

# Possible Financial Support For Energy Efficiency Measures in Transport



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# Content:

- ★ New Country Strategies of Thailand
- ★ Energy Conservation Promotion Fund  
(ENCON Fund)
- ★ Recent Implementation Achievements for Transport
- ★ 20 -Year Energy Efficiency Development Plan  
(EEDP 2011-2030)
- ★ ENCON Fund Administration

# New Country Strategies Thailand



# NEW Country Strategies

## State

Developing a competitive advantage through  
highly innovative manufacturing

## Manufacturing

Developing a competitive advantage through  
highly innovative manufacturing

## Services

Developing a competitive advantage through  
highly innovative services

Developing a competitive advantage through  
highly innovative services

Developing a competitive advantage through  
highly innovative services

## Government

Developing a competitive advantage through  
highly innovative government

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Developing a competitive advantage through  
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## ประเทศไทยสู่ประเทศไทย

การพัฒนาประเทศไทยสู่  
สังคม 4.0 (Smart Society)



# New Country Strategies

## ยุทธศาสตร์ที่ 3 การจัดการกลไกนโยบายและกฎเกณฑ์ที่สนับสนุนการดำเนินงาน

### วัตถุประสงค์: สนับสนุนการดำเนินงาน

การสนับสนุนการดำเนินงาน  
(1) (2)

1. สนับสนุนการดำเนินงานที่มีประสิทธิภาพ
2. สนับสนุนการดำเนินงาน

การสนับสนุนการดำเนินงาน  
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1. สนับสนุนการดำเนินงานที่มีประสิทธิภาพ
2. สนับสนุนการดำเนินงานที่มีประสิทธิภาพ
3. สนับสนุนการดำเนินงานที่มีประสิทธิภาพ

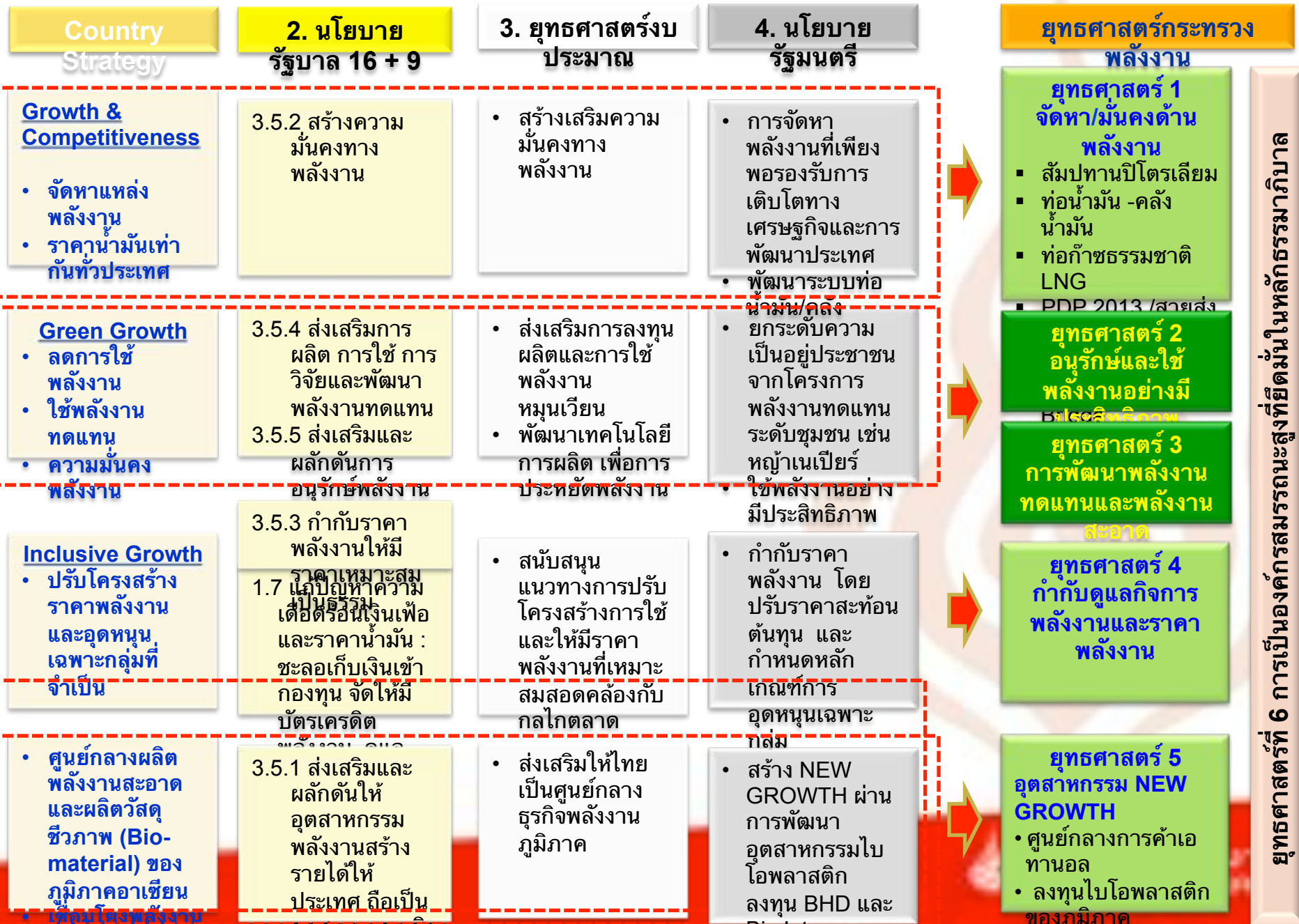
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# STRATEGIES : The MINISTRY of ENERGY



ยุทธศาสตร์ที่ 6 การเป็นองค์กรสมรรถนะสูงที่ยึดมั่นในหลักธรรมาภิบาล

# Energy Conservation Promotion Fund (ENCON Fund)



# Source of Funds for Energy Conservation Investment in Thailand

ENCON  
Fund

Investment  
for Energy  
Conservation

Government  
Budget

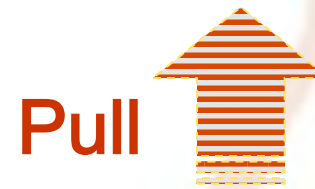
Investment  
by Private  
Sector



# Promotion of Energy Conservation in Thailand

## Energy Conservation Promotion Act

- Established in 1992
- Royal decrees for designated factories and buildings
- Ministerial regulations for designates factories and buildings to implement energy conservation measures



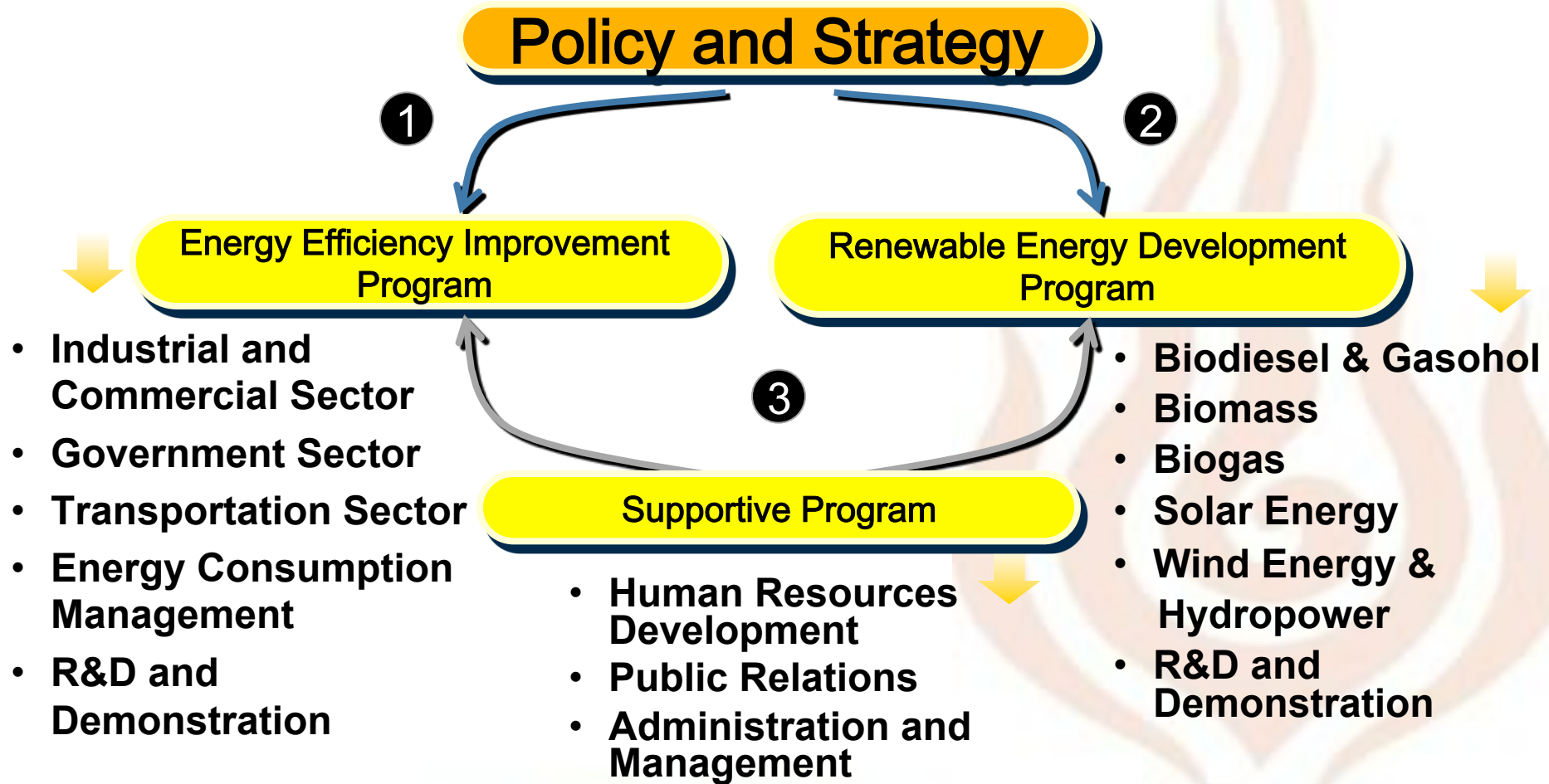
## Energy Conservation Promotion Fund (ENCON Fund)

- Established under the Energy Conservation Promotion Act
- The government tool to promote energy conservation, energy efficiency and renewable energy development.

# ENCON Fund

1. Working capital, grants, or subsidies for investment in and operations of energy conservation programs, or for solving environmental impacts of energy conservation programs of the government agencies, state enterprises, or private sectors.
2. Grants or subsidies to government agencies, state enterprises, educational institutions or private organizations, to be used on
  - 1) Programs
  - 2) Study or research projects
  - 3) Demonstration projects or pilot projects
  - 4) Educational, training and conferences
  - 5) Public awareness workson topics relating to energy conservation.
3. Administrative cost of energy conservation promotion work in accordance with ENCON Act.

# Energy Conservation Program



# Energy Conservation Program



**Phase 4**

**2012 - 2016**

**Phase 3**

**2005 - 2011**

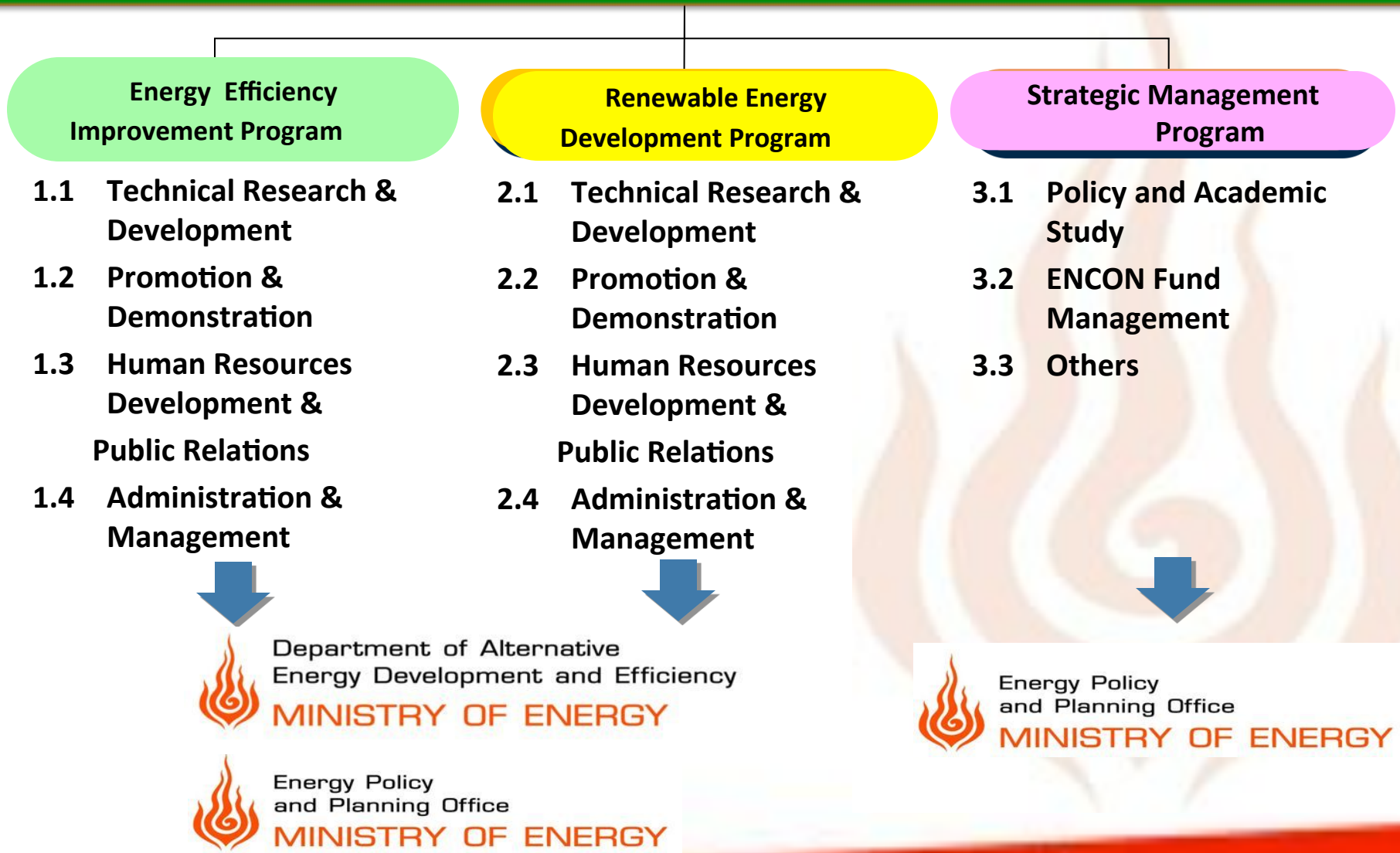
**Phase 2**

**1998 - 2004**

**Phase 1**

**1995 - 1999**

# Energy Conservation Program; Phase 3 (2005 - 2011)



# ENCON Program, Phase 3\* - revised (2008-2011)

## 1 Energy Efficiency Improvement Program

Transport, Industry, Residential, Others

- Technical R&D
- Development & Demonstration

To increase RE share to 9.2%, excluding NGV  
15.6%, including NGV

## 2 Renewable Energy Development Program

Ethanol, Bio-diesel, Solar, Wind, Hydro, Biomass, Waste Heat

- Technical R&D
- Development & Demonstration

To reduce energy use by 10.8%

## 3 Strategic Management Program

Management & Review of the Plan

- Administration & Management
- Human Resources Development
- Public Relations
- Others

\* Phase 3 began in 2005 & was revised to correspond with the changing situations.

The Revised Plan (2008-2011) was approved by the National Energy Policy Council (NEPC) on 16 November 2007 and by the Cabinet on 18 December 2007.

# Energy Conservation Program



Phase 4

2012 - 2016

Phase 3

2005 - 2011

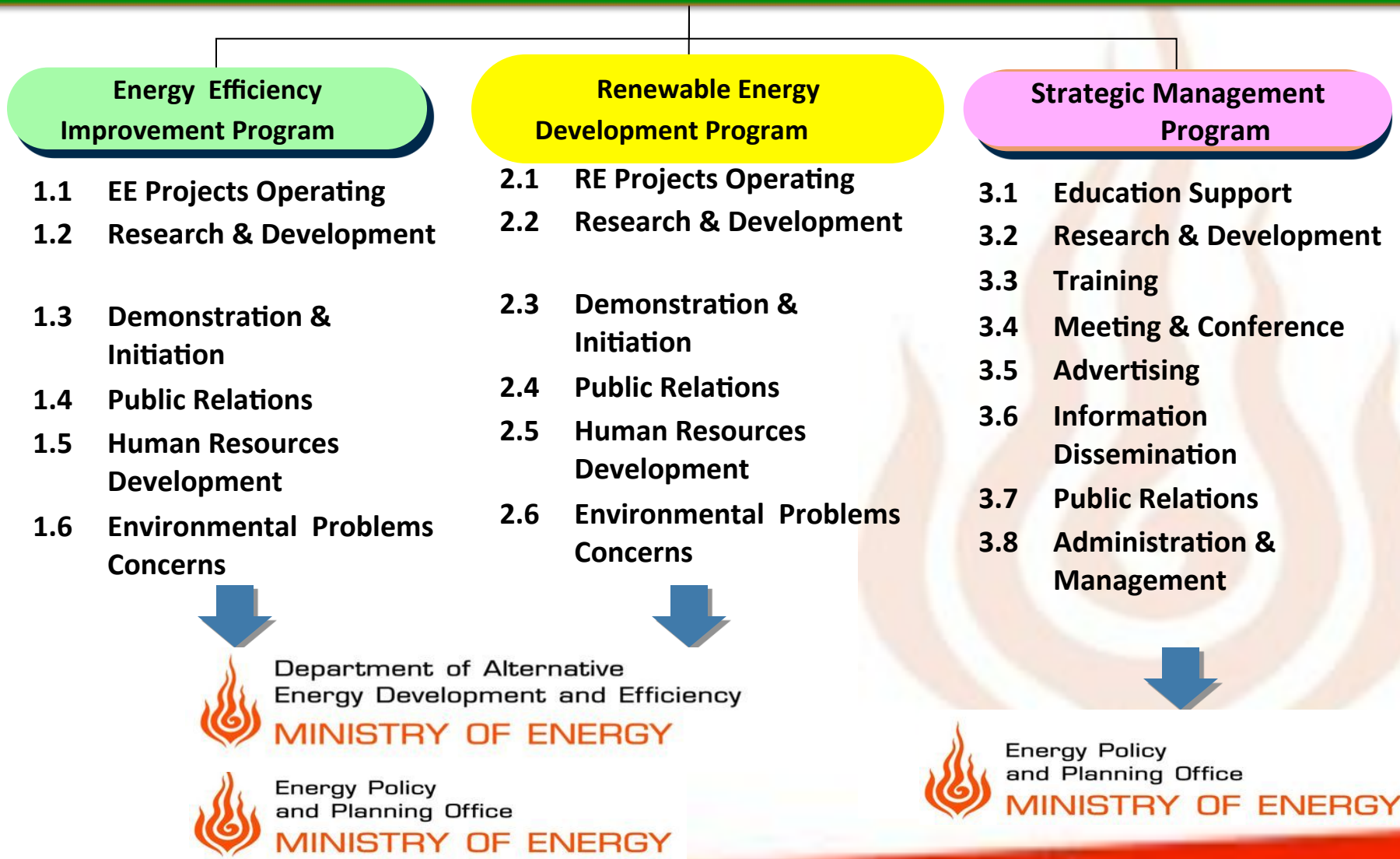
Phase 2

1998 - 2004

Phase 1

1995 - 1999

# Energy Conservation Program; Phase 4 (2012 - 2016)





# ENCON Program; Phase 4 (2012 - 2016)

1

## Energy Efficiency Improvement Program

Transport, Industry, Residential, Others

- Projects Operating under ENCON Promotion Act
- Technical R&D
- Demonstration & Initiation

2

## Renewable Energy Development Program

Ethanol, Bio-diesel, Solar, Wind, Hydro, Biomass, Waste Heat

- Projects Operating under ENCON Promotion Act
- Technical R&D
- Demonstration & Initiation

3

## Strategic Management Program

Supporting EE & RE Program, Management & Review of the Plan

- Administration & Management
- Public Relations
- Training
- Others

**Implementation budget; 7,000 million Baht per year**

**50% for EE**

**45% for RE**

**5% for Management**

# Recent Implementation & Achievements For Transport



# ENCON Program on Economic Sectors

Focus is placed on **3 key economic sectors**.

Economic Sectors	% of Thailand's 2009 Total Final Energy Consumption*
<b>Industrial</b>	36.6%
<b>Transportation</b>	<b>35.7%</b>
<b>Residential &amp; Commercial</b>	22.5%
Others	5.2%

ENCON Program, Phase 3 (2008-2011)	Projected Energy Demand in 2011 (ktoe)		Target Saving	
	BAU Case	With ENCON Plan	ktoe	%
<b>Energy Efficiency Improvement Program</b>	<b>80,331</b>	<b>72,511</b>	<b>7,820</b>	<b>10.8</b>
(1) Industrial Sector	31,847	28,658	3,190	4.4
<b>(2) Transportation Sector</b>	<b>28,781</b>	<b>25,367</b>	<b>3,413</b>	<b>4.7</b>
(3) Residential and Commercial Sector	19,704	18,486	1,217	1.7

\* Source: DEDE 2009

# Transport Sector

## Measures:

- Efficiency Improvement in Transport Business
  - Logistics & Transport Management (LTM)
  - Truck Driver Training
- Promotion of energy-saving vehicles (ECO Cars)
- Promotion of Mass Transit Systems
  - Improve & expand public transport systems
  - Park and Ride





## R&D on Energy Efficiency & Renewable Energy Technology

To assist and support government agencies, state-owned enterprises, educational institutions and private organizations in undertaking research, development, demonstration or initiatives with relation to energy efficiency (EE) and renewable energy (RE) or protection of/solution to environmental problems, resulting from EE & RE implementation, including support for the study, training and dissemination of EE & RE information.

# Way Forwards

## 20 – Year Energy Efficiency Development Plan : EEDP 2011 -2030



# 20 years Roadmap for Thailand's Energy Efficiency



20 years Roadmap  
for Thailand's  
Energy Efficiency

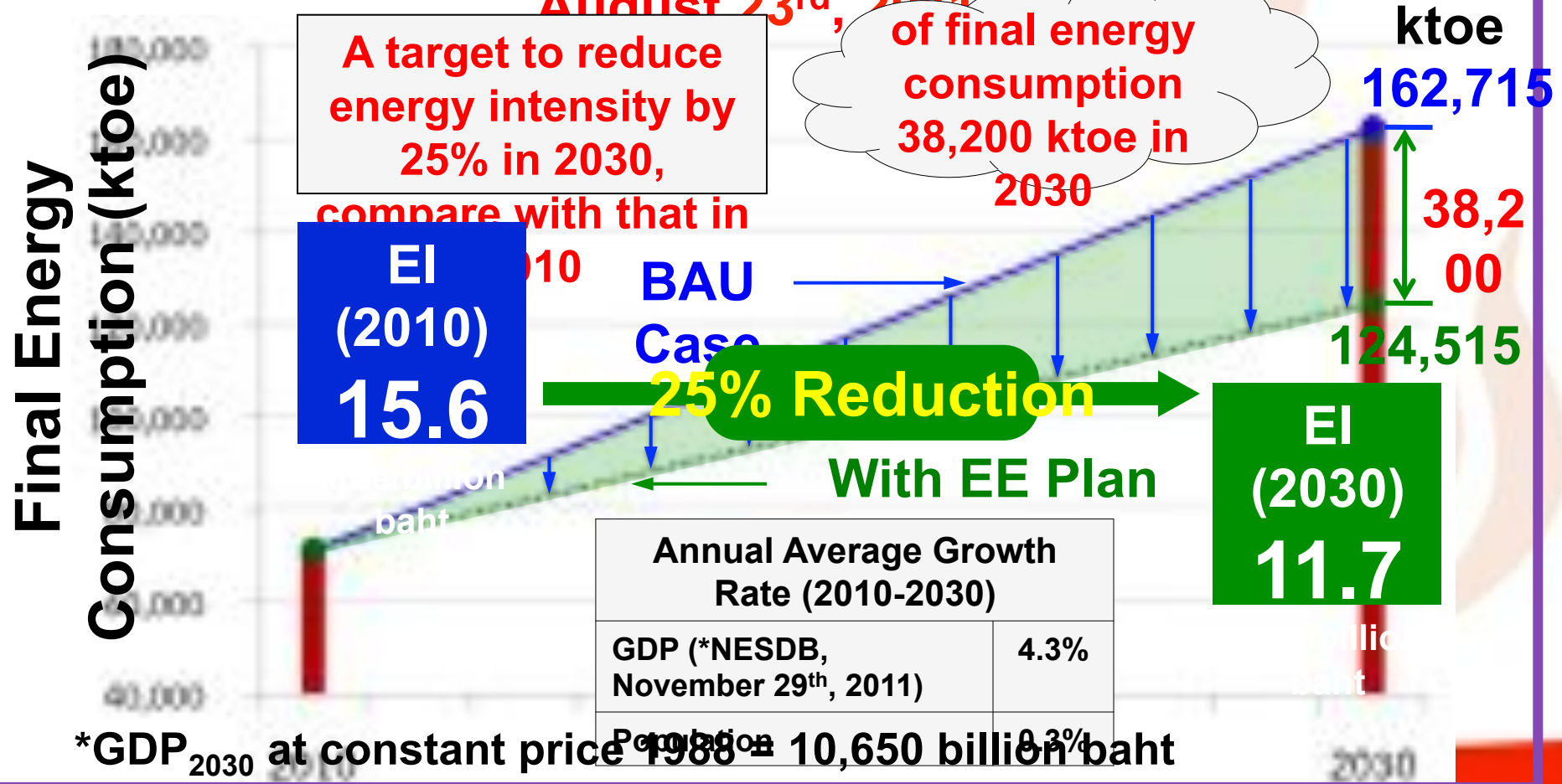




# Thailand 20-Year Energy Efficiency Development Plan

## Energy Conservation Target

(as per the present government policy statement on August 23rd, 2011)  
The reduction of final energy consumption 38,200 ktoe in 2030





## Expected Benefits

Economic Sector	Annual Average Energy Savings (ktoe)		Annual Average Avoided CO <sub>2</sub> Emission (Million Tons)		Annual Average Value of Energy Savings Achieved (Million Baht)	
	5 yrs	20 yrs	5 yrs	20 yrs	5 yrs	20 yrs
	<b>Transportation</b>	1,300	6,400	4	20	28,700

# Estimation of Energy-Saving by Strategies & Measures under EEDP

Strategy	No. of measures	No. of projects	Saving Energy (ktoe)
• Mandatory Requirements via Rules, Regulations and Standards	10	13	12,138
• Energy Conservation Promotion and Support	10	26	26,561
• Public Awareness (PA) Creation and Behavioral Change	5	15	146
• Promotion of Technology Development and Innovations	6	9	-
• Human Resources and Institutional Capability Development	3	4	-
<b>Total</b>	<b>34</b>	<b>67</b>	<b>38,845</b>

# Estimation of Energy-Saving by Strategies & Measures under EEDP

Economic Sector	Specified Target (ktoe)	Energy-Saving (ktoe)	Government Budget Expenditure & ENCON Fund (Million U.S. Dollars)
• Industrial	16,100	16,480	364
• <b>Transportation</b>	<b>15,100</b>	<b>15,323</b>	<b>2,289*</b>
• Large Commercial Building	3,600	3,630	487
• Small Commercial Building & Residential	3,400	3,412	738
Total	38,200	38,846	3,878

Remark \* Excluding the government expenditure for transportation infrastructure, e.g. double rail train system, rapid transit system ect.

## Success Factors

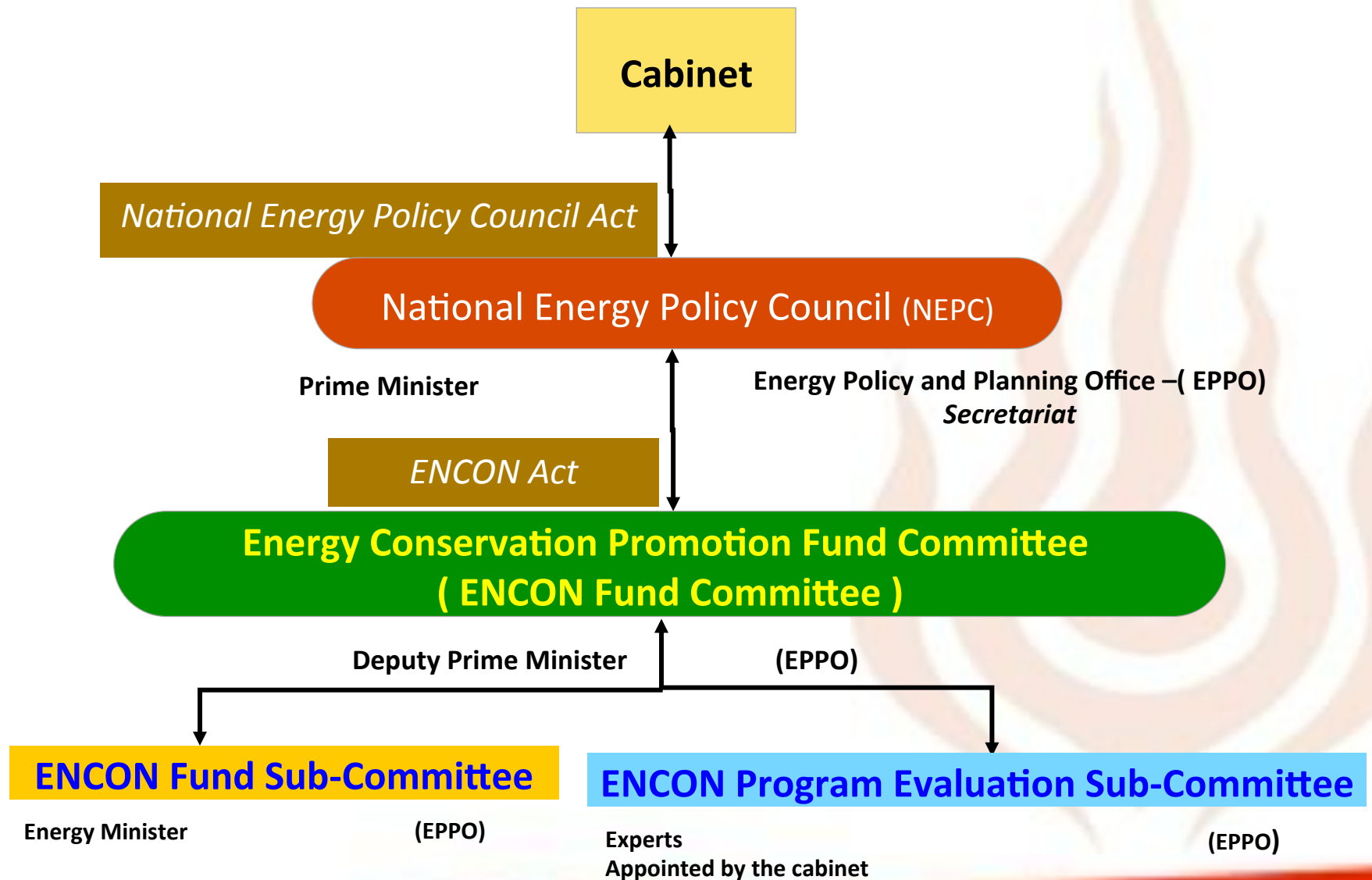
1. **Management system development as well as management tools, particularly the development of:**
  - 1.1 **an energy consumption database**
  - 1.2 **the reporting, verification and assessment systems**
  - 1.3 **a dedicated independent body with flexibility**
2. **Adequate and continuous budget to support work plans and activities under the plans, e.g. it can be developed as a rolling plan every 3-5 years.**
3. **Continuous development of human resources and institutional capability of concerned**

## Success Factors (Cont.)

- 4. Public agencies should take a lead role and set a good example by, for example, setting a policy requiring procurement of goods/ services which are **energy efficient and environmentally friendly** and implementing energy-saving measures in government buildings.**
- 5. The determination of **energy prices reflecting actual costs** and the application of **tax measures** as a tool to promote energy conservation and to reduce GHG emissions via **awareness raising and behavioral changes**.**
- 6. Concerned agencies should explicitly formulate policies and long-term development**

# ENCON Fund Administration

# ENCON Fund Administration



# ENCON Fund Administration

**Cabinet**

*National Energy Policy  
Council Act*

**National Energy Policy Council  
(NEPC)**

**Prime Minister**

**(EPPO)**

*ENCON Act*

**ENCON Fund Committee**

**Deputy Prime Minister**

**(EPPO)**

**ENCON Fund Sub-Committee**

**Energy Minister**

**(EPPO)**

**ENCON Program Evaluation Sub-Committee**

**(EPPO)**

- To propose ENCON policies, goals, measures to NEPC
- To propose to NEPC guidelines, criteria, conditions, priorities for the disbursement from the ENCON Fund
- To prescribe regulations on the criteria and procedures for applications, grant allocations or subsidies from the ENCON Fund
- To allocate appropriations from the ENCON Fund
- To propose to NEPC remittance rates to be imposed on petroleum for the ENCON Fund



# ENCON Fund Administration

**Cabinet**

*National Energy Policy Council Act*

**National Energy Policy Council (NEPC)**

Prime Minister

(EPPO)

- To propose ENCON policies, goals, measures to the cabinet
- To issue guidelines, criteria, conditions, priorities for the disbursement from the ENCON Fund
- To determine remittance rates to be imposed on petroleum for the ENCON Fund

*ENCON Act*

**ENCON Fund Committee**

Deputy Prime Minister

(EPPO)

**ENCON Fund Sub-Committee**

Energy Minister

(EPPO)

**ENCON Program Evaluation Sub-Committee**

(EPPO)

# Approved Budget by ENCON FUND Committee on March 1, 2012

## ❖ Summary of Annual Budget Year in 2012

Program	Total	%
<b>1. Energy Efficiency Improvement Program</b>	<b>1,285,967,730</b>	<b>42.57</b>
1.1 EE Projects Operating	73,094,380	2.42
1.2 Research & Development	217,600,000	7.20
1.3 Demonstration & Initiation	527,816,300	17.47
1.4 Public Relations	350,000,000	11.59
1.5 Human Resources Development	101,075,870	3.35
1.6 Environmental Problems Concerns	16,381,180	0.54
<b>2. Renewable Energy Development Program</b>	<b>1,616,630,568</b>	<b>53.52</b>
2.1 Renewable Energy Development Program	630,316,315	20.87
2.2 Research & Development	254,532,770	8.43
2.3 Demonstration & Initiation	306,856,320	10.16
2.4 Public Relations	350,000,000	11.59
2.5 Human Resources Development	50,534,885	1.67
2.6 Environmental Problems Concerns	24,390,278	0.81
<b>3. Strategic Management Program</b>	<b>118,215,762</b>	<b>3.91</b>
3.1 Policy and Academic Study	13,204,560	0.44
3.2 Environmental Problems Concerns	105,011,202	3.48
<b>Total budget ENCON Fund</b>	<b>3,020,814,060</b>	<b>100.00</b>

# Approved Budget by ENCON FUND Committee on October 3, 2012

## ❖ Summary of Annual Budget Year in 2013

Program	Total	%
<b>1. Energy Efficiency Improvement Program</b>	<b>4,476,913,632</b>	<b>81.30</b>
1.1 EE Projects Operating	380,702,752	6.90
1.2 Research & Development	236,972,000	4.30
1.3 Demonstration & Initiation	3,534,702,300	64.20
1.4 Public Relations	219,837,000	4.00
1.5 Human Resources Development	104,699,580	1.90
<b>2. Renewable Energy Development Program</b>	<b>869,227,420</b>	<b>53.52</b>
2.1 Renewable Energy Development Program	65,317,160	20.87
2.2 Research & Development	328,908,280	8.43
2.3 Demonstration & Initiation	209,000,880	10.16
2.4 Public Relations	165,630,000	11.59
2.5 Human Resources Development	100,371,100	1.67
<b>3. Strategic Management Program</b>	<b>160,372,611</b>	<b>2.90</b>
3.1 Policy and Academic Study	89,536,569	1.60
3.2 Environmental Problems Concerns	70,836,042	1.30
<b>Total budget ENCON Fund</b>	<b>5,506,513,663</b>	<b>100.00</b>



***Thank you  
for your kind attention  
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