Indonesia Coal Industry Update 2016

JOGMEC Coal Investment Seminar
Tokyo, 27 January 2016
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1. Indonesia Coal Industry

2. Coal as Key to Increase Electrification Ratio

3. Future Energy Mix
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1. Indonesia Coal Industry
2. Coal as Key to Increase Electrification Ratio
3. Future Energy Mix
Other than being the most economical source of energy for electricity, coal mining industry plays an important role in supporting Indonesia’s economy.

Sources: Badan Pusat Statistik
Historical Indonesian Coal Production 2009 – Oct 2015

Production (Million Tons) as Per October 2015
Export (Million Tons) as Per October 2015
Domestic Sales (Million Tons) as Per October 2015
Average of Coal Price based on HBA USD/MT as Per December 2015

Sources: Directorate General Mineral & Coal, MEMR
Currently, Indonesia is still dependent on coal exports as domestic consumption can only absorb a small portion of total coal production.

Sources: Directorate General Mineral & Coal, MEMR
Depressed Coal Price has affected CAPEX Coal Mining Company

• Global Coal Index NEWC declined by 62% from the highest level US$130/ton in January 2011 to US$49/ton in January 2016

• CAPEX of publicly listed coal mining company has been down significantly by 80% since 2012 as a result of significant lower coal price

• Most of the Companies cutting back on expansion and exploration. Low investment made will result no new reserves identified over last three years

• Total accumulated CAPEX for the last 5 years reach US$5.6 bn

*source: Bloomberg, internal analysis

Companies included: ABMM, ADRO, ARII, BORN, BRAU, BSSR, BUMI, BYAN, GEMS, GTBO, HRUM, INDY, ITMG, KKGI, MBAP, PTBA, TKGA, TOBA
APBI-ICMA INTERNAL SURVEY

Coal Price Forecast
- Decrease: 18%
- Increase: 43%
- Flat: 39%

CapEx Policy
- Increase: 69%
- Decrease: 21%
- Flat: 10%

Employee Rationalization
- Not rationalizing: 51%
- <10%: 24%
- >10%: 24%

Production Volume Policy
- Increase: 29%
- Decrease: 26%
- Flat: 45%

*Survey result as of May 6th, 2015
CHALLENGES: GOVERNMENT POLICIES

Non-tax state revenue from land use of forest areas

1. Significant rate increase
2. Upfront payment upon permit approval instead of upon usage

Letter of Credit requirement for export activities

1. Additional costs during distressed coal market condition
2. Potential cash flow management disruption
3. Creating confusion due to lack of technical guidelines

Plan of limiting coal shipment from 14 designated ports

1. Additional costs related to logistics and infrastructure use
2. Ports designation may not be transparent

Royalty increase plan

1. Increasing unemployment because of mine closures
2. Not necessarily increasing government revenue
3. Potential disruption in government’s 35 GW plan

Requirement of Rupiah as the only currency for domestic transactions

1. Supplies and contractor rates are already in US$
2. Potential hedging costs
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Current Economic and Electricity Condition

- Economic growth needs to be supported by sufficient Electrification Ratio (ER)
- Installed Capacity in Indonesia is always below the energy demand

Sources: PLN, IEA World Energy Outlook 2014 (for ER), Badan Pusat Statistik, RUPTL 2015, MEMR Presentation Sept 2014

**Estimated by PLN & BPS**
Indonesia Electricity Overview

Power plant investments must be focused towards developing Coal-fired and Gas-fired Power Plants

Installed Capacity* 43 GW

- Coal-fired: 22 GW
- Gas-fired: 13 GW
- Hydro: 4 GW
- Diesel: 3 GW
- Others: 1 GW

* Per December 2014, excluding rental from 3 rd party sources ~4 GW

Energy Source Costs (per KWh)

Coal and gas are the largest sources of energy for electricity generation with highest total installed capacity and at the most economical price

Coal is still the cheapest and most abundant energy source for power generation

Sources: RUPTL 2015-2024, Buku Statistik PLN 2014
Growing Power Demand

As government pushes for infrastructure & industrial development, low electricity consumption and installed capacity levels create significant increase in electricity demand

ASEAN Electrification Ratio Comparable

Target 2019: >95%

Government aims to achieve >95% electrification rate by 2019, hence PLN Programs such as Fast Track and IPP are enforced to attract Private Sector to enter into Electricity Sector

Sources: PLN Investor Presentation May 2015, RUPTL 2015-2024, MEMR, World Bank
Power Generation Overview

Indonesia projected additional 50-60 GW until 2024 to achieve electrification ratio of >95%

Projected Installed Capacity

To accelerate the needs of Electricity, Government of Indonesia initiated 35 GW Program from 2015-2019 and to follow up on several delayed projects from FTP 1 & 2 to increase Electrification Ratio to >95%

PLN
- Size: 18 GW
- Transmission: 50k kms
- Substation: 743 loc.

IPP
- Size: 25 GW
- Transmission: 360 kms

Sources: PLN Investor Presentation 2015, RUPTL 2015-2024
GOVERNMENT 35 GW PROGRAM

- Administration under President Jokowi has committed to add 35 GW power to existing installed capacity of 47 GW (until Dec 2014)
- 55-60% of total 35 GW power projects will come from coal-fired power plants and require significant participation from private (IPP)
- Total project cost to be borne by private sector / IPP: US$ 28 – 35 bln
35 GW Program Open Participation of Private Sector

- Total IPP Projects: 35.59 GW, Project Cost: US$ 68.5 Bn, Max Potential Revenue p.a.: US$ 18.3 Bn, Max EBITDA p.a.: US$ 8.2-9.2 Bn
- Soon to be Tendered IPP Projects: 11.04 GW, Project Cost: US$ 19.3 Bn, Max Potential Revenue p.a.: US$ 5.5 Bn, Max EBITDA p.a.: US$ 2.5-2.7 Bn
- Tendered IPP Projects: 16.92 GW, Project Cost: US$ 31.1 Bn, Max Potential Revenue p.a.: US$ 8.1 Bn, Max EBITDA p.a.: US$ 3.6-4.1 Bn

*Per Dec 2014, using the same assumptions as new IPP Projects
** EBITDA = 45-50% of Revenues

- IPP market of 36 GW is projected to be approximately US$ 70 billion market opportunity
- Out of 70 GW, ~60% will come from coal-based
- Wide-open opportunities to becoming main player in non-coal energy segment

Sources: RUPTL 2015-2024, PLN Market Sounding 2015, US EIA Report 2013, internal data analysis, APLSI
35 GW Electricity Program and Industrial Development Will Increase Electricity Demand dan Domestic Coal Consumption

- As the government pushes infrastructure and industrial development, the demand for electricity will increase and subsequently domestic coal consumption for electricity generation will increase.
- Assuming 5%-6% economic growth in 2015-2017, and 7% onward, coal consumption for electricity will increase by 10% CAGR in 2015-2024.
Forecast Indonesia Coal Production

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</thead>
<tbody>
<tr>
<td>NEWC Price (US$/ton)</td>
<td>59</td>
<td>46</td>
<td>41</td>
<td>41</td>
<td>41</td>
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<tr>
<td>Production (MT)</td>
<td></td>
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<tr>
<td>APBI</td>
<td>382</td>
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<td>IDN Govt RPJMN</td>
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<tr>
<td>Analyst I (Nov 2015)</td>
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<td>350</td>
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<td>335</td>
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<tr>
<td>Analyst II (Jun 2015)</td>
<td>382</td>
<td>402</td>
<td>394</td>
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<td>393</td>
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</tbody>
</table>

Sources: Various analyst reports 2015, Global Coal, Dir. Gen of Mineral & Coal MEMR Presentation Nov. 2015, Bloomberg, internal analysis
Coal Requirements post Realization of 35 GW

### Coal Requirement – Next 5 years

<table>
<thead>
<tr>
<th>Description</th>
<th>Capacity</th>
<th>Coal Cons p.a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Coal Fired PP (30 Sept 2014)</td>
<td>22 MW</td>
<td>76 mln</td>
</tr>
<tr>
<td>Estimated Under 35 GW</td>
<td>20 MW</td>
<td>~75 mln</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>42 MW</td>
<td>~150 mln</td>
</tr>
</tbody>
</table>

### Coal Reserves

**As of 1 January 2013**

<table>
<thead>
<tr>
<th>Coal Type</th>
<th>Reserves (billion ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>9.5</td>
</tr>
<tr>
<td>Medium</td>
<td>20.1</td>
</tr>
<tr>
<td>High</td>
<td>1.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>31.4</strong></td>
</tr>
</tbody>
</table>

**NEWC Price**

<table>
<thead>
<tr>
<th>Description</th>
<th>1 Jan 2013</th>
<th>Now</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEWC Price</td>
<td>US$ 94/MT</td>
<td>US$ 52/MT</td>
</tr>
<tr>
<td>Reserve</td>
<td>31 bln MT</td>
<td>-25 ~ 30 %</td>
</tr>
</tbody>
</table>

WITH COAL PRICE KEEP GOING DOWN, THE AMOUNT OF RESERVE WE HAVE IS GETTING SMALLER.

Sources: Bloomberg, APBI internal calculation, Handbook of Energy and statistics of Indonesia 2014
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ENERGY MIX LANDSCAPE

Government Initial Energy Mix Target

- By 2025, Indonesia plans to no longer use oil as power generation source and convert to other renewable energy sources
- Renewable energy such as solar and hydro power technology is rapidly developing, resulting in falling cost curves and more competitive investment costs
- Renewables as energy source were initially planned to rise from ~11% in 2014 to ~ 22% in 2025

CONCLUSION
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- Continued decreasing coal demand from China still causes market oversupply and therefore, further weakens coal prices, which affects production outputs of Indonesian miners.

- From 2014 to 2015, domestic coal demands increased 14% y-o-y from 76 MT to 87 MT and is expected to continue to increase. Though currently, Indonesia still needs to rely on exports as domestic usage of coal only absorbs a small portion of total Indonesia production.

- The 35 GW Program provides investment opportunities and is expected to revive the coal industry through their high installed capacity projections of coal fired power plants. In 2019, Indonesian domestic consumption of coal is expected to more than double 2015 consumption and overpass exports.

- In addition to utilizing the country’s cheapest energy source (coal), the government also increases opportunities towards growing renewable energy portion for power generation sources.
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