



‘Creating the Ways’

Sharing the experiences
from Thailand on
10Q on renewable energy
development

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Healthy Public Policy Foundation
Thailand

The Webinar on
"10 Questions to Ask About Scaling
On-Grid Renewable Energy"
20th May 2014

Outline

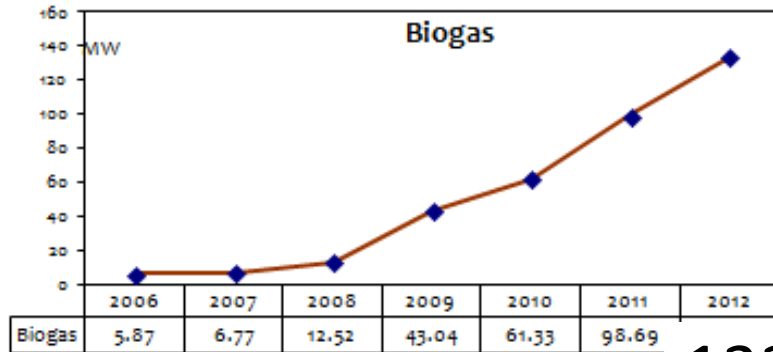
- The renewable energy development master plan by Ministry of Energy
- The problems
- The Solar PV Roadmap Initiative (*focusing on Q3, Q4, Q5*)
- Preventing the negative impacts from biomass power plant projects (*focusing on Q10*)
- The emerging of social enterprises for small-scale renewable energy development (*focusing on Q7*)

Alternative Energy Development Plan 2012-2021 by Ministry of Energy

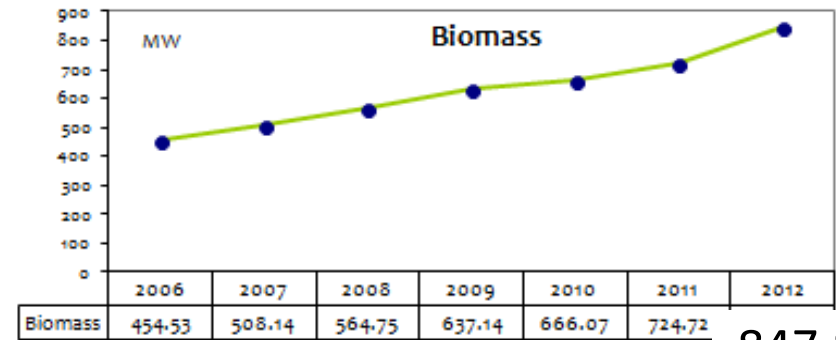
- AEDP is the long-term master plan on renewable energy, developed by Department of Alternative Energy Development and Energy Conservation
- Set the target of 13 927 MW within 2021

	Biomass	Biogas	MSW	Solar	Wind	Mini hydro
Target within 2021	4 800	3 600	400	3 000	1 800	324

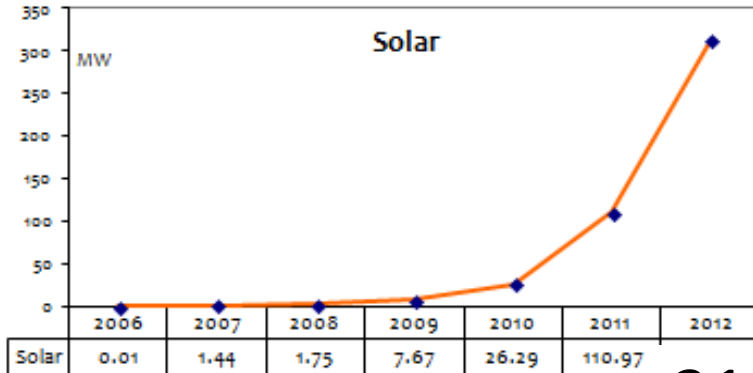
Trends in Thailand's Grid-Connected RE



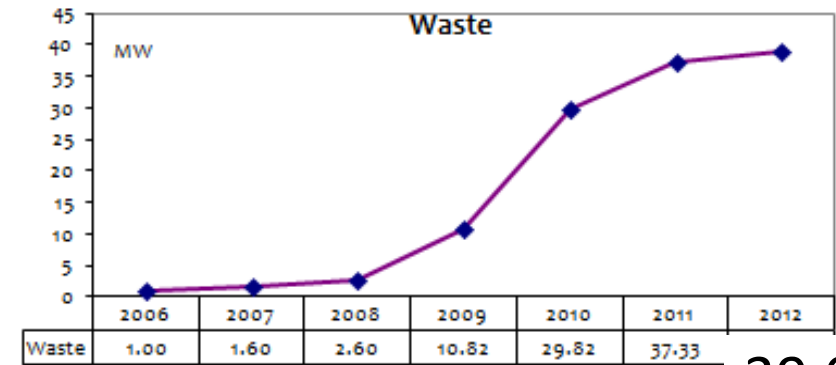
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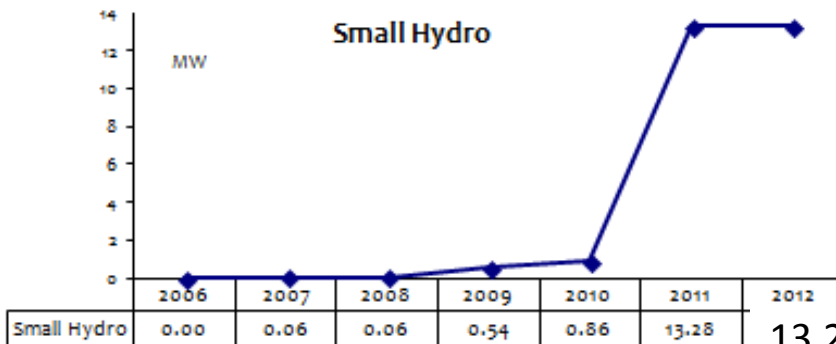
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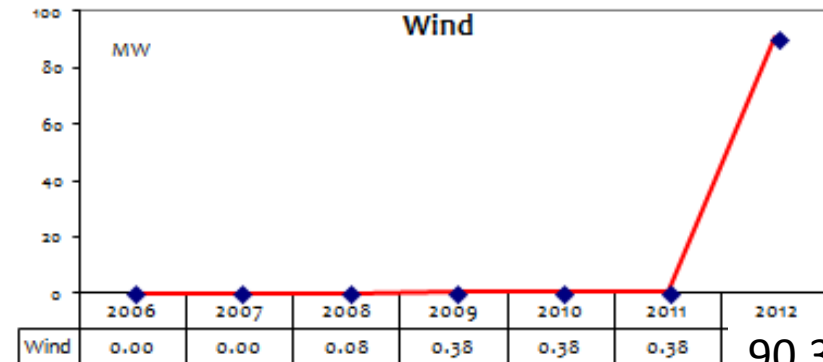
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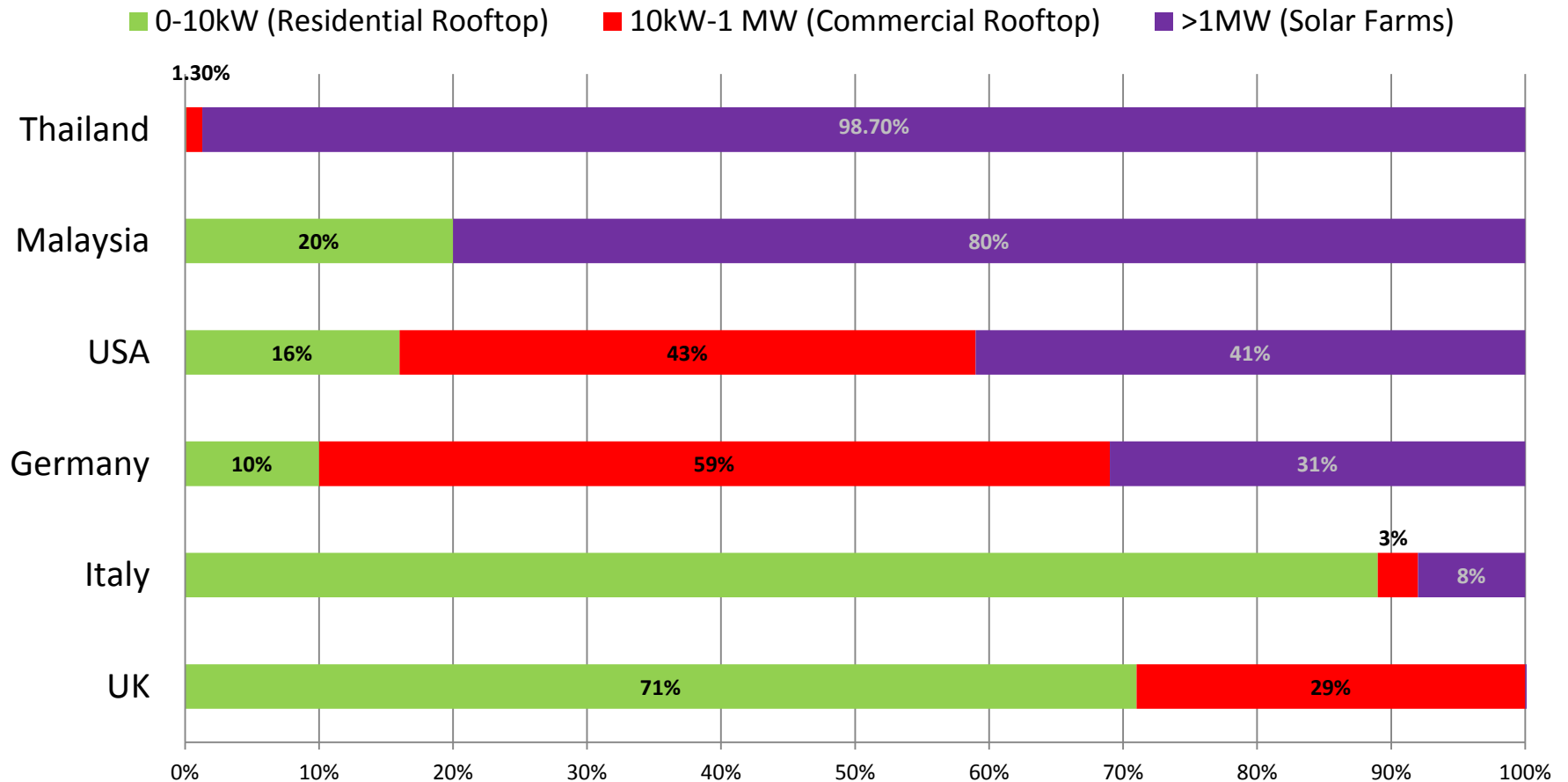


13.28



90.38

Solar Power Development in Different Countries Grouped by Size of Installations



Source: Analyzed from Malaysia (Chen, 2013); Italy (GSE, 2013); Thailand (EPPO, 2012), Germany (Schoenfeld, 2012), USA (SEIA, 2012); UK (DECC, 2013)

The obstacles to Solar PV expansion

The target has been used as 'quota'

- When the projects submitted for selling to the grid was more than the target of 2 000 MW within 2021, MoE stopped accepting the new projects.
- In 2013, MoE added another 1 000 MW of solar PV to the target within 2021, and already allocated the increased target into
 - 100 MW for Commercial Rooftop
 - 100 MW for Residential Rooftop
 - 800 MW for Private+Community Solar Farm

The obstacles to Solar PV expansion

The problematic legal framework and enforcement by other Ministries

- Solar PV of more than 2 kW is considered 'a factory' by Ministry of Industry and need to apply for the permission (*Thailand Only in the World!?!)*
- Consequently, some solar rooftop 'factory' may be contradicted with the residential area set in the Land Use plan of each area



Thailand's Solar PV Roadmap Initiative



The Power that Empowers

Solar power holds promises for a developing country like Thailand.

It is a clean, low-impact power generation option that empowers consumers to become producers and creates green jobs.

Thailand's Solar PV Roadmap process is designed to engage relevant stakeholders to help bring solar power to the mainstream



British Embassy
Bangkok



Department of Alternative
Energy Development and Efficiency

MINISTRY OF ENERGY

The diagram consists of a yellow rectangular area at the top and a grey rectangular area at the bottom. The yellow area contains the text 'Policy Platform' and the grey area contains 'Research Platform'. A blue outline arrow points upwards from the grey area to the yellow area. To the right of these two areas is a blue vertical bar containing the text 'Public Outreach' and a list of three items: '- Briefing Papers', '- News Flash', and '- Infographics'. Two blue outline arrows point from the yellow and grey areas respectively towards the 'Public Outreach' bar.

Policy
Platform

Research
Platform

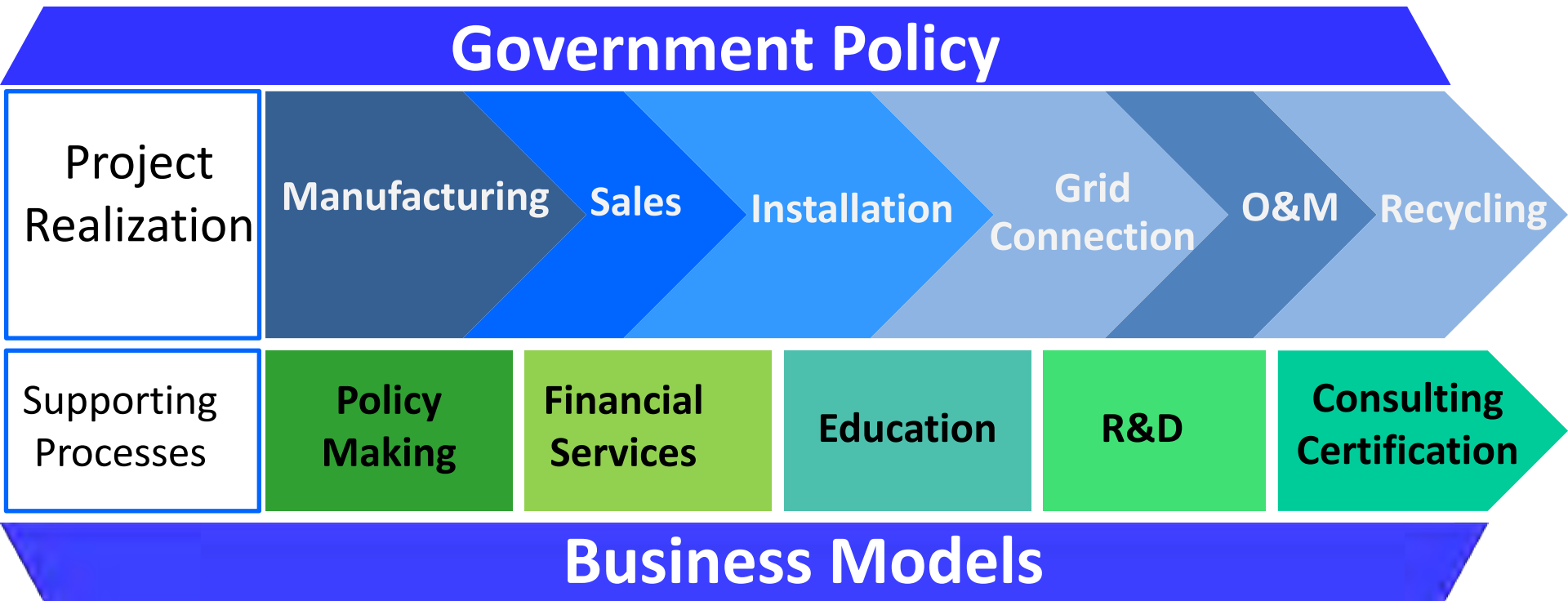
Public Outreach

- Briefing Papers
- News Flash
- Infographics

Output: Solar PV Roadmap for Thailand

Outcome: A network of stakeholders that operates based on the culture of knowledge creation and good governance

The Solar Value Chain



- How can policy be designed to enhance domestic value creation along the solar value chain?
- What are innovative business models that can add to value creation & value capture?



1. What are the technical impacts (positive and negative) of solar power to the grid?

2. How are the impacts managed to ensure safety and reliability while maximizing the solar benefits to the grid?

3. How should this knowledge be integrated into the Thai utilities' resource planning practices and grid code?

How can Thailand add and capture value in the global solar industry?
(cost trends, innovative business models)








How can policy be designed to exploit the full solar potential while keeping social and environmental considerations in mind?

TECHNICAL

ECONOMICS/ FINANCE

POLICY

The Policy Platform : a series of workshops and meetings for various stakeholders

		Technical Working Group	Economics/ Finance WG	Policy Working Group	Advisory Committee
2013	June				
	July				
	August				
	September				
	October				
	November				
	December				
2014	January				
	February				
	March				

HOW YOU CAN CONTRIBUTE



Research

Creating knowledge base on solar power in developing countries' context



Network

Strengthening the network of government officials, private companies, NGOs, and academicians in catalyzing change in solar energy policy & regulatory framework



Communicate

Broadening policy dialogue through engagement with the public/media.

The loophole in the legal frameworks for renewable energy project less than 10 MW

The regulation by Ministry of Energy since 2001

- Very Small Power Producer (VSPP) is less than 10 MW
- Small Power Producer (SPP) from 10 - 90 MW

The regulation by Ministry of Natural Resources and Environment since 1992

- EIA has been enforced on thermal power plant project from 10 MW and above

The 9.0 – 9.9 MW Biomass Power Plant

The projects which are already selling electricity to the Grid

9.9 – 9.0 MW 20 projects, out of the total of 42 VSPP projects

The projects which already signed the Power Purchase Agreement

9.9 MW 96 projects

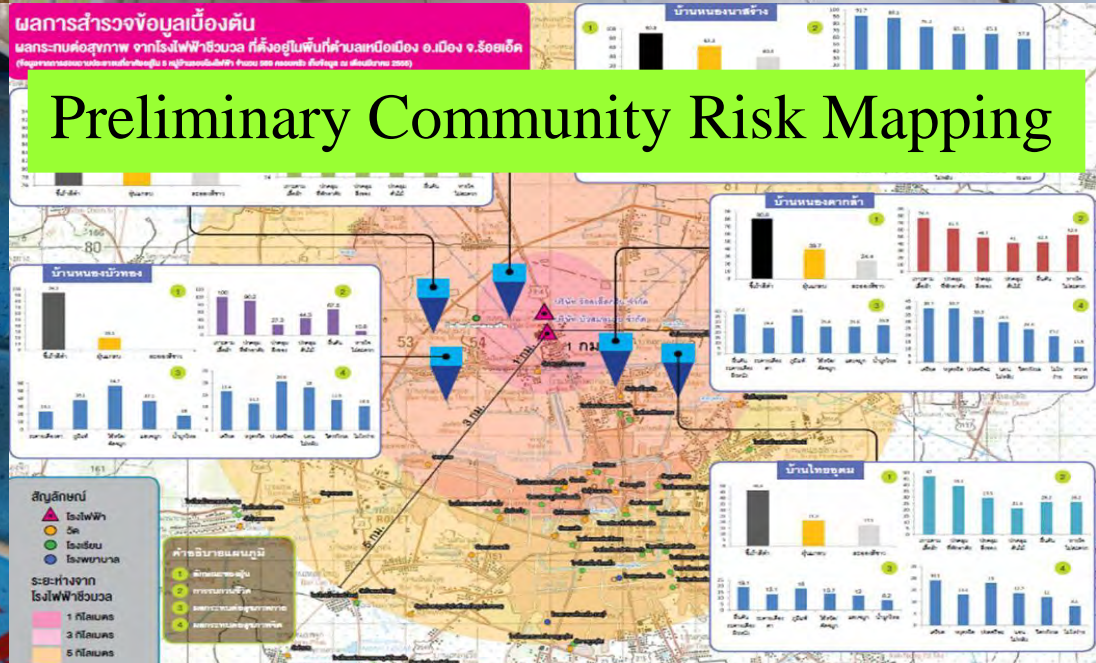
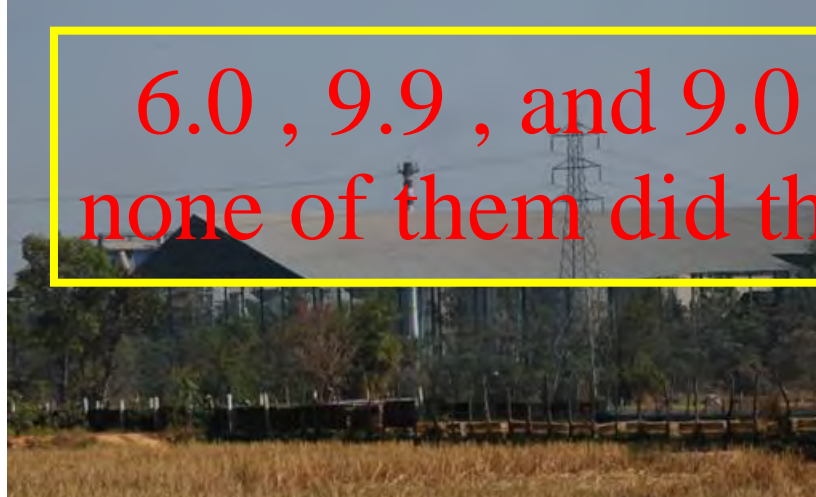
9.8 – 9.0 MW 36 projects

so 132 projects, out of the total of 174 VSPP projects

Ref. : SPP and VSPP status at December 2012, Ministry of Energy, www.eppo.go.th

Negative impacts from the three biomass power plants in the same area, Roi Et province, Thailand

6.0 , 9.9 , and 9.0 MW
none of them did the EIA



Code of Practice for Biomass Power Plant less than 10 MW



- Enforce by the Regulator in Dec. 2012
- Project owner must submit the Environmental Checklist with project application
- Cover many issues throughout the project life-cycle

The Ministerial Cabinet Resolution in 2013 approved the solution proposed by the National Health Assembly

1. Provincial energy planning, as the framework for RE project development and the decision-making

2. Improve the Land Use planning (standard and regulation for biomass projects)

3. Improve the incentive and criteria for project approval by the Regulator

4. Support the local communities for meaningful participation in the decision-making process

5. Develop the environmental monitoring plan and strengthening the enforcement

Problems of financing small-scale RE :

The fund of the government to support RE is very centralized

Yes, approved



The Energy Conservation Fund

We are developing
RE Power Plant



Sorry, we do not
deal directly
with community

Can we borrow or get
support for Biogas project?



Problems of financing small-scale RE :

Only selling to the Grid, not for self-use on electricity or cooking gas

Adders (the Thai version of FiT)



Electricity
for the Grid



We are producing
electricity and biogas for own uses
why no Adders??





- Establishing the network of social enterprises on small-scale renewable energy in November 2013
- To develop and expand small-scale renewable energy in sustainable manner, while also survive from the business point of view
- An innovative solution for financing small-scale renewable energy expansion

กิจการและเครือข่าย:

ภาคกลาง

- 11) อท. ลือเมงษ์ ลือเนบ ภาควิชาเทคโนโลยี คณะเทคโนโลยีสารสนเทศ สถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง จ. กรุงเทพฯ
- 12) อท. วิจิต ตรีสุข ภาควิชาวิศวกรรมไฟฟ้า คณะวิศวกรรมศาสตร์ มหาวิทยาลัยศรีปทุม จ. กรุงเทพฯ
- 13) กลุ่มปราชญ์เกษตรอินทรีย์บ้านดอนเมืองแพด จ.เพชรบุรี
- 14) เครือข่ายชุมชนพอเพียงตำบลบ้านไร่ จ.เพชรบุรี



- 5) ภาควิชาวิศวกรรมพลังงาน มหาวิทยาลัยเทคโนโลยีพระจอมเกล้า จ. อุตรดิตถ์
- 6) กลุ่มวิจัยพลังงานกับชุมชน จ.อุตรดิตถ์
- 7) ปราชญ์ จ.อุตรดิตถ์
- 8) เทศบาลนครขอนแก่น จ.ขอนแก่น
- 9) กลุ่มวิจัยนโยบายพลังงานเชิงรุก จ.สุรินทร์
- 10) กิจกรรมเครือข่าย E-Son Style จ.สุรินทร์



Biomass gasification for electricity generation or cooking gas



The foundation in Kanchanaburi province is providing installation and training course

Biogas from organic waste, using various local materials



**Several social enterprises are providing the design, building,
as well as the training course**

‘Biomass plus Biogas’

for electricity generation

- Pa Deng community in Petchburi province is providing the installation and training on biomass gasification plus biogas for electricity generation
- Each system can generate 5 kW, which is enough for several households



Low-speed wind turbine
plus solar PV light pole
developed by
Asia-Pacific Renewable
Energy Development
Foundation



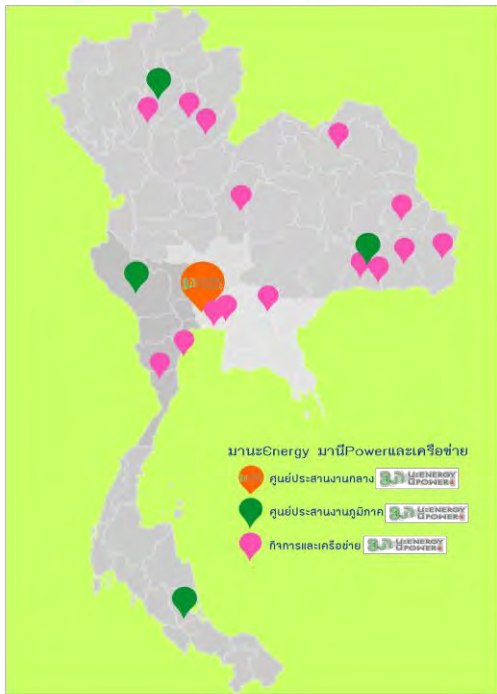
Micro hydropower

- The Community Enterprise, selling and providing the services on micro-hydro 1 000 W



จาก เครือข่ายพลังงานชุมชน พัฒนาสู่
IS กิจกรรมเพื่อสังคมด้านพลังงาน

มานะ ENERGY
มานี POWER



1. มานะ Energy มานี Power

ศูนย์ประสานงานกลาง: มูลนิธินโยบายสุขภาวะ จ. นนทบุรี

- Four enterprises on biogas
- Six enterprises on biomass
- One enterprises on wind turbine
- One enterprise on solar PV
- Three enterprises on various tech.
- One renewable energy shop
- Two enterprises on trainings, research, and supply chain

- 11) ผศ. สอพงษ์ สอนาม ภาควชาเทคนิคเกษตร คณะเทคโนโลยีการเกษตร สถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง จ. กรุงเทพฯ
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- 14) เครือรวมใจตามรอยพ่อตำบลป่าเต็ง จ. เพชรบุรี



Many challenges ahead

- Continuous support for small-scale renewable energy or ‘community energy’ innovations
- Develop the standards for the products and services
- Building management capacity for the social enterprises
- Strengthening the revolving fund of the network
- No systematic energy policy to support small-scale renewable energy or ‘community energy’



Thank you very much
for your attention

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