

Energy Efficiency Improvement Assistance Scheme (EASe)

APEC Workshop on Sustainable Energy Development in the Built Environment

14 Apr 09

Kwek Chin Hin
Resource Conservation Department
National Environment Agency



Presentation Outline

- Objective
- Funding Guidelines
- Updates on EASe



Energy Efficiency Improvement Assistance Scheme (EASe)

an
Energy Efficient Singapore
programme



- Objective

- Incentivise manufacturers and building owners and operators to carry out detailed studies on their energy consumption and identify specific areas for energy efficiency improvement



• Areas for Energy Efficiency Improvement

- Air-Conditioning Plants
- Lightings
- Mechanical Ventilation Systems



Funding Guidelines

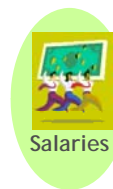
• Form of Assistance

- Grant Quantum

- Up to 50% of qualifying costs
 - capped at \$200,000 over a 5-year period

- Qualifying Costs

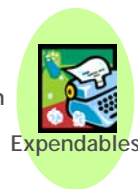
- Energy appraisal fees
 - Salaries
 - Instrumentation and Evaluation Tools
 - Expendables
 - Overheads
- Does not cover GST
- The cost of implementing the recommendations of the energy appraisal would not be supported under EASe



Salaries



Instrumentation
& Evaluation
Tools



Expendables



Overheads

Funding Guidelines

- **Eligibility Criteria**

- **Owner or operator of manufacturing facility or building**

- Must be a Singapore registered company
- Facility or building must be in Singapore

- **Energy Appraisal**

- Detailed appraisal must not have commenced at time of application
- Company has not signed any contract with the ESCO
- Preference for full facility appraisal. Partial appraisal for consumption > 30 MWh per day

Funding Guidelines

- **Eligibility Criteria**

- **Energy Audit Team**

- Local or foreign external consultants accredited under the Energy Services Company (ESCO) Accreditation Scheme by Energy Sustainability (ESU)



Or

- Experienced internal appraisal teams with good track record in carrying out projects of a comparable scale and scope

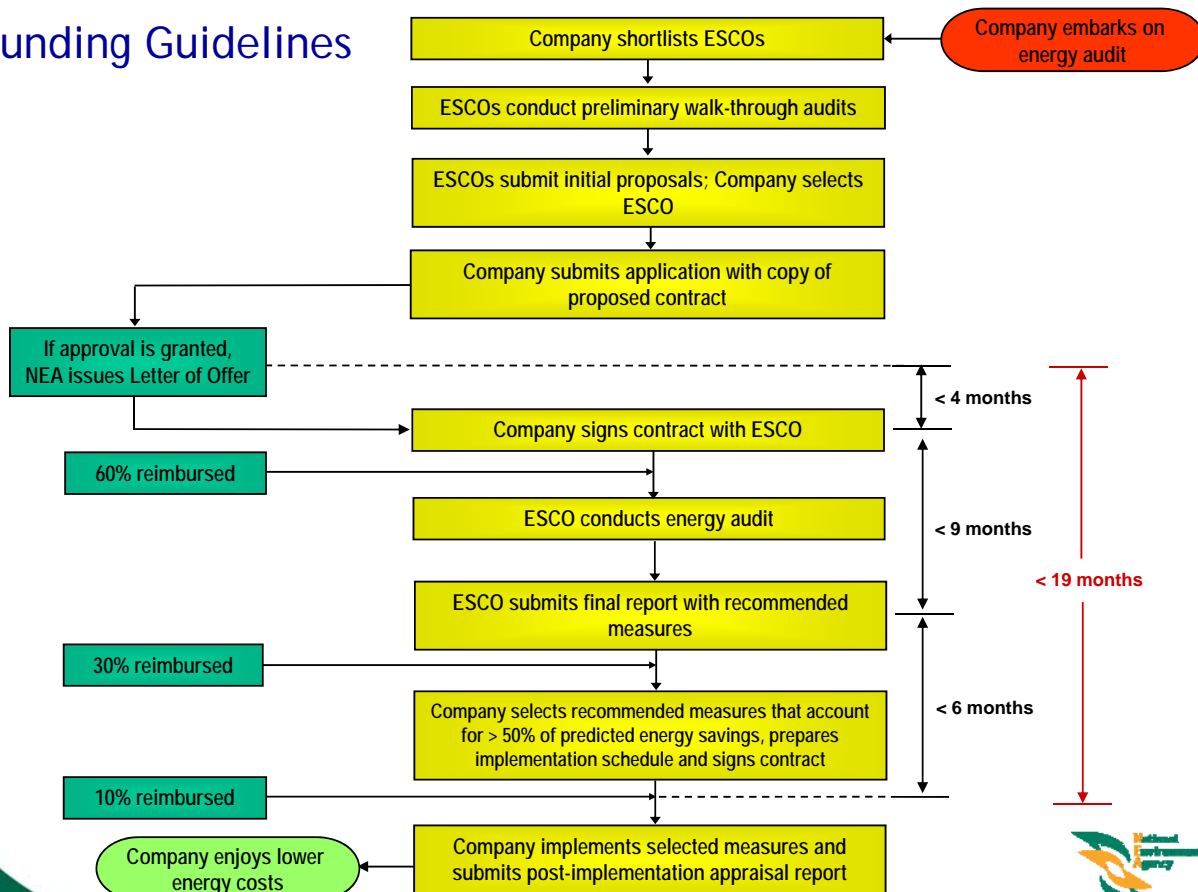
Register of Accredited ESCOs



<http://www.esu.com.sg/esco.html>



Funding Guidelines



Updates

- \$10 million incentive scheme introduced in April 2005
- 135 projects have been approved so far
 - 97 from the building sector
 - 38 from the industry sector
- Approved funding: \$3.6 million



Updates

- Total estimated annual energy savings (if all recommendations are implemented) is about 358,600 MWh or \$33.4 million
- \$1 spent on an investment grade audit potentially generates \$5 - \$10 in annual savings



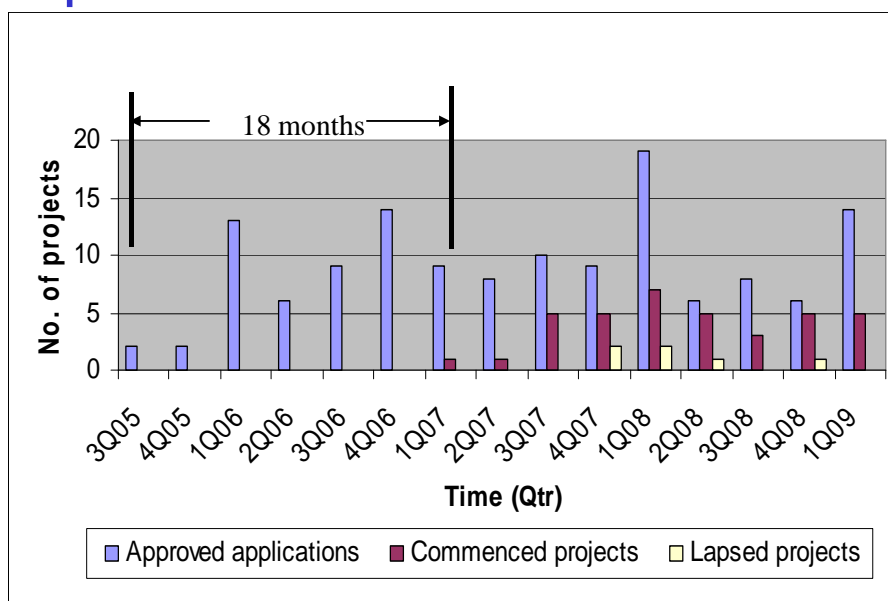
Updates

- So far, 37 projects have implemented energy savings measures
- Total implementation cost: \$44.8 million
- Total actual annual energy savings: 122,123 MWh or \$11.3 million



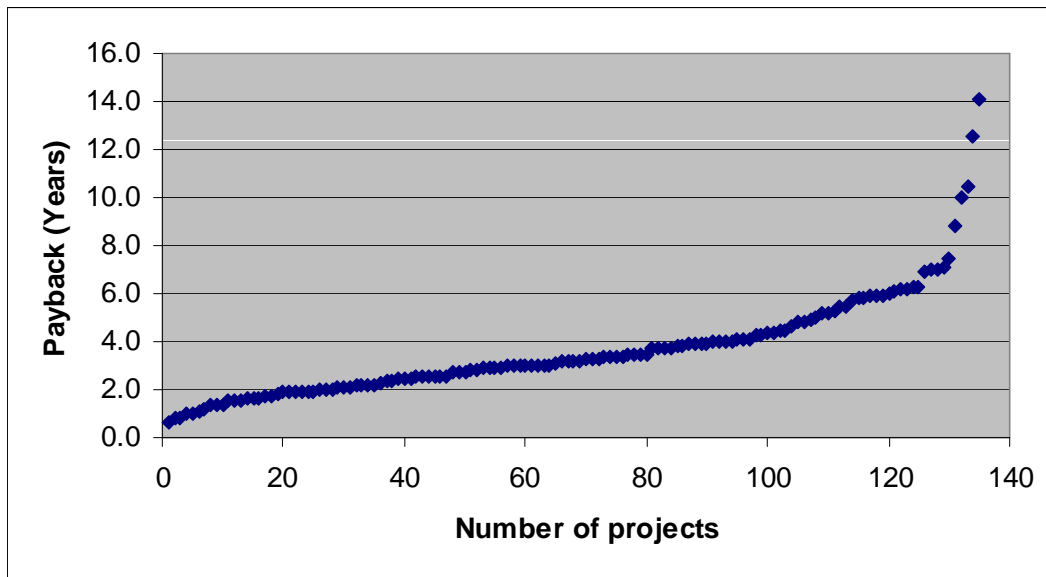
Updates

- **Implementation Status**



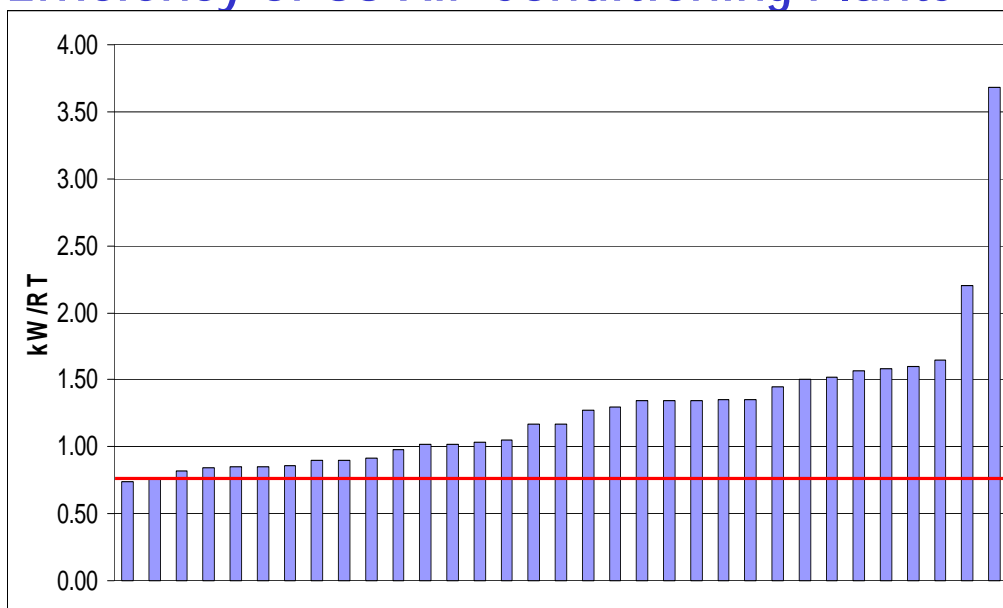
Updates

- Average Payback: 3.7 years



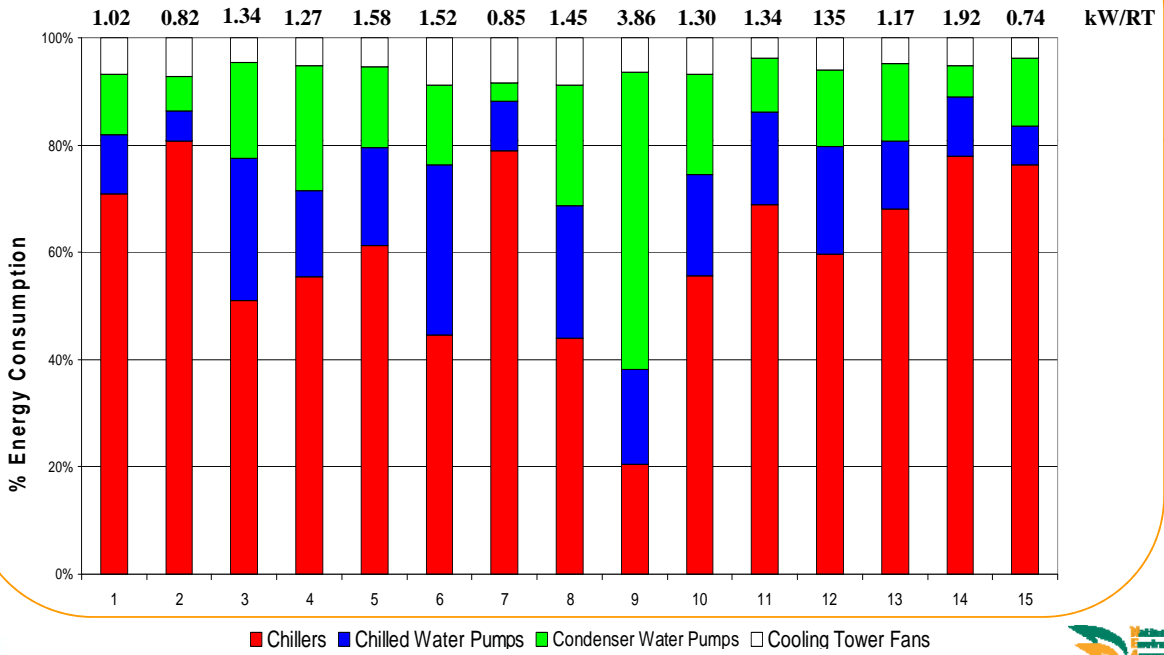
Updates

- Efficiency of 33 Air-Conditioning Plants



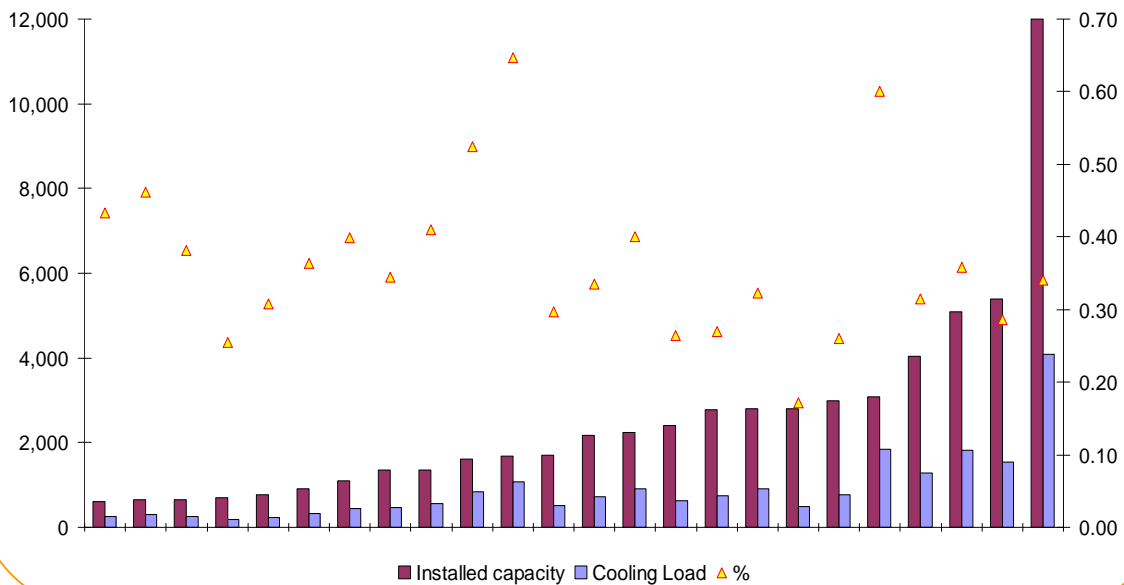
Updates

• Energy Consumption of 15 Air-Con Plants



Updates

• Installed Capacity vs Cooling Load



Updates

- **Examples of Successful Cases**

- **Singapore Oxygen Air Liquide Pte Ltd**

- Implementation cost: \$266,000
- Annual savings: 2,160MWh or \$324,000
- Payback period: < 1 year

- **Anchor Point Shopping Centre**

- Implementation cost: \$455,000
- Annual savings: 1,192MWh or \$250,000
- Payback period: < 2 years



Thank You

More information on

- Energy Efficiency Improvement Assistance Scheme (EASe)

is available at www.e2singapore.gov.sg

