CBAsia Workshop
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SUSTAINABLE ENERGY DEVELOPMENT IN VIET NAM

Presenter: LE NGOC SON
Program Coordinator of GreenID

MAIN CONTENTS

- ***Energy and power sector in Viet Nam***
- ***GreenID's works to promote RE and EE in Viet Nam***

POTELTIAL OF PRIMARY ENERGY RESOURCES

- Coal:
  * Theoretical potential: 48.7 bill tons
  * Technical potential: 7.2 Bill. Tons
- Oil: 2.3 Bill. tons
- Gas: 1.2 – 1.5 Bill. m^3
- Hydropower: 83 Bill. kWh
- Geothermal Resources: About 200 MW
- Solar Energy: 43.9 Bill. TOE
- Biomass: 43-46 TOE/year
- Wind Energy: 8,000 -12,000 MW

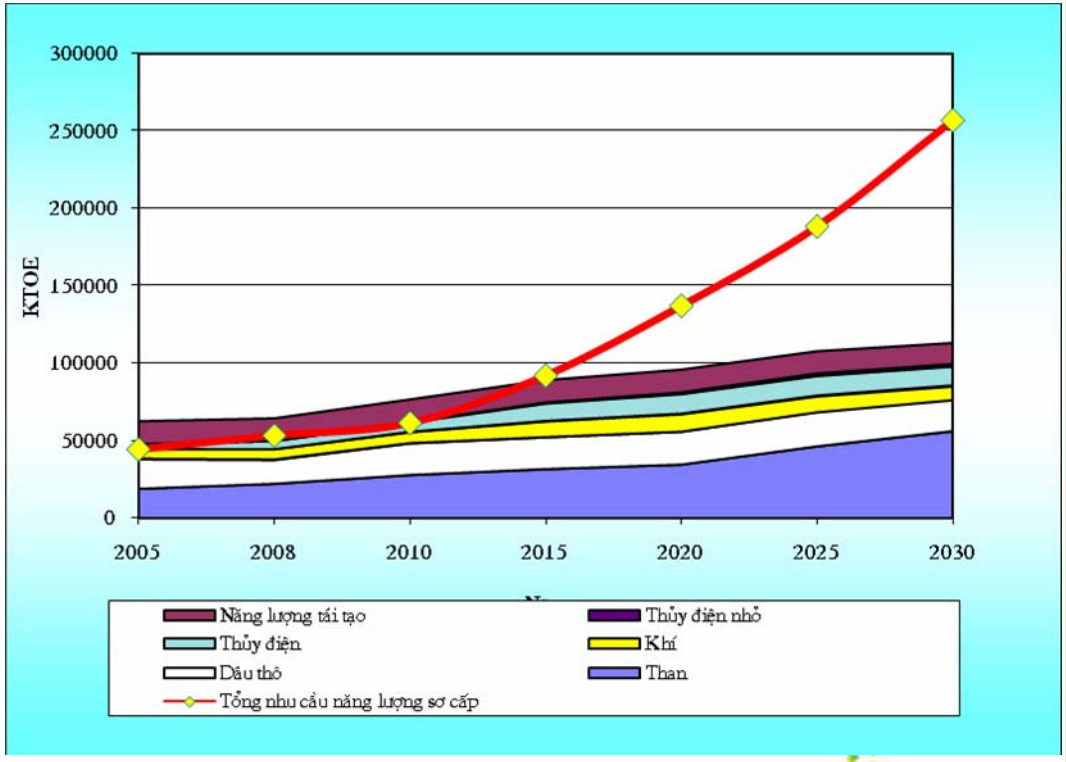
The Key Targets of PDP 7

Items	Year 2020	Year 2030
Total capacity	*75,000 MW*	*147,000 MW*
Coal Thermal power	48%	51.6%
Hydro	25.5%	15.7%
Gas	16.5%	11.8%
RE	5.6%	9.4%
Nuclear	1.3%	6.6%
Import	3.1%	4.9%
Total power production	*330 bill kWh*	*695 bill kWh*
Coal Thermal power	46.8%	56.4%
Hydro	19.6%	9.3%
Gas	24%	14.4%
RE	4.5%	6%
Nuclear	2.4%	10.1%
Import	3%	3.8%

Energy Demand/Supply

Orientation to 2030

- Primary Energy Demand (2030): > 250 MTOE, five time of its 2009
- ❖ Big Hydropower projects will be completed development in this decade
- ❖ Domestic fossil fuel resources (Coal, oil, gas) is limited
- ❖ Need to import coal for power generating (Est. ~ 2015)
- ❖ Vietnam Energy will depend gradually on import



Challenger for Energy security and Sustainable Development

Renewable Energy Policy Development in Vietnam

Electricity Law

Clean Development Mechanism

National Energy Development Strategy

Biofuel Development

Avoided Cost Tariff for Small RE Plant (Invalid)

National Power Development Plan No. VII

FIT for Wind

Climate Change Strategy

Revised Electricity Law

Circulars for Wind

Sustainable Development Strategy

Environment Protection Strategy

Green Growth Strategy

FIT for Waste-to-Energy

Circular for Wind

FIT for Biomass

Avoided Cost for Small Hydropower

Implementation Plan for EPS & GGS

National RE Development Strategy

Circulars for Biomass & Waste-to-Energy

Revised FIT for Wind (coming)

FIT for Solar (coming)

(Prepared by **Mr Phan Thanh Tung** – RE Freelancer, E: tungpts194@gmail.com, M: +84 (0) 977 935 010, A: Hanoi, Vietnam)

GreenID's works to promote RE and EE in Viet Nam

- **GreenID's view on sustainable energy system:**
- Meet the needs of the present without compromising the needs of future generations
- Support the citizens to participate in the policy making process
- Include the energy transition from large scale and centralized power plants to smaller decentralized
- Include energy efficiency and renewable energy as the main components
- **Promote the sustainable energy development in VN through three main programs: Research, community solutions and advocacy.**

GreenID's works to promote RE and EE in Viet Nam

- Conduct researches on existing related energy policies and alternative solutions
- **Propose alternative for power development plan No. 7 (Reduce the coal fired power from power mix to below 50% by 2030 through increasing energy efficiency and renewable energy**
- At local level: Demonstrate a new approach to promote the application of sustainable energy models and the local participation through **Local Energy Planning (LEP)**

The comparison of power development scenarios of PDP 7 and GreenID's (2030)

Type	Installed capacity (10^3MW)						Power Generation (TWh)					
	PDP 7	Ratio (%)	*Base scenario of GreenID*	*Ratio (%)*	*Saving Scenario GreenID*	*Ratio (%)*	*PDP 7*	*Ratio (%)*	*Base scenario GreenID*	*Ratio (%)*	*Saving scenario GreenID*	*Ratio (%)*
Total	*137,0*	*100*	*102,9*	*100*	*91,7*	*100*	*695,2*	*100*	*524*	100	*459*	*100*
Hydropower	22,5	16,4	22,5	21,9	22,5	24,5	60,3	8,7	60,3	11,5	60,3	13,1
Gas and diesel thermal power	17,3	12,6	17,3	16,8	17,3	18,9	90,9	13,1	90,9	17,3	90,9	19,8
Coal thermal power	76,3	**55,7**	47,1	**45,8**	35,9	**39,1**	431,0	**62,0**	273,5	**52,2**	208,5	**45,4**
Small Hydropower and renewable energy	10,7	7,8	10,7	10,4	10,7	11,7	74,4	10,7	74,4	14,2	74,4	16,2
Nuclear power	4,9	3,6	0,0	0,0	0,0	0,0	13,7	2,0	0,0	0,0	0,0	0,0
Imported power	5,3	3,9	5,3	5,2	5,3	5,8	24,9	3,6	24,9	4,8	24,9	5,4

What is LEP?

- Community based energy and environment planning approach
- Participatory, Bottom – up and right based approach
- People and authority together develop a common plan aim at addressing their problems
- **Local energy planning** is planning **by** the locals not planning **for** the locals.

Local Participation

Technology+Knowledge

LEP

Local energy planning

Why energy planning

- To predict how much energy will be needed for an area, and how it should be produced
- To predict the impact on environment, economy, employment
- To adopt changes in fuel for the energy production in to the system
- To utilize the local natural resources and create the local ownership

How to do (Main steps)

- S1: Introduction + orientation workshop and establish the local energy team (LET)
- S2: Capacity building for LET. Update/revise questionnaire and data processor according to the local context
- S3: Data collecting, processing and analyzing
- S4: Problem identifying and plan objectives development
- S5: Investigate the appropriate solutions and develop alternative scenarios
- S6: Drafting energy plan and consult with local people and authority to finalize
- S7: Exhibition and communication events
- S8: Implementing the developed plan and follow up activities

Where was LEP implemented?

Example of applied SE models

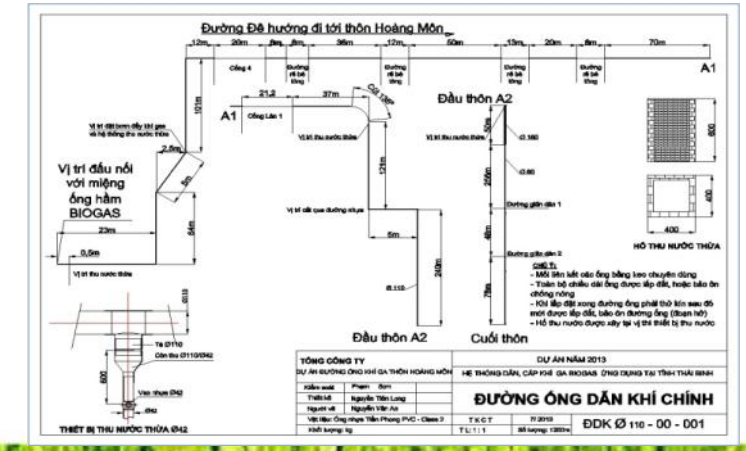
Example of applied SE models

Drinking water supply system using Power from solar PV system

Example of applied SE models

Composting and household biogas system

Community biogas system



LED light bulb for school

Solar water heater

Improved cook stove

Some conclusions

- Viet Nam has a high potential to develop RE and EE project at different scales throughout the country.
- Government has set targets for the RE development.
- A number of support mechanisms for RE power projects has issued to promote developing the RE, but they are still not strong enough to attract investors from inside and outside of the country.
- Local energy planning initiative was demonstrated as an effective tool to enhance the local participation and promote the use of sustainable energy models at the local level

Thank you for you attention!

http://greenidvietnam.org.vn/

info@greenidvietnam.org.vn

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