Suruhanjaya Tenaga
Energy Commission

Energy Efficiency Incentive through Investment Tax Allowance (ITA) & Pioneer Status

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Presentation Outline

- Overview of Energy Efficiency Incentive
- Suruhanjaya Tenaga Technical Evaluation Process
- Technical Report Guideline
- Example Energy Efficiency ITA evaluation calculation
- Status ITA Application

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Overview of Energy Efficiency Incentive

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ELIGIBLE COMPANIES

Companies Providing Energy Conservation Services

- **Pioneer Status (PS) with tax exemption of 100% of statutory income for 10 years**
- **Investment Tax Allowance (ITA) of 100% on qualifying capital expenditure incurred within a period of 5 years to be utilized against 100% of the statutory income for each year of assessment (Through *Energy Performance Contracting (EPC) Services Activity*)**

Companies which incur capital expenditure for conserving energy for own consumption

- **ITA of 100% on qualifying capital expenditure incurred within a period of 5 years to be utilised against 100% of the statutory income for each year of assessment**

ALL APPLICATION OF EE INCENTIVES SHALL APPLY THROUGH MIDA

MIDA
MALAYSIAN INVESTMENT DEVELOPMENT AUTHORITY

Overall Application Flow

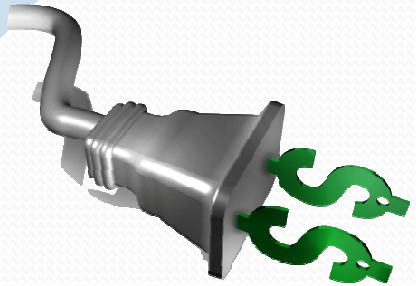
MIDA receives EE/JA form from applicant

MIDA forwards 1 copy of EE/JA form and Technical Report to Suruhanjaya Tenaga (ST) for technical evaluation

MIDA receives technical evaluation report from ST

MIDA prepares report and present to the National Committee on Investment (NCI)

MIDA sends approval / rejection letter to company



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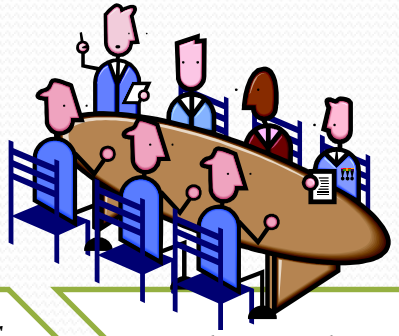
Suruhanjaya Tenaga Technical Evaluation Process

Process Flow

Received Application Form & Technical Report from MIDA



If necessary, call for presentation and Technical discussion

Submit evaluation report to internal committee

Send recommendation letter to MIDA

To ensure a smooth evaluation process, all applicants are advise to prepare all related information such as assumption used, operation hours, efficiency data, calculation methodology and datasheet of the equipment completely before hand.

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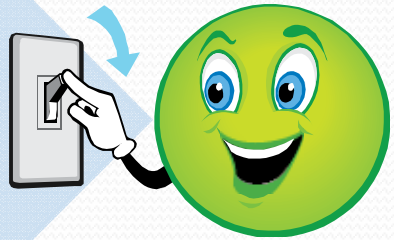
General Criteria of EE ITA Evaluation

Energy Efficiency

- Ex 1: Chiller replacement with high efficient chiller
- Ex 2: Application of VSD at pump and motor



Energy Conservation

- Ex 1: Heat pump application
- Ex 2: Heat Recovery
- Ex 3: Co-Generation

ROI ≤ 10 Years

For Lighting type of project, under LHDN and MOF code of definition, it was not categorized as CAPEX as the nature of lighting to be replaced yearly basis (consumable), thus, lighting will not be considered under the existing ITA.

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Technical Report Guideline

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Part A: Project site and summary of the Project

Name and location of plant/facilities

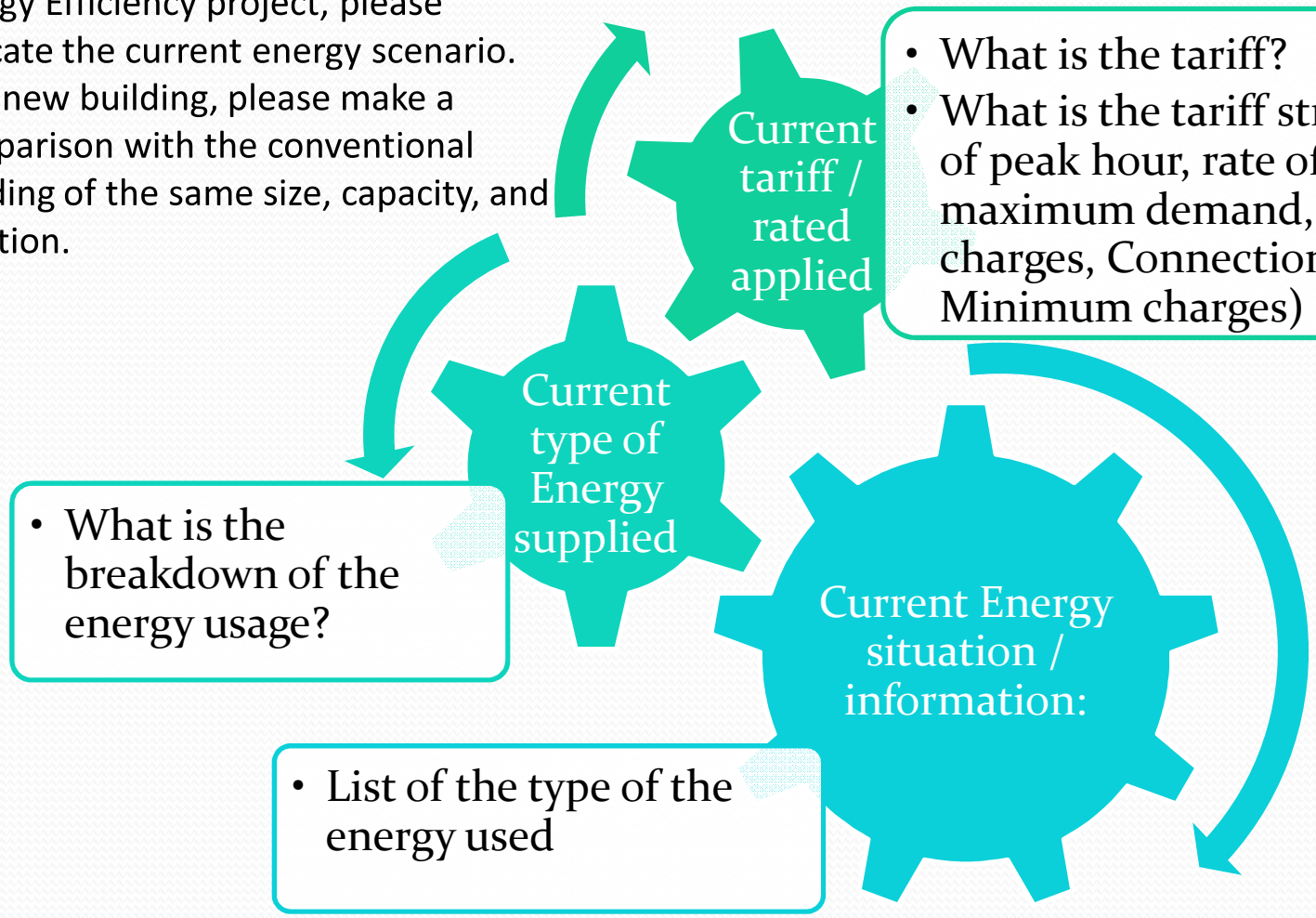
- What is the name of the plant / facilities?
- Where is the location of the plant / facilities? (Complete address)
- What is the nature of business of the plant/facilities?

Brief Description of the Project

- What is the project?
- What is the objective of the project?
- What is the project implementation and completion date?
- Modification/improvement of existing equipment or systems
- Introduction of new technologies or applications/ replacement of old equipment with more high efficient technologies or systems.

Part B: Project site energy detail

•For existing building implementing Energy Efficiency project, please indicate the current energy scenario.
•For new building, please make a comparison with the conventional building of the same size, capacity, and function.



Part B: Continue

Current energy consumption

- What is the monthly and annual consumption? (ie. kWh/mmBTU/RTH & RM)
- What is the monthly maximum demand? (kW, RT and RM)
- What is the operating hour of the electricity, fuel (Natural gas) and chilled water (GDC)?

Current plant / equipment energy performance such as efficiency level

- For example: for a chiller, what is the kW/RT or COP?
- For building, what is the kWh/m2/year?

Part C: Project details

- What is the detail of the technologies / equipment? (make, capacity, application, origin)

Description of the technologies / equipment to be applied

- What does it do?
- How will it increase efficiency / conserve energy at the premise?
- What is the energy efficiency principal of the equipment?

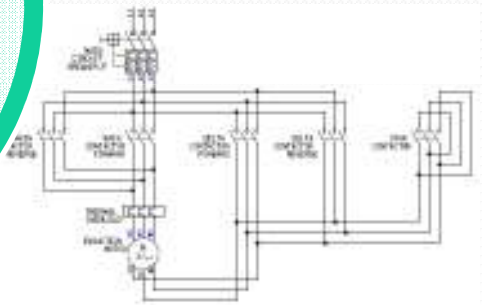
Function of each equipment / devices contributing to increase efficiency / conserve energy

Part C: Continue

Operational principal / system applied to improve efficiency and to conserve energy

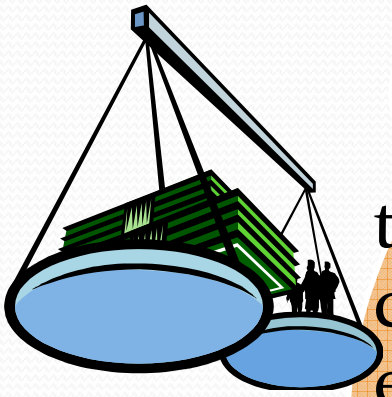
- How does it operate?
- How does it applied to the existing system?
- What will be the effect/changes to the operating hours of the existing electricity, fuel (Natural gas) and chilled water (GDC)?

Schematic drawing



- Where will the equipment be installed? (include layout of the premise)
- Single Line Diagram of the electricity supply of the premise & equipment

Part D: Project Cost details

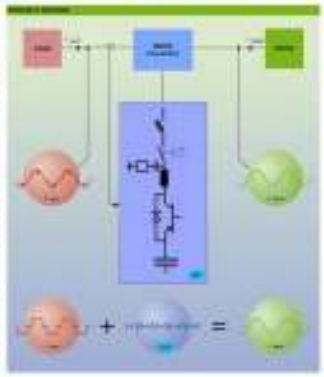


Project Cost

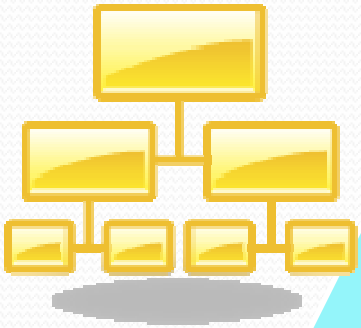
total costs and the itemized cost of the project covering each equipment and its components/parts involved in the Project, installation, operating and maintenance. (In table form)

Part E: Project energy efficiency & conservation potential details

- Types of energy to be saved. (electricity, diesel, fuel, etc)
- Comparison of energy consumption data and efficiency level between baseline with estimated saving in table form
- Method and calculation of energy conservation potential (Detail calculation on saving and methodology used, please also indicate all assumptions eg. Operation hours, tariff)
- Estimated energy cost savings: Potential cost savings from electricity and/or fuel energy
- Payback period/Return of investment (ROI) from the project



Part F: Project implementation plan



The personnel/people who will be involved in the implementation of the project: Internal personnel / external (Contractor/consultant)

Briefly on steps and duration to be taken to implement the project. (Project schedule)

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Example Energy Efficiency ITA evaluation calculation

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Example ITA Evaluation Calculation

Item	*System Chiller (Old)*	*System Chiller New*
Cooling Capacity	80 tons	80 tons
Power Capacity	84 kW	39 kW
Efficiency LEevel	1.2 kW/RT	0.65 kW/RT
Daily energy usage (Operation period = 24 Hour/daily)		
Estimated Energy Usage	24Hr x 1. 2 Kw/ton x 80 tons = 2,304 kWj Daily	24Hr x 0.65 Kw/ton x 80 ton= 1,248 kWj Daily
Estimated Energy Cost (RM)	2,304kWh daily x RM0.397/kWh = RM 914.7	1,248kWh daily x RM0.397/kWh =RM 495
Total Energy Usage Per Month	RM 914.7 x 30 = RM 27,440	RM495 X 30 = RM 14,850
Total Energy Usage Per Year	2,304kWh daily x 30 days = 69,120 kWh	1,248kWh daily x 30 days = 37,440 kWh
Total Energy Cost Per Year	RM 27,440 X 12 months **=RM 329,287**	RM 14,850 X 12 months **= RM 178,200**
Total Energy Cost saving Per Year	RM 329,287 - RM 178,200 **= RM 151,087**	
Percentage saving Per Year	**RM 151,087 = 39%** **RM 384,120**	
Project Cost	RM249,000- Equipment cost Total project cost: RM 344,000	
Estimated ROI	RM 344,000 = 2.3 Years @ RM 151,087	**2 Years 4 Months**

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Example ITA Evaluation Calculation

Perkara	Hybrid Condenser heat recovery Shower + Basin
Jumlah Permintaan Air Panas pada 40ºC	35,200 liters
Jumlah air yang perlu dipanaskan dari 25ºC ke 40º C	= 42.8% x 35,200 liters = 15,065.60 liters
Jumlah penggunaan tenaga elektrik bagi memanaskan air	= 15,065.60 liters x (60ºC – 33ºC) x 4.186/3600 = 473 kWj
Jumlah penggunaan tenaga (termasuk 20% heat loss) sehari	= 473 kWj + (0.2x 473 kWj) kWj = 567.6kWj $\frac{567.6\ kWj}{5.28\ (COP)}$ = 107.5 kWj sehari
Kos Penggunaan Elektrik Setahun	107.5 kWj x RM0.365 kWj = RM 39.24 Sehari =RM 14,321.69 Setahun
Kos elektrik boiler setahun	RM 52,324.12
Penjimatan Setahun	RM 52,324.12 – RM 14,321.69 Setahun =RM 38,002.43

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Status ITA Application

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Status ITA Application

ITA Application Statistic

	2012	2013	2014* Up until Sep 2014
No. of ITA Application received	35	17	7
No. of ITA Project	63	24	14
No. of ITA Project approved	42	19	7
No. of ITA Project rejected	25	5	0
Estimated kWh saving per Year	**46,989,664.00**	**25,355,241.21**	**15,623,175.40**

Example of Energy Efficiency project submitted:

- High efficient variable speed screw chiller with VSD
- Hybrid Ambient Heat Recovery
- High Efficient Cooling Tower
- Energy Efficient Control System

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Please Contact:

Unit Pengurusan Penggunaan Tenaga

Jabatan Pengurusan Tenaga dan Pembangunan Industri

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