Adaro Energy Highlights

• A *vertically integrated energy producer* with businesses in coal mining, coal logistics, power generation, water, and supporting infrastructure sectors.
• One of the *largest private business group in Indonesia* with net revenue of 3.45 billion USD in 2019. Adaro is one of the largest coal producers and private IPP in Indonesia.
• **Strong corporate balance sheet** with total asset of 7.2 billion USD and cash reserve of 1.6 billion USD at end of 2019.
• **Reputable and experienced management** and controlling shareholders, including several of the most prominent businesspersons in Indonesia.
• Listed in the Indonesia Stock Exchange (ADRO:IJ) since 2008.
Adaro Power is one of the largest IPP in Indonesia with 2,260 MW of gross power generation capacity

### Bhimasena Power Indonesia – CFPP
- **Size / Tech.**: 2 x 1,000 MW Ultra Super Critical
- **Shareholders**: 34% AP, 34% JPower, 32% Itochu
- **Project cost**: USD 4.2 billion
- **COD**: 2020 (estimated)

### Tanjung Power Indonesia – CFPP
- **Size / Tech.**: 2 x 100 MW CFB technology
- **Shareholders**: 65% AP, 35% Korea EWP
- **Project cost**: USD 545 million
- **COD**: 2019

### Makmur Sejahtera Wisesa – CFPP
- **Size / Tech.**: 2 x 30 MW CFB technology
- **Shareholders**: 100% Adaro Power
- **COD**: #1 Jun 2013, #2 Feb 2014

### Makmur Sejahtera Wisesa – Solar PV
- **Size**: 130 kWp + 467 kWp
- **Shareholder**: 100% Adaro Power
- **COD**: Q3 2018 (130 kWp)
### Adaro Power is expanding in renewables

<table>
<thead>
<tr>
<th>Project</th>
<th>Description</th>
<th>Size</th>
<th>Offtaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kelanis Solar PV expansion (Captive)</td>
<td>467 kWp (Floating)</td>
<td>Adaro Kelanis Port &amp; Office to reduce genset usage</td>
</tr>
<tr>
<td>2</td>
<td>Tanjung Solar PV</td>
<td>10 MWac</td>
<td>PLN Kalsel</td>
</tr>
<tr>
<td>3</td>
<td>Mini Hydro in Central Kalimantan (Captive)</td>
<td>3 MW Potential</td>
<td>Adaro Mining</td>
</tr>
<tr>
<td>4</td>
<td>Biomass + Solar PV + Battery Hybrid in Sulawesi</td>
<td>6 MW Potential</td>
<td>Micro grid to serve local islands</td>
</tr>
</tbody>
</table>

Several ongoing studies on some potential projects, and interest participation in PLN EBT tender
Project Description: Kelanis Overview

Crushing Capacity:
- 7 x crushers
- Total capacity of 9,000 tph
- Capacity up to 60 Mt

Barge Loading Capacity:
2 x load out conveyor systems with
75 Mt of capacity

Stockpiling Capacity:
350,000t of capacity
We are committed in developing renewable energy and have invested on an in-house pilot project and feasibility study as a learning platform

- Adaro believes in enhancing the company’s knowledge through capacity building, as a form of commitment to develop renewable energy.

- With this value in mind, Adaro has invested on an in-house pilot project of 100 (+30) kWp rooftop solar PV as a learning platform through one of Adaro’s affiliates, PT MSW.

- The project will generate 120,000 kWh/year and serves a captive market that will be utilized for Adaro Group’s mining operation. Environmental impact of this project includes replacing 33,000 L of diesel per year, which is equivalent to 88.4 ton CO₂/year.

- a captive market that will be utilized for Adaro Group’s mining operation. Environmental impact of this pro
Bi Facial Modules Floating PV – 467kWp, Target CoD End 2020

Installation Method
Construction Phase

Sliding Platform Preparation
Floating PV Performance and Emission Reduction Potential

Estimated Energy Yield

629,396 kWh - generated for the first year

Estimated Energy Yield

514.22 Ton

CO₂e / Green house gas emission avoided

- 514.22 ton CO₂e or greenhouse gas generation avoided
- 13,185 trees planted equal
- 179 ton worth of recycling
- 2,337,347 km car drive avoided
Future Development: Tanjung Solar PV - Project Summary

- Tanjung Solar PV (the Project) is located between MSW and TPI CFPP, in Tabalong, South Kalimantan.

- The Project area is approximately 18Ha with proximity ±4.2km from Tanjung Substation.

- The Project area is in industrial zone according to the Project RTRW.

- The Project is planned to improve energy mix in Kalselteng region of PLN and support MEMR program regarding Solar PV in Mining Area. The project is targeted to be in operation by 2022.

- We are actively seeking advise from PLN Wilayah and Directorate General of Electricity to improve the Project’s proposal implementation.
**Tanjung Solar PV : Site Location**

**Information and General Condition**

- Coordinate: 9761131.00 m S; 326981.00 m E  
  \(2^\circ 9.6'\) S, \(115^\circ 26.6'\) E

- Mostly are unproductive palm oil trees, shrubs, and bushes. No protected flora and fauna

- Minimum soil cut and fill for the site preparations

- Higher elevation from the existing road drainage, low flood risk

- Drainage around the site is available

- Water source is available. Alternatively to be supplied by MSW

- Low risk in earthquake

- No issue with existing RTRW/Spatial Planning and Forestry area

- Soil investigation for the CFPP can be used for PV foundation

- No issue with shading effect from existing CFPP

- No issue and impact to existing Warukin airport

- Nearest Port: Trisakti Port in Banjarmasin (app. 230 km from Site)
Selection Criteria of PV Tanjung

• **Location and distance to Medium Voltage grid and potential interconnection points**, the location of the site currently considered has been chosen as it allows to optimize all of these criteria, allowing for key success factors for competitiveness of the project. In summary, the site is relatively close to the medium voltage grid (4.2 km from nominated site).

• **Land status, use, ownership and availability**, the land status, use and ownership of nominated site is clear. The certificate of each entity is in place, no legal issues and has same boundaries with the local government data.

• **Constructability of the project**, there is a small concern related to the distance between the seaport and airport which are relatively far from the proposed site of PV site. Even though the land logistic options from the main port to the proposed location can be considered as the provincial road which has been maintained quite well, it is still at least a 5 hours journey. Nevertheless, it does not have a significant effect on the sustainability of the project construction.

• **Topography condition**, nominated site is located in an area with small degree of slope. The current condition does not require significant civil works (cut and fill works) during the implementation period, since region with extreme elevation difference has been excluded from the PV layout design.

• **Restricted Environmental Areas**, the nominated site is not located in restricted environmental areas. The assessment was based on the map published by Ministry of Environmental
Adaro Power is committed in developing renewable energy projects to support government initiatives in the mining area

1. Developing in-house renewable energy capabilities (i.e., rooftop solar PV project for internal use) to be prepared for the right investment opportunities in near future

2. Investing in various renewable energy studies (i.e., FS, grid connection, etc.)

3. Continuously exploring opportunity in renewable power generation and disruptive technology within mining area (i.e. Waste to Energy, Biomass, Mining Electrification)

4. Committed to reduce the Carbon Emission in mining area