



Policy and Regulation on the SPP in Thailand

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Policy and Regulations on The Small Power Producers (SPPs)

Background

The cabinet resolution 17 March 1992 :

Electric Generating Authority of Thailand (EGAT)

would purchase power from generating facilities

which generate power from Renewable Energy (RE)

and from cogeneration projects which utilize

commercial energy





Objectives

- Encourage SPPs to participate in power generation
- Promote more efficient use of RE and Cogeneration system
- Reduce the government's investment burden in power generation and distribution





Regulations on Power Purchase from SPPs

- **Cogeneration & Renewable**
 - Cogen : efficiency > 45% and steam > 10%
 - Renewable : may use up to 25% commercial energy
- **Direct sale to industrial estates near the power plants**
- **Sale to the transmission system at maximum 60 MW (90 MW on case by case)**
- **Minimum energy purchase guarantee by EGAT not less than 80% per year**



Power Purchase from SPPs (as of March 2003) (1)

	Firm	Non Firm	Total
Received notification of acceptance			
Number of projects	38	36	74
Generation Capacity (MW)	3,717	823	4,540
Sale to EGAT (MW)	2,130	282	2,412
Contract Signed			
Number of Projects	31	33	64
Generation Capacity (MW)	3,481	759	4,240
Sale to EGAT (MW)	1,967	252	2,219
Supply power to the grid			
Number of Projects	28	28	56
Generation Capacity	2,962	702	3,664
Sale to EGAT (MW)	1,828	221	2,049





Power Purchase from SPPs (as of March 2003) (2)

Type of Fuel	Selling to the System	
	No.	MW
Natural Gas	19	1,413
Fuel Oil	1	9
Coal	4	196
Coal & Non-conversional	3	190
Non - conversional (Bagasse, Rice Husk, Wood Chips)	28	196
Refuse	1	45
Total	56	2,049





Tariff Principle on Power Purchase from SPPs

- **Base on Avoided Cost**
 - **Non-Firm (< 5 years) : Energy Payment**
 - **Firm (> 5 - 25 years) : Capacity Payment + Energy Payment**
- **Tariff rate of renewable energy refers to natural gas price (replace fuel oil price)**



Average Tariff in 2001

Unit : Baht/kWh

Type of Fuel	Capacity Payment	Energy payment	Total
SPP			
- Natural Gas	0.73	1.60	2.33
- Fuel Oil	0.84	1.57	2.41
- Coal	0.96	0.83	1.78
- Biomass	0.83	1.54	2.37
IPP			
- Natural Gas	0.55	1.14	1.69
Purchase from Laos			
- Nam Theun - Hinboun	1.74	-	1.74
- Houay Ho	2.01	-	2.01
Wind Energy	7.00	-	7.00
Solar Energy	9.50	-	9.50

Source : Energy Policy and Planning Office (EPPO)

Currency 1 US \$ = 41.50 Baht (20 September 2004)





Promotion of SPPs

Using Renewable Energy in Thailand

Supported by

The Energy Conservation Promotion Fund





Why Subsidies ?

- **Benefits of renewable energy**
 - Reduction of greenhouse gases & air pollution
 - Reduction of energy import
- **New technologies**
- **High production cost**
- **Require assistance to be able to compete with “ Conventional Energy” power plants**





Potential Support Mechanisms

- **Power Purchase Agreement**
- **Investment Incentive**
 - **Investment Subsidies**
 - **Investment Tax Credits**
 - **Other Investment Tax Incentives**
 - **Preferential Finance**
- **Production Incentives**
 - **Per-kWh Production Subsidies**
- **Renewable Set - Aside**
- **Externality Adders**
- **Environmental Taxation**
- **Research, Development, and Demonstration Grant**
- **Government - Assisted Business Development**
- **Green Marketing**





Eligible Fuels

- **Solar energy**
- **Wind**
- **Biomass**
- **Municipal waste**
- **Waste from agricultural activities**
- **Waste from manufacturing activities**





Subsidy Mechanisms

- **The Energy Conservation Promotion Fund provides subsidy on top of the electricity tariff**
- **Maximum @ 0.36 Baht/kWh for 5 years**
- **Target : 300 MW installed capacity**
- **Budget : 2,060 million Baht**

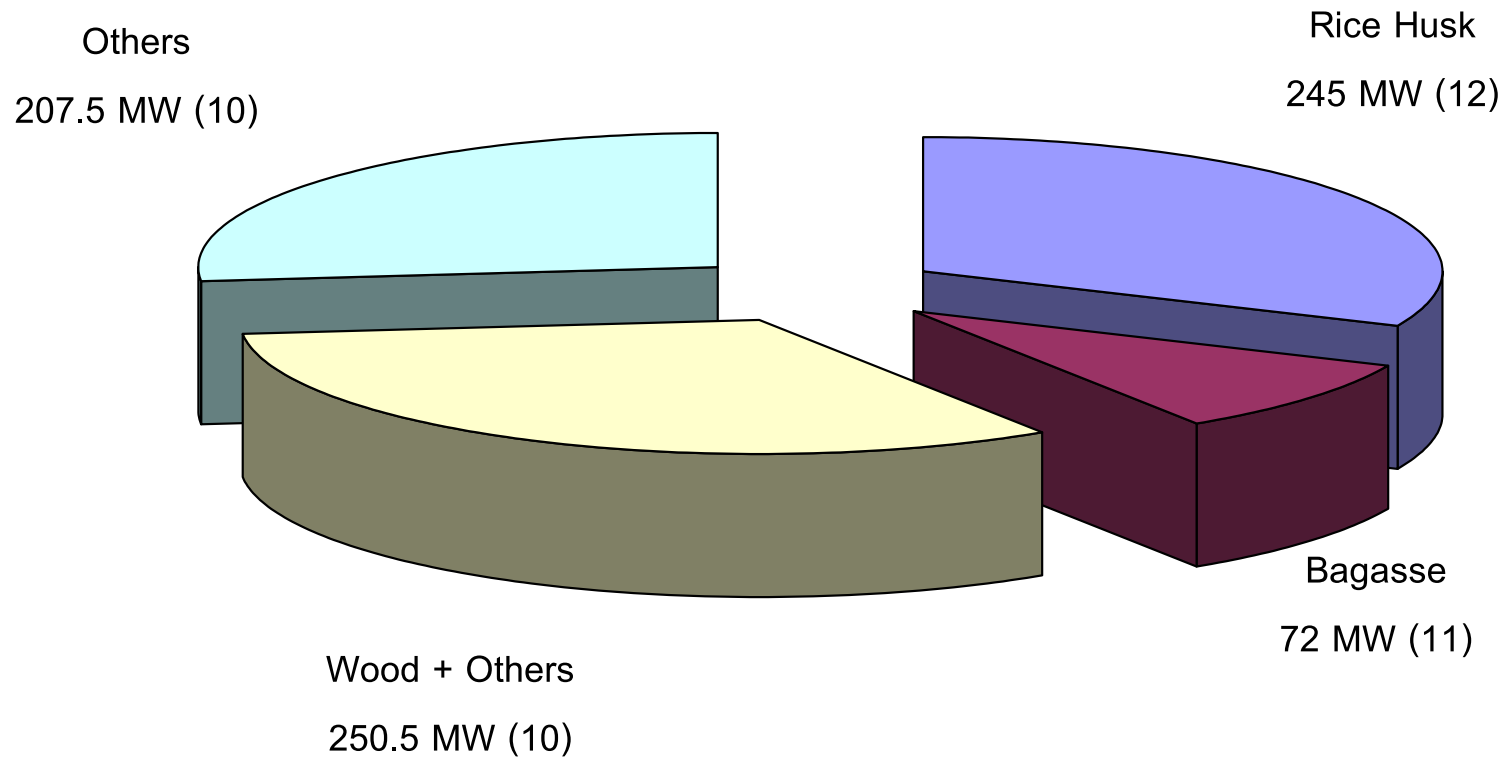


Level of Interest

- **68 Requests for Proposal (RFP) were picked up.**
- **43 Proposals were submitted.**
 - **Total proposed capacity of 775 MW**
 - **Required fund : 6,407.8 million Baht**



Distribution of Fuels





Selection Process

- **Tender Compliance Verification**
- **Information Review & Clarification Sought (if necessary)**
- **Technical Assessment**
- **Commercial Assessment**
- **Ranking based on the Average Levelized Adder**
- **Selection till “available fund is spent”**





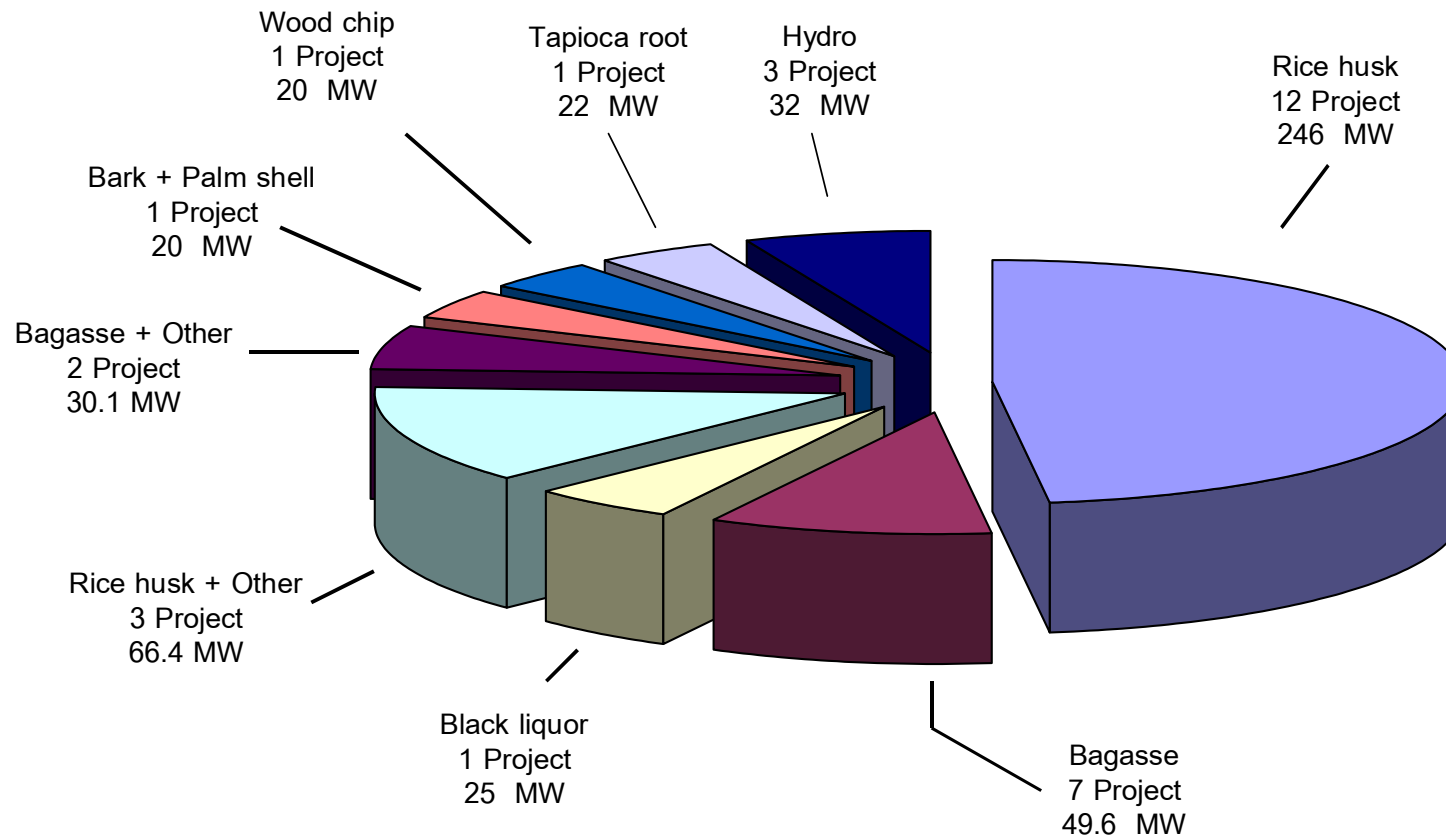
Result of the Proposal Selection

- **31 Projects provisionally accepted, pending a hearing process involving the local communities of each project**
- **511 MW installed capacity**
- **Budget for subsidies : 2,991 million Baht**





Distribution of Fuels





Future Perspective of RE and Cogeneration (1)

- From 2003 - 2012, power demand of Thailand is projected to increase by 1,200 - 1,500 MW per year.
- Although Thailand 's reserve capacity in 2003 is at 29% of the total capacity (25,000 MW), new capacity will be required in the next 5 years.
- Re and cogeneration system will be the main types of alternative energy due to the following reasons :
 - To decrease the dependency ratio on NG fuel that is equal to 70% in the power sector
 - To avoid opposition of local people to the use of coal for power generation.





Future Perspective of RE and Cogeneration (2)

- To promote more efficient use of RE and cogeneration system and reduce energy import.
- People are aware of benefits of RE utilization for power generation.
- Cogeneration system can help reduce energy costs in the industrial sector, which accounts for 50% of the national power demand.
- In the future, we need new technologies to reduce the production cost and to reduce environmental impacts.
- People participation will be introduced in power project monitoring at every step : before/during/after project construction.





Conclusion

- **Renewable energy and cogeneration are “Real Potential” energy sources in Thailand.**
- **Commercial - scale power plants using renewable energy are possible with appropriate level and mechanisms of subsidy from the government.**
- **Renewable energy projects will require cooperation among the owners of fuels, technologies, and investment funds.**
- **SPP community power plants will be important in the future.**
 - **near the load centers**
 - **promote people participation**





For more information

- mail to: **thailand@cogen3.net**
- or visit COGEN 3 website at
<http://www.cogen3.net>

Thank You !