





Thailand 's Biomass Energy

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Energy Situation in Thailand

-  **The energy demand vary to the economy growth**
-  **The Energy Elasticity or the growth rate of energy consumption per GDP was more than 1**

Final Energy Consumption in Thailand, 1992-2001

Type of Energy	Energy consumption (ktoe)									
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Renewable	9,818 28%	8,692 23%	8,430 21%	8,771 19%	8,861 18%	8,499 17%	7,885 17%	8,322 18%	8,599 18%	8,443 17%
Commercial	25,416 72%	28,926 77%	32,372 79%	36,958 81%	40,389 82%	40,956 83%	37,217 83%	38,807 82%	39,207 82%	41,099 83%
Total	35,234 100%	37,618 100%	40,802 100%	45,729 100%	49,250 100%	49,455 100%	45,102 100%	47,129 100%	47,806 100%	49,542 100%



Energy Policy and Strategy for Thailand

 **Development of Renewable Energy**

 **Promotion of Energy Efficiency**



Renewable Energy

- **Solar/Wind**
- **Biogas**
- **Hydro**
- **Geo thermal**
- **Fuel Cell**
- **Biomass**



Small Power Producer (SPP)

**EGAT announced to purchase electric from SPP
using the following fuels
(waste or residual from agriculture, garbage,
dendro thermal sources)**



Main Agriculture Residue

- Rice Husk/ Straw
- Bagasse
- Palm Oil Waste
- Wood Waste



Power Purchase Program from SPPs

Date	Cumulative Maximum Capacity (MW)
Egat Announcement Date <ul style="list-style-type: none"> ● March 1992 ● December 1995 ● September 1996* 	300 1,444 3,200
Cabinet Resolution Date <ul style="list-style-type: none"> ● August 1997** 	No limit

Remark : * two announcements : 1) To increase the purchasing capacity from 1,444 to 3,200 for pending SPPs 2) To purchase power from projects using renewable energy only

** Power purchase from Non-Firm Contract SPPs and / or SPPs using Renewable Energy



Current Status (as of August 20, 2003)

SPPs	Firm		Non-Firm	Total
	Co-gen.	Renew		
No. of SPPs Purchased Capacity (MW)	26 1,852.0	14 265.6	40 322.3	80 2,439.9
Signed Contracts No. of SPPs Purchased Capacity (MW)	26 1,852.0	5 65.4	34 281.9	65 2,199.3
Achieved COD No. of SPPs Purchased Capacity (MW)	25 1,792.0	4 45.2	30 231.7	59 2,068.9





Promotion of SPPs using Renewable Energy

ENCON fund committee approved budget 2060 M_B to subsidize SPPs using renewable energy.

In June 2002 the committee had approved 31 preposals 511 MW. But sofar only 15 proposals 214.1 MW were approved for the fund 1,235 M_B after they had assessed the result of public hearing.



Biomass for Cogeneration

Positive Factors :

- **Thailand is agriculture country. There is abundance of biomass production. The price of Biomass is still low.**
- **The exchange rate since 1997 have effected to the price of imported energy.**



- **Biomass is an environment friendly fuel**
- **There are many support programmes from government and others international funds (UNDP, GEF, EC etc.,)**



Negative Factors :

- **High investment cost for modern biomass technologies**
- **People don't want any new plant in their area**
- **Lack of research personnel in the area of thermal conversion**
- **The conversion efficiency in utilizing biomass as an energy source is generally low**
- **Difficult access to financing**



Conclusion

Development of Renewable Energy (target in next 10 years)

- **Increase renewable energy rate from 0.5% to 8%**
- **New power plant must generate power from renewable energy 3-5% of total capacity**



Thank You !

