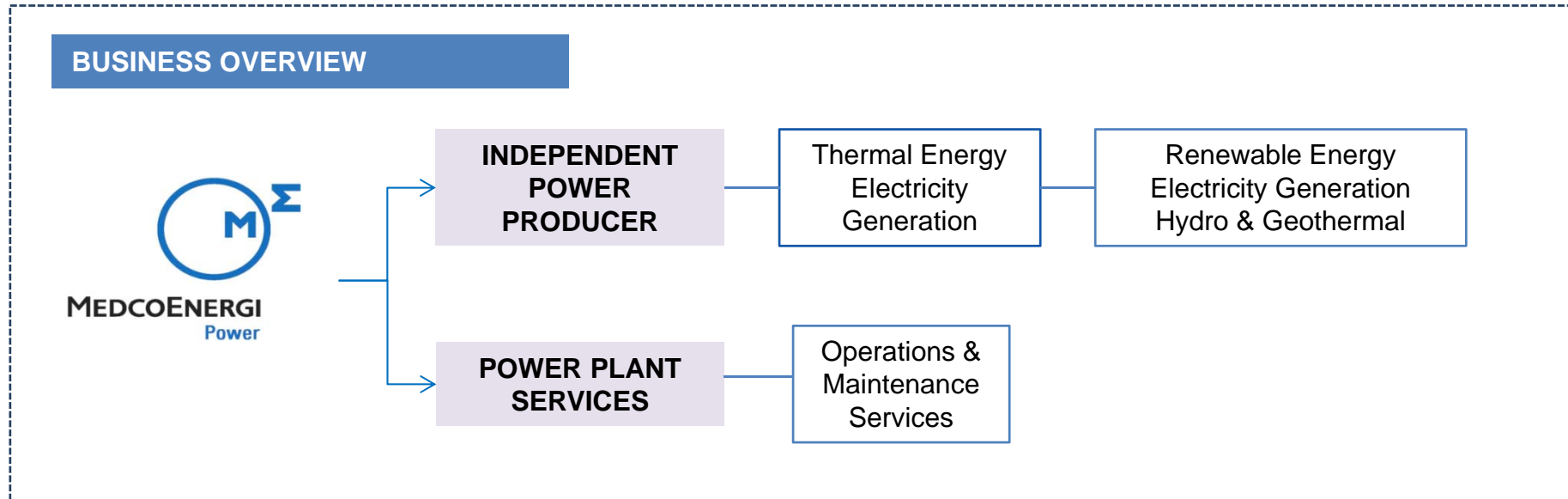




**DEVELOPING CLEAN
& RENEWABLE ENERGY RESOURCES
AS THE BASIS OF SUSTAINABLE POWER DEVELOPMENT**



PT MEDCO POWER INDONESIA



MPI Portfolio

OPERATING ASSETS

IPP	Fuel Type	MW
MEB Combine Cycle	Gas	85
DEB Combine Cycle	Gas	85
TM 2500	Gas	20
ELB Simple Cycle	Gas	76
EPE	Gas	12
MPE	Gas	12
Singa	Gas	7
TOTAL CAPACITY		297

O&M Services

Coal Fired TJBPS	Coal	1320
Geothermal Sarulla	Geothermal	330
MEB-PLN Batam scattered	Gas	500
Total Capacity		2150

COMMITTED PROJECTS

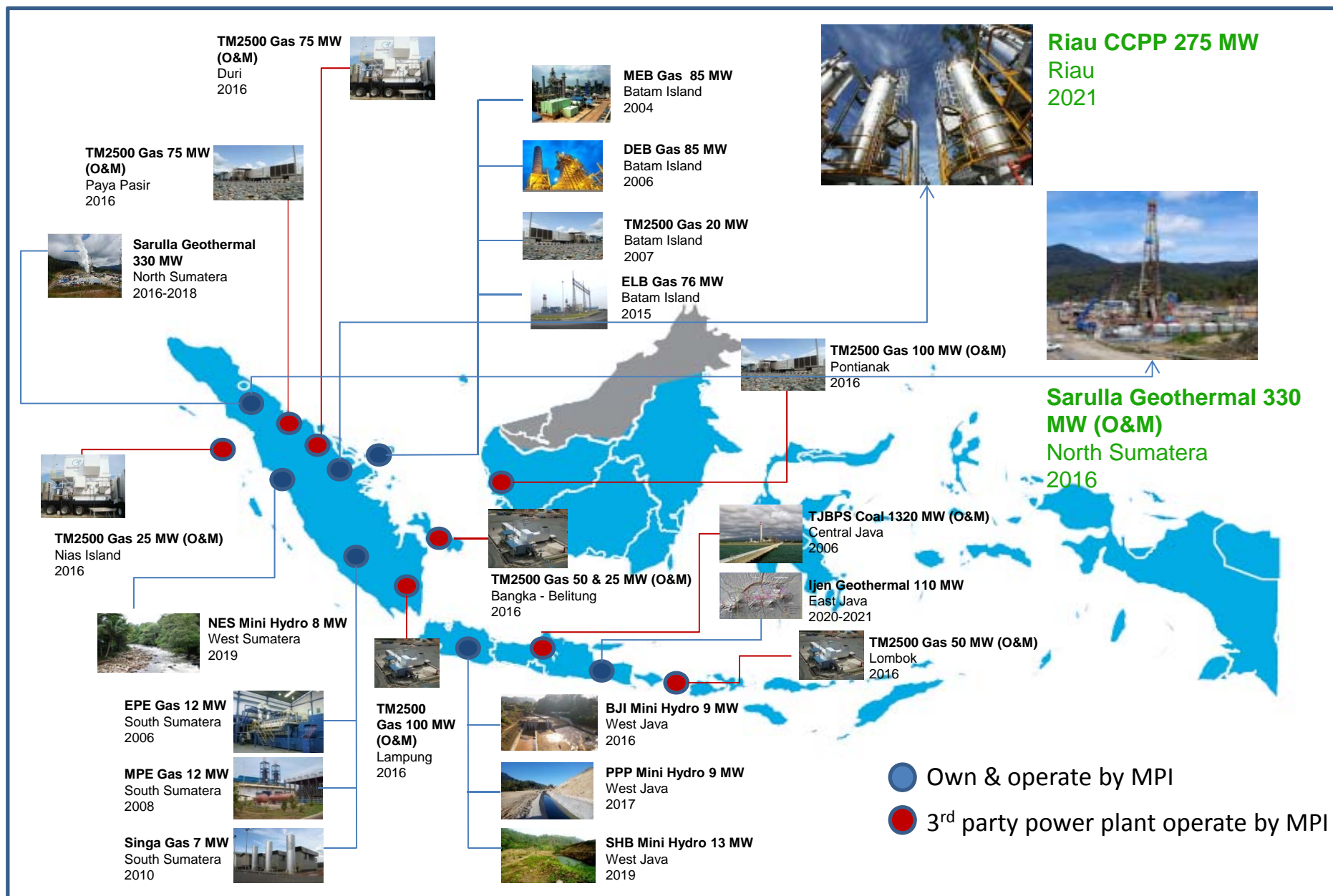
IPP	COD	MW
ELB Combined Cycle	2020	40
4 Mini Hydro	2017 - 2019	40
Sarulla Geothermal	2017 - 2018	330
Ijen Geothermal	2021 - 2022	110
CCPP Riau	2021	275
TOTAL		795

300 MW Operating Asset + 795 MW asset under construction
2150 MW 3rd party O&M business



MEDCOENERGI
Power

MPI Working Area





Mitra Energi Batam (MEB)
Panaran, Batam

PPA to 2034

Natural-gas-fueled Combined Cycle (Rolls-Royce Aero-Derivative RB211) Cap 85MW



Dalle Energy Batam (DEB)
Panaran, Batam

PPA to 2025

Natural-gas-fueled Combined Cycle (Rolls-Royce Aero-Derivative RB211.) Total Cap 85 MW



TM 2500
Panaran, Batam

Back up unit

Natural-gas-fueled General Electrics' Truck Mounted Derivative. Cap 20 MW



ELB
Tanjung Uncang, Batam

PPA to 2036

Natural-gas-fueled Simple Cycle (GE Frame 6 B). Total Cap 76 MW



Energi Prima Elektrika
Prabumulih, S. Sumatra

PPA to 2026

Natural-gas-fueled Wartsilla 18V 34 SG Gas Engine. Cap 12 MW



Multidaya Prima Elektrindo
Sako, S. Sumatra

PPA to 2028

Natural-gas-fueled Wartsilla 18V 34 SG Gas Engine. Cap 12MW



Singa
Palembang, S. Sumatra

PPA to 2017

Natural-gas-fueled Turbomach Gas Turbine Cap 7 MW



BJI – Mini Hydro 9 MW

West Java

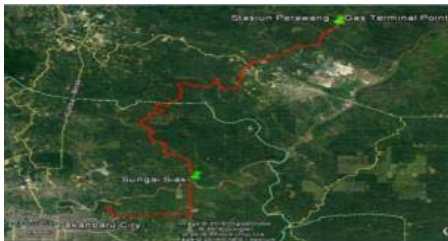
- Construction progress: 86%
- COD expected in 2017



Sarulla – Geothermal 330 MW

North Sumatera

- In process of commissioning unit 1 110 MW
- COD expected in 2017 – 2018



Riau – Gas Fired Combined Cycle 275 MW

Riau

- PPA negotiation process, expected signing by Q1 2017
- COD expected in 2021



Ijen – Geothermal 110 MW

East Java

- In process of slim hole drilling
- COD expected in 2021-2022

Resiko Proyek dan *Investor Return* (IRR) :

- *Required return* (IRR Proyek) tergantung dari besarnya resiko. Semakin besar resiko suatu proyek maka akan semakin besar pula *profit* yang diharapkan proyek tersebut.
- Untuk mendapatkan harga yang lebih ekonomis, adalah bagaimana kita bisa menurunkan resiko tersebut.
 - Kemudahan perizinan
 - Kemudahan pengadaan tanah

- Mismatch antara periode GSA (*Gas Supply Agreement*) dan PPA (*Power Purchase Agreement*)
- Sampel untuk beberapa kasus di anak perusahaan PT Medco Power Indonesia :

IPP	Location	Gas Volume	GSA Expired	PPA Expired
MEB	Batam	13.2 mmscfd	2019	2034
DEB	Batam	14.5 mmscfd	2019	2025
ELB	Batam	24 mmscfd	2019	2036
MPE	South Sumatera	2 mmscfd	2018	2028
EPE	South Sumatera	2 mmscfd	2019	2026

Resiko Eksplorasi / *Sub - Surface*

- Setelah Pengeboran eksplorasi selesai baru diketahui *feasibility* dari proyek, antara lain :
 - Besaran *Reserve / Cadangan Panas Bumi*
 - Biaya Produksi
 - *Resource Parameter : Fluid pH, Temperature & H2S*

Resiko Sumber Daya Manusia

- Sebagai negara dengan potensial *reserve* terbesar di dunia, kita memiliki sedikit *expert/expertise* di bidang *geothermal*
- Di negara lain ternyata *expert/expertise* yang ada juga sangat terbatas

THANK YOU

