

**Guidelines for the Accreditation of Energy Services Companies  
(ESCOs) under the ESCO Accreditation Scheme**

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## **1.0 Introduction**

### **1.1 Need for ESCO Accreditation**

Energy efficiency development is well recognised as the main stay in enhancing the energy security, productivity and environmental sustainability of most economies, particularly developing economies. To ensure strong achievement in energy efficiency, a strong and vibrant energy services sector is a prerequisite. Hence, the energy service sector is a strategic and emerging sector with significant growth potential in Singapore and the region. The development of this sector serves to expand the general service sector, underpins economic development through enhancing cost competitiveness and at the same time strengthens Singapore's energy security and environmental sustainability.

The energy services sector is also a natural segment of the knowledge economy, providing sustainable environmental benefits. It paves the way for Singapore's development towards a developed economy.

For the purpose of this document, an ESCO is a company dedicated to the provision of energy efficient technology and services including financing, design, implementation and management of projects.

In this respect, an ESCO Accreditation System is an important market development measure for Singapore. The establishment of an accreditation scheme may lead to the following benefits:

- Development of professional and qualified ESCOs and energy engineers;
- Enhance the standing of ESCOs, and in particular energy auditing services;
- Support services procurement and selection procedures; and
- Support public sector incentive schemes in the promotion of energy efficiency.

### **1.2 Purpose of Guidelines**

The aim is to establish clear and objective criteria for the assessment and accreditation of ESCOs. It serves to establish a Register of accredited ESCOs and enhance the professionalism of ESCOs' practices. This streamlines the procurement process and reduces overall tendering cost to clients who intend to engage such services.

These guidelines form part of a larger framework to accredit the full range of energy services. The overall objectives are to enhance professionalism and quality of services offered by ESCOs. This, in turn, leads to confidence in the energy services sector and hence promotes the growth of the sector.

## **2.0 Scope and Types of Accreditation**

### **2.1 Scope of Accreditation**

The accreditation scheme shall apply to the provision of energy auditing services by an ESCO with respect to Level III energy audit<sup>1</sup> and/or implementation of energy efficiency projects in the following areas:

- Building sector;
- Industry sector; and/or

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<sup>1</sup> More information on Level III energy audits may be found in Annex 1.

- Specific systems or processes (e.g. centralised chilled water system for space and/or process cooling, air distribution systems such as air handling units and fan coil units, lighting, compressed air system, boilers, pumping system, power generation).

An Operating System Efficiency report is not considered as a Level III energy audit report.

## 2.2 Types of Accreditation

### a) Full accreditation:

- It is applicable for existing ESCO that has been in operation for more than 3 years;
- The maximum accredited period is 3 years, whereupon a renewal shall be sought.

### b) Provisional accreditation:

- It is applicable only for newly formed ESCO that has been in operation for less than 3 years;
- The maximum accredited period is 1.5 years, whereupon a renewal shall be sought;
- An ESCO may only be provisionally accredited for a maximum of 3 years (i.e. only one renewal is allowed per ESCO), whereupon the ESCO shall seek full accreditation. See Figure 1 for illustration.

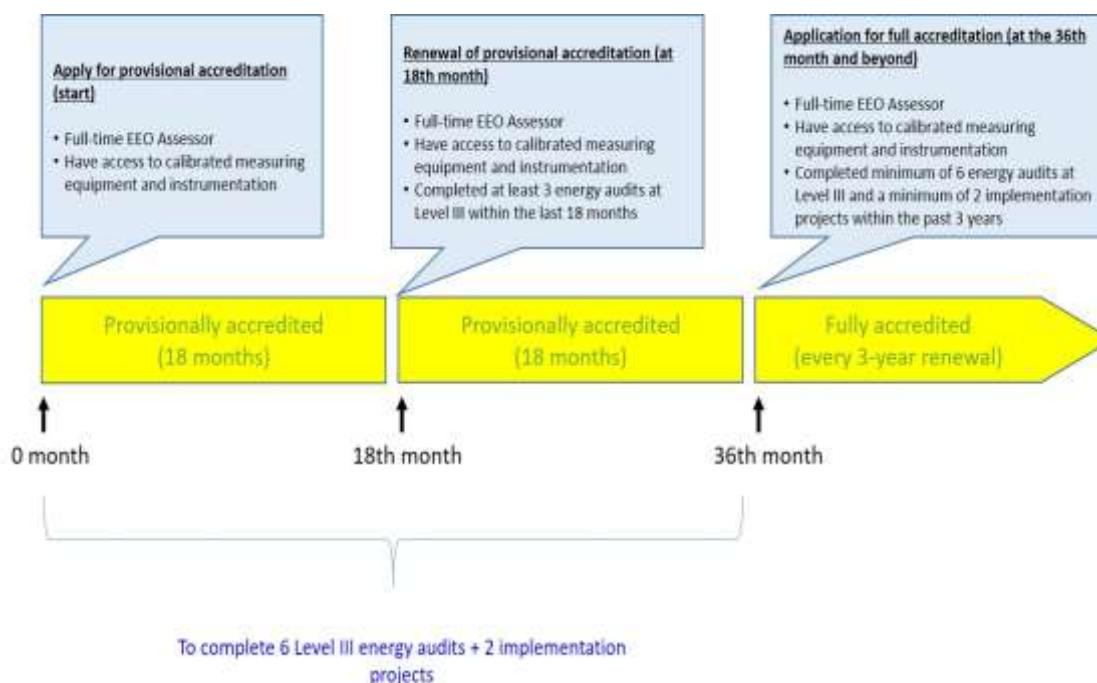


Figure 1: Illustration on how a newly formed ESCO may progress towards full accreditation

## 3.0 Qualifying Criteria for Accreditation

### 3.1 General Criterion

The Applicant must be a legal entity registered in Singapore.

### 3.2 Specific Criteria for Full Accreditation

In addition to the general criteria, an ESCO looking to be fully accredited shall have:

- 1) completed a minimum of **6 energy audits** at Level III and a minimum of **2 implementation projects<sup>2</sup>** within the past three years. To encourage ESCOs to take on projects in the industrial sector, 1 industrial sector audit/project would be considered equivalent to 2 audits/projects. This excludes industrial systems that are common to commercial sector (e.g. chilled water system for space cooling). The ESCO may only use a maximum of 2 industrial sector audits/projects to reduce the number of audits/projects required;
- 2) under its full-time employment a minimum of **1 Energy Efficiency Opportunities (EEO) Assessor<sup>3</sup>** as the main person to oversee, manage and carry out energy services work; and
- 3) access to **calibrated equipment and instrumentation** to carry out energy audit, as described in *Annex II*.

### 3.3 Specific Criteria for Provisional Accreditation

In addition to the general criteria, an ESCO looking to be provisionally accredited shall have:

- 1) under its full-time employment a minimum of **1 EEO Assessor** as the main person to oversee, manage and carry out energy services work; and
- 2) access to **calibrated equipment and instrumentation** to carry out energy audit, as described in *Annex II*.

## 4.0 Application

### 4.1 General Information

Applicants are advised to thoroughly read and check the guidelines before submitting an application.

NEA accepts no responsibility for any expenses, loss or damage which may arise from the evaluation process, interpretations and preparation made by the Applicant including the information contained therein, or omission from the submitted documents.

All materials and information submitted with the application will be held in strict confidence and will be used for assessment purposes only. By applying for ESCO Accreditation, Applicant allows and authorises the sharing of submitted information and documents amongst and within the ESCO Accreditation Committee.

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<sup>2</sup> Implementation projects include project management, M&V and analysis, and Energy Performance Contracting

<sup>3</sup> For more information on EEO Assessor scheme, please visit [www.eeo.sg](http://www.eeo.sg).

The application form is available for download at <https://www.nea.gov.sg/programmes-grants/schemes/esco-accreditation>.

**A full and complete submission with all the required details and relevant documents must be submitted to [Muhammad HAFIEZ@nea.gov.sg](mailto:Muhammad_HAFIEZ@nea.gov.sg) and [ENG Xue Er@nea.gov.sg](mailto:ENG_Xue_Er@nea.gov.sg).** The Accreditation Committee shall not evaluate any partial and incomplete submission, including failure to submit the necessary documents required.

Any inquiry or clarification with respect to an application must be made via email to NEA at the same address as for the submission of application.

#### 4.2 Quarterly application cycle

Applications are evaluated and approved by the Accreditation Committee quarterly. Applicants are expected to submit the new/renewal application forms and all required documents by the end of the 1<sup>st</sup> month of the quarter, in order to be considered for approval by that quarter.

Application Cycle	Submission Deadline	Notification of Approval
First quarter	31 January	End March
Second quarter	30 April	End June
Third quarter	31 July	End September
Fourth quarter	31 October	End December

#### 4.3 Renewal Applications

A provisional accreditation and full accreditation award shall be valid for a period of 1.5 year and 3 years respectively, whereupon a renewal application shall be submitted with the relevant documentation, otherwise the accreditation shall deem to have lapsed.

Renewal applications shall be submitted in the correct application cycle, for approval prior to the expiry of the accredited period.

In any case where renewal is not completed prior to the expiry of the accredited period, the ESCO may be removed from the registered list until further action to secure accreditation has been taken by the ESCO.

#### 4.4 Interview

Applicants who have met the qualifying criteria for accreditation may be invited to an interview by the Accreditation Committee. The objective of the interview is to evaluate the technical capability and ensure ESCOs maintain their professionalism and quality of services.

#### 4.5 Evaluation

All applications will be assessed based on the following:

- expertise, capability and track records of the ESCO in the respective sectors and categories indicated in the application; and
- qualifications and experience of the EEO Assessor.

Details of the evaluation criteria and procedure flow chart are provided in Annex II.

## 5.0 Additional Information

### 5.1 Accreditation Certificate and Register of Accredited ESCOs

Upon successful application, an accreditation certificate will be issued to the ESCO. The ESCO will also be listed on the Register of Accredited ESCOs.

The Register of Accredited ESCOs is made public<sup>4</sup> and available for use by private and public organizations in selecting and engaging ESCOs for energy efficiency work or projects.

### 5.2 Code of Practice / Conduct

Accredited ESCOs shall conduct their business in a professional and ethical manner according to the relevant government laws and regulations.

An accredited ESCO may have the accreditation withdrawn or suspended for the following reasons:

- a) failure to complete any energy audit and/or implementation project;
- b) consistently delivering poor quality work;
- c) financially insolvent;
- d) malpractice and/or fraud;
- e) major change to the company structure and/or personnel (e.g. no EEO Assessor);
- f) submitted misrepresented information.

The Accreditation Committee has the right to remove an accredited ESCO from the Register of Accredited ESCOs; or temporary suspend any member on the register for a period deemed appropriate.

### 5.3 Obligation and Additional Requirements from Accredited ESCOs

An accredited ESCO shall be obliged to inform NEA of any major change in the company. Such major changes may involve the company's ownership, financial status, structure, and/or movement of its EEO Assessors, **within a period of one month**. Failure to do so may result in the suspension of the company from the Register of Accredited ESCOs.

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<sup>4</sup> At <https://www.nea.gov.sg/programmes-grants/schemes/esco-accreditation>

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# **ANNEXES**

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## **General Information on Energy Audits**

### 1.0 Definition of Energy Audit

An energy audit is carried out in a building or facility with the objective of improving its energy efficiency. It is an investigation involving a detailed analysis of energy flows into and out of a system. The aim is to identify and quantify those areas where improvements can be made and estimate the amount of savings achievable. These may include improvements to facility design and installation, operation and management.

Energy audit is commonly performed by ESCOs to improve the energy efficiency of a facility. Energy auditing plays a vital role in the success of any energy efficiency improvement project and/or energy performance contract (EPC).

### 2.0 Scope of Work of Energy Audits

There are several types and levels of energy audit performed by ESCOs. The general scope of work expected from ESCOs in performing different levels of energy audits work is described as follows:

#### 2.1 Level I Audit – Preliminary or Walkthrough

Level I audit, sometimes referred to as preliminary audit, allows the overall energy consumption of the facility to be evaluated. It is expected to give an overview, providing a rough estimate of savings and costs.

This audit is usually designed to determine if the level of energy use of a facility has been reasonable or excessive. It provides initial baselines of the facility so that the effect of energy measures may be monitored and evaluated. It may or may not involve site visit. The information given to or gathered by the ESCO needs to be sufficient to enable the overall efficiency of the facility to be ascertained.

The scope of work for Level I audit is as follows:

- a) Gather facility wide energy use on a monthly and/or annual basis;
- b) Derive performance indicator;
- c) Broad conclusions and recommendations; and
- d) Written report.

#### 2.2 Level II Audit – Standard

Level II audit identifies the source of energy to a facility, the amount supplied and what the energy is used for. It also identifies areas where savings may be achieved, recommends measures to be taken, and provides a statement of costs and potential savings. It also involves short term metering and logging.

The expected scope of work for Level II audit is as follows:

- a) Follow-up from Level I audit and report where available;
- b) Facility investigation;
- c) Detailed facility and systems' energy input and energy use;
- d) Reconciliation of energy accounts with loads;
- e) Variation on energy use on a month-to-month basis;
- f) Energy performance indicators;

- g) Recommend improvement work with indicative cost and saving;
- h) Implementation priority and plan;
- i) Align recommendations with client's energy program; and
- j) Written report and presentation.

### 2.3 Level III Audit – Comprehensive or Detailed

Level III audit provides a detailed analysis of energy usage, the savings that can be made, and the cost of achieving those savings. It may cover the whole facility or may concentrate on an individual item and/or system, such as a single industrial process or one of the services. It also involves long term detailed metering and data logging.

The expected scope of work for Level III audit is as follows:

- a) Follow-up from Level II audit and report where available;
- b) Define facility / process audited;
- c) Facility / process investigation and detailed measurements;
- d) Detailed metering down to half-hourly time interval where required;
- e) Derive target energy use and develop baseline model where relevant;
- f) Detailed recommendations including costs, savings and accuracy of estimates;
- g) Detailed investment plan;
- h) Suggest refinement to energy policy and energy program; and
- i) Written report and presentation.

### 3.0 Documentation

All energy audit reports and subsequent implementation reports shall be prepared in accordance with requirements specified by established international standards and codes. References shall be made but not limited to the following documents for this purpose:

- a) AS/NZS 3598:2000 – Energy Audits;
- b) ASHRAE RP-669, SP-56: 2004 – Procedures for Commercial Building Energy Audits;
- c) CIBSE TM22:1999 – Energy Assessment and Reporting Methodology; and
- d) Other equivalent international standards and codes.

A guideline for energy audit reports is available at

<https://www.nea.gov.sg/programmes-grants/grants-and-awards/energy-efficiency-fund>  
for reference.

**ANNEX II**

**Evaluation Criteria and Procedure**

1.0 All applicants will be assessed based on the criteria listed below.

- a) Solvency of Applicant (i.e. the Applicant must be solvent and/or be backed by sound technical organization)
- b) Performance records on the following aspects of energy audit and implementation projects:
  - Building / facility energy audits;
  - Energy measurement and verification protocols;
  - Installation and project management;
  - Post-Implementation report of completed projects; and
  - Records of energy saving achieved (against guaranteed saving where relevant)
- c) Personnel competency of the EEO Assessor(s)
- d) Client satisfaction in Applicant's services
- e) System and Equipment Set-Up

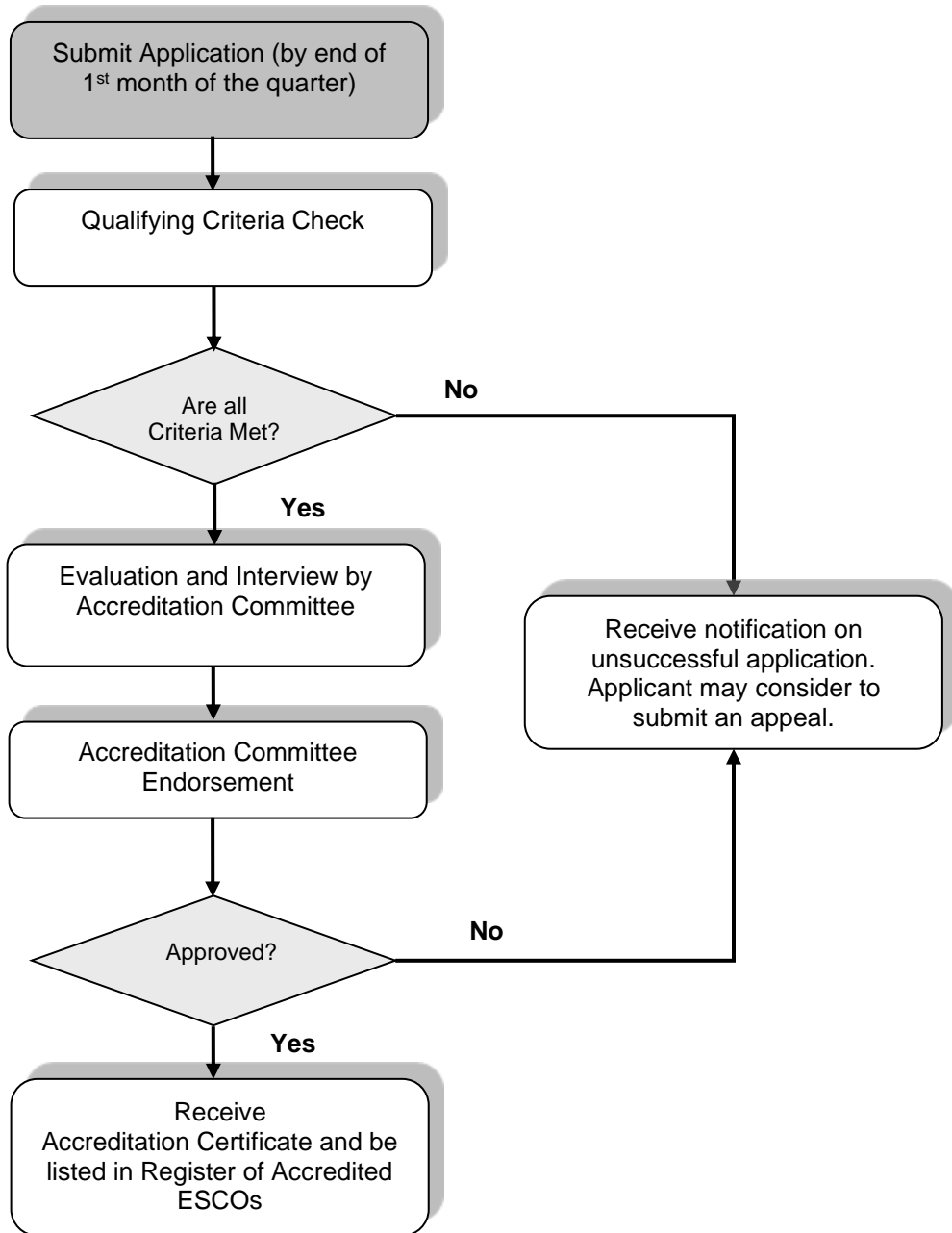
The Applicant should have access to, but not limited to, the following equipment and instruments to carry out a detailed energy audit and collect the required field data:

- Energy Meter
- Power Transducer
- Data Logger
- Ultrasonic Flowmeter
- Power Quality Analyser
- Current / Voltage Clamp Meter
- Pressure Indicator / Probe / Sensor
- Temperature Indicator / Probe / Sensor
- Humidity Level Indicator / Sensor

The expected frequency of calibration of equipment / instrumentation are as follows:

<b>Instrument</b>	<b>Frequency of calibration</b>
Thermistor Flow meter Power meter	Yearly
All other instrumentation	Depending on the validity of the calibration certificate

2.0 A flow diagram showing the evaluation procedure is shown below.



## APPLICATION FORM FOR ACCREDITATION OF ENERGY SERVICES COMPANY

### Explanatory Notes

Please read the *Guidelines for the Accreditation of Energy Services Companies (ESCOs) under the ESCO Accreditation Scheme* thoroughly before completing the Application Form.

All applications shall be made on a voluntary basis. In any case where renewal is not completed prior to the expiry of the accredited period, the company may be removed from the Register of Accredited ESCOs until further action has been taken to secure accreditation by the company.

**Please ensure that the submission is complete with all the required details and relevant documents.** The completed Application Form and all related documents shall be emailed to [Muhammad\\_HAFIEZ@nea.gov.sg](mailto:Muhammad_HAFIEZ@nea.gov.sg) and [ENG\\_Xue\\_Er@nea.gov.sg](mailto:ENG_Xue_Er@nea.gov.sg). Any incomplete submission, including failure to submit the necessary documents required, will not be evaluated.

All information and documents submitted will be kept confidential. By applying for ESCO Accreditation, the Applicant allows and authorises the sharing of submitted information and documents amongst and within the ESCO Accreditation Committee.

## **GENERAL INFORMATION**

- Name of Company :
- Date of Incorporation :
- Company Address :
- Tel No. :
- Website :
- Name of EEO Assessor :
- Tel No. :
- Email :
- Sector(s) of Work :  Building sector  
 Industrial sector (Please specify the sub-sector)
- Specific System(s)/Process(es) :  Chilled water system (space/process cooling)  
 AHUs and FCUs  
 Lighting  
 Ventilation  
 Compressed air system  
 Heating systems (e.g. boilers)  
 Pumping  
 Power Generation  
 Others (Please specify)
- Type of Application : New Application / Renewal \*
- Type of Accreditation : Full / Provisional \*

\* Pls delete whichever is unnecessary.

## **OTHER INFORMATION TO BE SUBMITTED**

- a) Appendices 1A and 1B listing the energy audit and implementation projects completed by the company
- b) Appendix 2 – List of Equipment and Instruments Form
- c) Organisational structure of company showing details of Director/s, Partner/s, Manager/s and Senior Staff providing names, position, qualification, experience and other firms with whom they are currently associated
- d) A copy of the ACRA business profile
- e) Past two years' audited annual financial (profit and loss) statements, balance sheet and certified statement of capital net worth
- f) Three customer references from past projects, including cost and cost savings achieved (against guaranteed saving)

**DECLARATION**

1. I declare that the facts stated in this application and the accompanying information are true and correct to the best of my knowledge and that I have not withheld / distorted any material facts.
2. I hereby authorise NEA to make direct enquiries and references to any person, firm, public officer or organisation named in the application to verify the information submitted herein or relating to the competence and general reputation of my organisation.
3. I will make my representative or myself available to be interviewed as and when required by NEA at a time agreed by both parties with respect to my application for accreditation.
4. I have clearly indicated that all information rendered is to be treated in the strictest confidence.
5. I agree that in the event that my organisation is found to be in breach of any code of conduct/practice, NEA reserves the right to either suspend or withdraw my accreditation from the Register of Accredited ESCOs for a period determined by NEA.

\_\_\_\_\_  
Signature of Authorised Person

\_\_\_\_\_  
Name of Company and Stamp

\_\_\_\_\_  
Authorized Person's Full Name

\_\_\_\_\_  
Designation

\_\_\_\_\_  
Date

**APPENDIX 1A**

**LIST OF ENERGY AUDITS COMPLETED BY THE COMPANY**

For new or renewal applications of Full Accreditation, the company shall submit at least 6 level III energy audit reports and 2 implementation projects where the energy savings are measured and verified. The energy audits and implementation reports must be completed within the past 3 years.

For renewal of Provisional Accreditation, the company shall submit at least 3 level III energy audit reports. The energy audits must be completed within the past 18 months.

All reports should include the calibration certificates of all the equipment used for the project.

	Project Title & EEO Assessor Assigned	Name of Client & Contact Info	Date of Completion (MMM/YYYY)	Project Cost (S\$)	Estimated Savings			
					Energy Savings (kWh)	Energy Cost Savings (\$)	Proposed Investment Cost (\$)	Payback Period (years)
Eg.	Chiller plant retrofit at XXX Pte Ltd / Dr. XXX	Name and tel no. of contact person	Jan 2017	S\$1000,000	S\$200,000 (Act.)			
1								
2								
3								
4								
5								



6						
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**APPENDIX 1B**

**LIST OF IMPLEMENTATION PROJECTS COMPLETED BY THE COMPANY**

Please submit at least 2 implementation projects for new/renewal application for full ESCO Accreditation. Supporting documents should include the calibration certificates of all the equipment used for measurement and verification of the energy savings achieved.

	Project Title & EEO Assessor Assigned	Name of Client & Contact Info	Year of Completion	Project Cost (S\$)	Savings Achieved				
					Energy Savings (kWh)	Energy Cost Savings (\$)	Proposed Investment Cost (\$)	Payback Period (years)	% of Energy Savings at System Level
<i>Eg.</i>	<i>Chiller plant retrofit of XXX Pte Ltd/ Dr. XXX</i>	<i>Name and tel no. of contact person</i>	<i>2017</i>	<i>1000,000</i>					
1									
2									

**Note:** Add rows as necessary. \*Indicate Achieved or Estimated Savings.

**APPENDIX 2****LIST OF EQUIPMENT AND INSTRUMENT OWNED OR RENTED**

Please submit all calibration documents for all the equipment listed. If the equipment were rented, please provide the contract/invoices between the Applicant and the leasing company.

<b>No.</b>	<b>Description of Equipment</b>	<b>Model &amp; Brand</b>	<b>Type</b>	<b>Accuracy</b>	<b>Year Purchased</b>	<b>Country of Origin</b>	<b>Status of Calibration (Year last Calibrated )</b>
<i>Eg.</i>	<i>Ultrasonic Flowmeter</i>	<i>ADM6725 / FLUXUS®</i>	<i>Portable, Clamp On, 2 Channel</i>	<i>± 2%</i>	<i>2016</i>	<i>UK</i>	<i>2017</i>
1							
2							
3							
4							
5							
6							

**Note:** Add rows as necessary.

## **SUBMISSION OF DOCUMENTS**

Please check the boxes to indicate that the items below are included in the application.

<input type="checkbox"/>	Company's ACRA business profile
<input type="checkbox"/>	Audited annual financial (profit and loss) statements and balance sheet for the last two years and certified statement of capital net worth
<input type="checkbox"/>	Management organisation chart of company <i>(with details of Director/s, Partner/s, Manager/s and Senior Staff providing names, position, qualification, experience and other firms with whom they are currently associated)</i>
<input type="checkbox"/>	Customer reference for at least three past projects including investment cost and cost savings achieved (against guaranteed saving)
<input type="checkbox"/>	List of Energy Auditing and/or Implementation Projects Completed by the Company <i>(including endorsed soft copies of the reports as well as names and contact details of the clients)</i>
<input type="checkbox"/>	List of Equipment and Instruments Owned or Rented <i>(including calibration certificates, contracts and invoices showing the leasing of equipment and instruments)</i>