MAESCO

(Pertubuhan Syarikat Syarikat Perkhidmatan Tenaga Malaysia)

Malaysia Association of Energy Service Companies

KEY SUCCESS FACTORS IN FULFILLING COMMERCIAL AND CONTRACTUAL OBLIGATION

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ENERGY SERVICE COMPANIES

- **Energy Service Companies** (ESCOs) can be an important institutional mechanism for the delivery of EE investments.
- In recent years, many established ESCOs have become active, and new ESCOs have been created in developing countries

BARRIERS TO EE INVESTMENT

Lack of motivation

- **Lack of interest for energy savings**
- **Investor-user problem**
  (owner has not to pay for energy supply costs)
- **Staff cuts (e.g. facility management, outsourcing)**

Lack of information

- **Technical, economic know-how**
- **Effects on operation procedures**
- **Know-how of grants and consultancy possibilities**

Financial barriers

- **Limited financial means**
- **In many cases: long payback times**
- **Trend of energy prices (forecast, consideration in the contract)**

Lack of commitment

- **Commitment of the building-user is essential for the success of EE implementation!**

THE SUCCESS WAY FOR EPC

POLICY SUPPORT

Policy support is an essential factor for paving the way for Energy Performance Contracting. The first action is to establish a favourable legal framework in the country. Depending on the maturity of the market, the policy actions can be taken in national or regional levels. Practices that can be applied include:

- Sustainable energy action plans, in particular with regard to energy efficiency, can be prepared and supportive laws can be introduced at the national level.

- Legal framework can be improved in favour of municipalities not to have the EPC investment as a debt in their budget

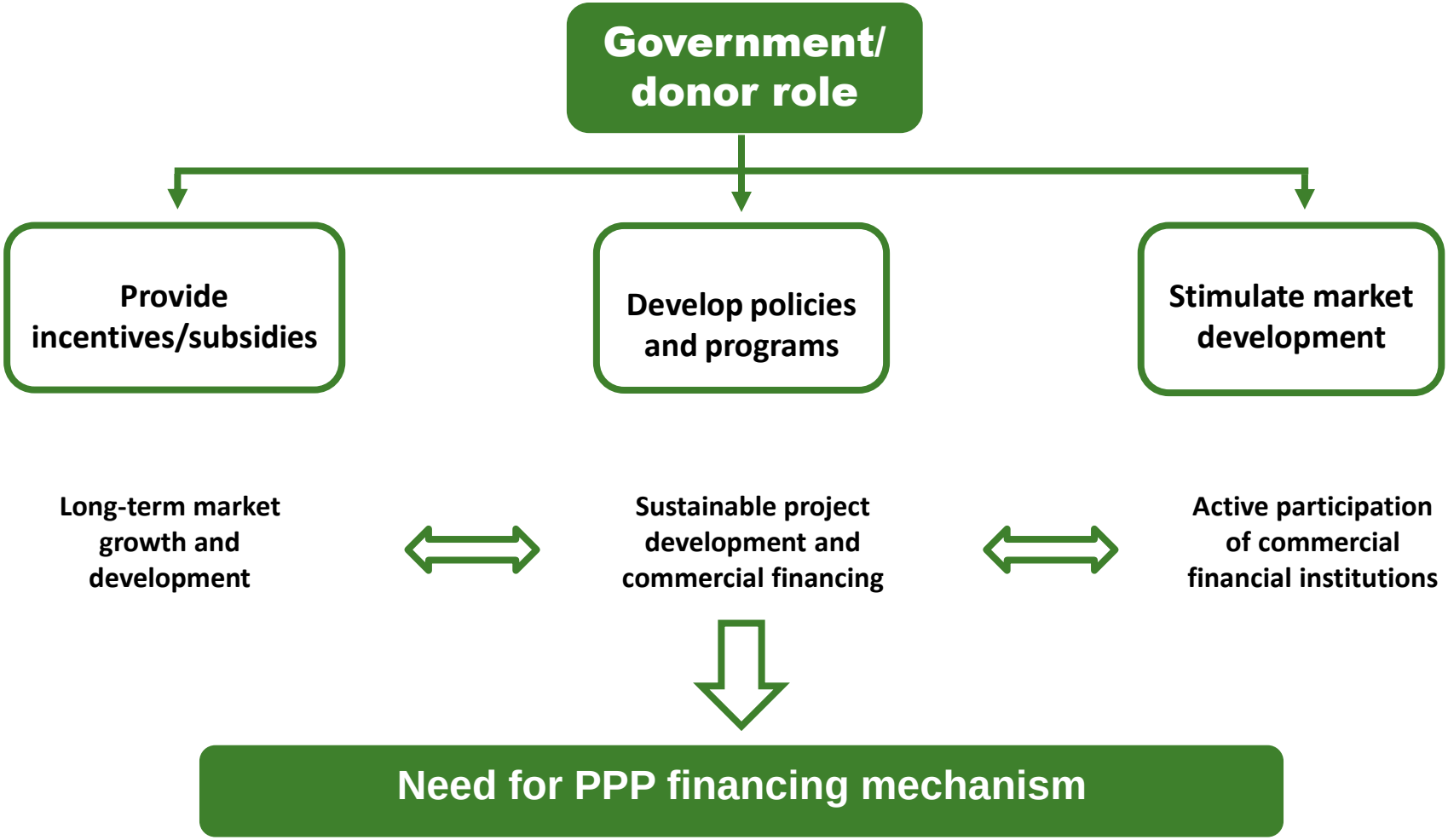
- Legislation can support the municipalities to retain the savings through energy efficiency investments

- Practical and transparent procedures can be created for public procurement in regional and municipal level.

- Internet based calculators for the projects and databases for access to the explicit information can be established

- Guidelines can be prepared for how to apply energy efficiency criteria in public procurement procedures

Public sector vs. market roles in scaling up EE investments



HOW DO PPP MECHANISMS GENERATE VALUE?

When EE financing and performance risks are the barriers targeted, PPP mechanisms if properly structured, can generate better value for money by:

- **Reducing project life-cycle costs** (in case of third party financing)
- **Reducing administration costs** (in the case of subsidized rate loans and partial credit guarantees)

- Providing **better risk allocation** (financial risk allocated to the bank and technical risk allocated to the ESCO)

- Providing **faster implementation** (private sector may have better capacity to deliver the needed services); and

- Providing **improved service quality** (private sector may have more rigid quality controls in order to be competitive)

ACCESS TO FINANCIAL RESOURCES

Access to financial resources is a crucial factor for attempts to increase the EPC capacity. Particularly in the immature markets, it is an important factor that can trigger rapid growth. A number of actions can be done to increase the access to financial instruments

- Disseminating the information of existing national and international financial initiatives for energy efficiency improvements
- Putting in place grants/subsidies facilitating the EPC contracts
- Encouraging the financial institutions to take part in energy savings projects

- Increasing the flexibility of the contracts in financial terms
- Establishing new partnerships between agencies, banks, energy service companies and clients

RELIABLE ENERGY CONSUMPTION DATA

Ensuring the reliable energy consumption data is a crucial factor in order to establish trustable and strong contracts. Therefore:

- Intelligent utility meters should be introduced in order to ensure the reliable data gathering from different kinds of consumptions
- Guidelines for how to collect energy data should be prepared
- Databases should be set up for historical energy consumption data

OVERCOMING MISTRUST IN ESCOS

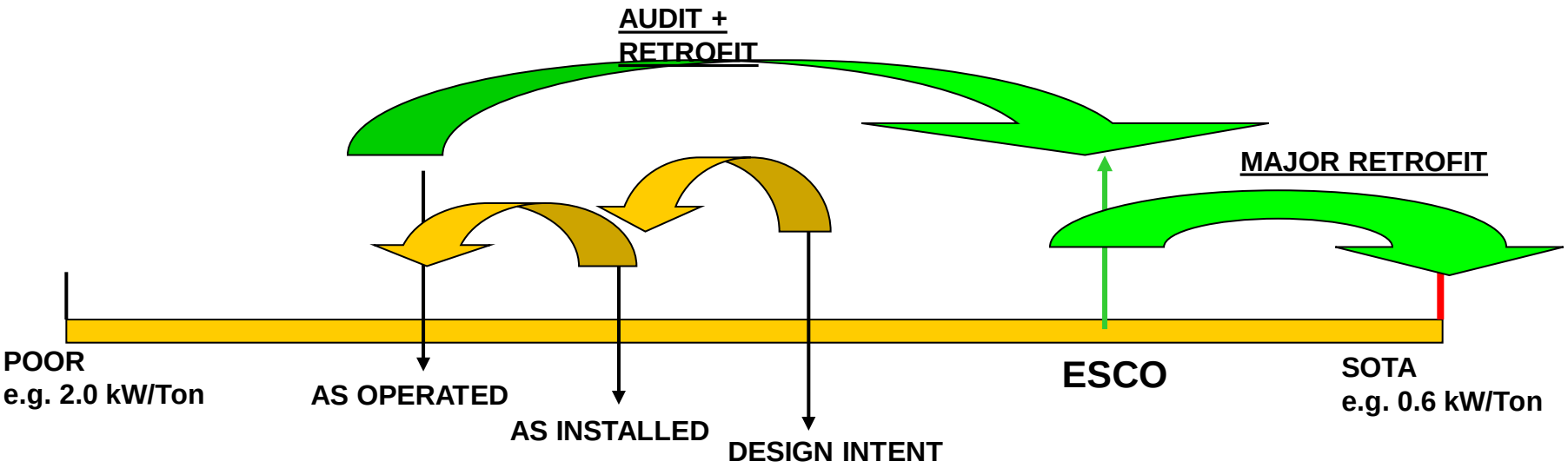
Even though the maturity of markets is different, there is a remaining mistrust in ESCOs in most countries. In order to build capacity in EPC, overcoming the mistrust in ESCOs must be one of the first target points. Thus;

- The awareness should be increased with good practice examples
- Example contract templates should be prepared for clients

- Complex and unclear contract terms should be avoided
- The contract periods should be shortened as much as possible
- Lobbying activities between the client and the ESCOs should be increased

CASE STUDIES

Understanding The ESCO Approach



OVERVIEW OF TYPICAL CHILLER PLANT SYSTEM EFFICIENCY

Telekom Raja Chulan

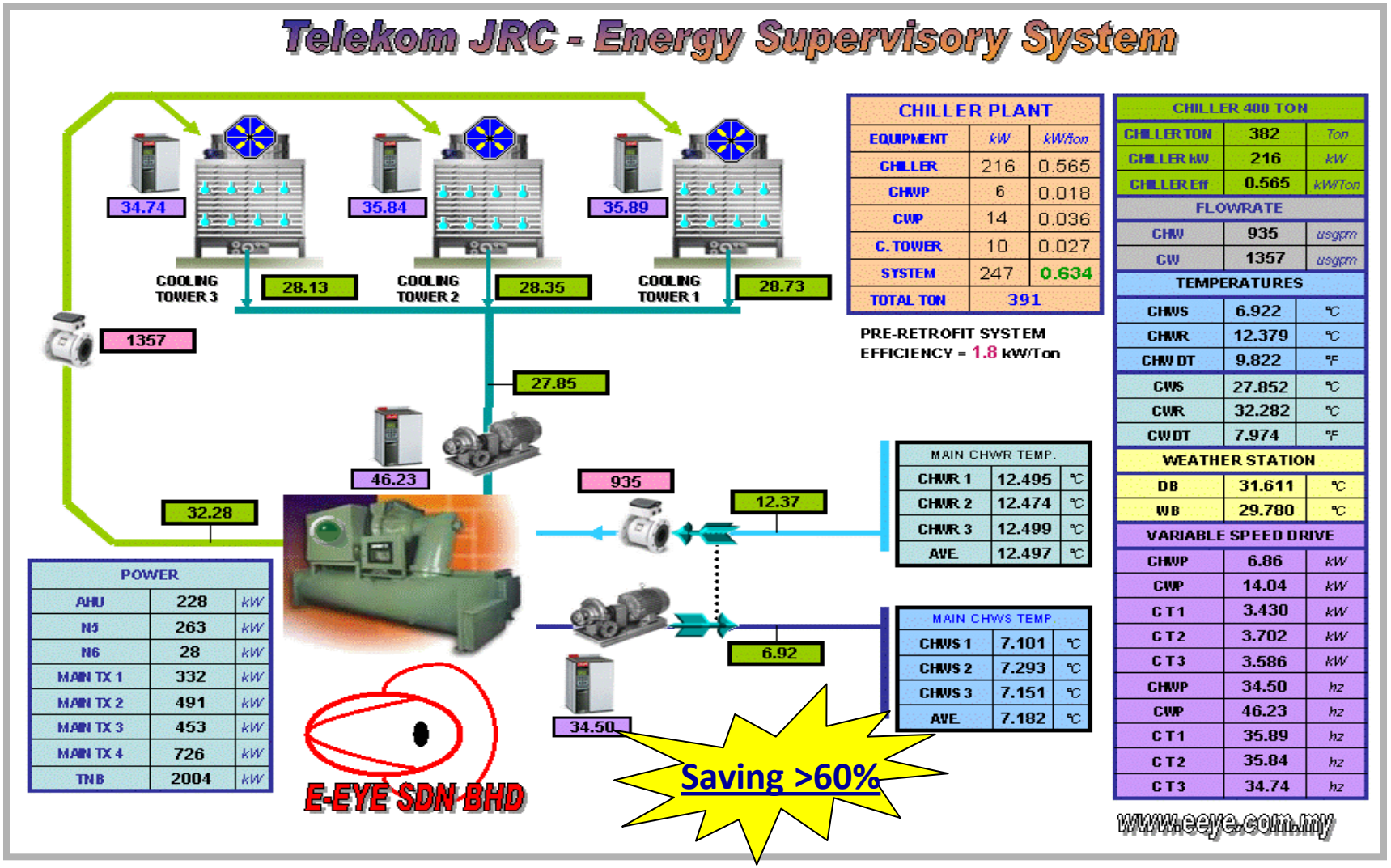
Overview

- Achieved average saving of **RM 100,000** per month (average of **RM 1,200,000** per annum) from the average electricity bill of RM 350,000 per month.

- Implementation of Total Energy Efficiency Retrofit and Energy Improvement at the HVAC plant. Retrofit and installation of High Efficiency Water Cooled Chiller, Cooling Towers, Piping System, Chilled Water Pumps, Condenser Water Pumps.

- Overall chiller plant system efficiency was improved from **1.8 kW/ton** to **0.6 kW/ton** without compromising the required cooling load.

Snapshot of Real Time Monitoring



EPC Proposal for Hospital

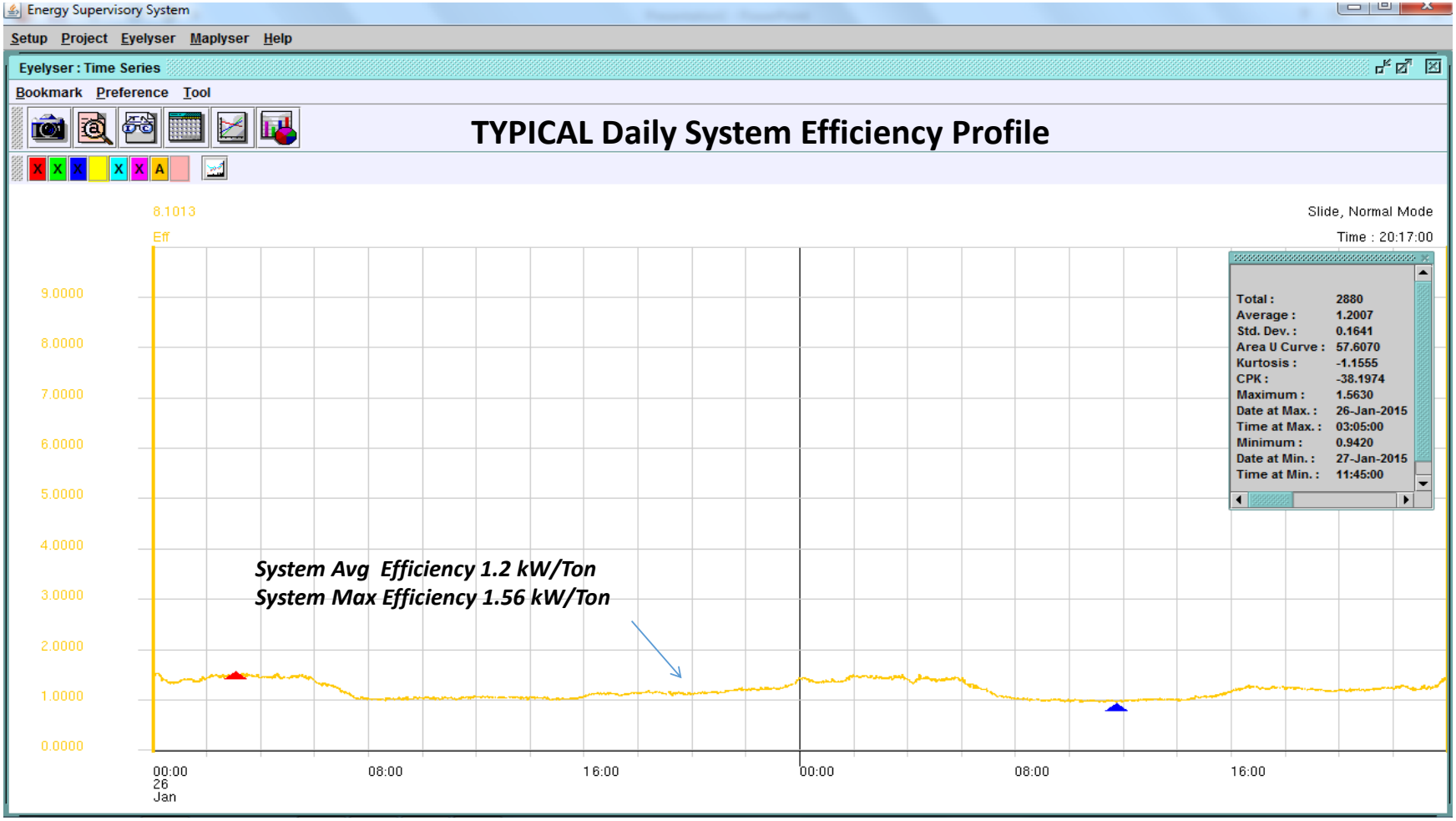
Overview

- Sutera Intrajaya Proposed average saving of more than **RM 1,400,000** per annum) from the average electricity bill of RM 850,000 per month. Overall Chiller Plant consumes 43% energy.

- Implementation of Total Energy Efficiency Retrofit and Energy Improvement at the HVAC plant. Retrofit and installation of High Efficiency Water Cooled Chiller, Cooling Towers, Piping System, Chilled Water Pumps, Condenser Water Pumps. Replacement of 2 nos new 600Ton Chiller.

- Overall chiller plant system efficiency will be improved from **1.2 kW/ton** to **0.6 kW/ton** without compromising the required cooling load.

Chiller Plant Efficiency



Major Barriers & Risks

Major barriers

- Weak awareness & experience
- Overcoming Clients demand

  eg: duration, sharing of EPC Contract
- Conventional procurement process
- Measurement & Verification process

Key factors for successful EPC

- ESCO has the technical, financial & mgt. skills
- Clients & ESCO have a *partnership*
- Good understanding of project goals

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THANK YOU

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