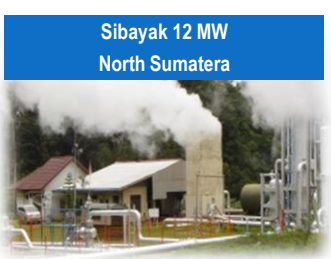
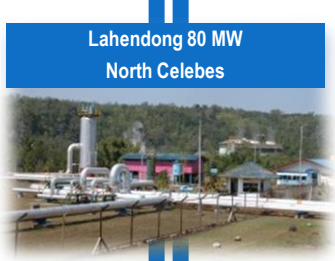
MINISTRY OF ENERGY AND MINERAL RESOURCES

DIRECTORATE GENERAL OF NEW, RENEWABLE ENERGY, AND ENERGY CONSERVATION





Directorate of Geothermal
geothermal.ebtke@yahoo.com

Geothermal Business Forum
Reykjavik, November 2nd, 2015

OUTLINE

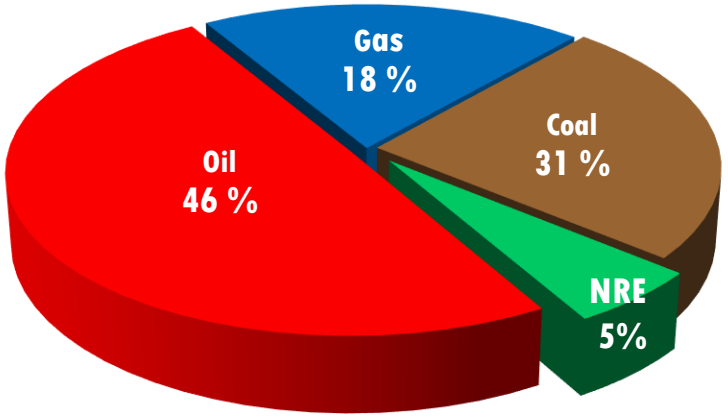
REGULATION & GEOTHERMAL BUSINESS SCHEME

DEVELOPMENT PLAN AND BIDDING PROCESS

HOW TO INVEST IN INDONESIA

I. REGULATIONS & GEOTHERMAL BUSINESS SCHEME IN INDONESIA

ENERGY: CURRENT CONDITION



INDONESIA AS A NET OIL IMPORTER

TOTAL OF PRIMARY ENERGY: 1176 MBOE

ENERGY MIX	PRIMARY ENERGY (MBOE)
Oil	612
Coal	411
Gas	243
NRE	63

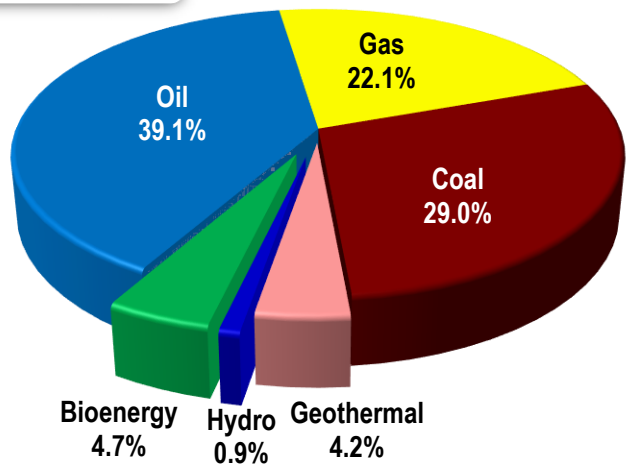
1. Energy has become a ***basic needs***;
2. The Indonesian economy grew by 5-6% per year with a population growth of 1,2% per year → ***Energy Growth* 7 – 8% per year;**
3. Dependence on fossil energy is still high, **while its reserves are limited**;
4. Electrification ratio 2015 (July) is **86,39%**
5. The sources of new, renewable energy **has not been optimized yet.**

NRE TARGET IN NATIONAL ENERGY POLICY (KEN)

(GOVERNMENT REGULATION NO. 79/2014 ON NATIONAL ENERGY POLICY)

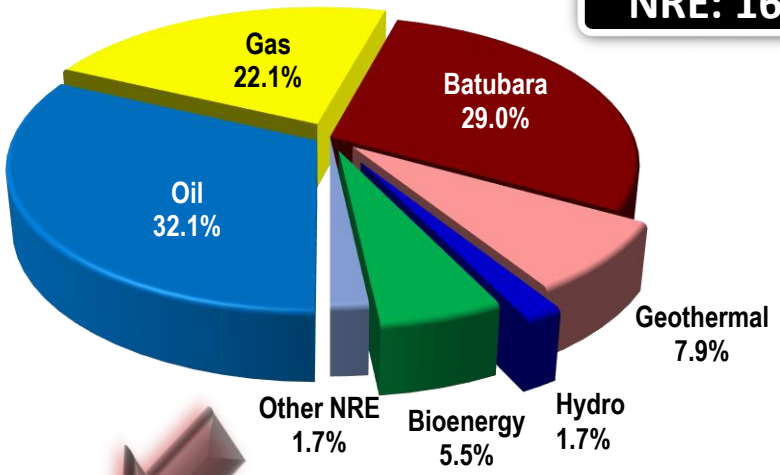
2015: 215 MTOE

NRE: 9.8%



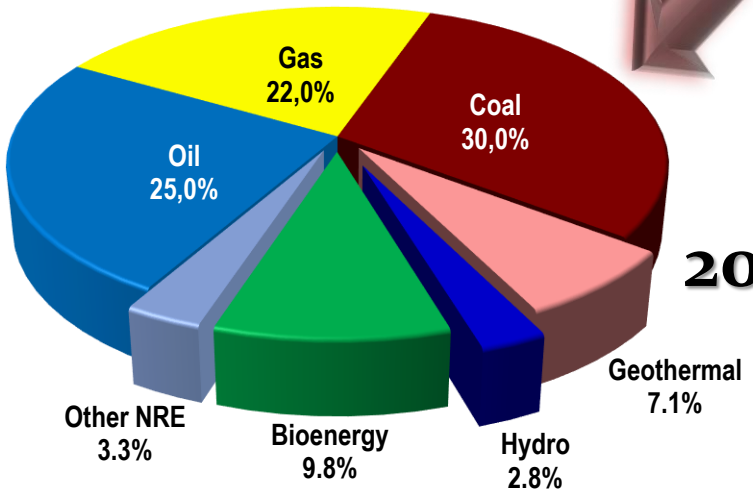
2020: 290 MTOE

NRE: 16.8%

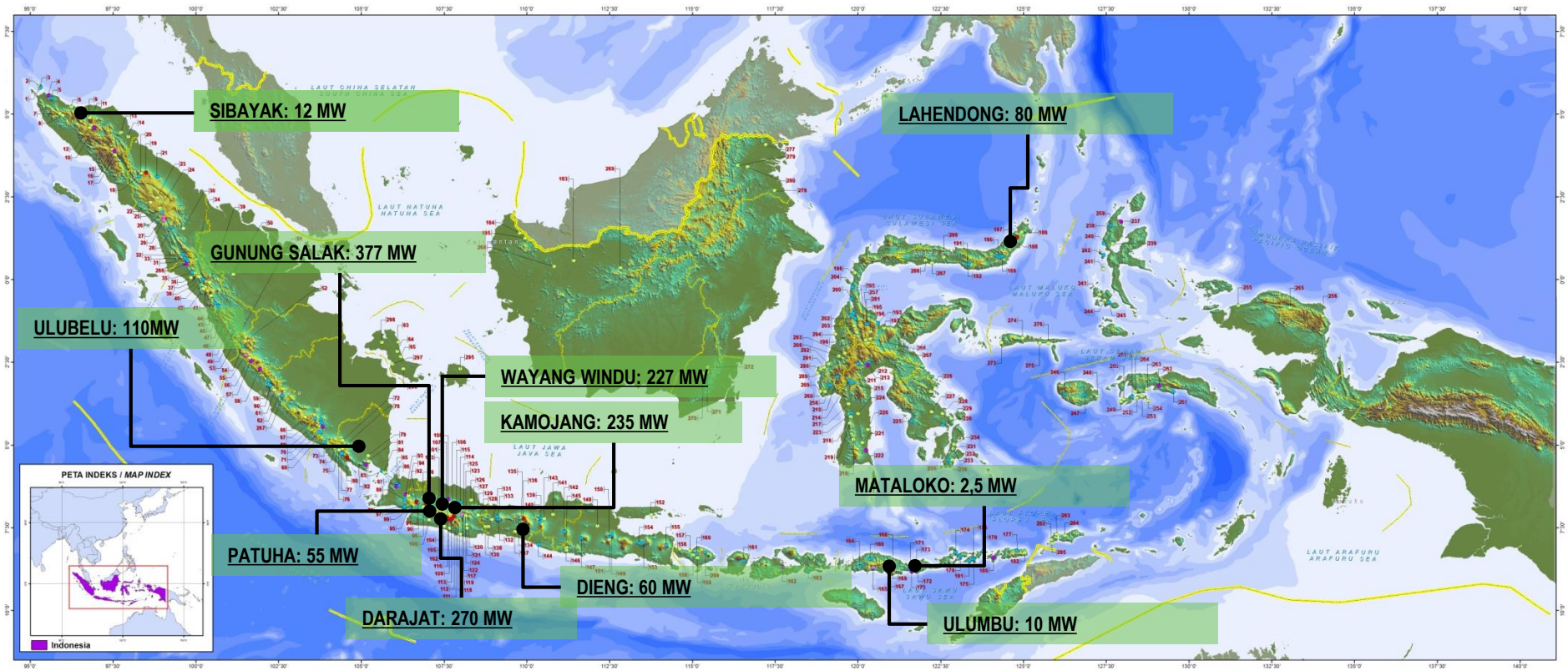


2025: 400 MTOE

NRE: 23.0%



GEOTHERMAL POTENTIAL MAP



Source : Geological Agency MEMR (2015)

No	Island	Number of Locations	Total	Installed
1	Sumatera	93	12.895	122
2	Java	73	9.795	1224
3	Bali-Nusa Tenggara	33	1.907,5	12,5
4	Borneo	14	162,5	0
5	Celebes	76	3.229	80
6	Moluccas	32	1388	0
7	Papua	3	75	0
	Total	324	29.452	1.438,5

Note:

- Preliminary Survey
- Detailed Survey
- Ready to Develop
- Installed

CURRENT GEOTHERMAL DEVELOPMENT

- Abundance geothermal energy more than **29 Gwe**, distributed in more than **324** locations in almost all regions.
- Total installed capacity **1,438.5 MW** or Only less than **5%** have been utilized.
- The Government has determined 67 geothermal working (concession) areas for development, but only nine of them were already produced.
- Under the previous regulations, geothermal operations were banned within restricted forested areas, which currently are home to an estimated 42% of Indonesia's geothermal resources.
- GoI's target for renewable energy is **23 %** of total national energy mix in 2025

  ➔ Geothermal contribution is expected **7.1 %** or about **6.3 GW** of installed capacity.

  ➔ With the additional capacity of **4.9 GW** will lead Indonesia as the largest CO2 mitigation country in the world with reduction emissions by 29.36 million ton/ year.

  ➔ The propose program will require an investment of at least **US$ 20 Billion**.

REGULATIONS REGARDING GEOTHERMAL

1. Law No. 21/2014 on Geothermal
2. Government Regulation No. 59/2007 on Geothermal Business Activities, as amended in GR No. 70/2010
3. GR No. 9/2012 on Types And Tariffs On Non-tax State Revenue Applicable to The Ministry Of Energy And Mineral Resources
4. GR No. 04/2010 on Assignment to PT. PLN (Persero) to Accelerate The Development of Power Plant from Renewable Energy, Coal and Gas
5. Ministry Regulation of Minister Energy And Mineral Resources
   1) MR No. 11/2008 on the Procedure for Determination GWA
   2) MR No. 02/2009 on Guidelines for Geothermal Preliminary Survey Assignment (as amendment of MR. 05/2007)
   3) MR No. 11/2009 on Guidelines for Implementation of Geothermal Business jo. MR No. 18/2012
   4) MR No. 17/2014 on Purchasing of Electricity from Geothermal Power Plants (PLTP) and Geothermal Steam to Geothermal Power Plants by PT PLN (Persero)
   5) MR No. 32/2014 on 3rd Revision of MR No. 15/2010 on The List of Power Plant Acceleration Projects Using Renewable Energy, Coal, and Gas and Related Transmission

PRINCIPAL SUBSTANCES OF LAW NO 21/2014

1. Geothermal is **not classified as a mining activity**, so that geothermal can be developed in forest conservation.
2. Geothermal **indirect use** (for electricity) is fully under authority of the Government, while for **direct use** (non-electric) is performed in accordance of authority (Central Government, Province, or District/City).
3. Geothermal developers is imposed to **production bonus** that is based on a certain percentage of the gross revenue from the first production unit that deposited to the local treasury.
4. Government can conduct exploration, exploitation and/or utilization.
5. Government can assign the State-Owned Enterprises (BUMN) or Public Service Agency to conduct geothermal power development.
6. More detailed in arrangement of geothermal utilization for both direct use and indirect use.
7. License for geothermal development and tender of geothermal concessions, as well as controlling and surveillance, are the **Central Government's authority**.

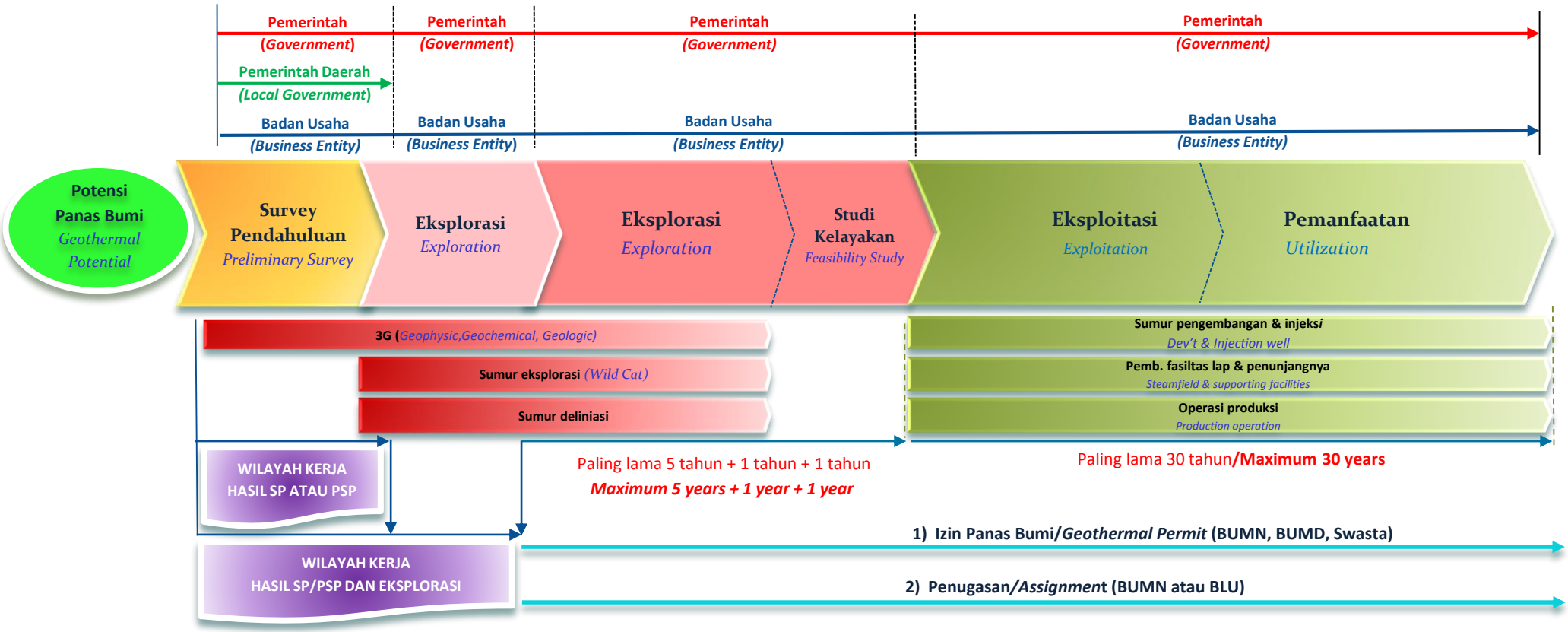
THE PRICE OF GEOTHERMAL ELECTRICITY
BY MEMR REGULATION NO 17/2014

Year of Commercial Operation Date (COD)	Ceiling Price (sen US$/kWh)		
	Region I	Region II	Region III
2015	11,8	17,0	25,4
2016	12,2	17,6	25,8
2017	12,6	18,2	26,2
2018	13,0	18,8	26,6
2019	13,4	19,4	27,0
2020	13,8	20,0	27,4
2021	14,2	20,6	27,8
2022	14,6	21,3	28,3
2023	15,0	21,9	28,7
2024	15,5	22,6	29,2
2025	15,9	23,3	29,6

Note:

1. Region I : Sumatera, Java, and Bali
2. Region II : Sulawesi, West Nusa Tenggara, East Nusa Tenggara, Halmahera, Maluku, Papua, and Borneo
3. Region III : Region that located in region I and II, with isolated transmision system and fulfillment of electricity is generated by fuel oil

GEOTHERMAL BUSINESS STAGES (ELECTRICITY)



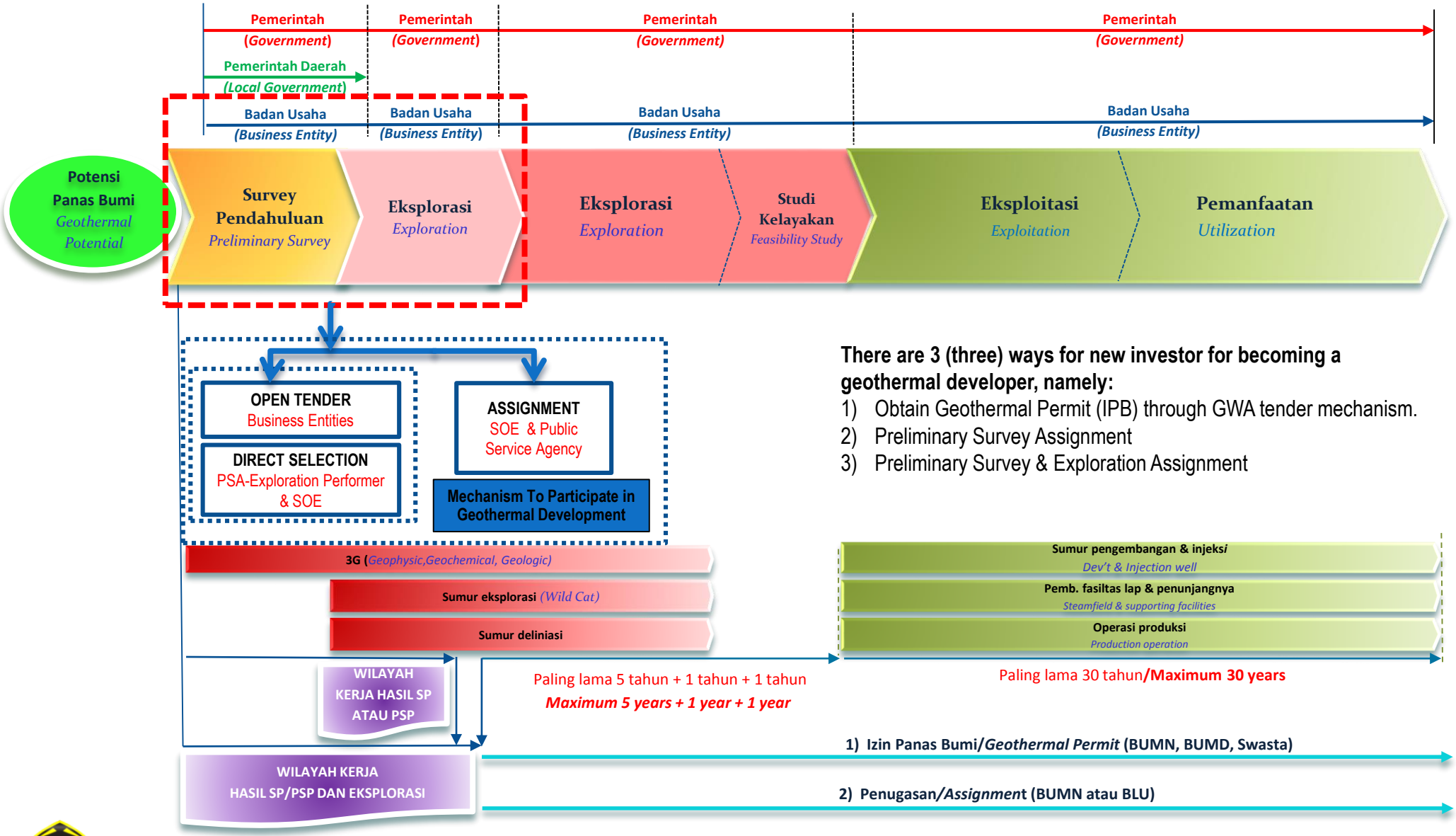
II. DEVELOPMENT PLAN & BIDDING PROCESS

GEOTHERMAL DEVELOPMENT PLAN TO 2025

Geothermal development road map to 2025 described on the table:

Development Plan	Installed Capacity (MW)	Development Plan (MW)											
		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Additional Capacity (MW)	1.438,5	60,0	37,0	279,0	293,5	808,5	960,0	495,0	354,0	1.084,0	640,0	175,0	565,0
Total Development Capacity (MW)	1.438,5	1.403,5	1.440,5	1.719,5	2.013,0	2.821,5	3.781,5	4.276,5	4.630,5	5.714,5	6.354,5	6.529,5	7.094,5

MECHANISM TO DEVELOP GEOTHERMAL POTENTIAL



There are 3 (three) ways for new investor for becoming a geothermal developer, namely:

1) Obtain Geothermal Permit (IPB) through GWA tender mechanism.
2) Preliminary Survey Assignment
3) Preliminary Survey & Exploration Assignment

MECHANISM TO PARTICIPATE IN GEOTHERMAL DEVELOPMENT

1. **Assignment to the State-Owned Enterprises to conduct exploration (Pertamina, PLN, Geodipa)**

   There is an opportunity for investors or business entities to join operation after exploration phase is completed.

2. **Preliminary Survey Assignment Plus Exploration**

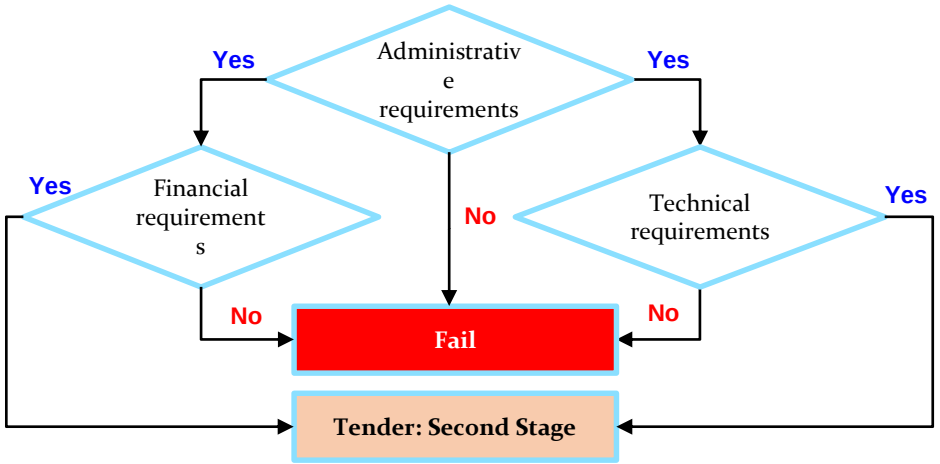
   Direct selection or direct appointment to obtain Geothermal Permit after exploration phase is completed.

3. **Open Tender**

OPEN TENDER OF GEOTHERMAL WORKING AREA

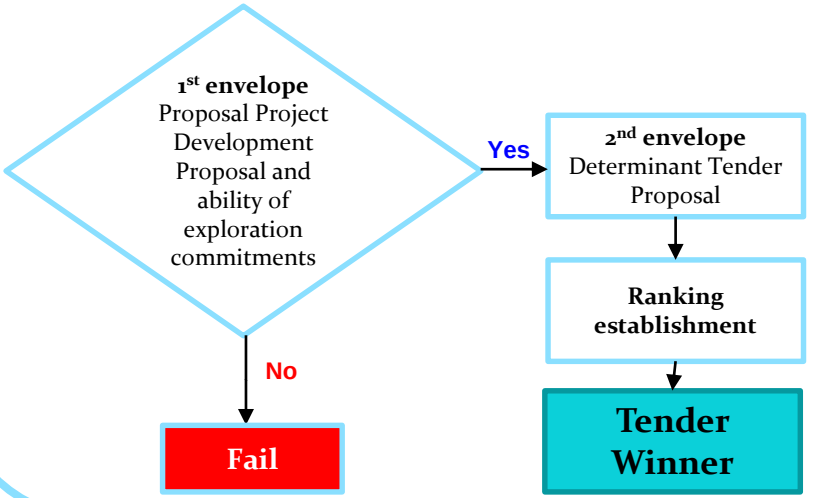
Tender: First Stage

- Determining qualified Business Entity(s)
- Tender documents for the first stage:
  a. Administrative requirements
  b. Technical and financial requirements

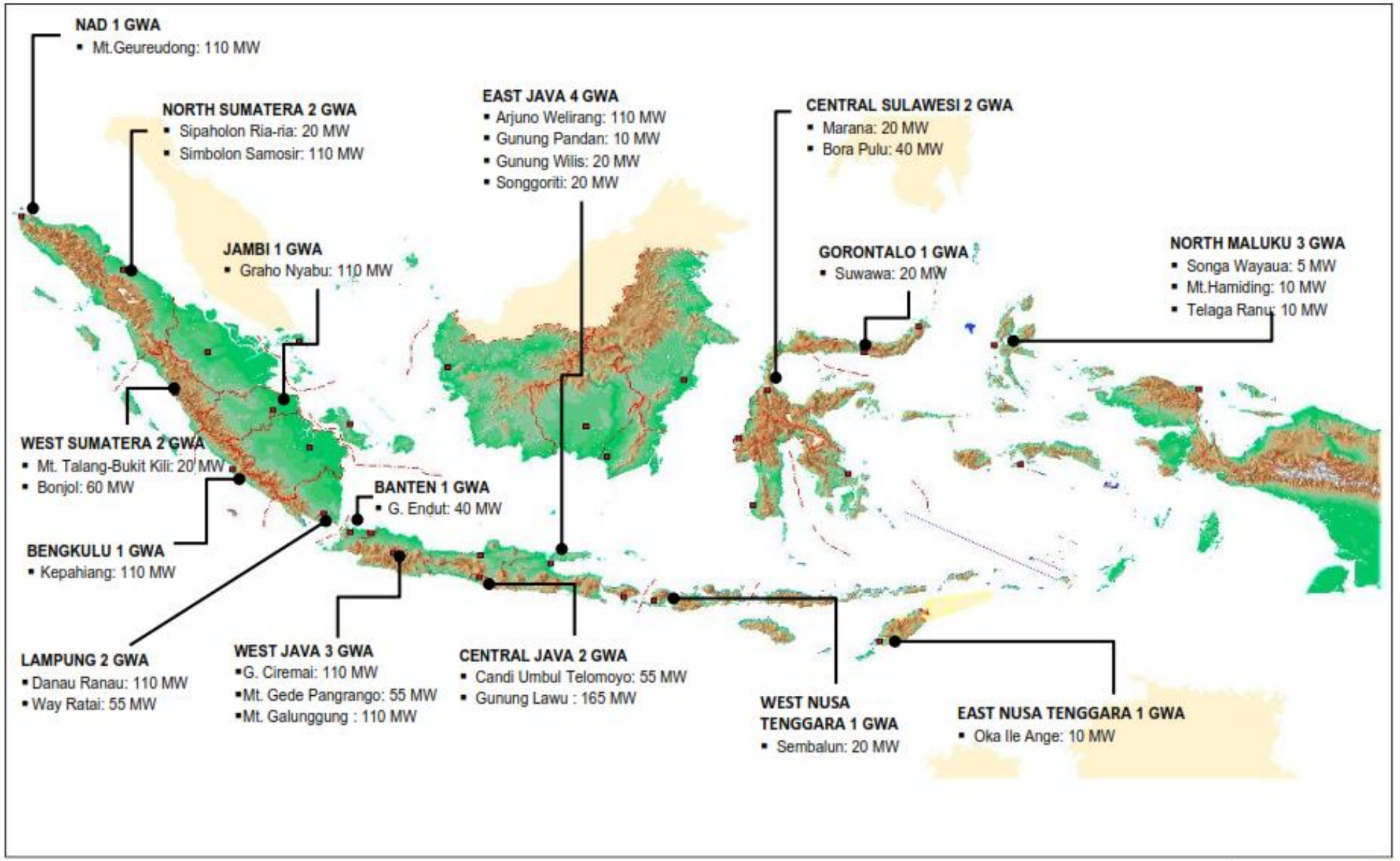


Tender: Second Stage

- Choosing a Business Entity as a winner of tender → get the IPB
- Tender documents for the second stage:
  Consist of 2 envelopes:
  a. 1st envelope: Project Development Proposal and ability of exploration commitments
  b. 2nd envelope: Determinant Tender Proposal



27 GWA TO BE TENDERED IN 2015 - 2017



LIST OF 27 GWA TO BE TENDERED IN 2015 - 2017

NO	WORKING AREA	LOCATION (District-Province)	POSIBBLE RESERVES (MW)	DEVELOPMENT PLAN (MV)
1	Gn. Lawu	Karanganyar - JATENG, Magetan - JATIM	195	165
2	Danau Ranau	Lampung Barat, Ogan Komering Ulu Selatan - LAMPUNG	210	2 x 55
3	Way Ratai	Pesawaran - LAMPUNG	105	55
4	Marana	Donggala - SULTENG	36	2 x 10
5	Kepahiang	Kepahiang - BENGKULU	180	110
6	Simbolon Samosir	Toba Samosir - SUMUT	150	2 x 55
7	Bora-Pulu	Sigi, Kota Palu - SULTENG	123	40
8	Gn. Geureudong	Aceh Tengah, Bener Meriah, Aceh Barat - ACEH	130	110
9	Graho Nyabu	Merangin, Kerinci - JAMBI	200	2 x 55
10	Arjuno Welirang	Mojokerto, Pasuruan, Malang, Kota Batu - JATIM	185	2 x 55
11	Candi Umbul Telomoyo	Semarang, Magelang, Boyolali, Temanggung, Kota Salatiga - JATENG	72	55
12	Gn. Talang Bukit Kili	Solok, Kota Solok - SUMBAR	65	20
13	Gn. Galunggung	Garut, Kota Tasikmalaya - JABAR	160	110
14	Gn. Gede Pangrango	Bogor, Cianjur, Sukabumi -JABAR	85	55
15	Sembalun	Lombok Timur - NTB	100	20
16	Suwawa	Bone Bolango - GORONTALO	110	20
17	Bonjol	Pasaman - SUMBAR	200	60
18	Telaga Ranu	Halmahera barat - MALUT	85	2 x 5
19	Gn. Hamiding	Halmahera Utara - MALUT	265	2 x 5
20	Songa Wayaua	Halmahera Selatan - MALUT	140	2 x 2.5
21	Oka-Ile Ange	NTT	40	10
22	Gn. Wilis	Kediri, Tulungagung, Nganjuk, Madiun, Ponorogo, dan Trenggalek - JATIM	50	2 x 10
23	Sipaholon Ria-Ria	Tapanuli Utara - SUMUT	75	20
24	Gn. Pandan	Bojonegoro - JATIM	60	10
25	Songgoriti	Malang - JATIM	35	20
26	Gn. Endut	Lebak - BANTEN	80	40
27	Gn. Ciremai	Cirebon, Kuningan, Majalengka - JABAR	150	2 x 55
TOTAL CAPACITY			**3.286**	**1.535**

III. HOW TO INVEST IN INDONESIA

INVESTMENT OPPORTUNITIES

1. To achieve the targets, international supports are needed in terms of **finance, technology, human resources** and **Technical Assistance**.
2. Foreign ownership in Geothermal Business is **allowed up to 95 %.**
3. Access to Potential Geothermal Resources for Investors:
   a) **Preliminary Survey Assignment or Preliminary Survey & Exploration** Assignment
   b) Obtain Geothermal Permit (IPB) through **GWA tender mechanism**
   c) **Financial Institutions**
   d) **Services Company**
4. Other business opportunities in geothermal sector is through direct utilization of geothermal potential.

HOW TO PARTICIPATE IN ELECTRICITY PROJECT

INFRASTRUCTURE INVESTMENT SCHEME			
Engineering Procurement and Construction (EPC) Contract	**Independent Power Producer (IPP)**	**Public Private Partnership (PPP) Project**	**Business to Business (Private Initiative)**
Private sector acts as contractor / sub-contractor both for government projects and private's projects through tender process and the project owner provide financing.	▪ This scheme is implemented on electricity development. ▪ As IPP, private sector roles as project owner and our State Owned Company (PT PLN) as an off-taker. ▪ The Procurement process for IPP scheme offer through open tender or direct appointment method by PT. PLN	▪ This scheme is used for government infrastructure projects which cooperated with private sector. ▪ By this scheme, the investor is given a consession time to operate the project. ▪ After concession period is completed, the project must be transfered to the Government.	▪ It is a private initiative or B-to-B projects that mainly used for own interest/purpose and not guarantee by government. ▪ **For electricity program, this scheme is called as Private Power Utility (PPU).**

INVESTMENT STEP BY STEP

Establishing Foreign Investment Company

Obtain Principal License

Establish Limited Liability Company

Research Sector in Negative Investment List

Negative Investment List for Geothermal (Presidential Regulation No.39 of 2014)

Drilling service for **geothermal**
Foreign Capital max. 95%

Survey service for **geothermal**
Foreign Capital max. 95%

Operation & maintenance for **geothermal**
Foreign Capital max.90%

FISCAL INCENTIVES

TAX ALLOWANCE

Government Regulation No 18/2015

30 % of investment value Reducton of Corporate Net Income Tax for 6 years, 5% each year

143 bussiness segments Eligible for Tax allowance, expanded from 129 in previous regulation

Recuirements among others:
Minimum amount of **investment values** and **workforce,** and certain project **location** (esp. Outside Java)

TAX HOLIDAY

MoF Regulation 159/2015

5-15 years Tax relief facility, starting from commencement of commercial production

Pioneer Industry:

1. Metal industry;
2. Oil refinery industry;
3. Organic basic chemical derived fro petroleum
4. Machinery industry that produces indutsrial machinary
5. Agriculture, forestry and fishery product-based manufacture industry
6. Tellecommunication, information and communication industry
7. Marine transportation industry
8. Manufacture industry that is the main indstry in Speciaal Economic Zones (KEK)
9. Economic infrastructure other than the ones applying Cooperation betwaan Government and Business Entity (KPBU) scheme

IMPORT DUTY FACILITY

MoF Regulation 176/2009

Machines, Goods, Materials for Production

2 Years import Duty exemption or 4 years for companies using locally produced machines (min 30%)

Industries
Which produces goods and/or services, including:

1. Tourism and culture
2. Public transportation
3. Public health services
4. Mining
5. Construction
6. Telecommunication
7. Port

IMPROVEMENT OF LICENSING

Electricity Licensing that has improved through BKPM's One Stop Services (OSS):

	Type of Licenses / Non-License	SLA (days)	RECOMMENDATION FOR STREAMLINING	SLA (days)
Business Entity	Principle License	3	Principle License	3
	Approval of Limited Liability	1	Approval of Limited Liability	1
	NPWP/NPPKP	1	NPWP/NPPKP	1
	TDP	3	TDP*)	3
Construction or Realization	Determination of geothermal working area	5	Determination of geothermal working area	5
	Electricity Power Supply Business Plan (RUPTL)	45	Temporary IUPTL	5
	Procurement for Non-solar power plant and geothermal power plant	45	Procurement for Non-solar power plant and geothermal power plant	45
	Electricity purchasing agreement (PJBL) with PT. PLN	60	Electricity purchasing agreement (PJBL) with PT. PLN	60
	Quota determination of solar power plant	-	Quota determination of solar power plant	-
	Licensing, determination and assignment supplication (Renewable energy/EBT or Non EBT)	14	Licensing, determination and assignment supplication (Renewable energy/EBT or Non EBT)	14
	A technical review of land (SKPT)	30	A technical review of land (SKPT)	7
	Location permit/SITU	14	Location permit *) Not necessary if there is IPKH	14
	A permit to borrow and utilize forest area (IPPKH)	120	A permit to borrow and utilize forest area (IPPKH)	52
	Environment license and Environmental Impact Analysis (AMDAL)	115	Environment license *) Integrated/ initiative AMDAL	10
	AMDAL for traffic arrangement	90	AMDAL for traffic arrangement	
	Nuisance permit	14	Nuisance permit	
	Land rights (HGB)	165	Land rights (HGB) *)	50
	Building construction permit (IMB)	14	Building construction permit (IMB) *)	14
	A permit special terminal and navigation from Minister of Transportation (Jetty)	81	Permit of location for special terminal from Minister of Transportation *)	5
	Licenses related to Manpower	23	Licenses related to Manpower	3
	Utility (water, telephone)	14	Utility (water, telephone) *)	14
	Social security (BPJS) for workers and Health	1	Social security (BPJS) for workers and Health *)	1
	Import duties exemption from Ministry of Finance (IUPTL)	7	Import duties exemption from OSS Center at BKPM *)	7
	Fiscal facility for renewable energy from MoF	10	Fiscal facility for renewable energy from MoF *)	
	Import Plan of Goods (RIB)	7	Import Plan of Goods (RIB)	
	Certificate of competency for electricity engineer	3	Certificate of competency for electricity engineer	Contractor requirement
	Certificate of Business Entity	3	Certificate of Business Entity	
	Certificate of Operation Worthiness (SLO)	5	Certificate of Operation Worthiness (SLO)	5
	Permanent license for power supply for general public (for own needs: 14 days, for temporary needs: 20 days)	30	Permanent license for power supply for general public needs	5
	Total days of Completion	**923**	**Total days of Completion**	**256**

LICENSES IN BKPM

Investor

OSS CENTER

BKPM

1. Principle License (IP) / temporary IUPL
2. **APIP (Inatrade)**
3. **Import duty facility (DBC)***
4. **NIK (DBC)***
5. IUPTL
6. Ioperating License
7. designation of area
8. Assignment Geothermal Survey
9. Geothermal License

* Online by investor

PLN

1. RUPTL
2. Procurement (Auction, Direct Selection,
3. Appointment Directly)
4. PPA/PJBL
5. Financing Date

KESDM

1. Electricity Supply Business License
2. Operating License
3. Business Area Stipulation
4. Electric Power Supporting Service Permit
5. Transnational Electricity Purchase Permit
6. Utilization of Electricity Network Permit in the Interest of Telecommunications, Multimedia and Information
7. The assignment of Geothermal Preliminary Survey
8. Geothermal Permit
9. Geothermal Supporting Business Approval
10. Use of Geothermal Explosives Warehouse Permit

Kemenkeu

1. Taxpayer Identification Number (NPWP)
2. Letters VAT collector (SPPKP)
3. Security Feasibility (SJKU)
4. Customs Identification Number (NIK)
5. Approval For Duty Exemption

BPN

1. Technical consideration
2. Land acquisition
3. (implementation)
4. Certification

Kemenhut dan LH

1. Usage Rights of Forest Area Permit (IPPKH)
2. AMDAL for Power and Transmission Network
3. Water utilization and use permit

Kemenhub

1. Confirmation Letter on High Stacks Permit Not Required
2. Jetty Utilization Permit
3. Terminal construction permit
4. Land Dredging permits
5. Tuks Management approval
6. Permanent International Ship Security Certification
7. Railroad Crossing Permit
8. Specific Terminal License
9. Navigation License

Kemenko Ekon

Foreign Commercial Loan Approval (PKLN)

Kemenaker

1. Foreign Manpower Utilization Plan (RPTKA)
2. Permit to Employ Foreigner (IMTA)
3. Vessel Pressure Permits
4. Steam Vessel Permits
5. Permission To Installing and Using Fire Extinguishers
6. Permission To Installing and Using Lightning Protector
7. Permission To Installing and Using Electricity Production Machinery
8. Permission To Install and Use Lifting and Transport
9. Permission Installing and Using Steam Boiler
10. Permission To Install Electrical Equipment at Work
11. Boiler Operator Permit

Kem PU Pera

1. Dam Permit
2. Construction License

OSS PROVINCE*

Regional LIcensing

* Location permit from OSS Province if the location is across regencies/municipalities

OSS Country/City

Regional LIcensing

1. IMB (Kab/Kota)
2. Environmental Permit
3. Location Permit (Kab/Kota)
4. Permit use of boiler
5. Permit use of lift
6. Permit use of genset
7. Lighting protection permits
8. TDP
9. Occupational health and safety permit

Source: BKPM, 2015

CONCLUSION

1) The government has a strong commitment to increase the utilization of geothermal in order to support the fulfillment of energy security, reduce dependence on fossil fuels, increase the national electrification ratio as well as contribute to the global issue of reducing Green House Gasses.

2) Investors can participate in Geothermal development through Preliminary survey assignment, preliminary survey and exploration assignment and Open Tender

3) 27 GWAs will be tendered within two years (2015-2017), with total predictive capacity reach 1,535 MW, It requires more than US$ 6 billions for the investment.

Thank You

Go Green Indonesia !

GREEN ENERGY, ENERGY FOR THE FUTURE

MINISTRY OF ENERGY AND MINERAL RESOURCES, REPUBLIC OF INDONESIA

DIRECTORATE GENERAL OF NEW, RENEWABLE ENERGY AND ENERGY CONSERVATION

Jalan Pegangsaan Timur No. 1 Menteng, Jakarta Pusat 10320; Phone/Fax : 021-31924540

www.ebtke.esdm.go.id

STATUS OF GEOTHERMAL WORKING AREAS (WKP)

67 WKP (6.238,5 MW)

PRODUCTION:
9 WKP (1.438,5 MW)

EXPLORATION & EXPLOITATION:
30 WKP (3.210 MW)

- **EXPLOTATION**
  7 WKP (930 MW)
- **EXPLORATION:**
  23 WKP (2.280 MW)

GEOTHERMAL LICENSE PROCESS:
1 WKP (55 MW)
- WKP Seulawah Agam (55 MW)

TENDERING PROCESS:
27 WKP (1.535 MW)

Telah Beroperasi:
9 WKP (1.438,5 MW)
1. Sibayak (12 MW)
2. Ulubelu (110 MW)
3. Cibeureum-Parabakti (Gn Salak) (377 MW)
4. Pangalengan (Patuha+WW) (282 MW)
5. Kamojang-Darajat (505 MW)
6. Dieng (60 MW)
7. Lahendong-Tompaso (80 MW)
8. Ulumbu (10 MW)
9. Mataloko (2,5 MW)

Eksplorasi Lancar
5 WKP (825 MW)
1. Liki Pinawangan (Muaralaboh) (220 MW)
2. Gn. Rajabasa (220 MW)
3. Rantau Dedap (220 MW)
4. Blawan-Ijen (110 MW)
5. Gn.Ungaran (55 MW)

Telah Tandatangan PPA/PJBL:
10 WKP (1.010 MW)
1. Telaga Ngebel (165 MW)
2. Baturaden (220 MW)
3. Guci (55 MW)
4. Kaldera Danau Banten (110 MW)
5. Gn. Tampomas (40 MW)
6. Cisolok Sukarame (45 MW)
7. Tangkuban Perahu (110 MW)
8. Sorik Marapi (240 MW)
9. Jaboi (10 MW)
10. Sokoria (15 MW)

Proses Tandatangan PPA/PJBL:
WKP Jailolo (10 MW)

WKP yang telah dikembalikan:
7 WKP (435 MW)
1. Suoh Sekincau (220 MW)
2. Hu'u Daha (20 MW) → proses pengembalian
3. Iyang Argopuro (55 MW)
4. Kotamobagu (80 MW)
5. Atadei (10 MW) → proses pengembalian
6. Tulehu (20 MW)
7. Ciater (30 MW) → proses pencabutan