs. 332 Crores
-

Two Major Electrical Energy Consuming Areas in ULBs

Water Pumping

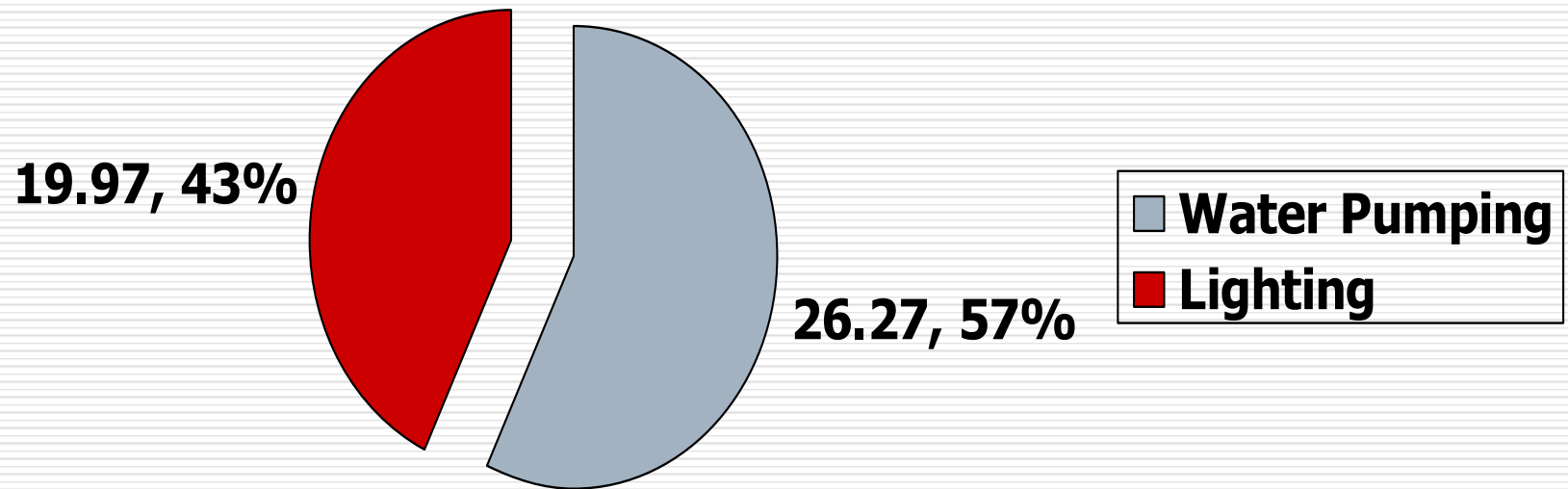
Street Lighting

Preliminary Energy Survey

Two firms were employed by TNUIFSL

- National Productivity Council (20 ULBs)
 - TERI - The Energy Research Institute
(25 ULBs)
-

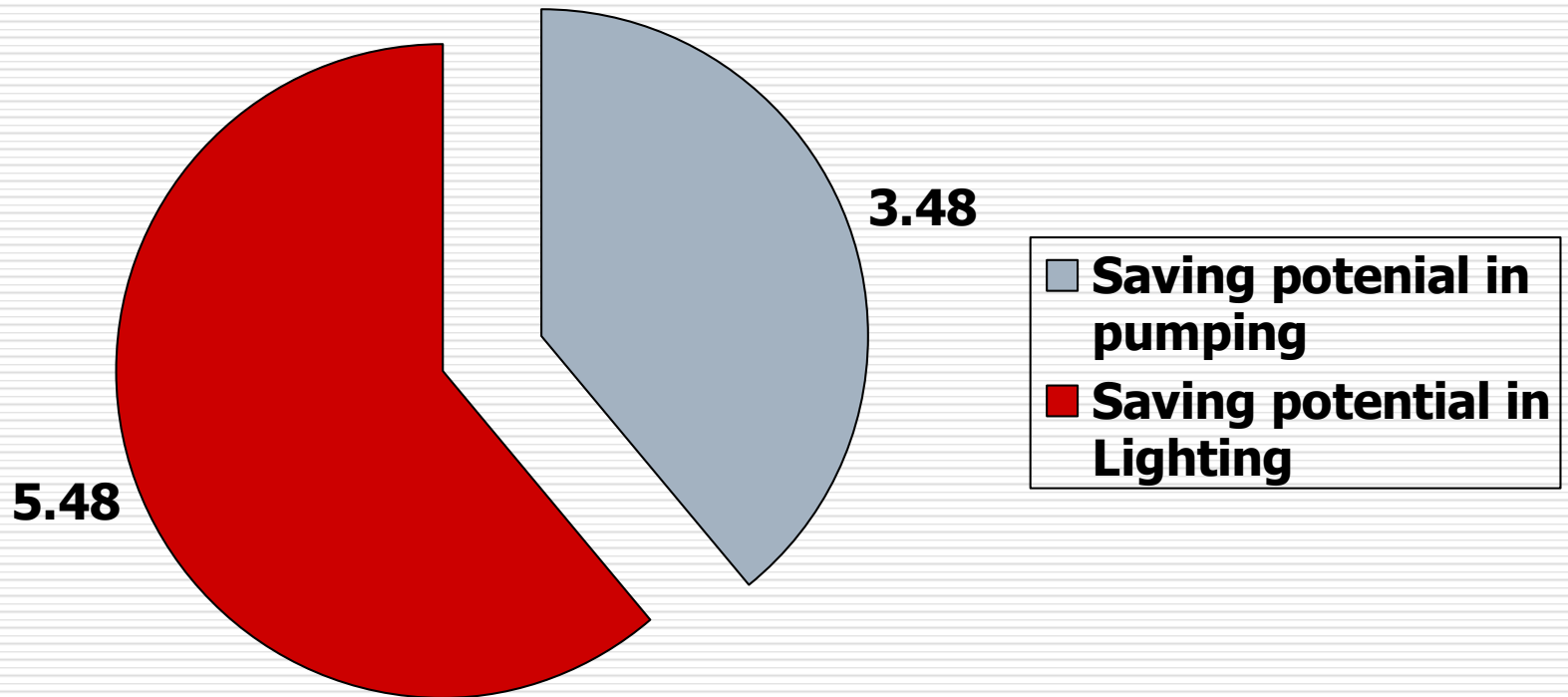
% Share of Annual Electricity Bill



Annual Electricity Bill

Of 45 Municipalities = Rs. 46.24 Crores

Saving potential in 45 Municipalities



Annual Cost Saving Potential = **Rs. 8.96 Crores**

Tamil Nadu Municipal Energy Efficiency Project

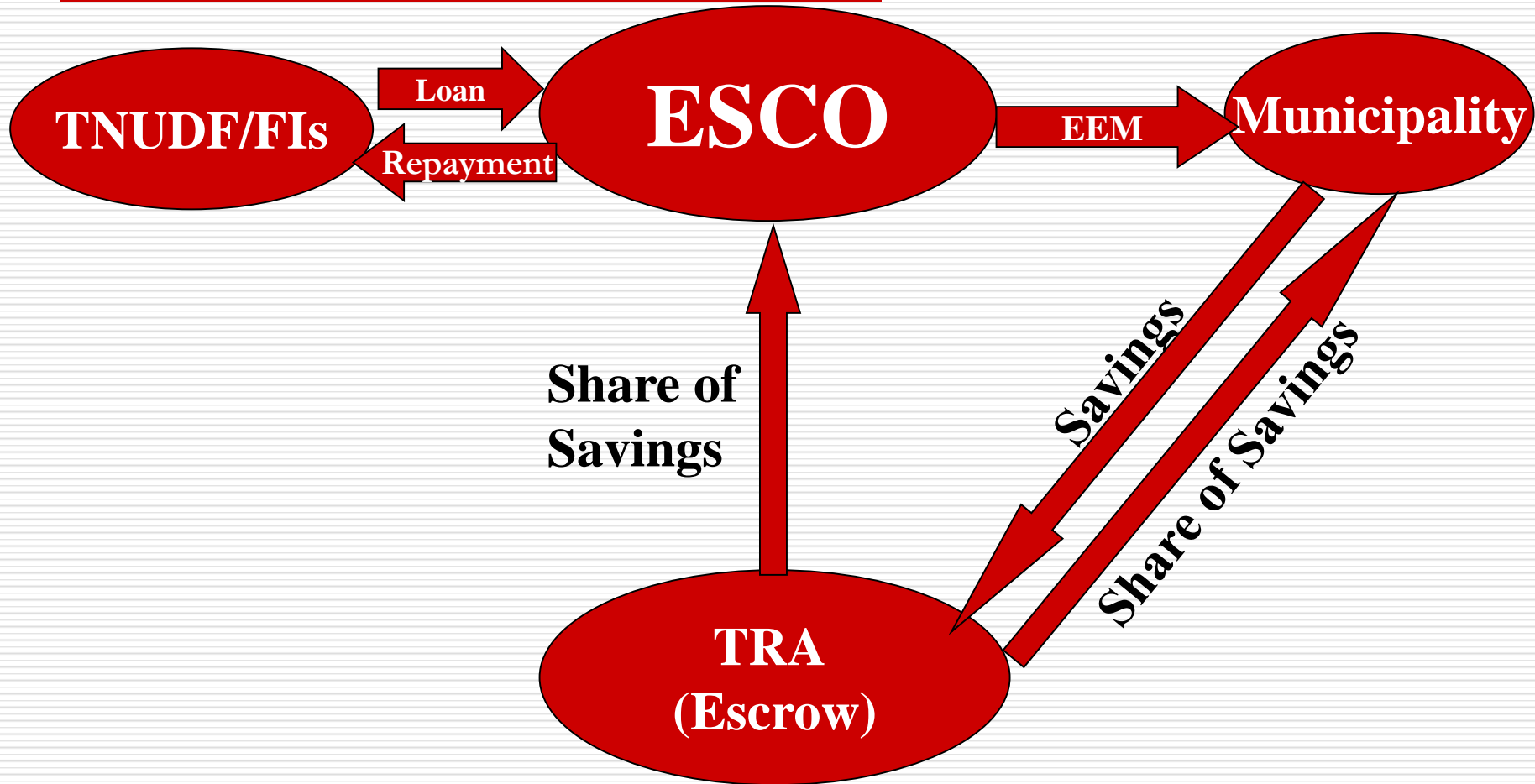
- First Statewide Municipal Energy Efficiency initiative in Water pumping and Street lighting through ESCO mechanism in India
 - Project Size - 45 ULBs
 - Investment Grade Audit (IGA) for Water Pumping and Street Lighting and Implementation of EE Measures for 29 towns in 3 Clusters under Phase I and 16 towns under Phase II

 - Project Duration - 18 Months
-

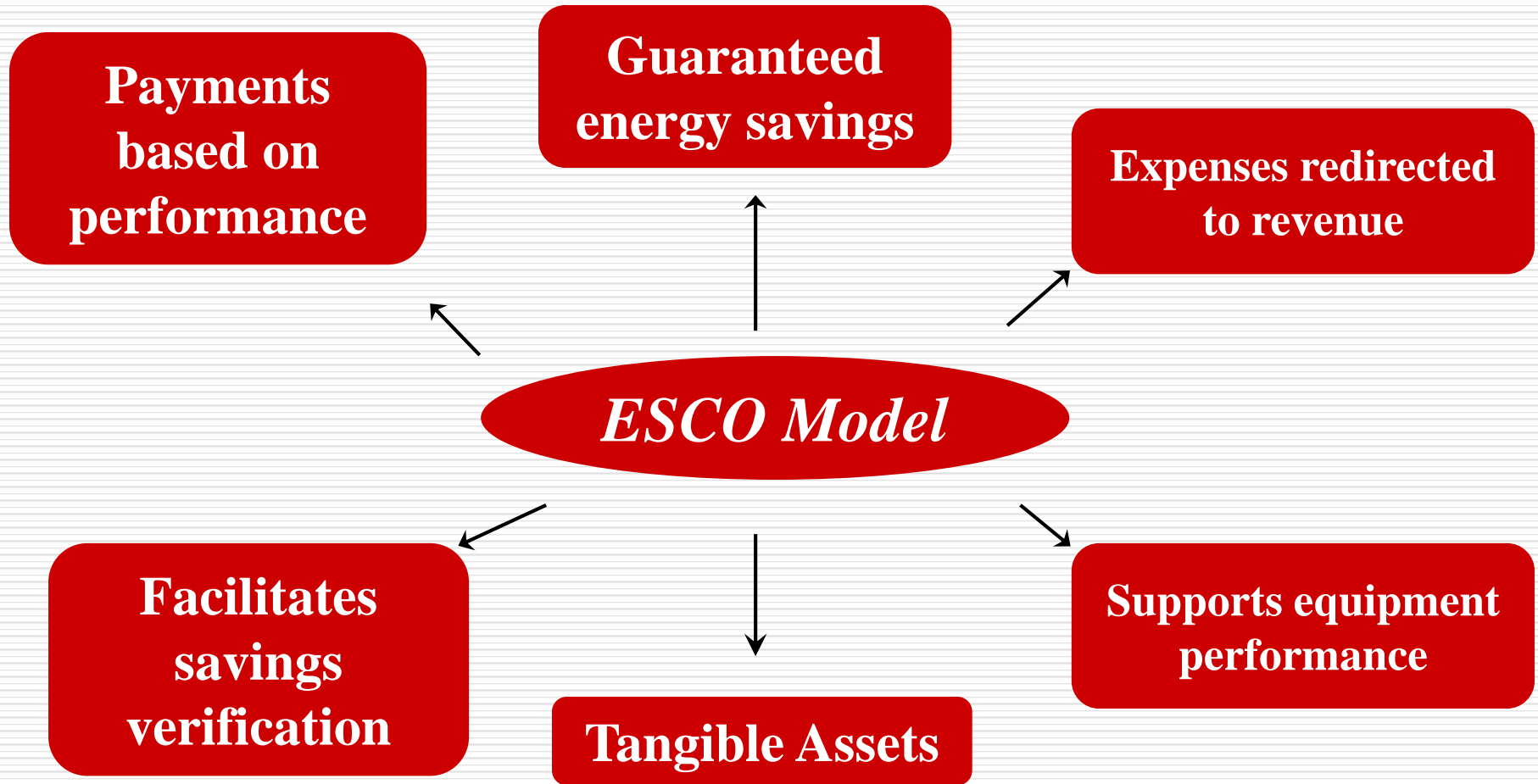
Project Key Highlights

- ❑ Project in Two Stages
 - Stage 1 – Investment Grade Audit
 - Stage 2 – Implementation and Monitoring & Verification of results
 - ❑ Shared Savings Model
 - ❑ Payment Mechanism – Trust & Retention Account (TRA)
 - ❑ Minimum Energy Cost Savings defined based on Preliminary Audit Reports
 - ❑ Third Party Monitoring & Verification
 - ❑ Guideline for IGA provided in the RFP
-

Financing Model



Features of ESCO Model



Appointment of ESCOs

- Expression of Interest
 - Registered with BEE/PCRA
 - Criteria - Financial turnover, BEE certified staff and past experience
 - Bidding - RFP issued to short-listed firms
 - Minimum 30% saving
 - Maximum contract period of 5 years
 - Maximum share to ULB
-

Appointment of ESCOs contd..

- Council Resolution
 - to accept the IGA report
 - to authorize the Municipal Commissioner to sign the performance contract agreement with ESCO
 - to authorize the Municipal Commissioner to open and operate Trust and Retention Account (TRA)
 - Signing of Performance Contract Agreement with ESCO
 - Implementation of project
 - Monitoring & Verification
-

THANK YOU

D.Rajendiran
Sr. Asst. Vice President
TNUIFSL