KAMOJANG GeoPP (Indonesia Power – Generation Business Unit)

INDONESIA POWER

KAMOJANG

Kamojang GBU is a power plant that uses geothermal as its prime energy supply. Kamojang GBU has 375 MW installed capacity that operates of 3 sub units consist of: Sub Unit of Kamojang, Sub Unit of Darajat, and Sub Unit of Gunung Salak.

Indonesia's geothermal energy is estimated contain up to 16.035 million megawatts of potential energy. And, Kamojang Generation Business Unit (GBU) is the biggest geothermal generating station in Indonesia and is owned by PT Indonesia Power.

Geothermal energy is totally distinctive, easy to obtain continuously, uninfluenced by weather, simply enough to explore and most importantly, it needs relatively quite low investment.

Kamojang Generation Business Unit began its first operation through its Unit I which inaugurated by Presiden Soeharto, on February 7th, 1983 and subsequently Unit II and Unit III on July and November 1987, followed by the release of Sub GBU Darajat in 1993 and Sub GBU Gunung Salak which consists of Unit I 1994, Unit II in 1995 and Unit III in mid 1997.

Type	Geothermal Power Plants
Area	West Java
Kind of Fuel	Geothermal
Power Capacity	- Kamojang 140 MW 1 = 30 MW 2 = 55 MW 3 = 55 MW - Darajat 55 MW 1 = 55 MW - Gunung Salak 180 MW

	1 = 60 MW 2 = 60 MW 3 = 60 MW _____ 375 MW
Owner	PT. Indonesia Power
Shareholders	PT. PLN
Activity Since	- Kamojang 1 = 1983 2 = 1987 3 = 1987 - Darajat 1 = 1994 - Gunung Salak 1 = 1994 2 = 1995 3 = 1997
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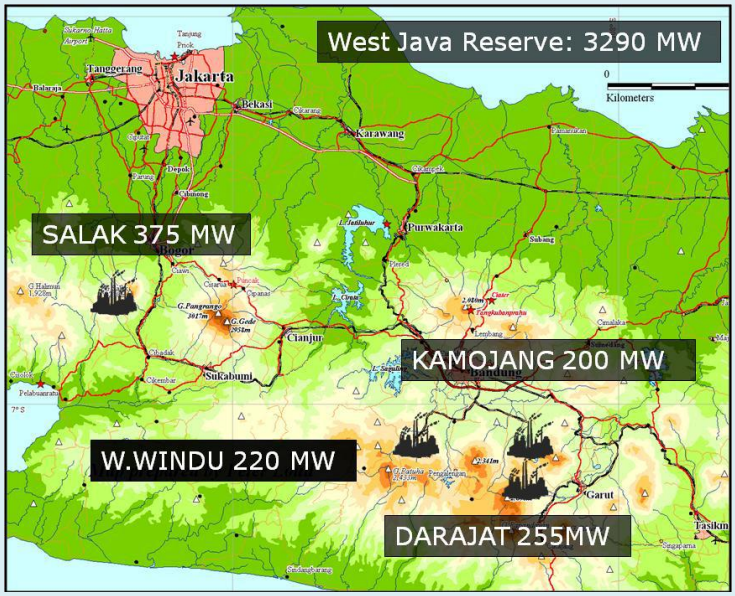
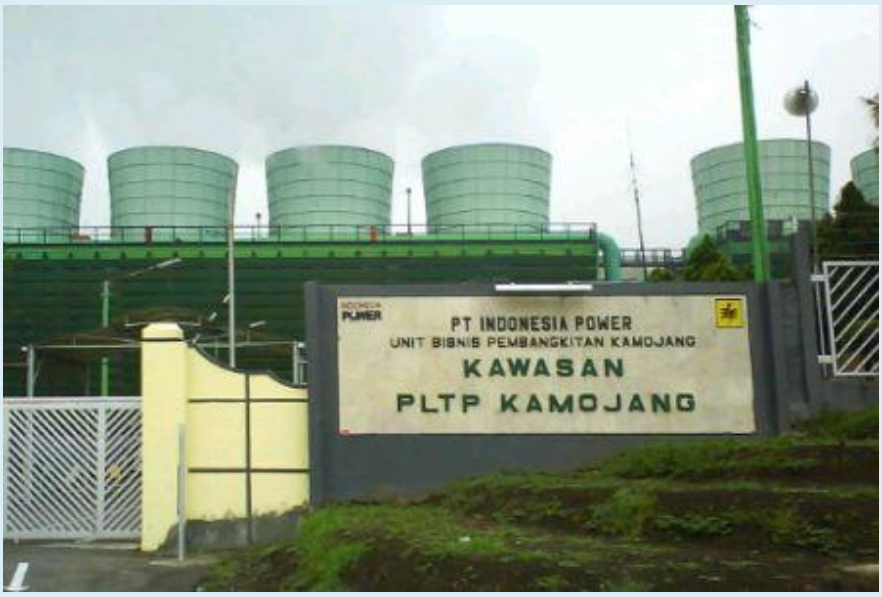


1. Kamojang

Kamojang geothermal field, with the well named KMJ-3, which produced steam in 1926, was a milestone in geothermal drilling, the first exploration by the Dutch colonial government. Until the year of 1928 it had made five geothermal exploration drilling, but the one succeeded in producing steam was only well KMJ-3 with the depth of 66 meters. Until now KMJ-3 still produces natural dry steam with a temperature of 1400 C and pressure of 2.5 atmospheres.

Pertamina started exploration activities in Kamojang in 1974 and installed a 250 KW non-condensing geothermal power turbine in 1978. PLN built on this initial success with the costruction of Indonesia's first geothermal electric power plant in late 1982 with a capacity of 30 MW. Unit II and III (2 x 55MW), the 61 million World Bank financed project, commenced operation in 1987. The facility at present draws from 24 production wells.

No. Unit	Turbine			Generator	COD	MW
	Manufacturer	Type	Serial Number			
1	MITSUBISHI	IMPULS & REACTION	N-1133	MITSUBISHI	1982	30
2	MITSUBISHI	IMPULS & REACTION	N-1024/5	MITSUBISHI	1987	55
3	MITSUBISHI	IMPULS & REACTION	N-1024/5	MITSUBISHI	1987	55


PT INDONESIA POWER
UNIT BISNIS PEMBANGKITAN KAMOJANG
KAWASAN
PLTP KAMOJANG


KE BANDUNG
AREA RENCANA UNIT - V
INDONESIA POWER UNIT I,II,III
DAM PLN
WPS CIKARO
PLTP 60 MW UNIT IV
PASIR JAWA
KANTOR PERTAMINA
KE GARUT
JALUR PIPA UAP
JALUR PIPA REINJEKSI
SUMUR PRODUKSI
SUMUR INJEKSI
SUMUR MONITOR
SUMUR ABANDON

2. Darajat

The Darajat Geothermal Resource which is located in District Pasirwangi, Garut, West Java, is on the flanks of Mt Kendang, approximately 40 km south-east of Bandung, the major provincial city of the region, and 150 km south-east of Jakarta. The resource is within a volcanic range containing centres of relatively recent activity; and vigorous surface displays of geothermal activity occur within the area. The resource is located in steep and rugged terrain, some 2000 metres above sea level. The Darajat geothermal field is a substantial high quality resource producing dry steam at the wellhead; and includes some very large wells (40 MW capacity from one well - the worldwide average is 5-10 MW/well). The resource is one of only a few dry steam fields in the world.

Daradjat I:

In December 1984 Amoseas signed a JOC with Pertamina and an ESC with PLN to develop up to 330 MW of geothermal energy within a 56,650 hectare area in Daradjat, West Java. Amoseas, which acts as the operator for the project, confirmed a resource sufficient to generate a 55-MW power plant and with potential for at least 400 MW. After investing US $55.2 million for the construction of 55-MW power plant, PLN started commercial operation in November 1993, with steam supplied by Amoseas.

No. Unit	Turbine			Generator	COD	MW
	Manufacturer	Type	Serial Number			
1	MITSUBISHI	IMPULS & REACTION	N-1317	FUJI ELECTRIC	1994	55

3. Gunung Salak

This Geothermal Power Plant(PLTP) is located at Salak Mountain National Park, located on the border Halimun district of Sukabumi and Bogor regency, West Java province. This PLTP is located approximately 1400 meters above sea level and has a capacity of up to 375 MW (both Chevron's and IP's) and provide electricity supply to the network of Java Bali.

Units 1,2 and 3 were built by PLN and came on-line in March 1994 and 1997. Originally unit 1,2 and 3 were built at 55MW each but had been upgraded to 60 MW each in 2005.

No. Unit	Turbine			Generator	COD	MW
	Manufacturer	Type	Serial Number			
1	Ansaldo Energia, Italy	SC 2 F	SC 2 F	Ansaldo Energia, Italy	1994	60
2	Ansaldo Energia, Italy	SC 2 F	SC 2 F	Ansaldo Energia, Italy	1994	60
3	Ansaldo Energia, Italy	SC 2 F	SC 2 F	Ansaldo Energia, Italy	1997	60

Sources :
1. http://www.indonesiapower.co.id 2. PLN power plant inventory list 3. Other websites