

Business Model for Geothermal

Experience in Indonesia



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Outline

Business Structure



Government Support



Current Regulation





Business Structure

- Geothermal business model is developed as IPP
 - 100% private
 - Project finance
- Tendering process is done before exploration drilling
 - Government plays a limited role in exploration risk
 - Expecting private to accept resource risk
- PLN (SOE in electricity) acting as single buyer
 - Tariff is determined in tendering process
 - PLN sells in lower price, government subsidizes to fill the gap
 - PLN financially depends on gov^t subsidy



Government Supports



| | | Exploration | Construction | Operation |
|---|---|-------------|--------------|-----------|
| 1 | Import Duty Facility | ✓ | ✓ | ✓ |
| 2 | Income Tax Facility | ✓ | ✓ | ✓ |
| 3 | VAT Facility | ✓ | ✓ | ✓ |
| 4 | Geothermal Fund Facility | ✓ | -- | -- |
| 5 | Government Guarantee | | | |
| | a. Fast-Track Program II (FTP II) : <i>Off-take Guarantee</i> (Business Viability Letter) | -- | -- | ✓ |
| | b. PPP Project (Through PT IIGF) | -- | ✓ | ✓ |

Law Base:

- 1,2, dan 3 : MOF Regulation 21 /2010;
- 4 : MOF Regulation 03 /2012;
- 5.a. : MOF Regulation 139 / 2011;
- 5.b. : Presidential Decree 78 / 2010 and MOF Regulation 260 / 2010.



BVGL Progress



| No | Project | Project Cost | BVGL |
|----|--------------------------------|------------------|--|
| 1 | PLTP Muara Laboh (2 x 110 MW) | USD635 million | S – 152/MK.011/2012 dated 2 March 2012 |
| 2 | PLTP Rajabasa (2 x 110 MW) | USD653 million | S – 151/MK.011/2012 dated 2 March 2012 |
| 3 | PLTP Rantau Dedap (2 x 110 MW) | USD645 million | S – 833/MK.011/2012 dated 21 November 2012 |
| 4 | PLTP Sarulla 1 (3 x 110 MW) | USD1,606 million | S-285/MK.011/2013 dated 10 April 2013 |
| No | In the Process | Project Cost | Status |
| 1 | PLTP Ijen (2 x 55 MW) | - | Negotiation phase |



Current Regulation



- New Law (Law 21/ 2014)
 - Classifying geothermal as non-mining activity → more opportunity to drill in conservation forest
 - Central government has authority in utilizing geothermal to be power plant
- Regulation in tariff
 - 2011 → ceiling price 9.7 cents/kwH → Minister of Energy regulation No. 2/2011
 - 2012 → feed in tariff → Minister of Energy regulation No. 22/2012
 - 2014 → ceiling price based on COD year and region → Minister of Energy regulation No. 17/2014

| COD Year | Ceiling Price (sen USD/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 |

- Region I : Sumatera, Jawa and Bali;
- Region II : Sulawesi, Nusa Tenggara Barat, Nusa Tenggara Timur, Halmahera, Maluku, Papua, and Kalimantan;
- wilayah III : region located in Region I or Region II were isolated and meeting the needs of most of the electrical power obtained from the power plant to fuel oil

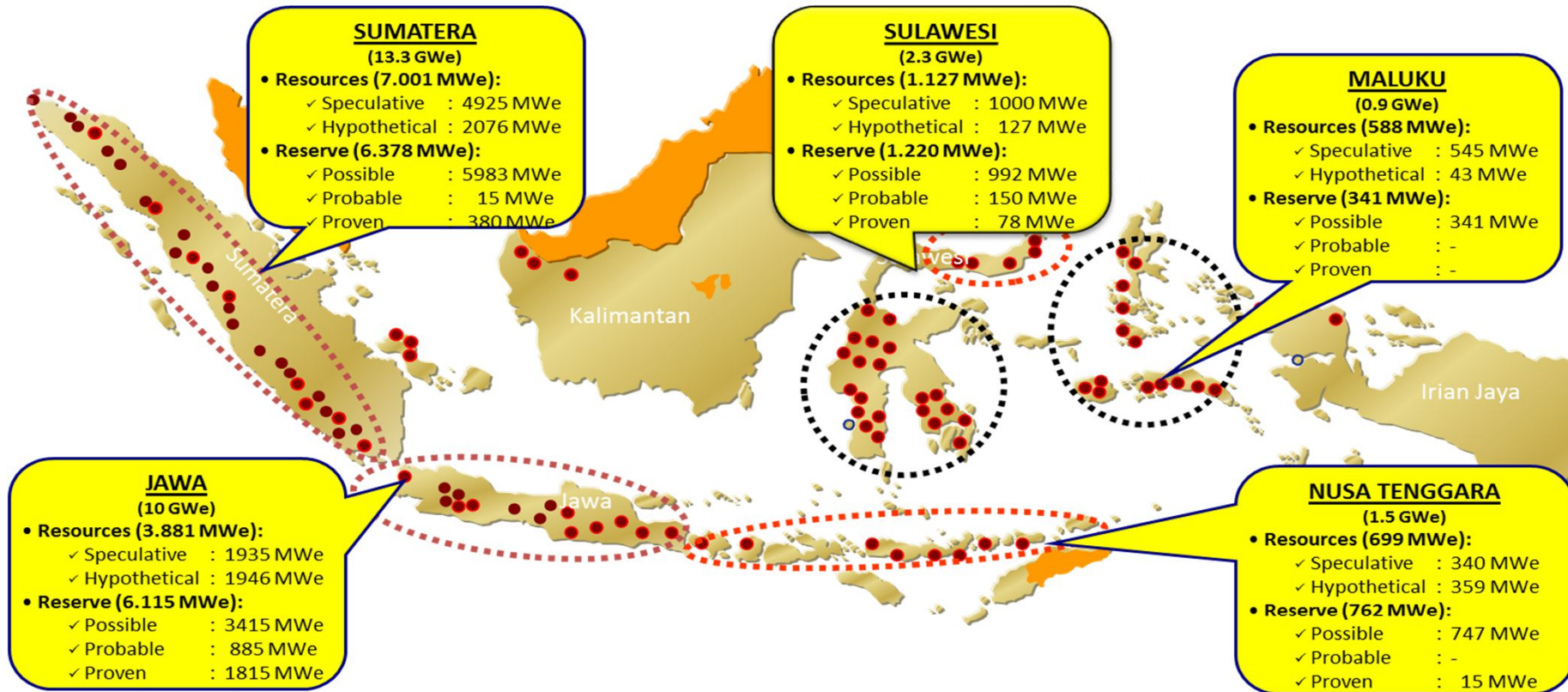
*Thank
you*



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Geothermal Development



High temperature geothermal zone, large potential, and found many other types of energy



High temperature geothermal zone, large-small potential, and lack of other energy types



Low-temperature geothermal energy zone, small-medium potential, and lack other types of energy



Geothermal Fund Facility

Definition

- ☐ intended to fund geothermal exploration that provides sub-surface data before tendering process

Regulation

- ☐ MOF Decree No. 3 Year 2012

Objective

- ☐ Increase the contribution of renewable energy resources, especially geothermal energy in the energy mix
- ☐ to make the geothermal project become financially viable and bankable by providing exploration data which is verified a reputable international institutions

Eligibility

- ☐ For local government to increase the data sufficiency of geothermal working areas before tendering
- ☐ Loan for geothermal developers to do exploration

Size & Executing Agency

- ☐ Rp 3 Trillion in 2013, managed by Government Investment Unit (PIP)

