Monsoon by the numbers

- 600 MW
- 22km transmission line
- 1,500 GWh net annual generation\(^1\)
- $950m project cost
- $670m debt mobilized by ADB
- 750,000 tCO2 emissions offset per year

1. Based on a P90 estimate.

1st wind project in Lao PDR

Largest wind project in ASEAN

1st cross-border wind project in Asia
A natural cross-border relationship

“The Battery of Southeast Asia”
• History of exporting hydropower.
  ✓ Hydropower exports currently account for ~10% of GDP
• Renewables ambition.
  ✓ Targets 30% non-hydro renewables production by 2025
• Significant wind potential.
  ✓ Utility scale wind potential in the range of 100-500GW

Massive Demand for Renewable Power
• High GDP growth = increasing energy demand.
  ✓ 8.0% in 2022; 6.5%-7.0% in 2023 and 2024
• Renewables ambition.
  ✓ PDP8 targets generating up to 39% of power from renewables 2030
• 2015 established MoU.
  ✓ Target to import 3 GW of Lao renewable power by 2025, 5GW by 2030

Against this backdrop, Viet Nam’s PDP8 incorporates the MOU target to import 5,000 MW by 2030
Project site in southern Lao PDR

Site Highlights

- Located in Sekong and Attapeu provinces in Lao PDR, 22km from the Viet Nam border, and at an elevation of 1,000-1,600m
- Project area comprises 68,000 hectares, but requires footprint of only 1,050 hectares
- Along the road connecting Ubon Ratchathani (Thailand) to Danang (Viet Nam), (Danang), with road infrastructure adequate for transportation of wind farm components
- Unexploded ordinance (UXO) clearance a key EPC activity in early construction
Project structure

CA - Concession Agreement
PPA - Power Purchase Agreement
O&M - O&M Agreement
EPC - Engineering, procurement, construction

**Sponsors**
- PowerChina
- Envision Energy

**Lenders**
- MDB/DFI lenders
- Commercial lenders
- Concessional lenders

**Government of Lao PDR**

**EPC**
- PowerChina

**PPA**
- EVN

**O&M**
- PowerChina and Envision Energy
Further project details

**Project**
- **133 x 4.5MW Envision turbines**; project cost of approx. $950m
- Project developed under an MoU between Lao PDR and Viet Nam for import of renewable power
- Complementarity of wind with hydro compelling given large existing hydro exports from Lao PDR

**Transmission**
- **22km 500kV transmission line (TL)** from the project to the border constructed by Project
- Project TL will connect to 44km 500kV TL constructed by EVN, with interconnection at the border

**Power Purchase Agreement**
- **25-year Power Purchase Agreement with EVN** signed in 2021, amended 2022
  - US$ tariff paid offshore Viet Nam; PPA governed by English law with Singapore arbitration
  - Termination payments for GoV Force Majeure; deemed generation payments for delay in EVN TL
  - “Take-and-pay” for electrical power generated, with curtailment only for technical EVN grid issues

**Concession Agreement**
- **25-year Concession Agreement** with the Government of Lao PDR
  - Royalties payable as a % of gross revenue; key bank accounts to be held offshore

**E&S**
- Strong community support with a focused community development programme, including $1.1m contributed to **Community Development Fund** annually

**EPC**
- Fixed-price, date-certain, turnkey, fully-wrapped EPC with PowerChina

**O&M**
- O&M with Envision Lao for the turbines, and PowerChina Lao for the balance of plant (BoP) facilities
Innovative blended finance structure

Key bankability concern – curtailment

$60m to address curtailment risk

- “Take-and-pay” PPA structure means there is risk if EVN were to curtail power from the project
- Curtailment risk is mitigated in other ways, but in part, the blended finance package was designed to address this significant risk in two ways:
  1. $30m applied to project costs as longer-tenor and subordinated debt to mitigate effects of ordinary curtailment
  2. An additional $30m cash reserve to mitigate cases of one-off or extreme curtailment
- With the blended finance package, it is estimated the project can withstand extreme curtailment (50% of potential output) for more than three years without triggering a default

* Diagram for illustrative purposes only
Development impact

**OP3: Tackling Climate Change**

- 748,867 tons of CO2 emissions avoided per annum

**OP2: Accelerating Progress in Gender Equity**

- Effective Gender Mainstreaming (EGM)

**OP7: Regional Cooperation and Integration**

- Improved connectivity by developing cross-border energy infrastructure

**Support Least Developed and FCAS Country**

- Employment and revenues through collection of royalties, lease payments, and taxes

**Support Clean Energy Supply**

- 1,519 GWh of clean electricity delivered per annum to meet Viet Nam’s energy demand

**Support Rural Development**

- $1.1 million annual development fund to support education, agriculture, health, and infrastructure in local rural community

**SDG5:** Achieve gender equality and empower all women and girls

**SDG7:** Ensure access to affordable, reliable, sustainable, and modern energy for all

**SDG13:** Take urgent action to combat climate change and its impact
THANK YOU!