



Department of Alternative  
Energy Development and Efficiency  
**MINISTRY OF ENERGY**

# Updates on Measures for Renewable Energy Promotion In Thailand

By

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Ministry of Economic Development of New Zealand

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- **Thailand's latest-11<sup>th</sup> National Economic and Social Development Plan**

2

- **Energy Policies**

3

- **Latest version of Thailand's master plan on renewable energy (AEDP 25 % within 10 years)**

4

- **Updated Measures for RE Promotion**



## **Thailand's latest-11<sup>th</sup> National Economic and Social Development Plan**

1 Promoting the just society

2 Developing human resources to promote lifelong learning society

3 Balance of Food and Energy security

4 Stable economy based on knowledge and enabling factors

5 Linkages of economic and security in the regions

6 Sustainable management of Natural resources and Environment

- ◆ Developing **natural resources** to strengthen the agricultural base
- ◆ Enhancing the agricultural **productivity and value creation**
- ◆ Promoting **job and income security** for farmers
- ◆ Enhancing **food and bio-energy security and biomass** at household and community level



- ◆ Developing **bio-energy security** to support the national development and agricultural sector
- ◆ Improve the **agricultural management** to ensure the balance of food and energy



- ◆ **Conserving and restoring** the natural resource base and the environment

- ◆ **Shifting development Paradigm** towards the Low Carbon Society

- ◆ Enhancing **adaptive capacity** to achieve climate-resilient society

- ◆ **Building immunity** from the use of trade measures to protect the environment



- ◆ **Enhancing Thailand's role in the global environmental forum** and international cooperation

- ◆ **Preventing and reducing pollution**

- ◆ **Improving the efficiency, transparency and equity** of the natural resource and environment management system



## Shifting development paradigm and driving

Thailand towards *Low Carbon Society*

- (1) Restructure production sectors towards low carbon economy
- (2) Increase energy efficiency in transportation and logistics
- (3) Develop Environmental friendly cities by integrating the culture, society and ecology aspects
- (4) Change consumption behavior to achieve low carbon society
- (5) Utilize the measures of generating income from Natural resource and Biodiversity conservation.





## **Energy Policies**





**Miss. Yingluck Shinawatra**  
**Thailand's Prime Minister**

## 5 Energy Policies

- Enhancing energy-related industries & business to be next generation value-creator
- Securing country's energy supply
- Pricing energy right
- Up-scaling RE mix to 25% in 10 years
- Targeting Energy Intensity Reduction by 25% (based on 2010 level) within 20 years.

**3**

**Latest version of Thailand's master plan  
on renewable energy  
(AEDP 25 % within 10 years)**

# Alternative Energy Development Plan (AEDP)

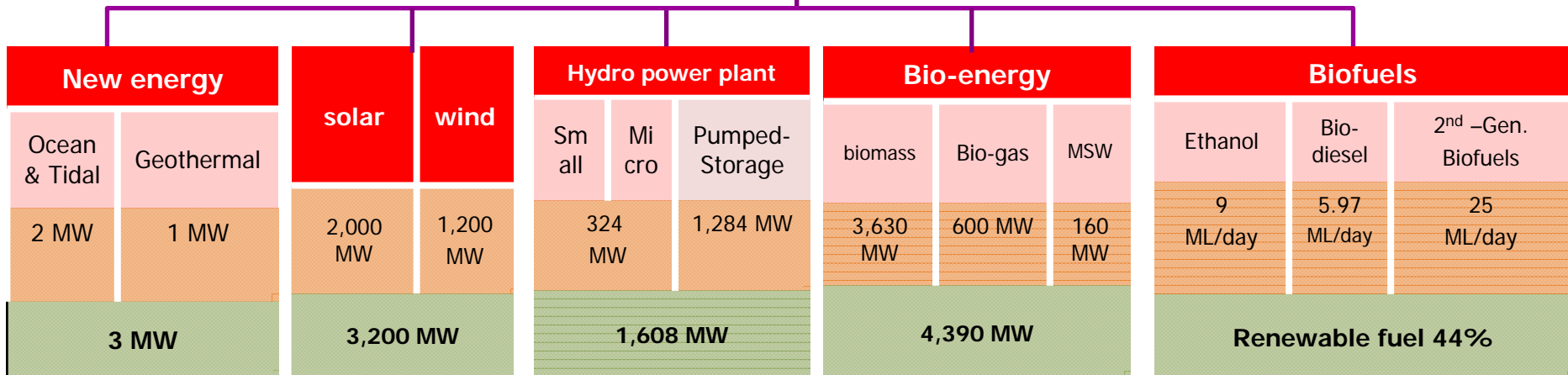
**Committed to the development of low-carbon society**

**Government Funding On R & D & D Activities**

**10 years Alternative Energy-Development Plan (AEDP-Master Plan 2012-2021)**

**Private-Led Investment**

**Target 25 % of RE in Total Energy Consumption By 2021**



**RE for Power generation = 9,201 MW**


# Current Situations and Targets (1/2)



Type	Unit	Current capacity	New Target 9,201 MW	Old Target 5,607.5 MW
<b>Electricity</b>				
1.Wind	MW	7.28	<b>1,200</b>	800
2.Solar	MW	120.14	<b>2,000</b>	500
3.Hydro	MW	86.39	<b>1,608</b>	324
4.Biomass	MW	1,751.86	<b>3,630</b>	3,700
5.Biogas	MW	138	<b>600</b>	120
6.MSW	MW	13.45	<b>160</b>	160
7.Tidal & Geothermal	MW	0.35	<b>3</b>	3.5

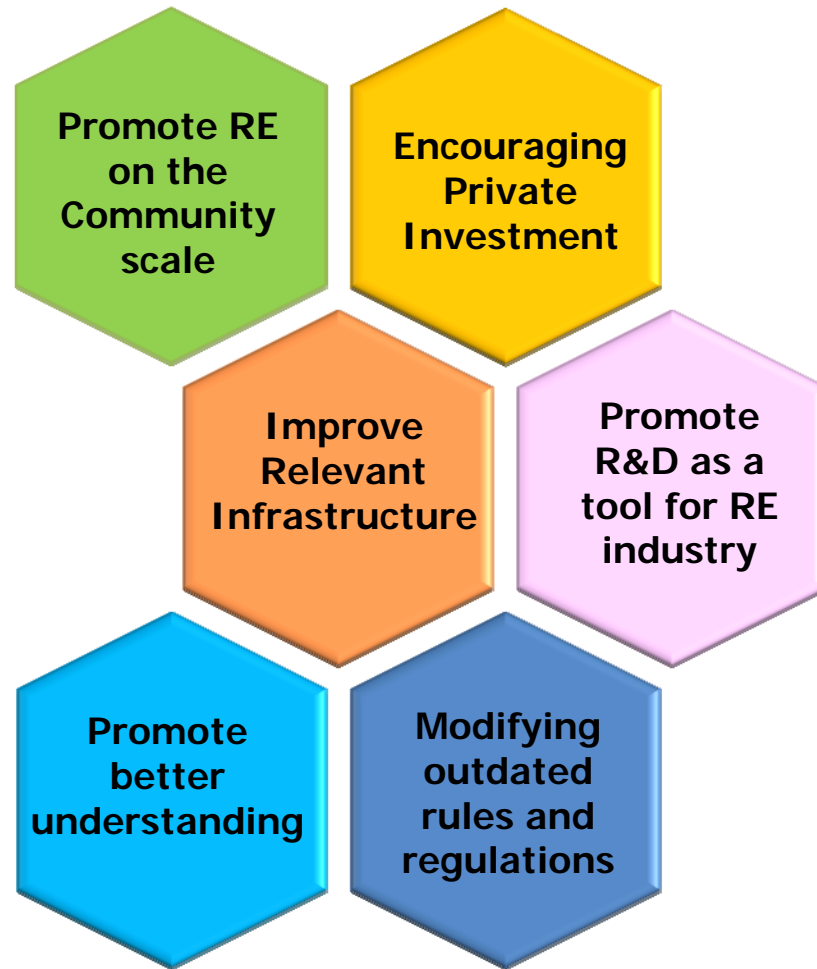


# Current Situations and Targets (2/2)



Type	Unit	Current capacity	New Targets	Old Targets
<b>Heating</b>				
8. Solar	Ktoe	2.10	100	35
9. Biomass	Ktoe	3,441.18	8,200	6,760
10. Biogas	Ktoe	421.00	1,000	600
11. MSW	Ktoe	1.71	35	35
<b>Biofuel</b>				
12. Ethanol	ML/Day	1.20	9.0	9.0
13. Biodiesel	ML/Day	1.80	5.97	4.5
14. 2 <sup>nd</sup> Gen. Biofuels for Diesel market	ML/Day	-	25.0	-

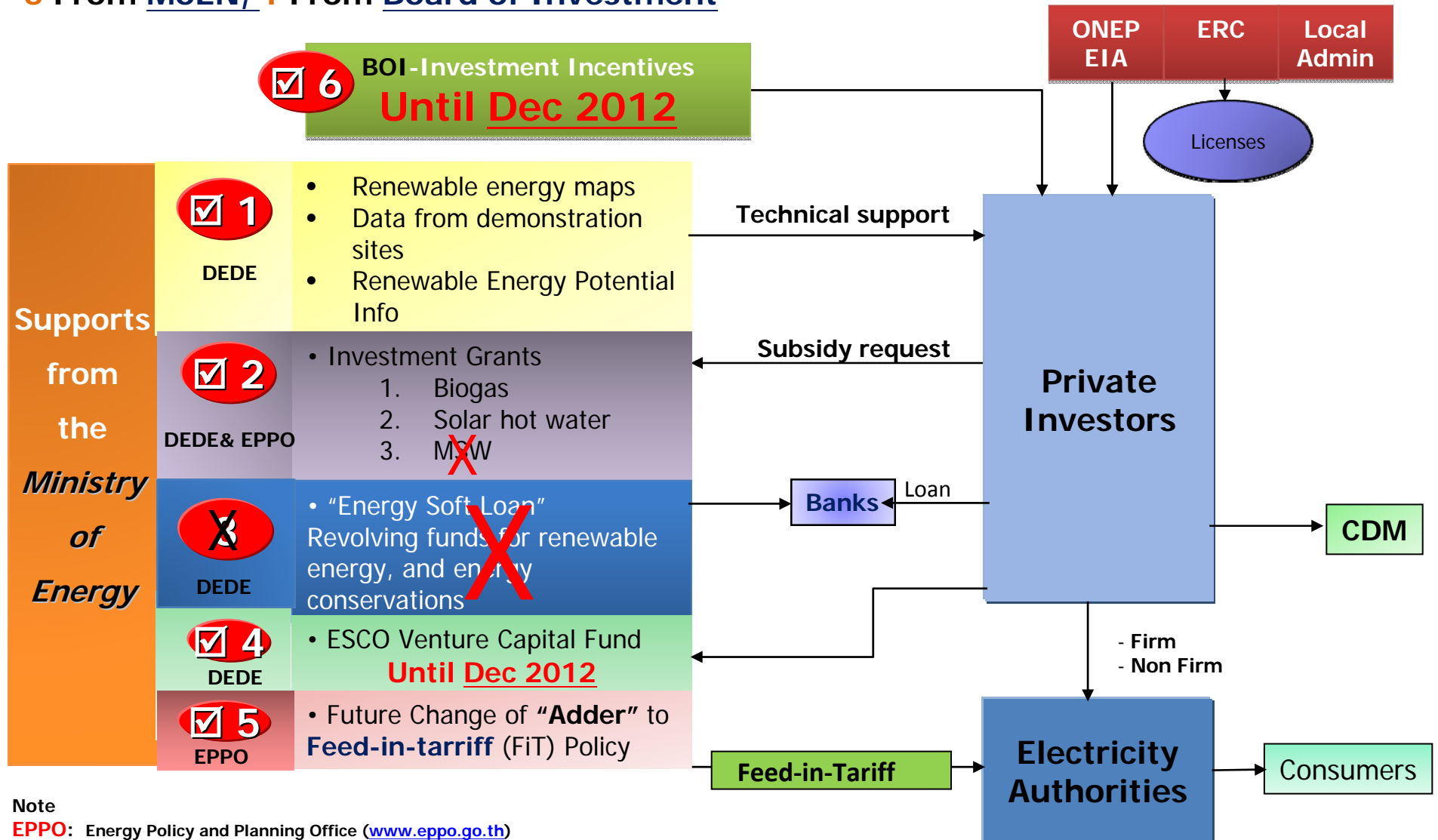






## **Updated Measures for RE Promotion**

**6 Supporting Mechanism: RE-Electricity Generating**  
**5 From MoEN, 1 From Board of Investment**




Note  
**EPPO**: Energy Policy and Planning Office ([www.eppo.go.th](http://www.eppo.go.th))  
**BOI**: The Board of Investment of Thailand ([www.boi.go.th](http://www.boi.go.th))  
**DEDE**: Department of Alternative Energy Development and Efficiency ([www.dede.go.th](http://www.dede.go.th))



# RE Power Project in Thailand

## SPP & VSPP

EPPO : December 2011

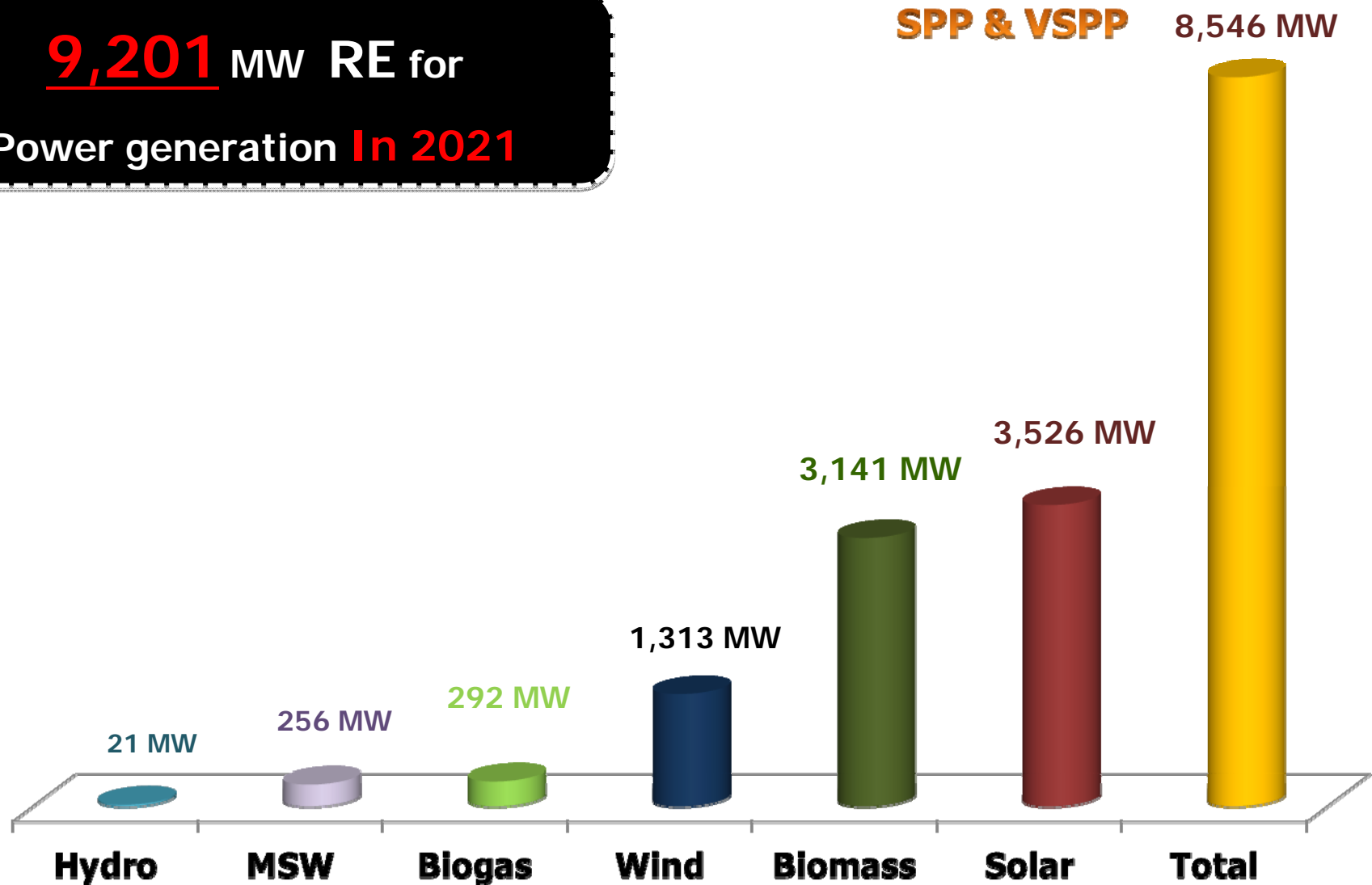
Type	Proposals submitted			Received Notification of Acceptance			Contract Signed			Supplying Power to The Grid			Total		
	Number (Project)	Install Capacity (MW)	Sale to EGAT/PEA (MW)	Number (Project)	Install Capacity (MW)	Sale to EGAT/PEA (MW)	Number (Project)	Install Capacity (MW)	Sale to EGAT/PEA (MW)	Number (Project)	Install Capacity (MW)	Sale to EGAT/PEA (MW)	Number (Project)	Install Capacity (MW)	Sale to EGAT/PEA (MW)
	177	1,105	1,073	45	109	96	446	2,303	2,246	97	169	111	765	3,685	3,526
	34	394	292	60	614	483	231	2,069	1,641	87	1,423	725	412	4,499	3,141
	17	398	370	26	593	584	18	398	358	3	0	0	64	1,390	1,313
	33	74	68	36	59	53	42	83	72	71	113	99	182	329	292
	11	101	93	7	7	6	23	141	114	12	39	37	53	288	256
	3	1	1	2	0	0	5	6	6	6	14	13	16	22	21
												<b>985</b>	<b>1,492</b>	<b>10,213</b>	<b>8,549</b>



# RE Power Project in Thailand

EPPO : December 2011

**9,201** MW RE for  
Power generation **In 2021**



# STRATEGIES: MOVING FORWARD

## Solar

- Promote solar PV rooftop
- Develop “Smart-grid” system

## Wind

- Small-wind for community
- Promote wind for water- pumping in Agri-sector

## Hydro

- Promotion Pico & Micro hydro turbine
- New pumped storage facilities by EGAT





# STRATEGIES: MOVING FORWARD

## MSW

- Focusing on household and community waste
- Promoting RDF & Pyrolysis oil

## Biomass

- Dedicated Energy Crops
- Agricultural wastes → Focusing on “Bagasse” from Sugar Mills

## Biogas

- Waste-water and animal farms
- Biogas network
- CBG-Compressed Biogas-for transportation



# Updated on Thailand's Solar Energy

## Short term

- **New FiT**
- **PV Rooftop**
- **Measure on Local Content Promotion**
- **Community-based Solar Farm**

## Medium term

- **R&D**

## Long term

- **PV recycle**
- **Building code**

- Still “No-New-Solar-application” policy
- The new Feed-in Tariff (FIT)-is not yet approved by the NEPC.
- **Community use and Solar-Rooftop will be more focused**

# NEW RE TECHNOLOGIES FOR R&D



- Geo-Thermal in Northern part of Thailand (Chaing-Mai)



- Tidal Energy in Phuket and Samui Islands



- Promote materials researches
- Researches on Vanadium Redox Flow and Lithium-Ion Battery

# Conclusions

1. Thailand has

- 11<sup>th</sup> National Economic & Social Development Plan
- The new master plan on renewable energy- **AEDP** → **calling for 25%RE by 2021**

2. The new FiT is not yet approved. Adder scheme is still valid and on-going.

3. Still “No New Solar applications” policy

## Energy



- RE mix increase to 25%
- Power Electric 9,201 MW
- Heat 9,335 ktoe
- Biofuel 39.97 ML/day
- % replacement oil 44 %

## Environment



- Reduce emission CO2  
76 M.TON in 2021
- Revenue from the sale  
carbon credit  
Approx. 23,000 M.Baht/year

## Economy



- Investment promotion  
442,000 M.Baht/year
- Reduce oil imports  
574,000 M.Baht/year

New AEDP PLAN (2012-2021)

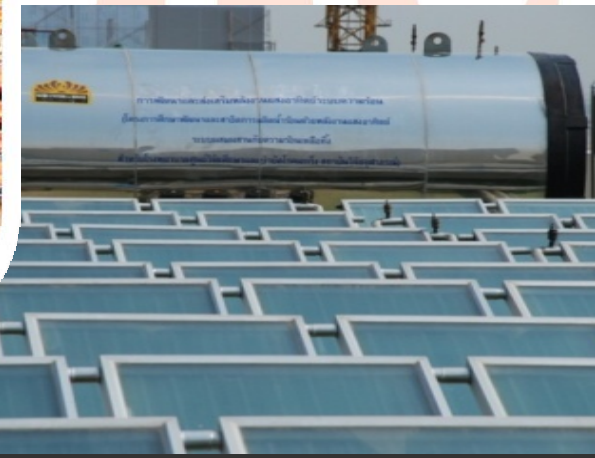




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[www.dede.go.th](http://www.dede.go.th)

Thank you for your attention



**DEDE: Knowledge Base organisation  
and sustainable development Centre of RE and EE**