



# Thailand Clean Energy Policy and Programs

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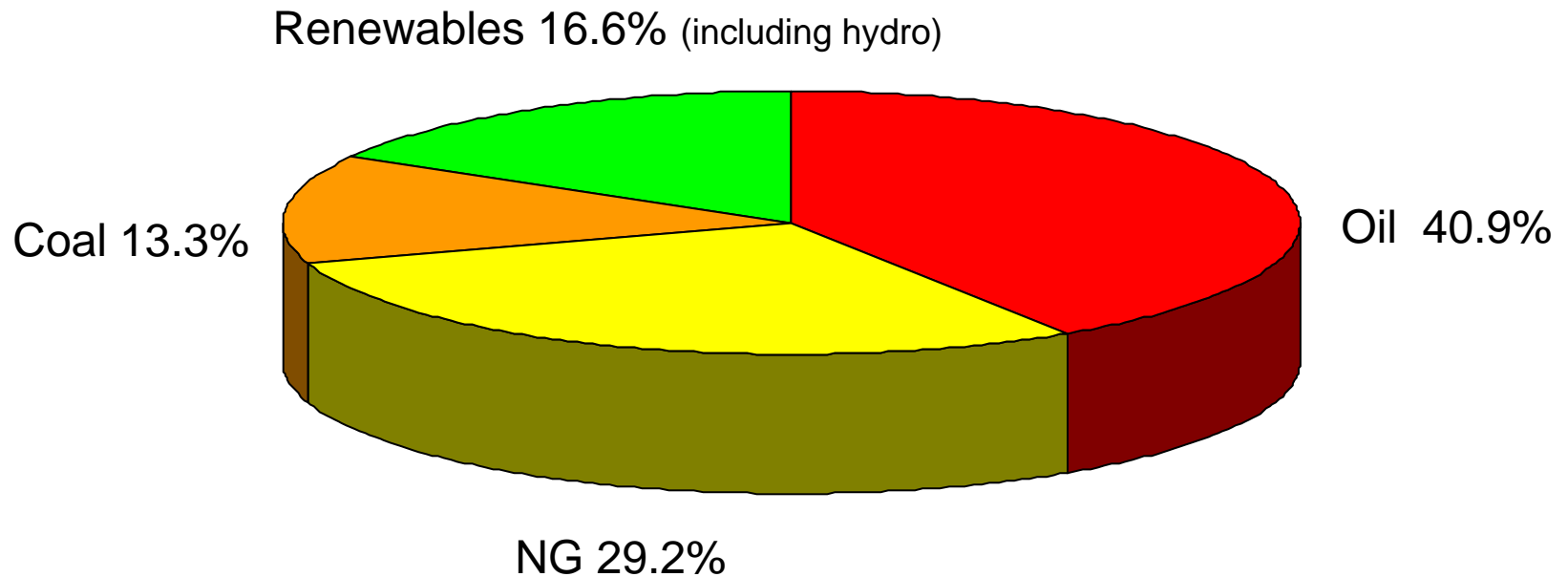
**Prasert Sinsukprasert**  
**Ministry of Energy, Thailand**

**ADB Workshop on Climate Change and Energy**

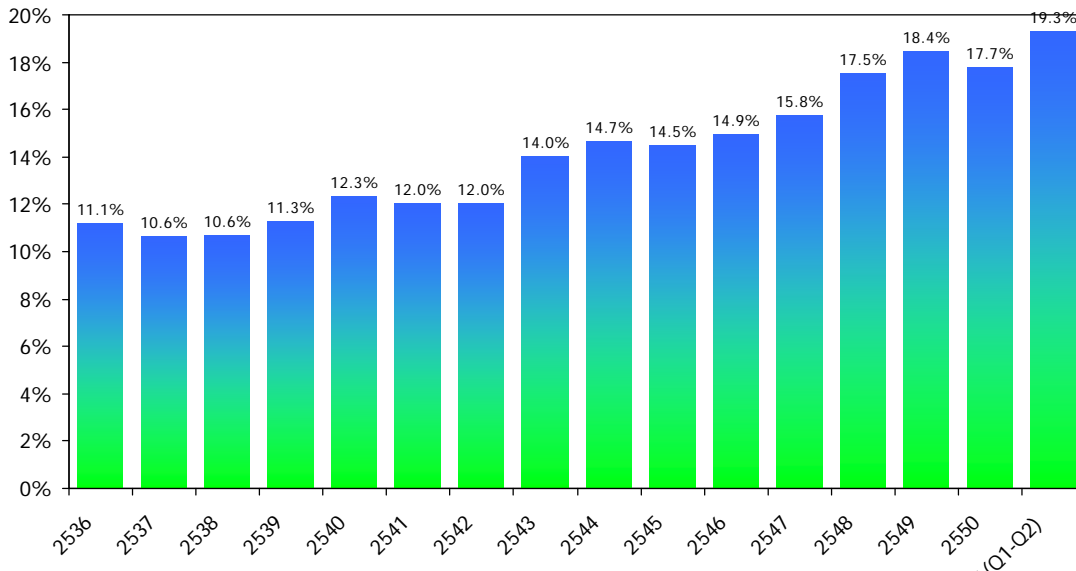
**March 27<sup>th</sup> 2009 Intercontinental Hotel, Bangkok**



# Primary Energy Supply 2007



Total Primary Energy Supply 110,106 ktoe (increased from 2006 by 3.9%)

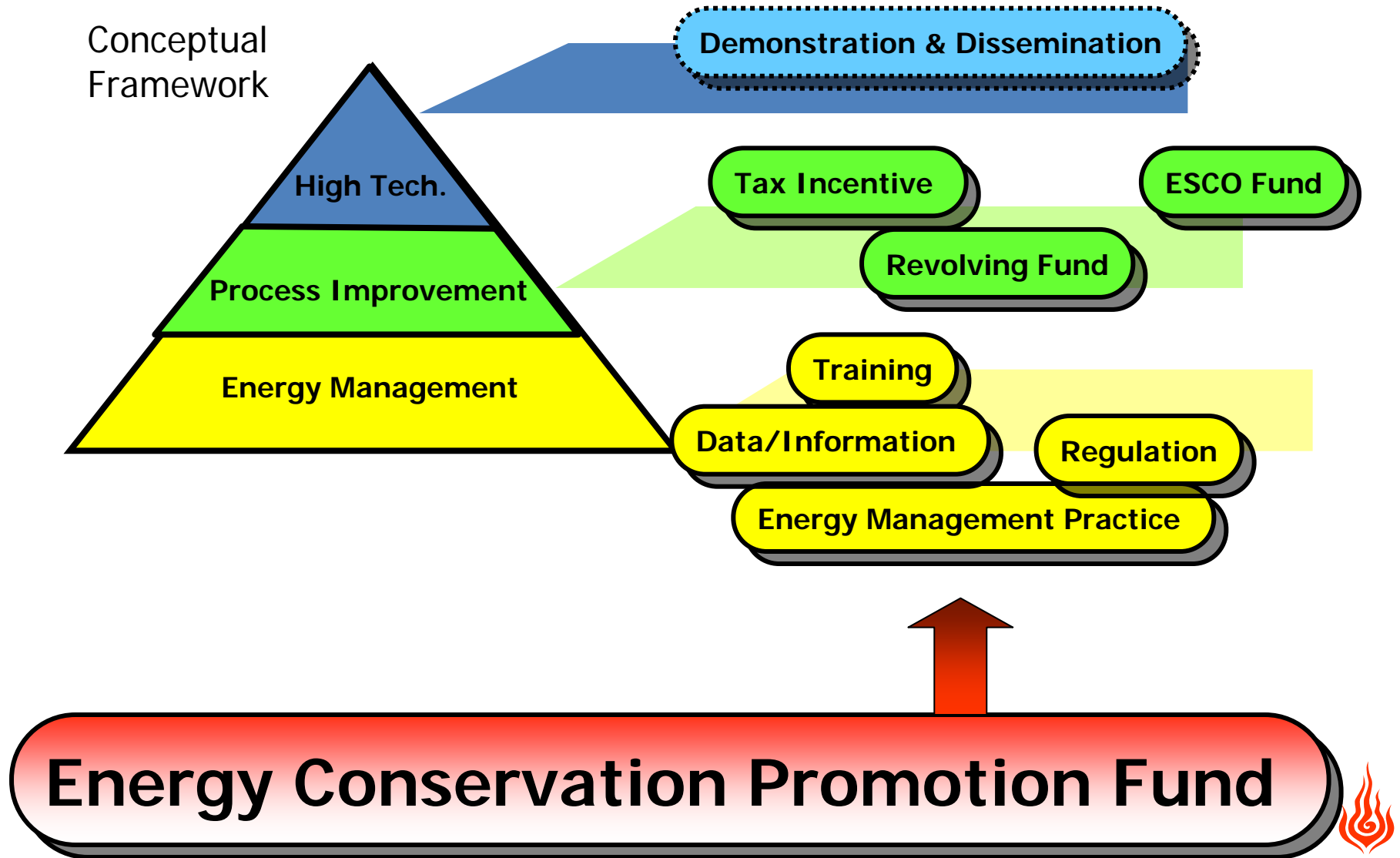


The proportion of Energy Expenditure to GDP keeps rising during the high oil price period.

## Values of Final Energy Consumption (MBaht)

Type	2005	2006	2007	2008	(% Change)		
					2006	2007	2008
Oil Products	774,404	915,461	955,370	1,120,255	18.2	4.4	17.3
Power	328,237	385,135	390,731	398,742	17.3	1.5	2.1
Natural Gas	22,275	28,880	35,110	56,789	29.7	21.6	61.7
Coal/Lignite	18,407	19,488	24,275	32,136	5.9	24.6	32.4
Renewable	95,541	92,562	96,529	101,417	-3.1	4.3	5.1
<b>Total</b>	<b>1,238,864</b>	<b>1,441,525</b>	<b>1,502,014</b>	<b>1,709,340</b>	<b>16.4</b>	<b>4.2</b>	<b>13.8</b>

# Energy Efficiency Conceptual Framework



# Energy Conservation Promotion Fund

## Objective and Source of Fund

- collect small levy (0.05-0.25 baht per liter) from the sell of gasoline, diesel, fuel oil, and kerosene
- Annual Revenue around 2 – 2.5 billion baht
- Supervised by Energy Conservation Promotion Fund committee – chaired by Deputy Prime Minister
- To be used for energy conservation promotion including research, study, development, demonstration, incentives (grants/soft loan), capacity building, and policy study



# Measure/Program - Results and Plan

## Revolving Fund Program

Description	Results 2002-2008	Future Plan
<p>Low interest loan for Energy Efficiency via financial institutes</p> <ul style="list-style-type: none"><li>• Less than 4% interest</li><li>• Loan period of 7 years with one year grace period</li><li>• Up to 50 million baht (1.3 million USD)</li></ul>	<ul style="list-style-type: none"><li>• Support over 250 EE/RE projects</li><li>• Total investment around 500 million USD – of 150 million USD of Government's Revolving Fund</li><li>• Energy savings of 120 million USD per year.</li></ul>	<p><b>2009</b></p> <ul style="list-style-type: none"><li>• Secured additional 60 million USD of budget</li></ul> <p><b>Long term Plan</b></p> <ul style="list-style-type: none"><li>• Reduce DEDE roles on Funding Sources – providing more technical assistance</li><li>• More co-financing from the banks</li><li>• Training banking officers on EE technical knowledge</li></ul>

## Participating Banks



# Measure/Program - Results and Plan

## ESCO Fund Program

### Description

Co-investment fund with private sector/investors

- Equity Investment
- Venture Capital
- Equipment Leasing
- Carbon Credit Trading
- Technical Assistance
- Credit Guarantee Facility

### Results 2008

- Set up the Fund (initial budget of 15 million USD)
- Selected 2 Fund Managers
  - Energy Conservation of Thailand Foundation
  - Energy for Environment Foundation

### Future Plan

#### 2009

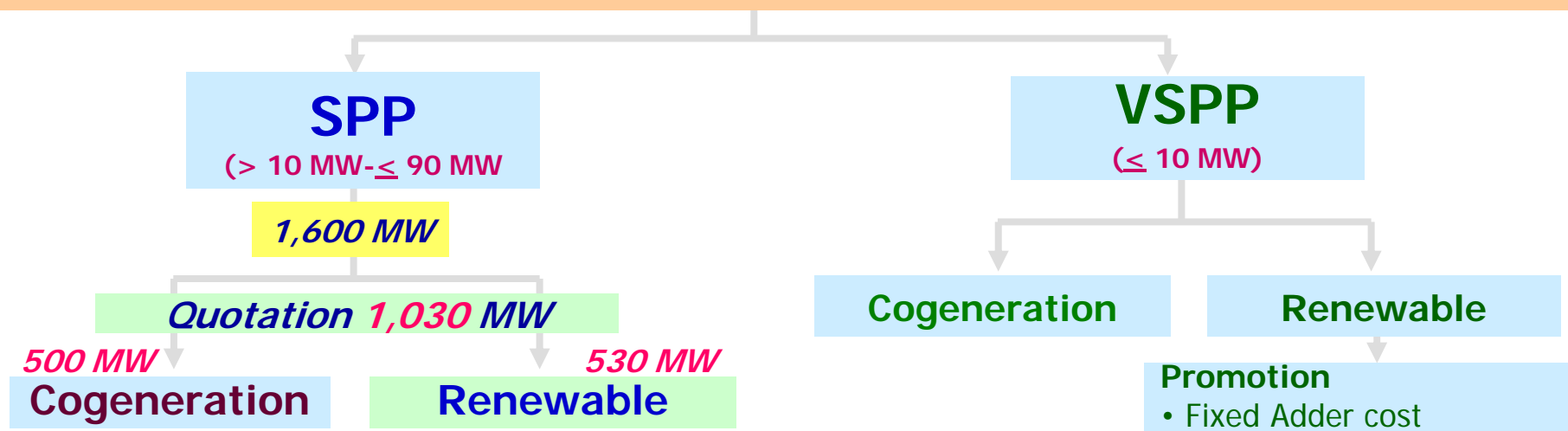
- Promoting and Marketing the Fund
- Support at least 20 projects
- Leverage minimum of 50 million USD
- Energy Savings of 10 million USD

#### Long term Plan

- Increase the Fund to 100 to 200 million USD
- Corporatise the program to be Investment Company
- Open for private investors



## Adder cost of power generation from RE.



- Adder cost for Renewable power producers by term of support 7 years and 10 years for power generation from wind and solar;

\*special cost in 3 provinces in Southern of Thailand

SPP		
Type	Adder (Baht/kWh)	Capacity (MW)
MSW	2.50	100
Wind	3.50	
Solar	8.00	
Other Renewable	0.30	300
Total		

Fuel	฿ /kWh	Special*
Biomass	0.30	1.30
Biogas	0.30	1.30
Mini-Hydro (50-200 kW)	0.40	1.40
Micro-Hydro (< 50 kW)	0.80	1.80
MSW	2.50	3.50
Wind	3.50	5.00
Solar	8.0	9.50

# Measure/Program - Results and Plan

## Tax Incentives

### Description

- **Cost-based :Deduct Taxable Income 125% of EE investment costs**
- **Performance-based : Reduce Taxable Income with Actual Energy Savings**
- **BOI : exemption of cooperate income tax and import duties for EE equipment manufacturers/ESCOs**

### Results 2002-2008

#### Cost-Based

- support 94 projects
- energy savings of 10 million USD/y
- leverage EE investment of 17 million USD
- Tax reduction of 3.2 million USD

#### Performance-Based

- support over 200 EE projects
- energy saved 30 million USD/y
- leverage EE investment 52 million USD
- Tax reduction of 3 million USD – in a form of subsidy

#### BOI

- support 27 projects
- energy savings of 35 million USD/y
- leverage EE investment of 120 million USD

### Plan

#### 2009

**Continue the supports**  
Estimated energy savings of additional 10 million USD/y

#### Next Steps

- **Increase the incentives to a deduction of 200% of EE Investment cost**
- **Install performance based incentives into the TAX system**





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