



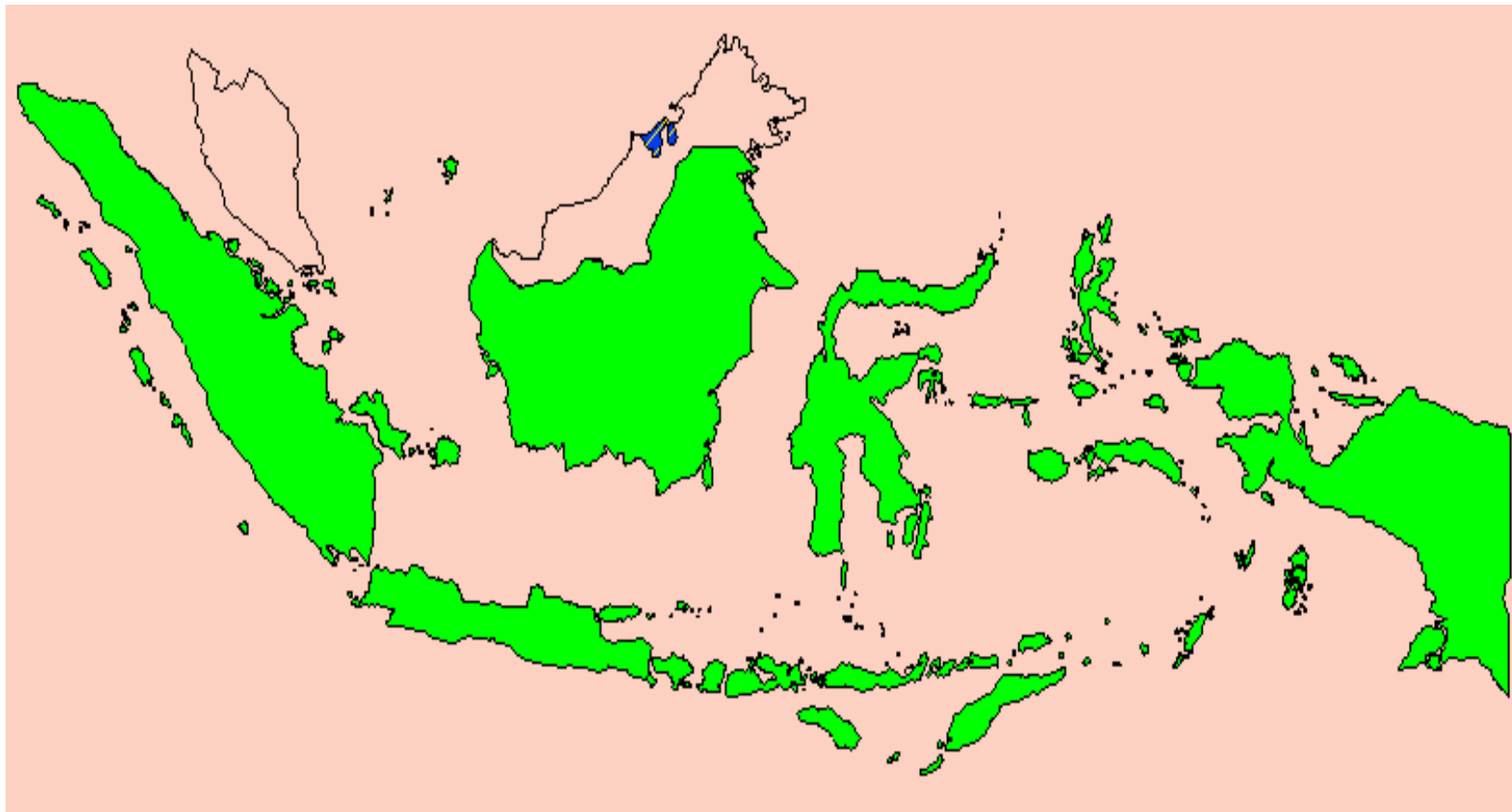
COGENERATION IN INDONESIA: CURRENT SITUATION AND PROSPECTS

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History and Country Overview

Indonesia





History and Country Overview

- 19th century: electricity generator at tea/sugar factories.
- 1964, established PLN (state-owned electricity company): monopolistic structure
- 1992, participation of private sectors: Act no. 15/1985, Gov. reg. 10/1989
- 2002, ratification of new electricity law:
monopolistic and competitive, Act no. 20/2002



History and Country Overview

Economy Situation in 2002

- **POPULATION** : 211.7 (million)
- **GNI /CAPITA** : US \$ 710
- **GDP** : (billion US\$) 172.9
- **GDP Growth** : 3.7%
- **POVERTY** : 16% (below national poverty line)



Current Situation

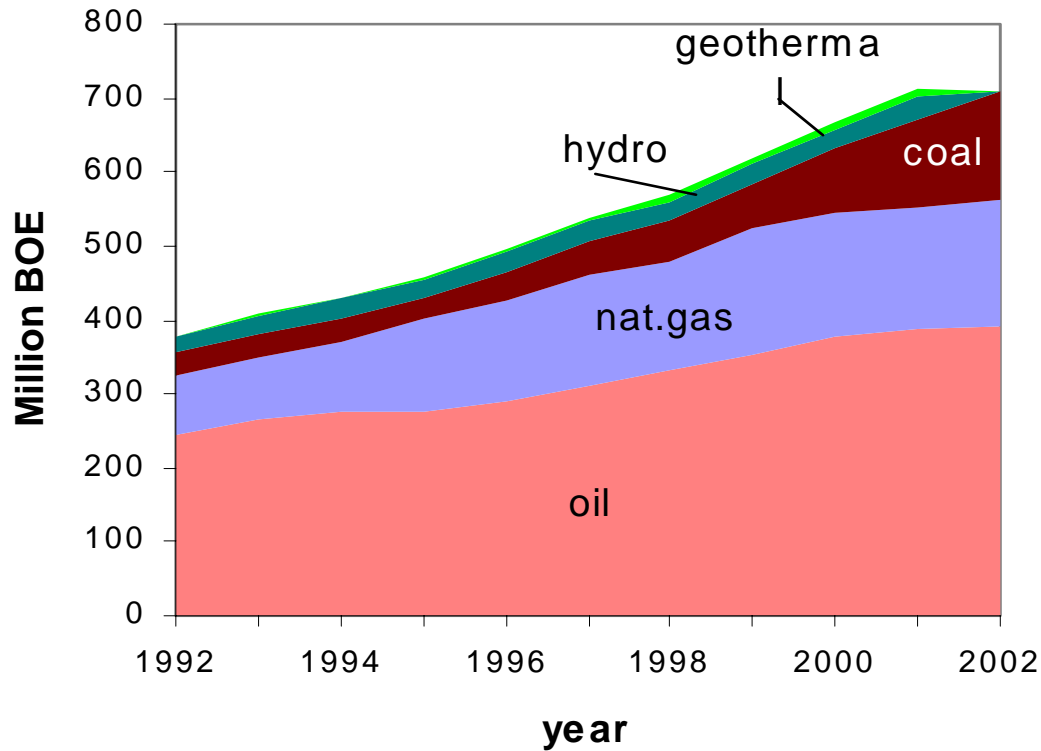
Energy/Electricity in 2002

- PRIMARY ENERGY CONSP. : 751.4 MBOE ,
Share of oil : 52.2%, gas: 22.6% and coal: 19.7%
- ELECTRICITY SYSTEM : 21,112 MW (PLN)
3,150 MW (IPP)
- CAPTIVE POWER : 13,856 MW
- ELEC. PRODUCTION : 106,983 GWh
- ELECTRICITY SOLD : 87,988 GWh



Current Situation

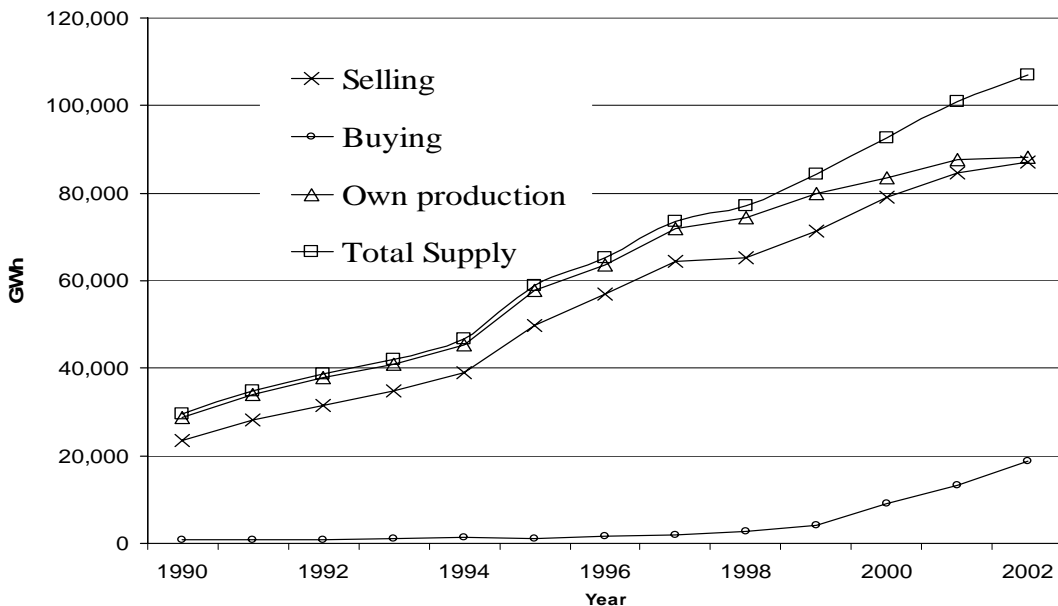
The Growth of Primary Energy Consumption





Current Situation

The Growth of Electricity Supply





Energy Sources

Oil (Million Barrel)		Gas (TSCF)		Coal (Million MT)	
Proven	Potential	Proven	Potential	Proven	Potential
5,123	4,490	91.9	75.5	11,484	27,284

Energy Resources	Potential (MW)	Installed Capacity (MW)	Utilization (%)
Geothermal	19,658	309	1.57
Micro hydro	458	20	4.54
Biomass	50,491	177	0.36



Current Situation

National Energy Policy for 2003-2020

Three policy measures to be taken :

- Intensification,
To increase the exploration for searching new energy sources
- Diversification,
It leads to variety energy utilizations
- Conservation,
To increase energy efficiency and the implementation of efficient energy technology



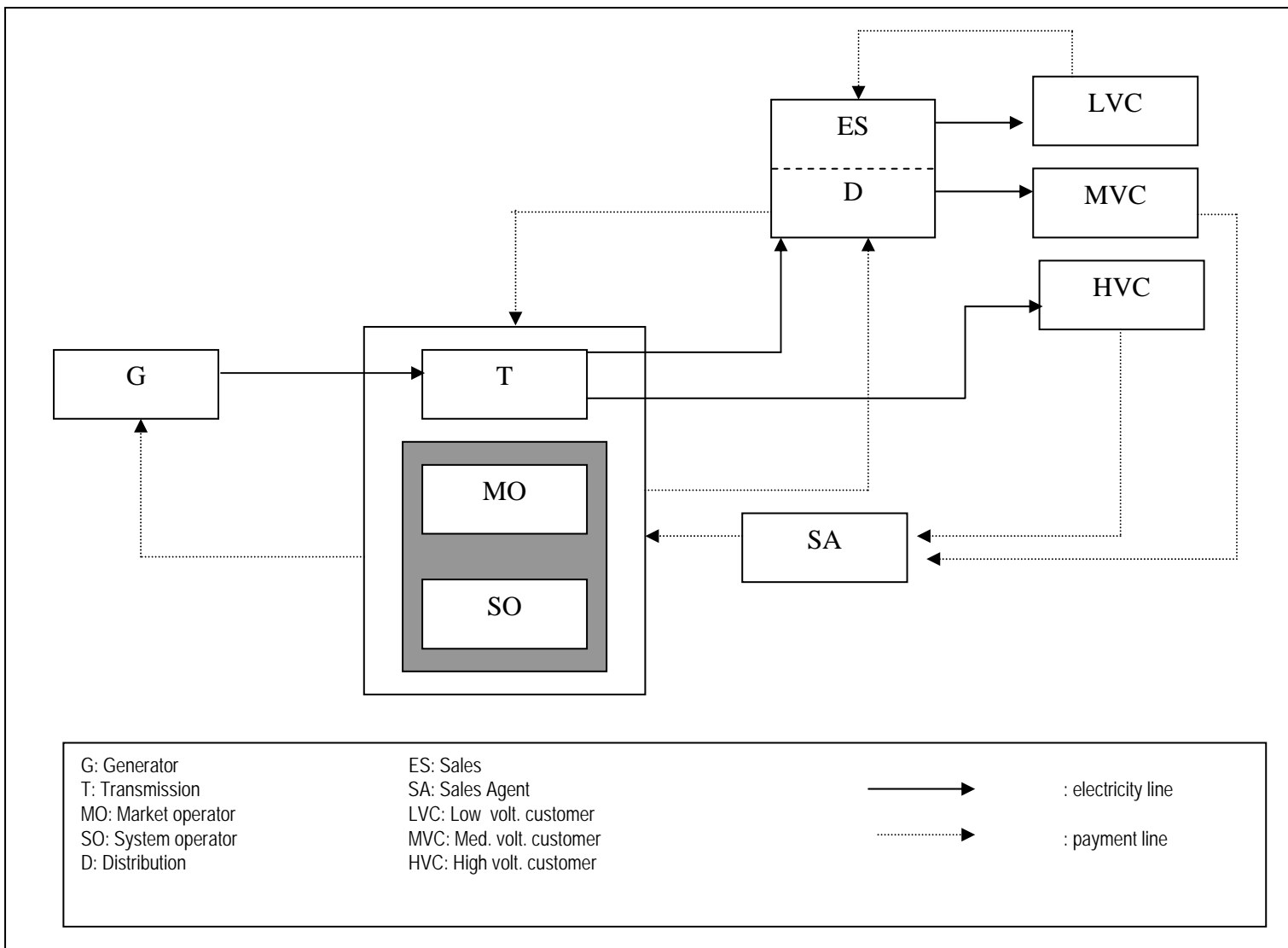
Policy for renewable energy

- The National Energy Policy targeted the increase of renewable energy market (excluding large hydro) at least 5% in 2020
- Law No. 20/2002, the priority is given to local energy resources utilization and the highest priority is renewable energy resources utilization.



Current Situation

Law No. 15/1985	Law No. 20/2002
<ul style="list-style-type: none"> ➤ Electricity supply is carried out by the Authority of Electricity Business (PKUK) inclusive social mission ➤ Tariff and subsidy are set by the Government ➤ Market structure : Monopolistic ➤ Venture structure: Vertically integrated ➤ The Government regulates electricity industry 	<ul style="list-style-type: none"> ➤ Electricity supply is carried out by Holder of License of Electricity Business (PIUPTL) ➤ Tariff is based on market mechanism ➤ Subsidy is set by the Government ➤ Market structure : Competitive and Monopolistic ➤ Venture structure: <ul style="list-style-type: none"> Competitive : Unbundled Non Competitive : Vertically Integrated ➤ Regulation: <ul style="list-style-type: none"> Competitive : Regulatory Body Non Competitive : Government





Cogeneration Current Situation

Industries potential for cogeneration application

Sector	Self-generated (GWh)	Purchase (GWh)
Food and bevarage	1,615	4,949
Textile	1,733	1,144
Wood	1,257	1,921
Puplp and paper	679	3,264
Chemical and Fertilizers	1,165	3,556
Rubber	365	2,456
Cement and Glass	1,494	5,307
Metal	842	5,159
Material from metal	109	1,041
TOTAL	9,260	28,798



Cogeneration Current Situation

Share of Electricity Supply by Sector

Total supply in 2002: 88,000 GWh

- Industrial : 43%
- Residential : 38%
- Commercial : 14%
- Public : 5%

The share of (medium-large scale) industries which are potential for Cogeneration : 30%



Cogeneration Current Situation

Existing Cogeneration Plant

No.	Industry/sector	No. Plant/Company	Capacity (MW)
1	Chemicals		
	Fertilizer	6	213
	Petrochemical	1	53
	Cement	1	12
2	Pulp & Paper	7	516.4
3	Textile	2	21
4	Food	2	39
5	Petroleum	1	300
6	Agriculture	4	40.7
7	Commercial	1	8
	Total	25	1184



Currently Hindering Factors

- Limited financial access
- Lack of awareness in most of traditionally managed industries (textile mill, agribusiness)
- Limited fuel options (for gas supply)
- Government subsidies for fuel/electricity price



Future Favoring Factors

- Preparing regulations → implementation of Law no.20/2002
- Huge biomass resources and establishing infrastructure of piped gas for Sumatra, Java and South Sulawesi
- An insufficient monopolistic power supply market
- Gradually eliminating subsidies of the energy price
- Increasing awareness, especially in traditional management in industries.



For more information,
please visit COGEN 3 Web Site at:-

<http://www.cogen3.net>

Thank You !