

**EE CHALLENGE 2014 AWARD CEREMONY AND SEMINAR
ON EPC IMPLEMENTATION IN GOVERNMENT BUILDINGS**

**GOVERNMENT INITIATIVES ON
ENERGY EFFICIENCY IN MALAYSIA**



**Ministry of Energy, Green Technology and Water
Malaysia**

1

Malaysia Key Indicators and Scenario

2

Energy Efficiency Policy

3

Energy Efficiency Initiatives

“...Malaysia is adopting an indicator of a voluntary reduction of up to 40 per cent in terms of emissions intensity of GDP (gross domestic product) by the year 2020 compared to 2005 levels...”

YAB Dato' Sri Mohd Najib Tun Abdul Razak
Prime Minister of Malaysia

15th Conference of Parties (COP-15)
17 December 2009



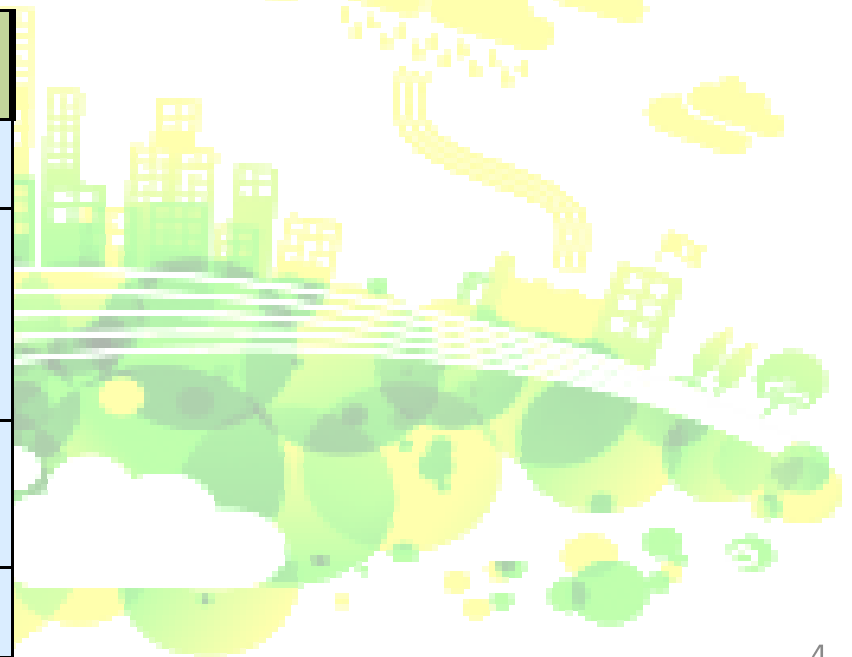


Economic Indicators (2013)

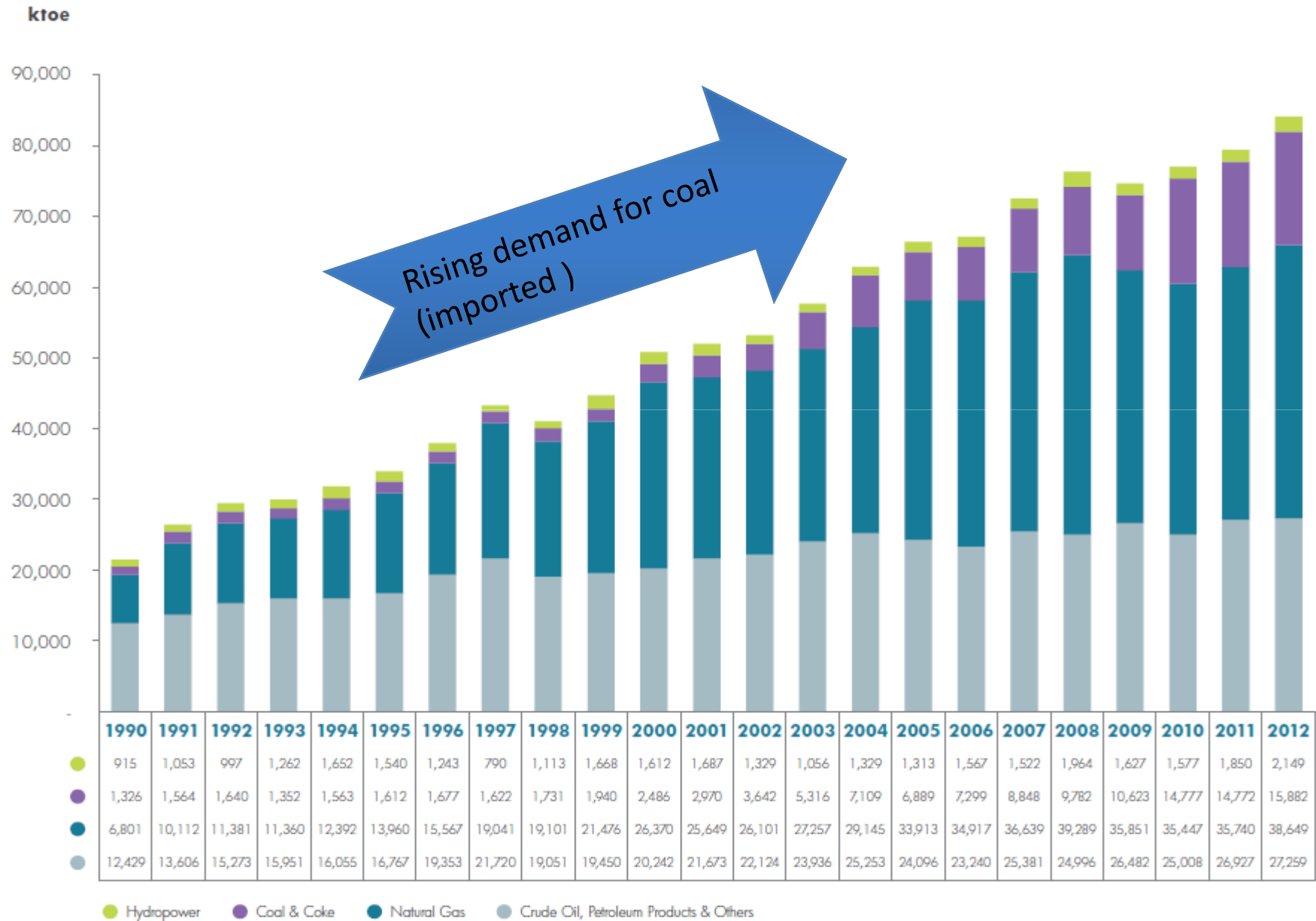
| | |
|--------------------------|-------------------|
| Population | 29.7 million |
| Area | 329,847 sq km |
| GDP | RM1,008.2 billion |
| GDP Growth | 5.0%~6.0% |
| Per capita income | USD10,687 |

Energy Resources (2012)

| | |
|------------------------|--|
| Oil | 5.9 billion barrel |
| Gas | 92.12 Trillion Standard Cubic Feet(TSCF) |
| Coal | 2.95 billion metric tonne |
| Hydro Potential | 20 GW |



MALAYSIA : ENERGY DEMAND BY SOURCE



ENERGY EFFICIENCY POLICY



Supply Objective: Ensure the provision of **adequate, secure and cost-effective energy supply.**

Utilization Objective: Promote **efficient utilization of energy and eliminate wasteful and non-productive patterns of energy consumption**

Environmental Objective: Minimize **negative impacts of energy production, transportation, conversion, utilization and consumption on the environment.**

NATIONAL ENERGY EFFICIENCY POLICY

Boost the nation's energy efficiency & conservation and to ensure productive use of energy and minimize waste in order to contribute to sustainable development and increased welfare as well as national competitiveness

ENERGY EFFICIENCY in 10th MALAYSIA PLAN

RESIDENTIAL

- Phasing out of incandescent light bulbs by 2014
- Increasing energy performance labeling
- Introduction of Minimum Energy Performance Standards (MEPS) for selected household electric appliances

INDUSTRIAL

- Increasing the use of energy efficient machineries and equipment

BUILDING

- Revision of the Uniform Building By-Laws to incorporate the MS1525
- Wider adoption of the Green Building Index (GBI)
- Increasing the use of thermal insulation for roofs in air conditioned buildings to save energy

Electricity Supply (Amendment) 2001 - Act A1116

- ❑ Empowers the Minister to promote the efficient use of electricity (Section 23A, 23B & 23C)
 - Determine efficiency standards;
 - Installation to meet efficiency requirements; and
 - Equipment to meet efficiency requirements

Efficient Management of Electrical Energy Regulations 2008

- ❑ Requires installations consuming 3 million kWh or more over a 6-month period to engage a registered energy manager to:
 - analyze total consumption of electrical energy;
 - advise on the development and implementation of measures to ensure efficient management of electrical energy; and
 - monitor the effectiveness of implemented measures

Amendment of Electrical Supply Regulations 1994

- ❑ Enable the enforcement of the Minimum Energy Performance Standards (MEPS) on electrical appliances (television, air conditioner, refrigerator, domestic fan and lighting)
 - Gazetted in May 2013

MS1525 : Code of Practice for Energy Efficiency and Use of Renewable Energy for Non-Residential Buildings

- ❑ Code is mandatory under the Uniform Building By-laws (UBBL)
 - Introduced in 2001 & updated in 2008

ENERGY EFFICIENCY INITIATIVES



Initiatives

1



Leading by example

- **Government to lead by example on energy efficiency practices**
 - Promotion on Energy Saving Programme to 105 energy intensive Government Buildings selected under the Efficient Management of Electrical Energy Regulation, EMEER 2008
 - Setting air-condition temperature at 24 degree C in Govt Buildings

2



New appliances

- **Give retailers incentives on sales of small capacity appliances** to increase sales of energy efficient goods amongst low-middle income households
- **Promotion of Electrical Appliances with Minimum Energy Performance Standards (MEPS) under the SAVE Rebate Programme.**

Low Energy Office - LEO

1



- ❑ 1st showcase model completed in 2004 (GBI-Silver)
- ❑ Demonstrate the feasibility of EE design standards as implied in MS1525 :2001 Code of Practice on EE & Use of RE for Non-Residential Buildings
- ❑ BEI – **100 kWh/m² annually**
- ❑ **CO2 reduction 56%**

Green Energy Office - GEO

2



- ❑ 1st certified green building in Malaysia (GBI-Certified)
- ❑ Demonstrate advance EE and RE design for commercial building- 2007
- ❑ BEI - **65kWh/m² annually**
- ❑ Solar Energy - 35kWh generated
- ❑ **CO2 reduction 86%.**

Diamond Building

3



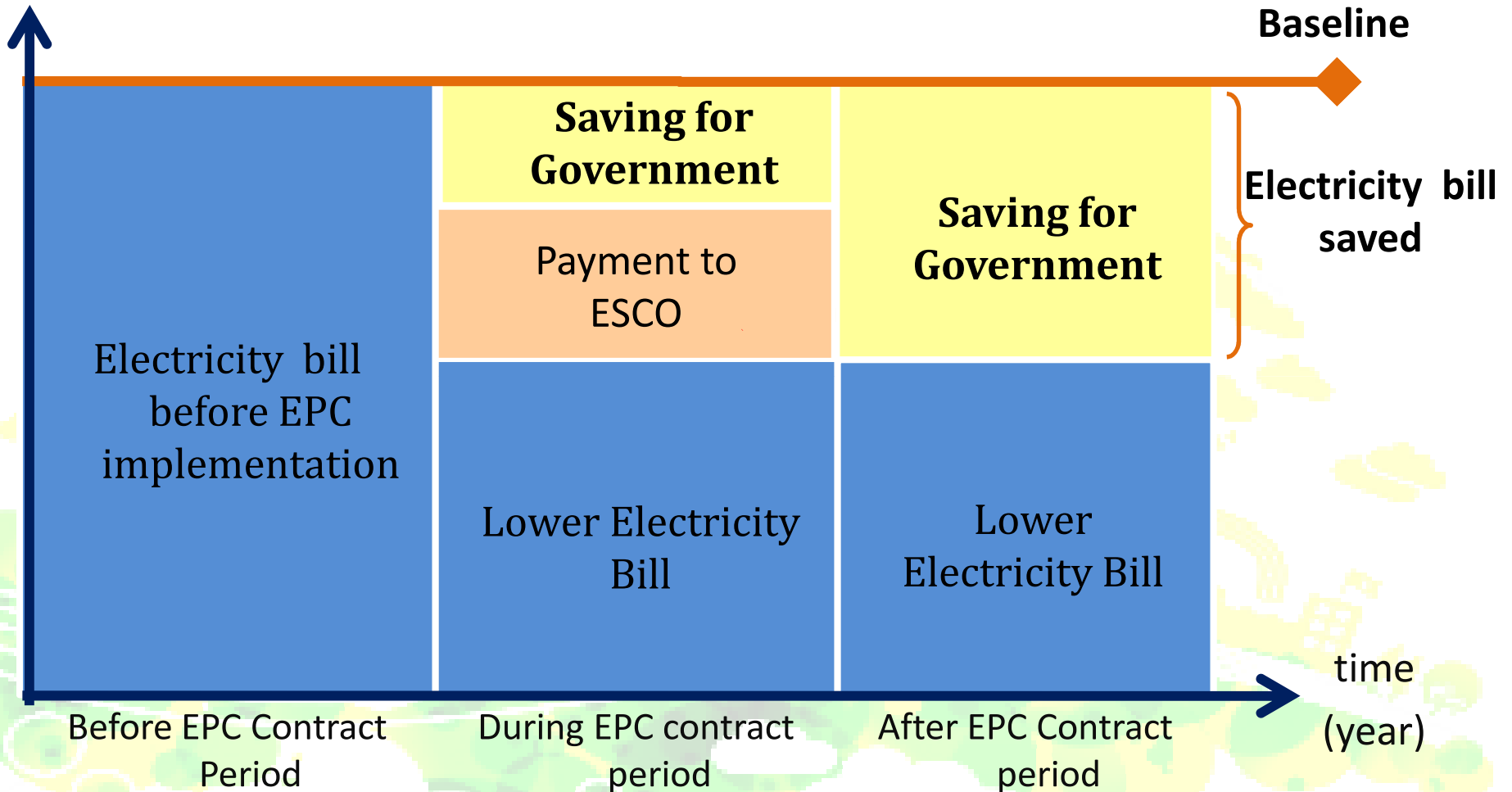
- ❑ Improved from both LEO & GEO building experience.
- ❑ Completed in 2010
- ❑ Platinum certificate, from Malaysia's Green Building Index (GBI) and Singapore's Green Mark.
- ❑ Building Energy Index- **85 kWh/m² annually**

- Energy Audit at selected government buildings to identify energy saving measures to reduce energy consumption:
2010: NRE, JPA, MAMPU, KSM, KKM
2014: KBS, KPDKKK, MOA
- Retrofit work to enhance energy savings at selected government buildings through re-lamping, Building Control System retrofitting, etc:
2010: Ministry Of Finance, EPU
2012: NRE, MAMPU
2014: KKM, KSM
-Savings achieved after retrofit ranging from 4% to 19%
- Monitoring of 5% savings on electricity bill for 25 ministries' buildings

- EPC is an initiative which was started in January 2013 by Malaysian Government to promote EE in Government buildings
- EPC is an effective mechanism **to implement energy saving measures** to promote energy conservation in government buildings by market mechanisms-private investments
- Under the EPC concept Government buildings are allowed to engage Energy Service Companies (ESCOs) to help reduce energy consumption through EE

EPC SAVING MECHANISM

Electricity Bill



- Introduced on a voluntary basis in 2005
- Provide energy performance information labels and help consumers make informed choices when purchasing electrical appliances
- Introduced Minimum Energy Performance Standard (MEPS) that will set minimum energy performance for energy consuming equipments sold in the market. Currently MEPS has been introduced for 5 equipments :

- ❖ Refrigerators
- ❖ Air-conditioners
- ❖ Televisions
- ❖ Fans
- ❖ Lightings



- The SAVE program was launched on July 7, 2011 with two (2) main objectives:
 - to increase the number of energy-efficient electrical equipment/appliances in the market and
 - to increase public awareness to purchase energy-efficient equipment that can reduce electricity consumption
- Through this program, purchases of refrigerators, air conditioning and energy efficient chiller will get a rebate of RM100-200.
- The program has been successful in reducing domestic electricity consumption by 158.1GWj equal to RM34.4million. Total amount of reduction in CO₂ emission is estimated to be at 167,568,689 tonnes.

SAVE ENERGY MONEY



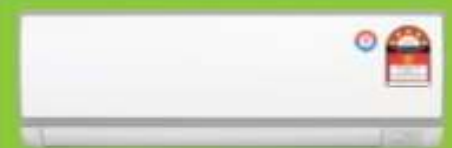
ENERGY-EFFICIENT
APPLIANCES

REBATES



REFRIGERATOR

RM200/unit



AIR-CONDITIONER

RM100/unit

Log on to www.saveenergy.gov.my to check your eligibility and print the SAVE rebate voucher

REBATE FOR CHILLER REPLACEMENT

RM200 PER REFRIGERATION
TON (RT)

Log on to www.saveenergy.gov.my
to download application form and guidelines



Water-cooled Chiller
(comply with MS1525:2007 standard)

Introduced under the government financial budget in 2001 with the aim of promoting EE projects through the provision of tax incentives;

- investment Tax Allowance
- accelerated capital allowance
- import duty exemption
- sales tax exemption
- energy efficient products

Additional tax incentives whereby :

- Tax exemption equivalent to 100% of the additional capital expenditure incurred for **owners** to obtain the Green Building Index (GBI) Certificate

- For **buyers** of buildings and residential properties awarded with the GBI certificates purchased from property developers;
 - Stamp duty exemption on instruments of transfer of ownership of such building.
 - Amount of stamp duty exemption on the additional cost incurred is given only once to the first owner of the building



IMPLEMENTATION OF NATIONAL ENERGY EFFICIENCY ACTION PLAN (NEEAP)

CONTINUATION OF ENERGY AUDIT AND RETROFIT IN GOVERNMENT BUILDINGS

SUSTAINABLE ENERGY COMMUNICATION PLAN

THANK YOU

