Tidal Power Plants
**Project profile**

<table>
<thead>
<tr>
<th>Name Project</th>
<th>Tidal Power Plant Larantuka</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Larantuka &amp; Adonara, Nusa Tenggara Timur, Indonesia.</td>
</tr>
<tr>
<td>Installed Capacity</td>
<td>40 MW</td>
</tr>
<tr>
<td>Connection Grid</td>
<td>In 2021 on East Flores Larantuka, Adonara</td>
</tr>
<tr>
<td>Power Generation</td>
<td>100 GWh (Annually)</td>
</tr>
</tbody>
</table>

**Project Benefits**

- Secured, attractive Export Finance supported by Dutch Government
- Increase of local employment by growth of Fishery, Agriculture, Tourism, Industries
- Large iconic development of renewable energy based on tides integrated in infrastructure
Tidal currents Larantuka strait & Tidal Bridge

Information from Mr. Erwandi
Indonesian Hydrodynamics Laboratory, Surabaya

Positioning Bridge

3.3 m/s

3.8 m/s
Tidal power plant and Bridge
Project overview: Tidal power plant with extension

Turbines
Gradually build up production capacity

The build up of the capacity
- Anticipates on the development of the demand as noted in Connectivity Study
- Creates timing for the investors of harbour, tourism, fishery to prepare
- Gaining experience with gas turbines load followers
Implementation phase...

- **Pre-FS, FS, Social impact, Connectivity Study**
  - Realized
  - Reported on November 2018

- **Agreement phase with PLN**
  - EPC with PLN

- **Front End Engineering and Design (FEED)**
  - Data gathering for Terms of Requirement (TOR) and Relay upon Information
  - From basis design to preliminary certified design
  - Finance by Dutch G2G

- **EPC**
  - Engineering, Procurement and Construction phase
  - Finance by Dutch G2G

- **COD**
  - 4th quarter 2022
TIDAL POWER DAM
MASIRAH ISLAND, OMAN
DTP is a dam concept composed of several standard caissons, for turbines and as substations, supplemented by a normal dam. The dam creates a blockage of the currents to realise impoundment ($\Delta h$). This effect together with the FTP turbines, generates extra energy yields.
TIDAL ENERGY PROJECT OMAN

Ideal location at Masirah Island

Tidal Power Dam, length 15 km
IMPRESSION TIDAL POWER DAM

Ideal location at Masirah Island
IMPRESION TIDAL POWER DAM

• Start
• Tidal Bridge
• Unique selling points turbine
• "Proven" solution
• Added value Interreg MEA

• Technical
• Business
• Q&A

Ideal location at Masirah Island
Worldwide iconic prestige project

This project has a direct positive impact worldwide, with a major development on technology, innovation, entrepreneurship and prestige defining the progressive role of OMAN

Politics
“Right timing for cost neutral solution with International allure”

Renewable energy
“Higher production than demand creating export possibility”

Unlocking Masirah island
“Access to strategic position with development of tourism and creations of jobs”
**NEXT STEPS**

1. **Activities**
   - **Data gathering**
     - Tidal Current, Water heights & waves, Hydrography, Geological conditions, Weather, Infrastructure, energy demand
   - **Numeric analysis**
     - Waterworks to influence the flow profile, Length of solution, impact on surroundings
   - **Development**
     - Engaging operating and financial parties

2. **Output**
   - **Design**
     - Position dam, Basis of design waterworks and dam, Configuration of the turbines
   - **Energy**
     - Yield of the turbines, output and conversion base load
   - **Financial**
     - Estimation investment and opex, Cost of energy, Returns
     - Funding institutions

Next step is determining the feasibility
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