Energy Service Conference 2016

# ENERGY PERFORMANCE CONTRACTING BUSINESS MODEL IMPLEMENTATION FOR LARGE ENERGY USERS

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# OUTLINE

- BENEFITS OF EPC BUSINESS MODEL
- SCOPE OF SERVICES BY ESCO IN EPC PROJECTS
- HOW EPC WORKS?
- KEY SUCCESS FACTORS

# KEY BENEFITS/IMPACTS OF EPC FOR ENERGY SAVING PROJECTS IMPLEMENTATION

## ORGANISATION/COMPANY

- No up-front & capital costs for new assets
- Reduce operating costs
- Faster results when scale investments required
- Outsourced to the specialists with guaranteed commitment
- Maximising internal funds for core business
- Improve competitiveness
- Corporate responsibilty

## NATIONAL

- Improve DSM
- Reduce government expenditure
- Reduce dependent on fossil fuels
- Delay/avoid new power plants
- Reduce CO2 emission
- Jobs creation
- Promote DDI
- New source of economic growth
- Fuel prices increase mitigation

## GLOBAL

- Climate change mitigation
- CO2 emission reduction commitment

# COMMON OPTIONS FOR EPC MODEL

## 1. GUARANTEED SAVING

- The loan goes on the client's balance sheet

## 2. SHARED SAVING

- The loan goes on ESCO's balance sheet

**BOTH PERFORMANCE GUARANTEED!**

# EPC BENEFITS AGAINST NORMAL PURCHASE

| Item | Shared Saving | Performance Guaranteed | Normal Purchase |
|---|---|---|---|
| Technical expertise | ESCO | ESCO | ESCO |
| Implementation(design, installation, testing & commissioning) | ESCO | ESCO | ESCO |
| Funding source | ESCO | OWNER | OWNER |
| Sharing of returns % | ESCO-OWNER At agreed % & conditions | 100% to OWNER | 100% to OWNER |
| Technical & investment risks | ESCO | ESCO-OWNER | OWNER |
| Energy performance maintenance & monitoring works and risks | ESCO | ESCO-OWNER | OWNER |

# SCOPE OF SERVICES BY ESCO IN EPC PROJECTS

## Built-in

- ❑ Funding & financing options
- ❑ Engineering & economic feasibility studies
  - ✓ Investment grade/Detailed energy audit
- ❑ Design
- ❑ Construction
- ❑ Commissioning
- ❑ Operations, spare parts & maintenance
- ❑ Performance measurement, verification & monitoring
- ❑ Energy performance reporting

## Value added

- ❑ Consultancy & Advisory
- ❑ Regulatory Compliance
- ❑ Standards & Ratings

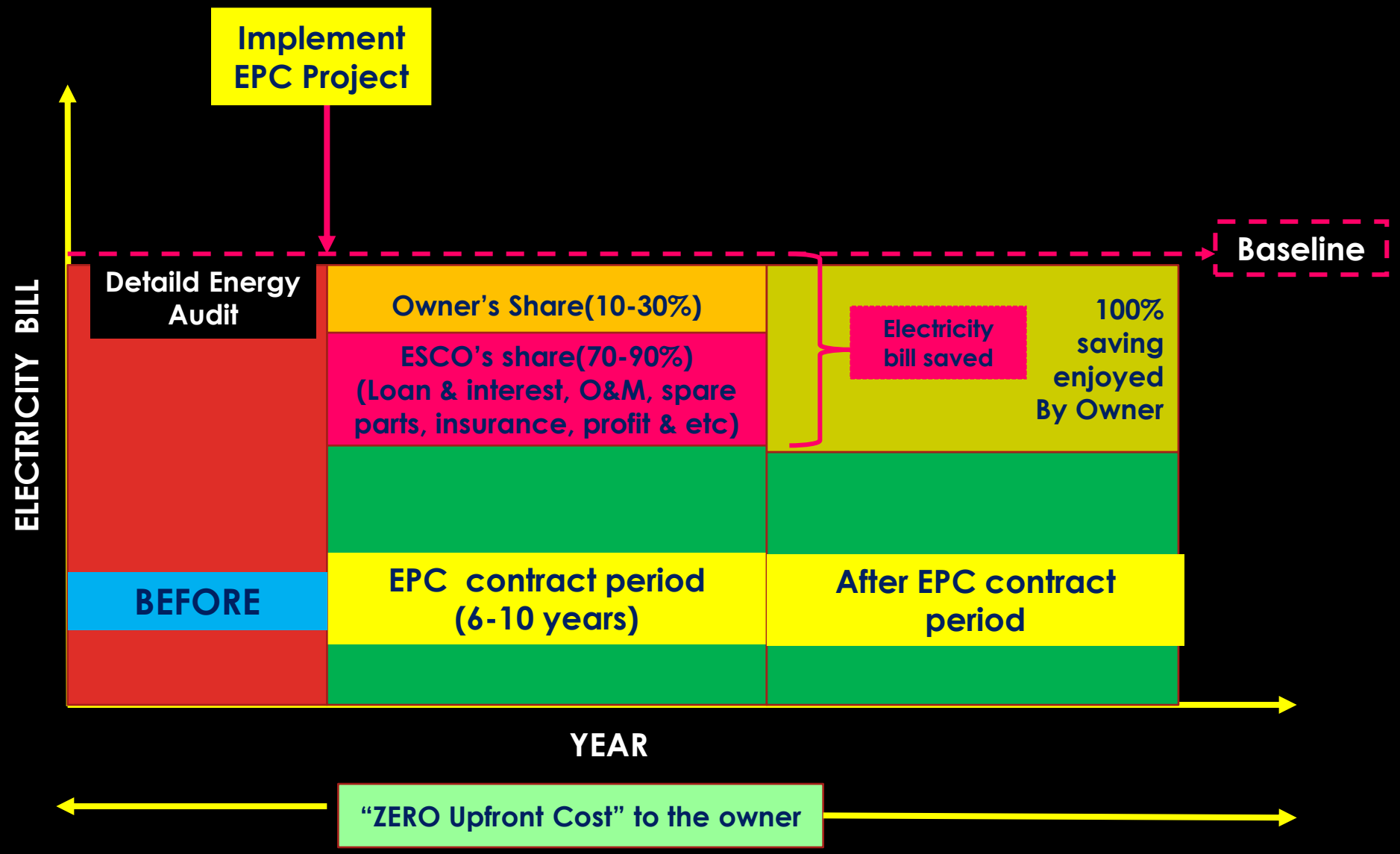
# DIRECT APPOINTMENT OR OPEN TENDER?

THE KEY DIFFERENCE FROM THE NORMAL PROJECT TENDER PROCESS

To PREQUALIFY AND SELECT THE CAPABLE ESCO/STRATEGIC PARTNER and NOT TO OBTAIN AND COMPARE THE BEST PRICE/DETAILED INVESTMENT PROPOSALS from the start

# HOW EPC WORKS?

# EPC –SHARED SAVING



# THE EPC PROJECT IMPLEMENTATION PROCESS FLOW – SHARED SAVING MODEL

Select ESCO

Sign EPC Contract

Payment To ESCO

STAGE1: PREPARATION

STAGE 2: DEVELOPMENT

STAGE 3: IMPLEMENTATION

STAGE 4: MEASUREMENT & VERIFICATION

# STAGE 1:PREPARATION
# *DEFINE & CONFIRM COMMITMENT*

- ❑**CONFIRM THE NEED**

- ❑**CREATE VISION, BUILD INTERNAL BUY-IN TO EPC PROCESS**

- ❑**GOAL SETTING**
  - Clear goals to guide the process
  - Determine metrics for success
  - Clear investment criteria
  - Quantifiable
  - To make conversations with external service providers(ESCOs) & internal financial decision makers more smooth on “what is considered as a “successful” proposal

# STAGE 1:PREPARATION
# *DEFINE & CONFIRM CRITERIA*

❑KEY CRITERIA

- Indication of quantity of energy to be reduced
- Hurdle rate-minimum IRR/ROI required
- SPP vs LCC
- Other cash flow/OE reduction requirements
- Desired outcomes-rating,certifications,awards & etc
- Desired enhanced benefits in building functionality-improved comfort & controlling capabilities

✓ Requirements that will be part of the project scope that guides the ESCO to incorporate into the EPC contract document

✓ Don't have to specify the total project cost-focus on financial & environmental outputs

✓ Let the ESCO to challenge themselves to meet the desired goals of the owner

# STAGE 1:PREPARATION
## *DEFINE & CONFIRM CRITERIA*

### ❑CONSIDER POTENTIAL FUNDING STRATEGIES

- Self funding
- Third party-loan/lease
- ESCO –financing as part of scope of services

### ❑SELECTION CRITERIA OF PROJECT SITE(S)

- Higher annual energy costs AT facilities with potential energy saving opportunities
- Outdated systems/equipment or near the end the useful life
- Relatively consistent energy using patterns in several years(3-5),stabilized occupancy
- Access to energy bills/records/information
- Assets that are already planned for major capital improvements
- Large facilities with complex systems

# STAGE 1:PREPARATION

## *DEFINE & CONFIRM COMMITMENT WITH NEEDED INFORMATION*

### ❑RESPONSIBILITIES OF THE OWNER

- **Ensure the goal setting with decision makers occurs before the commencing of project**
- **Assign project manager-oversee the EE project and as the key point throughout the process**
- **Create a project team**
  - cross functional to enable timely decision making
- **Compile key facilities data & information**

# STAGE 2:DEVELOPMENT

## *SELECT ESCO & ASSESS OPPORTUNITY*

Experiences in EPC Projects /Track Records in energy services

Financial Strengths

Ability to secure financing & ensure sustainable operations

Management capacity in energy services

Technical Competency & Expertise

- TO CREATE A STRATEGIC PARTNERSHIP
- SELECTED & TO BE INVOLVED IN THE PROJECT DEVELOPMENT STAGE

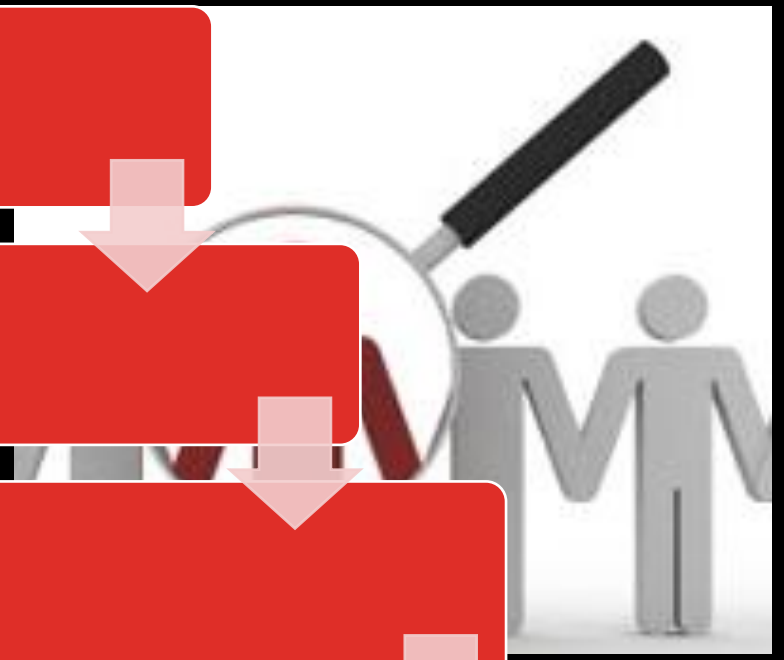
# ESCO SELECTION PROCESS

Release RFP/RFQ

Review responses

Interview shortlisted ESCOs

Select team & sign letter of intent with the ESCO



# INFORMATION IN RFP/RFQ

- To assemble the team
- To prepare for the selection process

- Key information
  - ✓ Project goals & investment criteria
  - ✓ Site information(summary)
  - ✓ Procurement process & timeline
  - ✓ Project team requirements-competency, skills & organizational structure
  - ✓ Expected response contents & format
  - ✓ Evaluation process & criteria
  - ✓ Project development process & expected timeline

# APPOINTMENT OF THE ESCO

- Appointment to implement EPC projects
  - ✓Approval to conduct detailed energy audit at ESCO's own costs
  - ✓Access to energy data, information and selected facilities

**The commercial commitment to sign EPC contract will subject to the findings of detailed energy audit by the ESCO**

# DETERMINE THE METHOD OF FUNDING

- THE APPOINTMENT OF ESCO MEANS A COMMITMENT TO IMPLEMENT THE PROJECT

- TO CONFIRM THE COMMITMENT OF THE FUND SOURCING METHOD & FUNDING PARTY
  - Owner(internal/external); or
  - ESCO

- WALK-AWAY FEE IF THE OWNER/ESCO UNABLE TO SECURE THE FUND FOR PROJECT IMPLEMENTATION

# FUNDING OPTIONS FOR ENERGY SAVING PROJECTS?

## INTERNAL

CONVENTIONAL PROCUREMENT

## EXTERNAL

LOAN

GRANTS

ENERGY PERFORMANCE CONTRACTING
Performance Guarantee Model

## EXTERNAL & BY THIRD PARTIES

PUBLIC PRIVATE PARTNERSHIP

ENERGY PERFORMANCE CONTRACTING
Shared Saving Model

ENERGY PERFORMANCE CONTRACTING
Special Purpose Vehicle

# CONDUCT DETAILED ENERGY/INVESTMENT GRADE AUDIT(IGA)

- With agreed document to implement findings if feasible technically & financially
- To follow owner-defined investment criteria for energy saving measure recommendations
- Site constraints
- Expected deliverables
- Ownership of the work
- Owner & ESCO commitment in the audit process
- Detailed audit schedule
- **Details of walk-away fee**

# DELIVERABLES OF IGA

- Energy performance baseline data & analysis
- Total energy saving potentials with detailed breakdown of minimum guaranteed performance
- Cost for each energy saving measure proposed
- Detailed investment costs to cover
  - Equipment & installation
  - O&M
  - Spare parts
- M&V plan & facilities
- Detailed investment proposals
  - Minimum guaranteed energy cost savings
  - ROI/IRR
  - Options of funding(Normal procurement/EPC)
  - EPC Shared saving
    - sharing % by each party
    - Contract period
    - Draft EPC contract

# KEY PROVISIONS IN CONTRACT DOCUMENT(1)

**WHAT IS GUARANTEED?**

- Minimum expected savings
- Measurement, Calculation & Verification of saving methods
- Conditions applied if less saving achieved & vice versa

# KEY PROVISIONS IN CONTRACT DOCUMENT(2)

Cost saving measurement with significant changes in operations

Responsibilities of the ESCO & Owner during contract period

Maintenance, use, modification/removal of equipment installed by the ESCO/ Owner

If the equipment installed lost/damaged

Guarantee of losses and liabilities by the ESCO-Owner

# STAGE 3: IMPLEMENTATION

EXECUTE THE EPC CONTRACT

IMPLEMENT FINAL PROJECT SCOPES

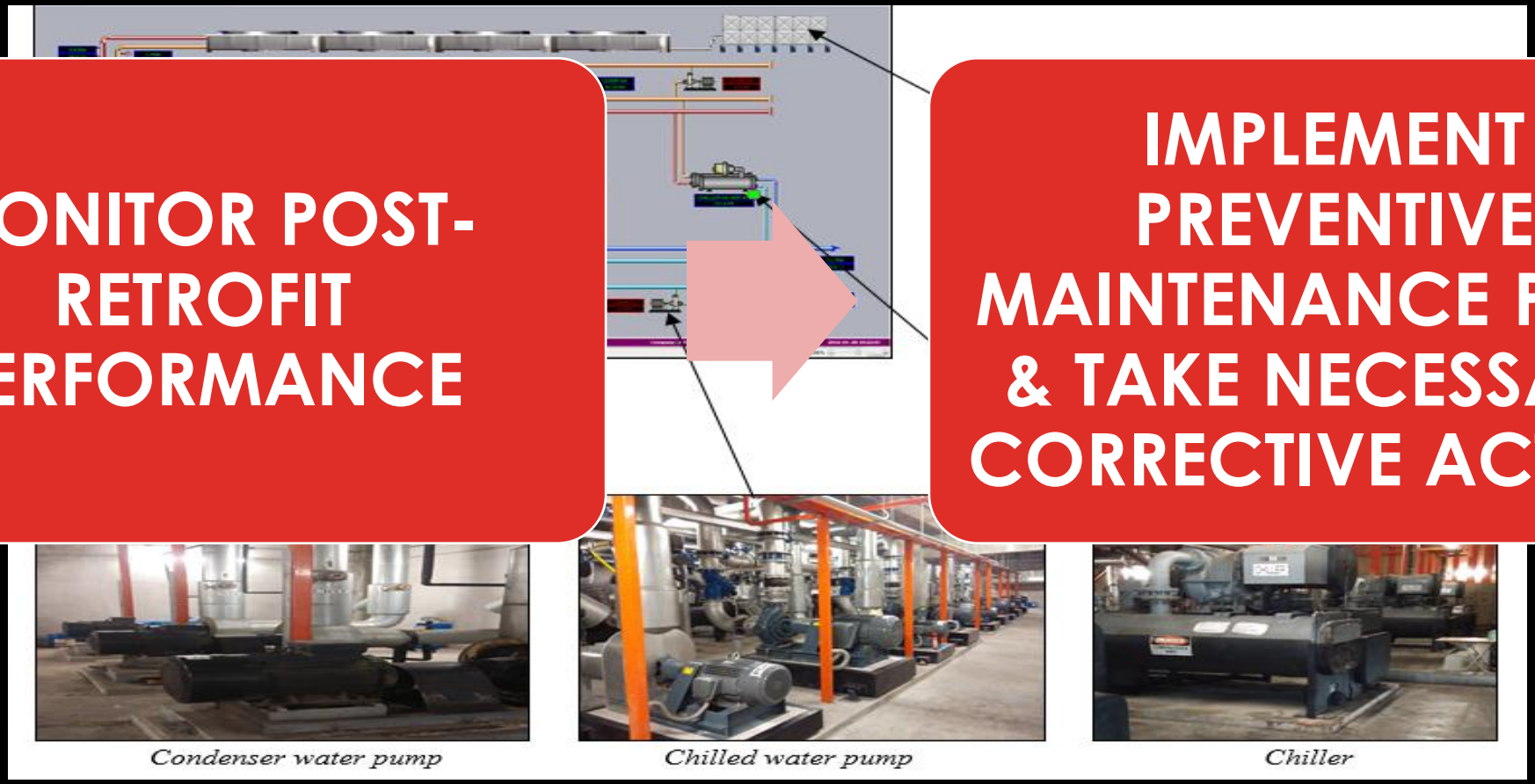
COMMISSION ALL INSTALLED & IMPROVED EQUIPMENT FOR IMPACTED SYSTEM

STAFF TRAINING & UPDATING OF O&M DOCUMENTS

# STAGE 4: MEASUREMENT & VERIFICATION

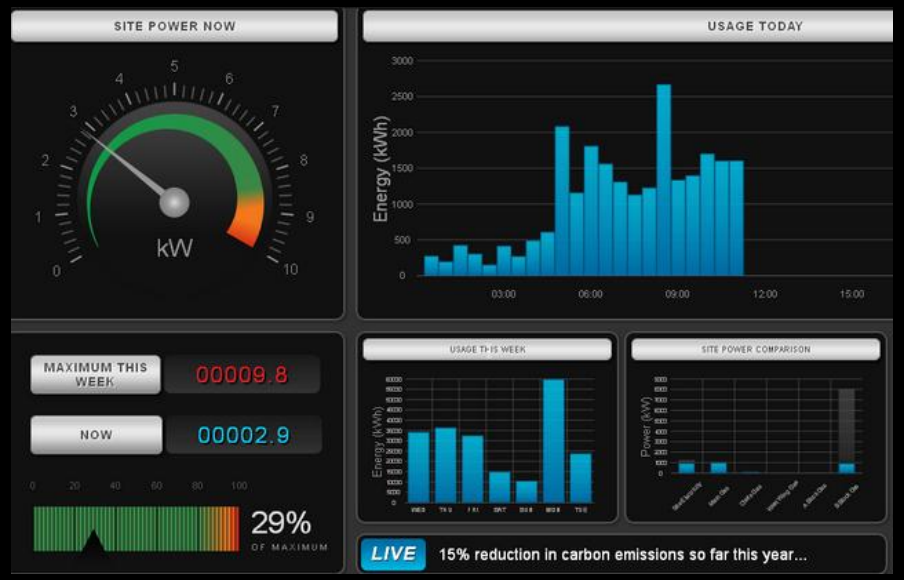
MONITOR POST-RETROFIT PERFORMANCE

IMPLEMENT PREVENTIVE MAINTENANCE PLAN & TAKE NECESSARY CORRECTIVE ACTION

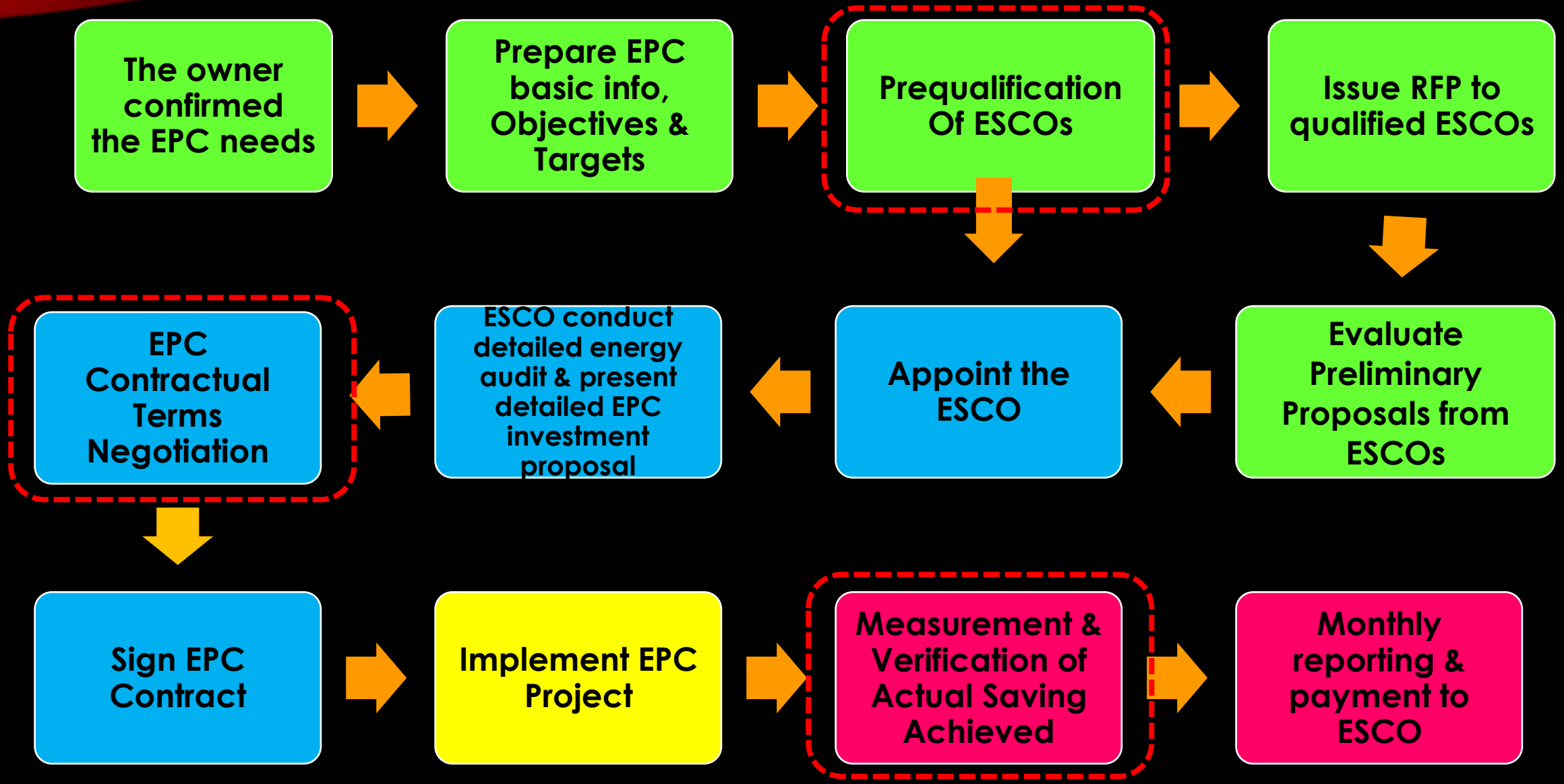


# FACTORS SHOULD BE CONSIDERED FOR M&V IN EPC CONTRACT TO REDUCE DISPUTE

- Commitment from Client
- Factors Affecting Savings Performance
- Evaluating Savings Uncertainty
- Minimum Operating Conditions
- Energy Prices
- Verification by a Third Party
- Baseline Adjustments (Non-Routine)
- Balancing Uncertainty and Cost



# SUMMARY OF A WORKABLE EPC BUSINESS PROCESS FLOW : DIRECT APPOINTMENT/OPEN TENDER



# KEY FEATURES & SUCCESS FACTORS IN EPC

Energy Cost savings based on ACTUAL & MEASURED data- before & after

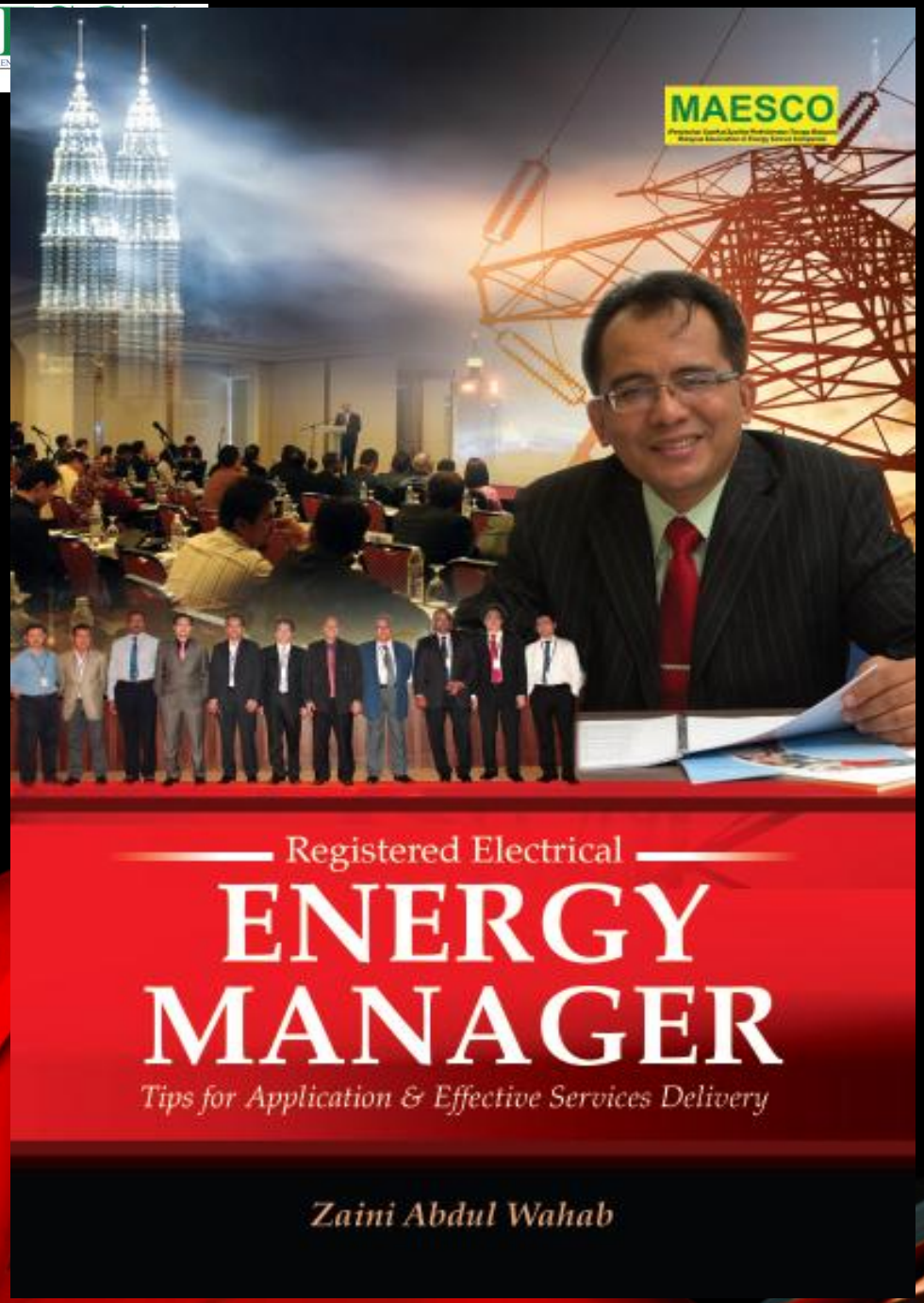
CAPABLE ESCO

COMPREHENSIVE EPC Contract Document

UNDERSTANDING of the how EPC works & it long term benefits by facilities owners

TRUST & TRANPARENCY in strategic partnership to reduce business cost

**Commitment to get FASTER results!**

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