
Power, Planning and Politics:

The Contribution of SEA in Sustainable Energy Planning in Thai Power Sector

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The problems of Thai power sector

- Heavy rely on large-scale conventional power plant : gas, coal, dam
- Serious environmental and social impacts - power plants, coal mining, gas pipelines, etc.
- Many dead-lock social conflict, cases after cases
- Both gas and coal price closely links to oil price
- Over investment in power plant projects
- Able to push excess costs to consumers through the power tariff

The Need for SEA

- **In 1999**, SENT proposed Thai government to invest in sustainable energy development (limited at project level)
- **In 2003**, Thai government has launched the National Energy Strategy for energy efficiency and the renewable energy development (no link with economic, social and environmental consequences)
- **In 2004**, the National Economic and Social Advisory Council suggested the alternative PDP will help the government to release public investment and debt (no link with other developmental goals and impacts)
- **In 2005** HPP-HIA Program of HSRI has selected power sector as a case study for SEA development in Thailand (also refer to Strategic HIA)

SEA and Sustainable Energy in Thailand

- The 9th National Development Plan (2002-2006) based on King's philosophy of "Self-Sufficiency Economy"
 - Moderation and due consideration
 - Sufficient protection from internal and external shocks
 - Development of self-support and self-reliance
- Government Target in National Energy Strategy
 - Increase renewable share from 0.5% to 6%
 - Lower energy intensity from 1.4 : 1 to 1 : 1

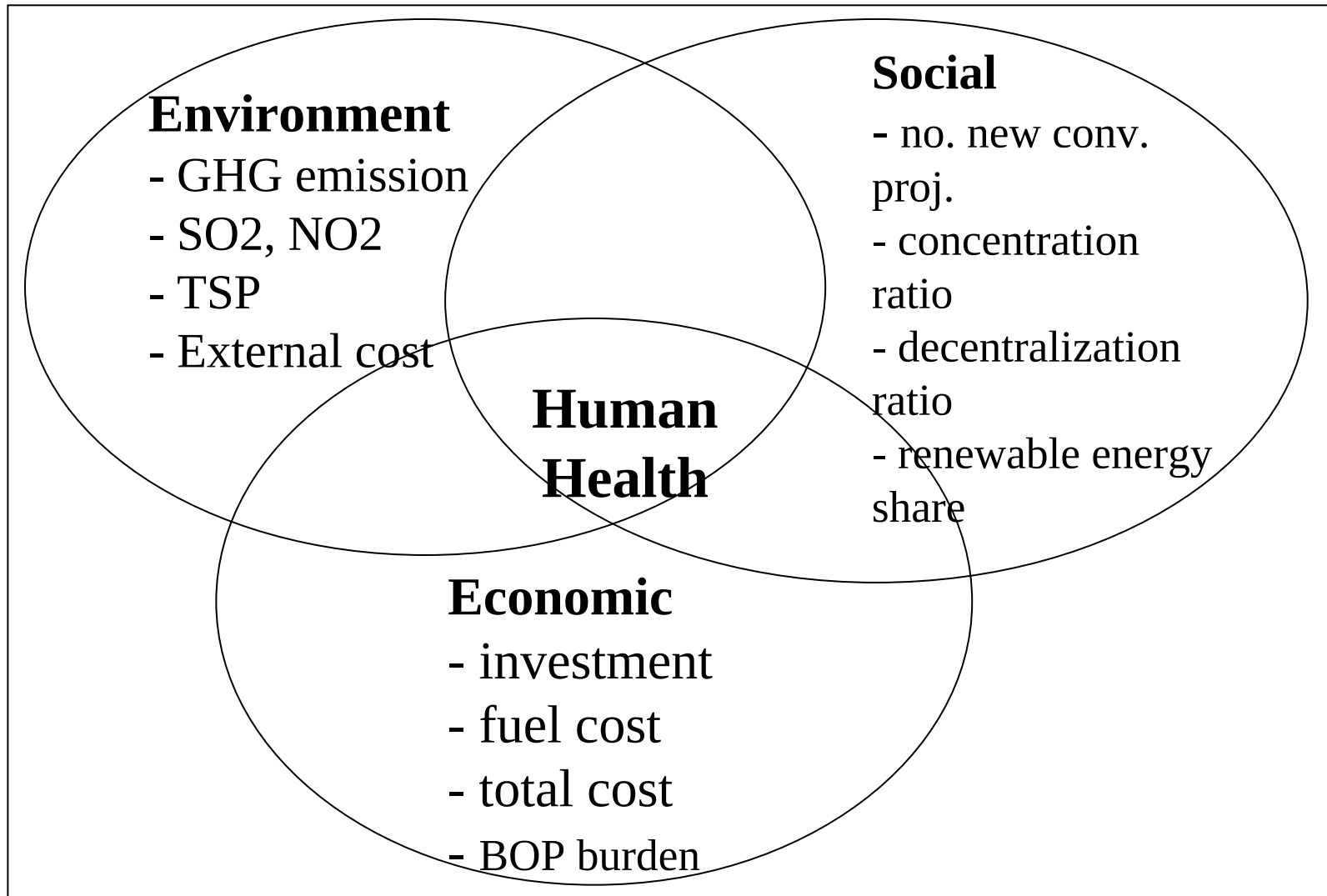
Power Development Plan (PDP)

- Master Plan of 12 years for all new power plants according to long-term power demand forecast
- Identify energy options: fuel, technology, capacity, construction area
- Lignite mining, gas pipeline, transmission expansion, etc.
- Impacts and consequences to the society – emission, externalities, investment, import burden, fuel price risk, employment, and tech. development
- Limited public participation, option analysis, and accountability (for example, overestimation)

SEA Process in This Case

- Analyzing Development Visions and Goals
 - Developing Policy Options
 - Identifying PDP Options (Incl. Planning criteria)
 - Calculating Strategic Impacts
 - Preparing Policy Document
 - Policy Communications
 - Workshops, SE Trips, SE Fair and Public Medias
 - Policy Recommendations and Actions
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Impact Indicators



The three PDP options

- The existing PDP: PDP-Gas (81% on Gas)
- The utility's alternative PDP: PDP-Coal (50% of new power plants switch to coal)
- The alternative PDP
 - Adjust the forecast (5.6% Growth, adjusted to actual peak demand in 2003)
 - DSM and Renewable Energy Technologies
 - Co-generation
 - Repowering
 - Cancel and postpone the conventional projects

The potentials and reference cases of RE



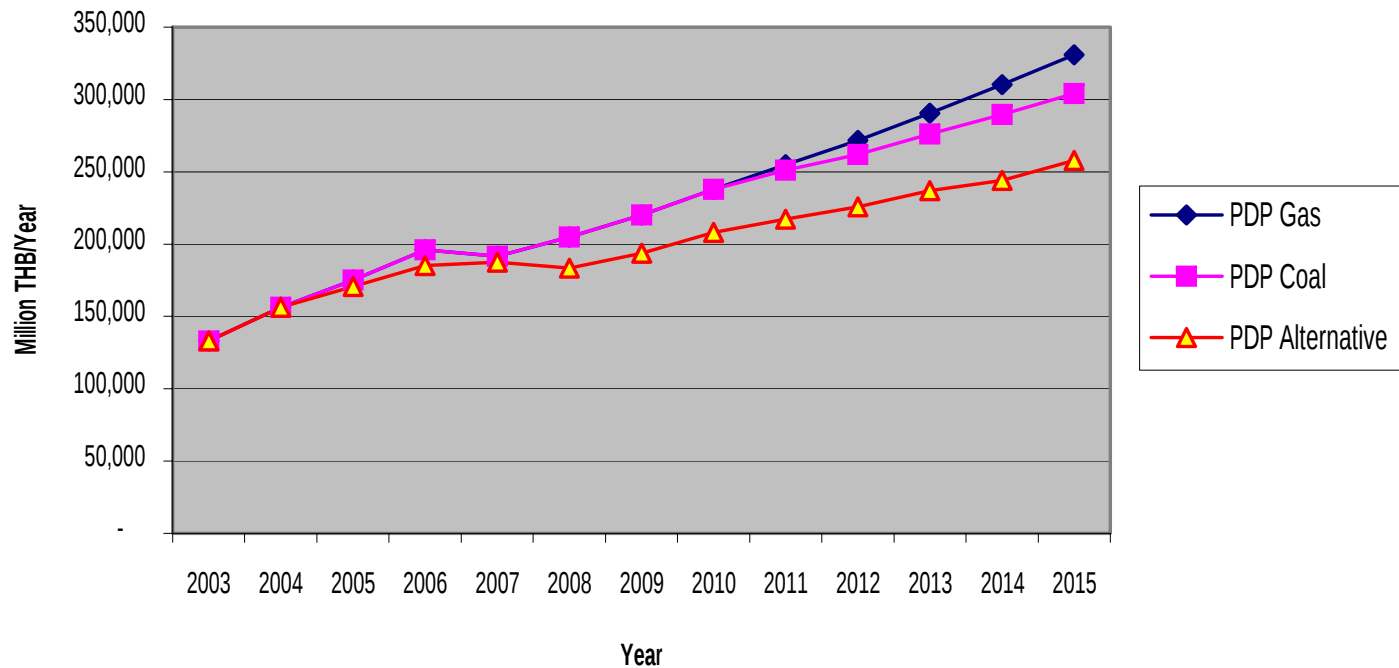
Main differences in three PDP options

Items	PDP-Gas	PDP-Coal	PDP-Alt.
Assumed Econ. Growth Rate(%)	6.5	6.5	5.6
Power Demand in 2015 (MW)	40,978	40,978	36,253
Install Capacity in 2015 (MW)	47,334	47,334	41,485
Energy Generation in 2015(GWh)	265,786	265,786	224,910
Propor. of Energy Gen. 2015 (%)			
- Gas	81	65	72
- Lignite & Coal	11	27	13
- Oil	1	1	1
- Renewable energy	2	2	10
- Large hydro	2	2	2
- Import	3	3	2

Strategic results: economic aspect

Items	Unit	PDP Options			Diff. (Gas-Alt.)	
		Gas	Coal	Alt.	Unit	%
Investment Cost 2003-2015	Billion THB	642.4	749.5	628.1	14.3	2.22
Fuel Cost 2003-2015	Billion THB	2,973.50	2,898.50	2,599.70	373.8	12.57
Fuel Cost 2015	Billion THB	330.9	304.1	257.9	73	22.05
Total Cost 2003-2015	Billion THB	3,932.60	3,993.30	3,600.70	332	8.44
Import Burden 2003-2015	Billion THB	2,557.20	2,623.00	2,242.70	314.5	12.3

Figure 4 The Comparison of Fuel Cost in Three PDP Options



Strategic results: environmental aspect

Items	Unit	PDP Options			Diff. (Gas-Alt.)	
		Gas	Coal	Alt.	Unit	%
GHG Emission 2003-2015	Mil. Ton CO2 eq.	1,221.20	1,259.30	1,090.60	130.5	10.5
GHG Emission 2015	Mil. Ton CO2 eq.	129.9	143.6	103	26.9	20.72
NO2 Emission 2015	Thousand Ton	143.8	258.6	138.7	5.1	3.57
SO2 Emission 2015	Thousand Ton	187.2	297.8	170.6	16.6	8.85
TSP Emission 2015	Thousand Ton	299.1	318	240.9	58.3	19.5
External Cost 2003-2015	Billion THB	2,903.30	3,134.10	2,704.40	230.8	7.95
External Cost 2015	Billion THB	283.6	366.3	245.1	38.6	13.6

Figure 5 Greenhouse Gas Emission in Three PDP Options

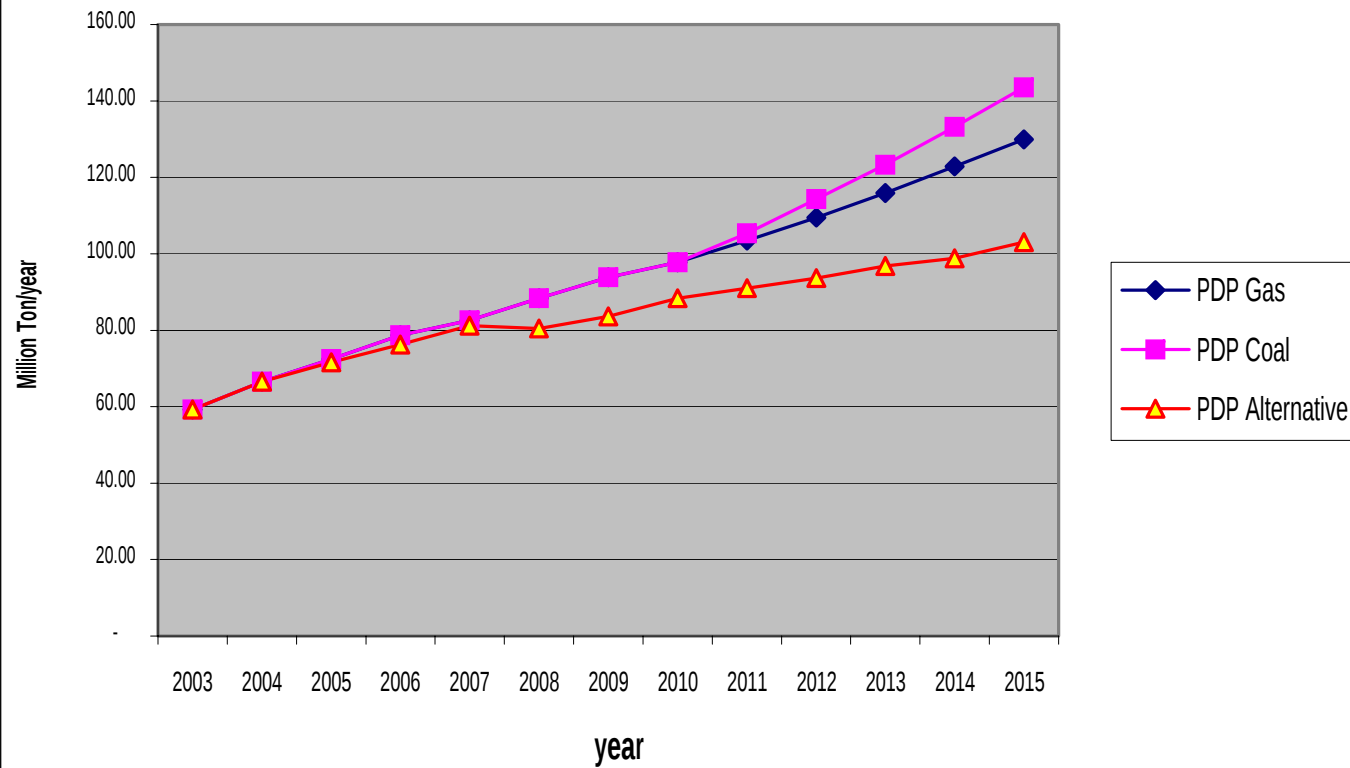
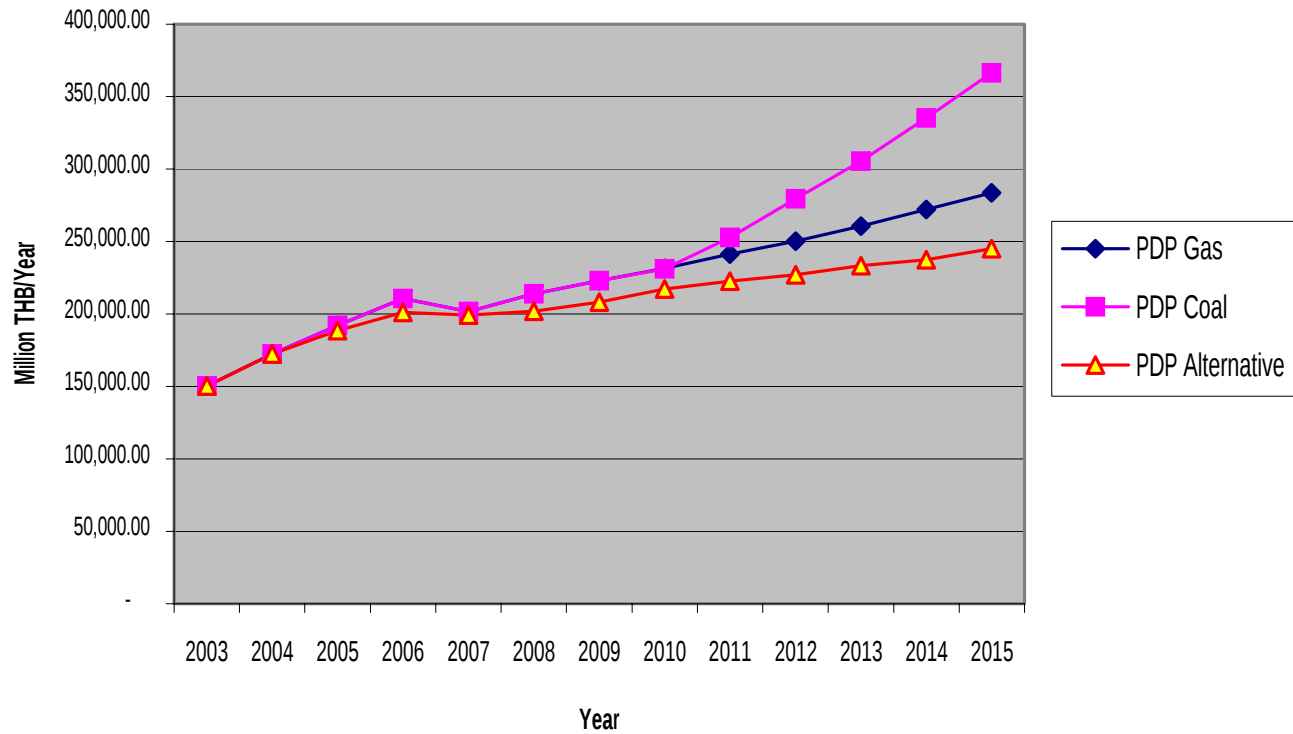


Figure 6 The Comparison of External Costs from Three PDP Options



Strategic results: socio-political aspect

Items	Unit	PDP Options			Diff. (Gas-Alt.)	
		Gas	Coal	Alt.	Unit	%
New Large Proj. 2003-2015	No.	27	27	6	21	77.7
Direct Employment 2015	Person-year	81200	78471	98811	-17611	-21.7
Concentration Ratio 2015	%	57.46	57.46	57.21	0.25	
Decentralization 2015	%	6.98	6.98	22.61	-15.63	

Strategic results:

Achieving the government targets

Items	Gov. Target	PDP- Gas	PDP- Coal	PDP- Alt.
Assumed GDP Growth (%)		6.5	6.5	5.6
Growth in energy gen. (%)		7.1	7.1	5.6
Energy Intensity 2015	<i>1:1</i>	<i>1.1 : 1</i>	<i>1.1 : 1</i>	<i>1:1</i>
RE Share 2011 (%)	6	<i>1.95</i>	<i>1.95</i>	6.4

Various public discussions



Summary from public discussions

- Thai people are fully aware of envi. and health consequences from power generation
- Sustainable energy trips and fair are very useful
- Value-added for agricultural by-products and waste
- Alternative PDP is highly welcome
- renewable energy projects still need environmental protection mechanism with public participation process
- Some local areas are active in development of the regional and local energy planning
- Identify several unfair and unflavored regulations

Policy Recommendations

- Reconsider and revise PDP2004 to reflect real situations and open for alternatives
- Alternative PDP is possible, affordable and better, but require more decentralized system
- More open market and policy mechanism, such as feed-in tariff are required
- Local and regional energy planning is fruitful
- Development in environmental and health protection mechanism is still essential

Responses from the Agencies and Government

- EGAT denied to revise PDP2004
- Thai government decided to privatize EGAT with the centralized monopoly model
- Some actions have been taken by agencies
 - Promote the very small power producers
 - Project for local and regional planning
 - Agree to unlock renewable producers with the fossil fuel producers (as designed in RPS scheme)
- Unclear development in governance system

Policy Progresses

- Understanding the formal planning process and its policy back-up
 - No space for public participation
 - No other development objectives
 - No actual options analysis (due to pre-determined policy decision)
 - Unrealistic assumption
 - 6.5% GDP growth compared to 5.6% in historical record
 - World oil price at 29 USD/bbl in 2005 and will reduce to 26 USD/bbl in 2015 (Link to high dependency on gas)

Policy Progresses

- Building relationship for policy network
 - Affected communities
 - Local knowledge and tech. Development
 - Local and regional energy planning
 - Policy analysts and activists
 - Renewable energy producers???
- Forming policy discourse and policy framing
 - Decentralization
 - Healthy public policy
 - Self-sufficiency economy

Unsuccessful Aspects

- Total authorized control of PDP Process
 - Agenda setting power make alternative solutions become non-action policy.
 - Ineffective policy framing
 - Failed to create clear and sharp policy messages (policy framing) to urge for policy changes
 - Unclear policy mechanism
 - Clear policy visions and impacts but no clear policy mechanisms
 - Less attractive for authorized agency who need the order to stabilize the system
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Unsuccessful Aspects

- Less influential policy network
- Problematic governance structure
 - No public participation in decision-making
 - No corrective mechanism in PDP
 - No accountability mechanism
 - excessive cost can push to captive consumers
 - Conflict of roles and responsibility
 - EGAT = Biggest producer + Single Buyer + Planner + System Operator + Some level of regulators
 - EGAT Public Co., Ltd. = EGAT + More Profit

Multi-aspects of policy process and actions and contribution of this SEA

Address by SEA

- Shared and difference concerns and visions
- Formulation and selection of policy options
- Analysis of different future impacts
- Public communication and deliberation 😞
- Try to influence authorized decision 😞

Not Addressed directly

- Linking and contesting of different expertise 😊
- Negotiation and learning between policy networks
- Seeking the order or policy mechanisms
- Governance system over authorized decision

Further Efforts in Thailand

- Expanding and strengthening policy networks
- Further analysis on risk and flexibility of policy options to reflect real situations and elaborate self-sufficiency economy concept
- Further study of effective policy mechanisms
- Strengthening and upgrading local and regional energy plan as a tiering process
- Improving policy message and communication
- Assessing electricity governance and seek for the better practice and structure

SEA is a long-term process of

- Changing ways of thinking about policy
- Opening rooms for wider stakeholders and expertise
- Communicating concerns and perspectives
- Creating new policy solutions and mechanisms
- Balancing power relationship within policy arena
- Deepening deliberative democracy into the structure and culture of public decision-making

Thank you

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