

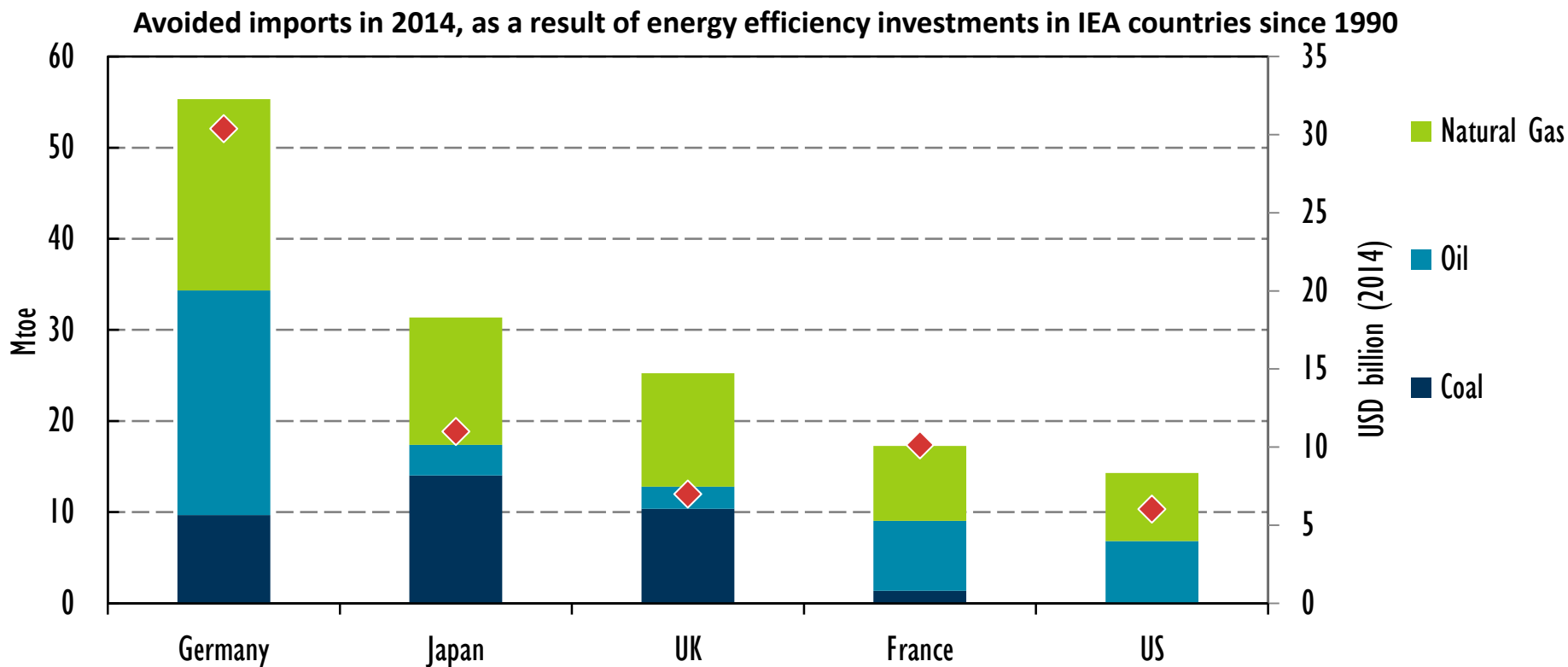
The Role of Energy Efficiency in a Sustainable, Secure Thai Electricity System

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Efficiency's Domestic Production Substitutes for Fuel Imports

www.iea.org

- In 2014, IEA countries avoided primary energy imports totalling 190 Mtoe, saving USD 80 billion in energy import bills and improving trade balances



Domestically produced, efficiency supports energy security

Energy Efficiency Development Plan (EEDP) 2015-2036

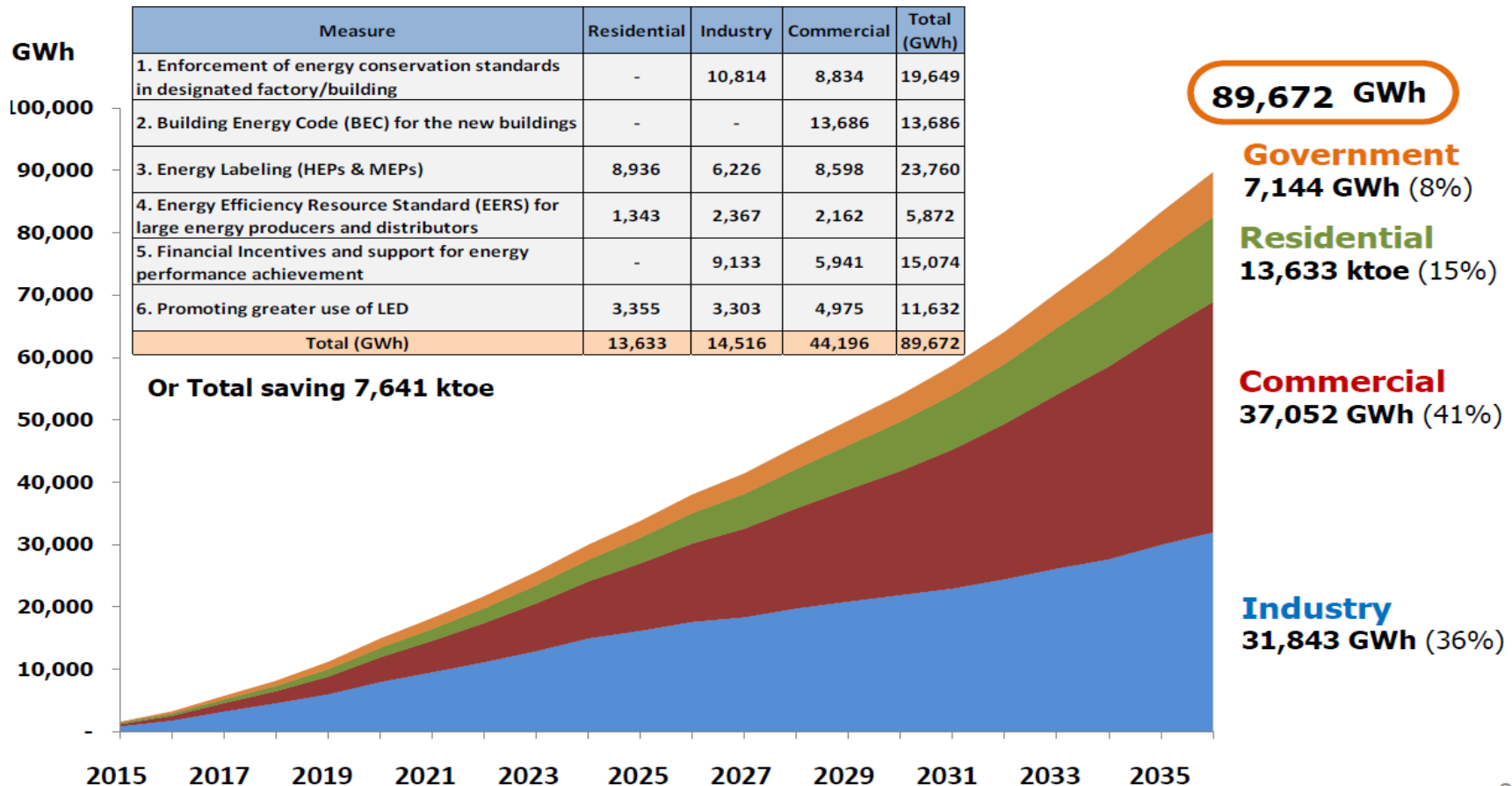
- **Package of measures to seek 89,672 GWh of savings by 2036**
- **Equivalent to:**
 - annual output of 16 coal-fired power plants
 - energy savings of 17,020 installed wind turbines
 - carbon sequestered by 1.59 billion tree seedlings grown for 10 years
 - Energy savings equal to energy used to drive 147 billion miles by an average passenger vehicle
- **And EEDP is only skimming the surface of energy savings available in Thailand!!**

What does EEDP cover?

- **Mandatory requirements via rules, regulations and standards**
- **Energy conservation promotion and support**
- **Public awareness of energy efficiency and behaviour change**
- **Promotion of technology development and innovation**
- **Human resources and institutional capacity development**

Where will EEDP Energy Efficiency Improvements be Made?

www.iea.org



Minimum Energy Performance Requirements (MEPs)

- MEPS cover residential ACs, refrigerators, ballasts, fluorescent lamps & CFLs
- MEPS only mandatory for ACs and refrigerators



voluntary certification mark

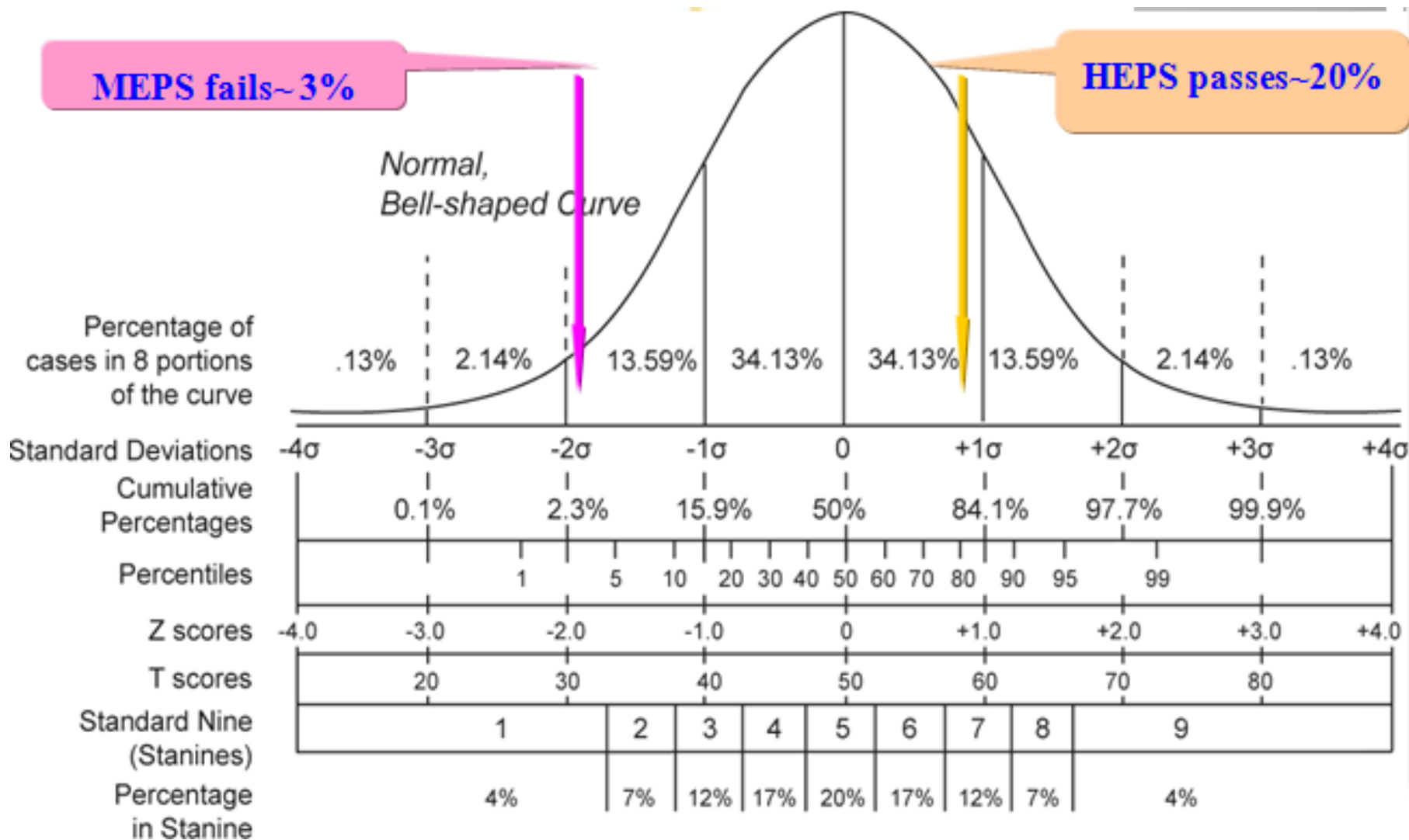


mandatory certification mark

High Energy Performance Standards (HEPs)

- **HEPS cover eight products: ACs, refrigerators, AC electric fans, chillers, glazing, electric water heaters, rice cookers and electric pots.**

Criteria for MEPS and HEPS



- EGAT label (left) covers 25 products.
- DEDE's label (right) covers 8 non appliances



25 Products

No.5 Labeling Program by EGAT



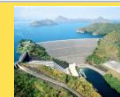
Year	Products
1994	Refrigerator
1995	Air Conditioner
1996	Compact Fluorescent Lamp
1998	Electromagnetic Ballast
2001	Electric fan
2004	Rice Cooker
	Luminaire (T8)
2009	Oscillator Electric Fan
	Fluorescent T5 Lamp
	Electronic Ballast for T5
2010	Standby Power : TV
	Standby Power: monitor

Year	Products
2010	Electric Pot
	Luminaries for T5
2011	Water Heater
	Iron
	Ventilation fan
2012	Washing Machine
	LED Lamp
2013	Microwave Oven
	Induction Cooker
2014	TV : on mode
	Electric Kettle
2015	Refrigerated Display Cabinet
	Automatic Water Pump

(up to 31 Dec 2014)



การไฟฟ้าผลิตแห่งประเทศไทย
Electricity Generating Authority of Thailand



EGAT
Power for Thai Happiness



Energy Efficiency Label by DEDE



Low Pressure
LPG stove



High Pressure
LPG stove



Fiberglass
Insulator



Window Glass



VSD



Diesel engine



Gasoline
engine



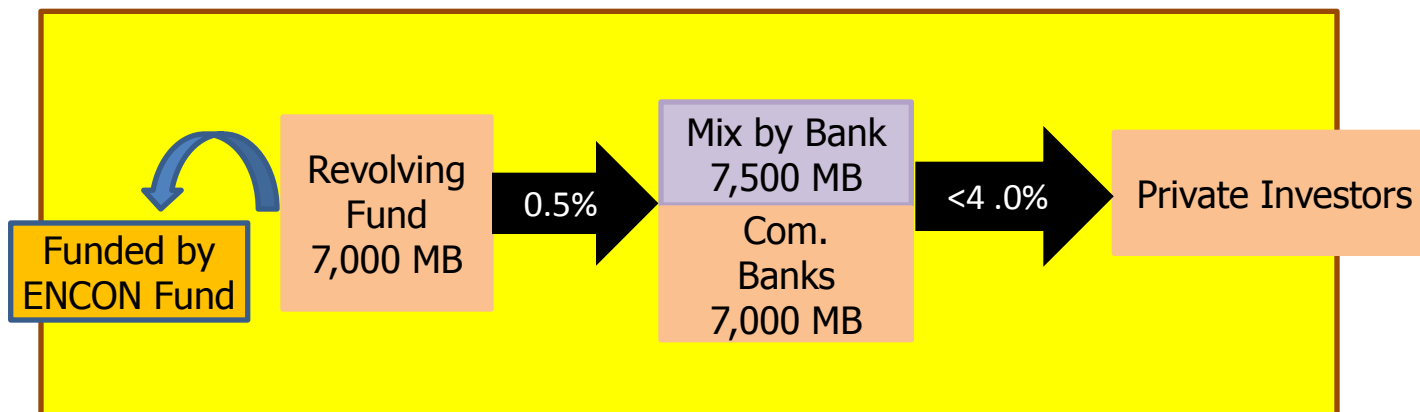
3-phase
Induction motor

Energy Conservation Promotion (ENCON) Act

- **ENCON Fund – USD 200 million from levy on petroleum products; used for R&D, incentives, soft loans and capacity building**
- **Finances the Energy Efficiency Revolving Fund (ended) & the ESCO Revolving Fund**

Incentive Measures: Revolving Fund

- **7,000 mill.Baht** allocated from Gov's **ENCON FUND**
- 2-Stepped Loan **mix w/ Bank's Money (approx. 1:1)**
- **Max. Interest Fix at 4%** (Bank pay 0.5% Int. to Encon Fund)
- **Max. 7 yr. loan period**
- **Max. 50 Mill.Baht / project**
- **11 major banks are participating**



Incentive Measures:

Direct Subsidy 20:80

- For EE measures
 - **Subsidy 20% of EE measures for Designated Building and Factory**
 - **Subsidy 30% of EE measures for Non-Designated Building and Factory**
 - **maximum 3 million baht ($\approx$ USD 93,800)**
- To buy EE products
- Payback period ≤ 7 years



High eff. motor



VSD



LED



Incentive Measures:

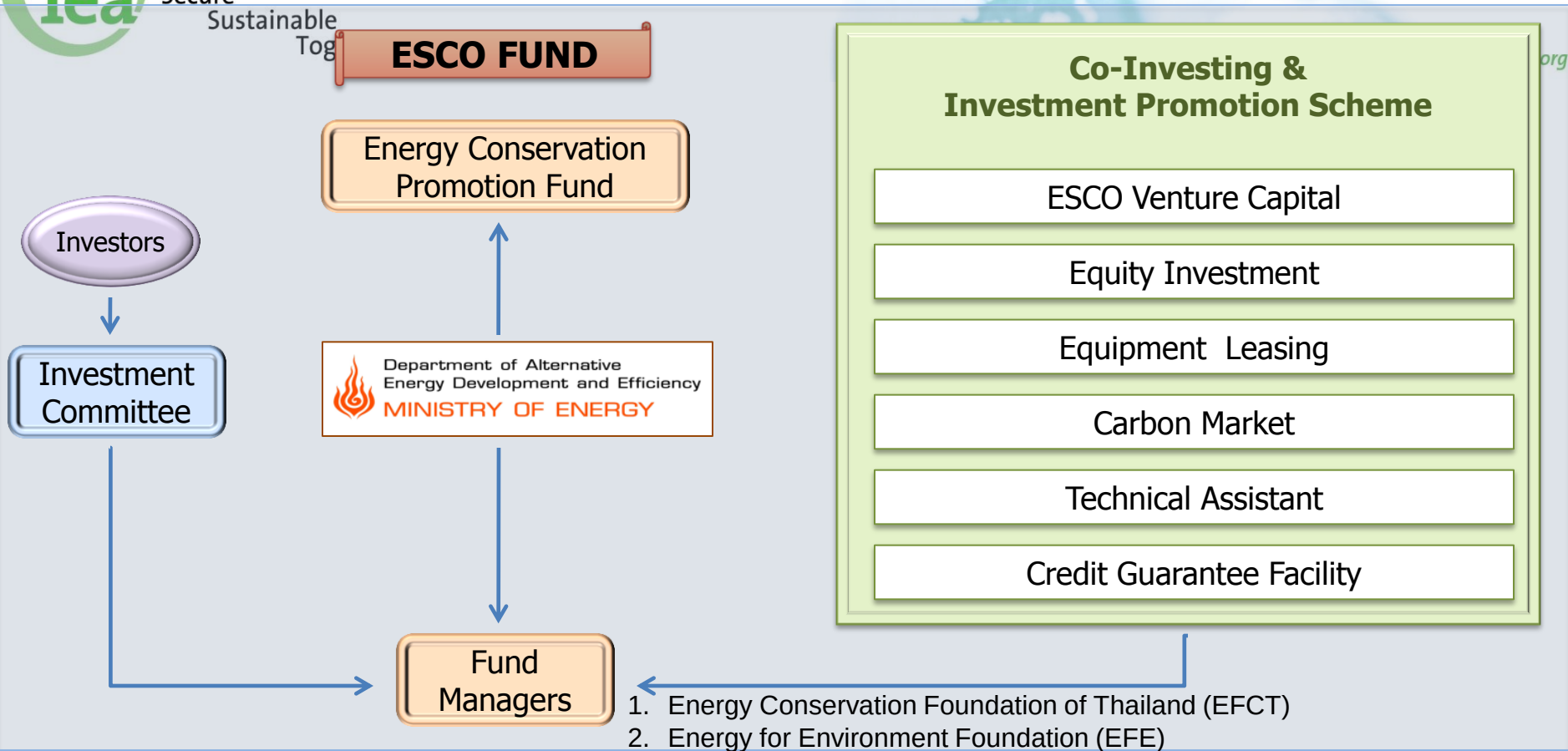
Tax Incentive for EE Products

www.iea.org

<http://www.energy-tax.com/>

- Cooperation program with Revenue Dept.
- 25% tax credit from purchasing of EE products
- 19 products are announced for tax incentive;
Mostly label No.5 products





- 500 + 500 mil.B allocated from Gov's **ENCON FUND**
- 2 Fund Managers assigned & given 3 years window of investment
- **Equity Investment** 10-50% equity holding, Max. 50 mill. B./project , Investment period 5-7 years
- **Equipment Leasing** 100% of total cost with max. 10 mill. B. Maximum leasing period 5 years
- As of now, 54 projects invested with total investment of 6.1 billion Bt.(510 mill. B. from ESCO Fund)
- Total Energy saving of 1.06 billion B.

Key Recommendations

- **Thailand actively engaged in energy efficiency!**
- **Could further integrate energy efficiency planning into resource planning**
- **More measures could and should be taken:**
 - Strengthen and expand the coverage of MEPS, HEPS and labels and make more of these measures mandatory
 - Improve energy efficiency of commercial buildings and shopping malls
 - Further develop MRV systems