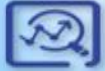




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**ENERGY AND MINES**



# Lao Power Development and Energy Transition

**ERC Forum 2023**

**Renewable and Sustainable Energy Transition**

August 28, 2021

Presented by: Department of Energy Policy and Planning,  
Ministry of Energy and Mines, Lao PDR



# I. Lao Power Development

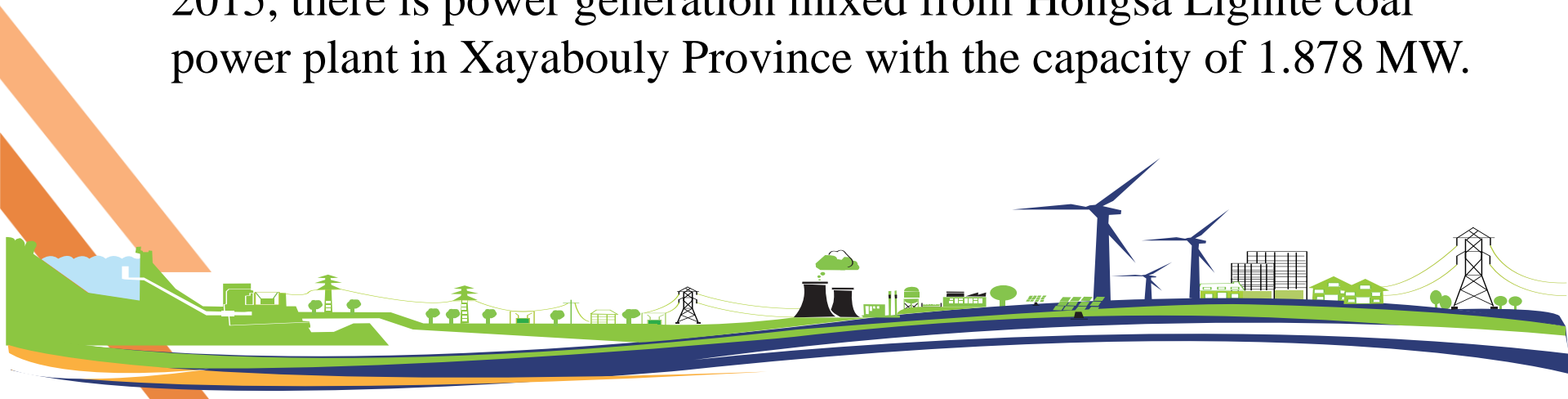
1. Power Generation Sources Development
2. Transmission systems Development



# I. Lao Power Development

## 1. Power Generation Sources Development

- Started in 1970 up to now, showing the growing rate around 17% per year.
- The investment of power generation sources consists of the government, Joint-venture (Utility is representative of the government), and private sector.
- Power development before 2012 is mainly hydropower, then in 2015, there is power generation mixed from Hongsa Lignite coal power plant in Xayabouly Province with the capacity of 1.878 MW.



# I. Lao Power Development

## 1. Power Generation Sources Development (Cont.)

| Type                   | June 2023         |                       |            |
|------------------------|-------------------|-----------------------|------------|
|                        | Amount            | Install Capacity (MW) | %          |
| Hydropower             | 81                | 9615.14               | 81.6       |
| Coal Thermal           | 3                 | 2003                  | 17         |
| Solar                  | 8                 | 56.5                  | 0.5        |
| Biomass*               | 4                 | 112                   | 0.9        |
| <b>Total</b>           | <b>96</b>         | <b>11,786.14</b>      | <b>100</b> |
| <b>Max output/year</b> | <b>59,477 GWh</b> |                       |            |

\*Biomass: sugar can

# I. Lao Power Development

## 2. Transmission Systems Development

- 1) Domestic system
- 2) Interconnection system
  - Export through the National Grid
  - Directed Export by IPPs



# I. Lao Power Development

## 2. Transmission Systems Development (Cont.)

### 1) Domestic system

| No | Detail            | Length (Km)       |              |              | Length (cct-Km)       |              |              |
|----|-------------------|-------------------|--------------|--------------|-----------------------|--------------|--------------|
|    |                   | Total Length (Km) | 115 kV       | 230 kV       | Total Length (cct-Km) | 115 kV       | 230 kV       |
| 1  | North             | 3.396             | 2.668        | 728          | 4.736                 | 3.302        | 1.433        |
| 2  | Vientiane Capital | 195               | 195          | 0            | 281                   | 281          | 0            |
| 3  | Central           | 1.696             | 1.422        | 274          | 2.769                 | 2.221        | 548          |
| 4  | South             | 876               | 876          | 0            | 1.310                 | 1.310        | 0            |
|    | <b>Total</b>      | <b>6.163</b>      | <b>5.161</b> | <b>1.002</b> | <b>9.096</b>          | <b>7.115</b> | <b>7.981</b> |

# I. Lao Power Development

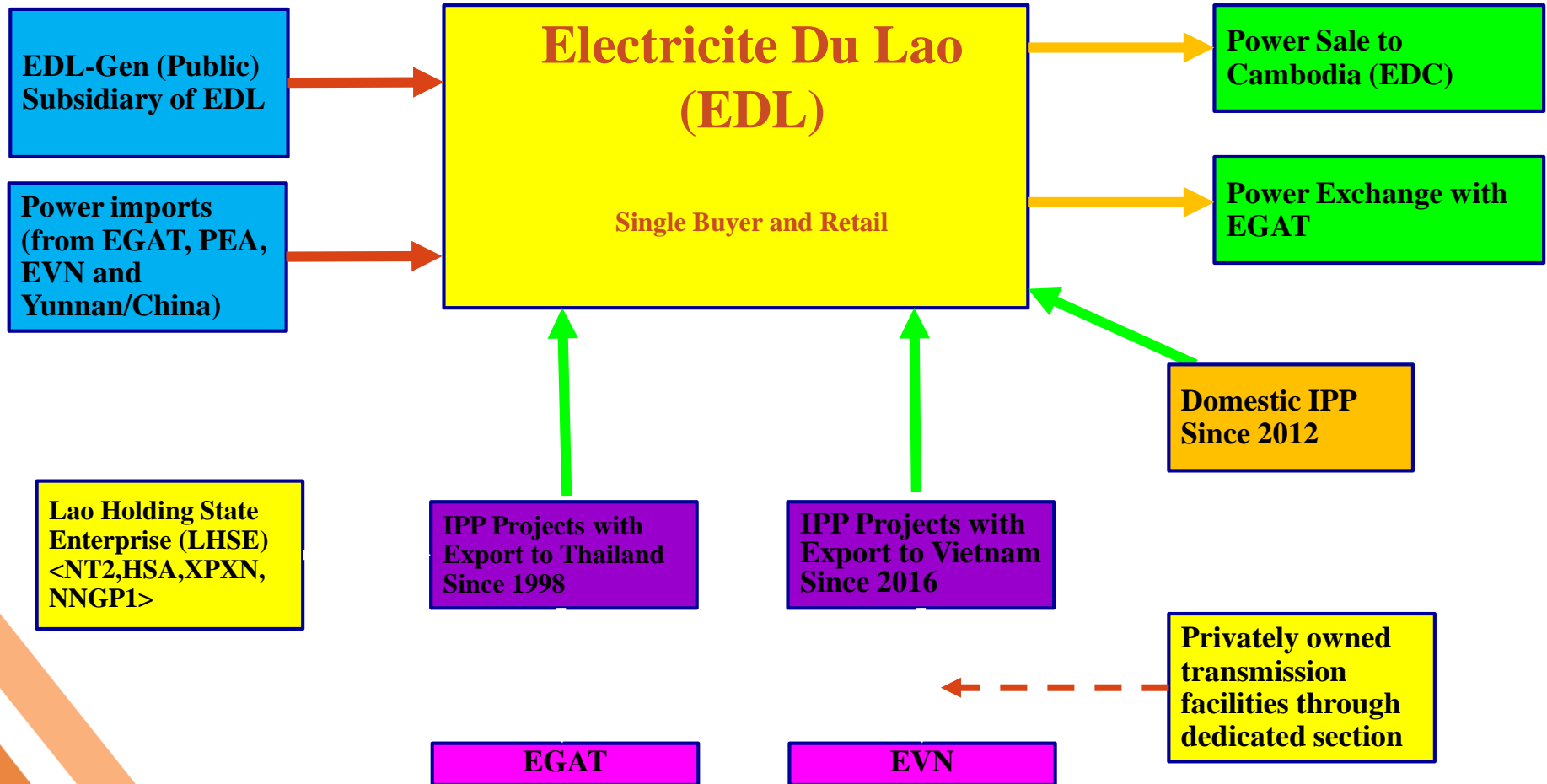
## 2. Transmission Systems Development (Cont.)

### 2) Interconnection system

| Voltage<br>(kV) | Thailand  |          | Vietnam  | Cambodia | Myanmar  | China    | Length       |              |
|-----------------|-----------|----------|----------|----------|----------|----------|--------------|--------------|
|                 | EGAT      | PEA      |          |          |          |          | Km           | (cct-km)     |
| 500             | 3         |          |          | 1        |          |          | 646          | 1.292        |
| 230             | 2         |          | 2        |          |          |          | 500          | 1.000        |
| 115             | 6         |          |          | 1        |          | 1        | 218          | 254          |
| 35/22           |           |          | 7        |          |          | 2        | 126          | 126          |
| 22              |           | 6        |          | 1        | 1        |          | 201          | 201          |
| <b>Total</b>    | <b>11</b> | <b>6</b> | <b>9</b> | <b>3</b> | <b>1</b> | <b>3</b> | <b>1.691</b> | <b>2.873</b> |

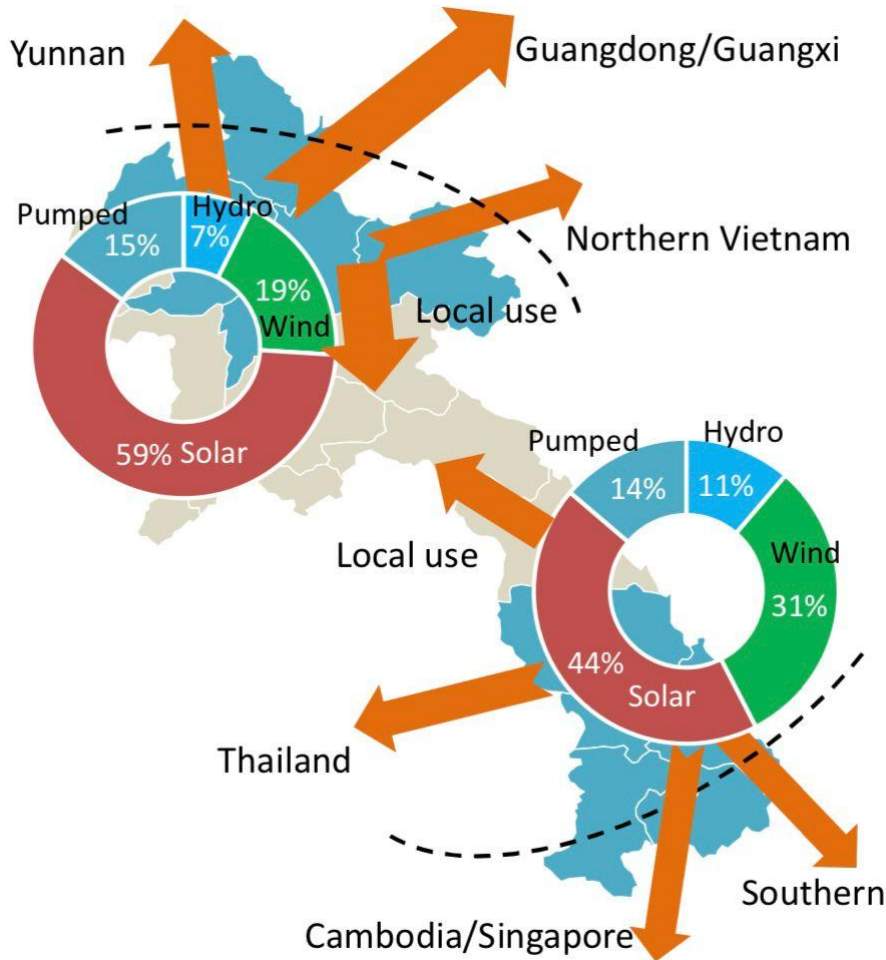
# I. Lao Power Development

## Power Trading Structure





# II. Planning of RE development

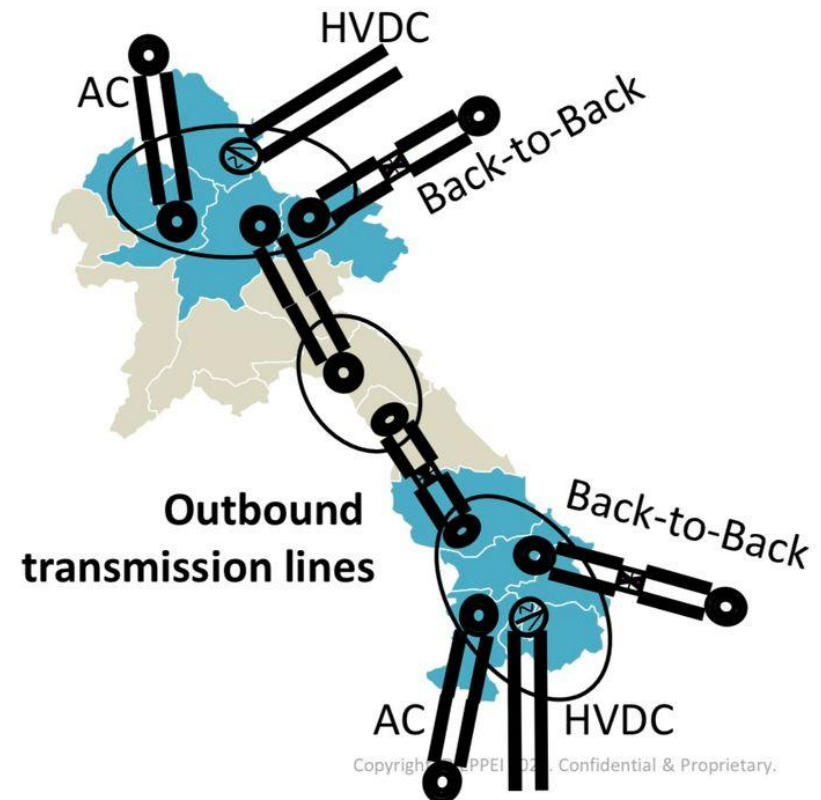
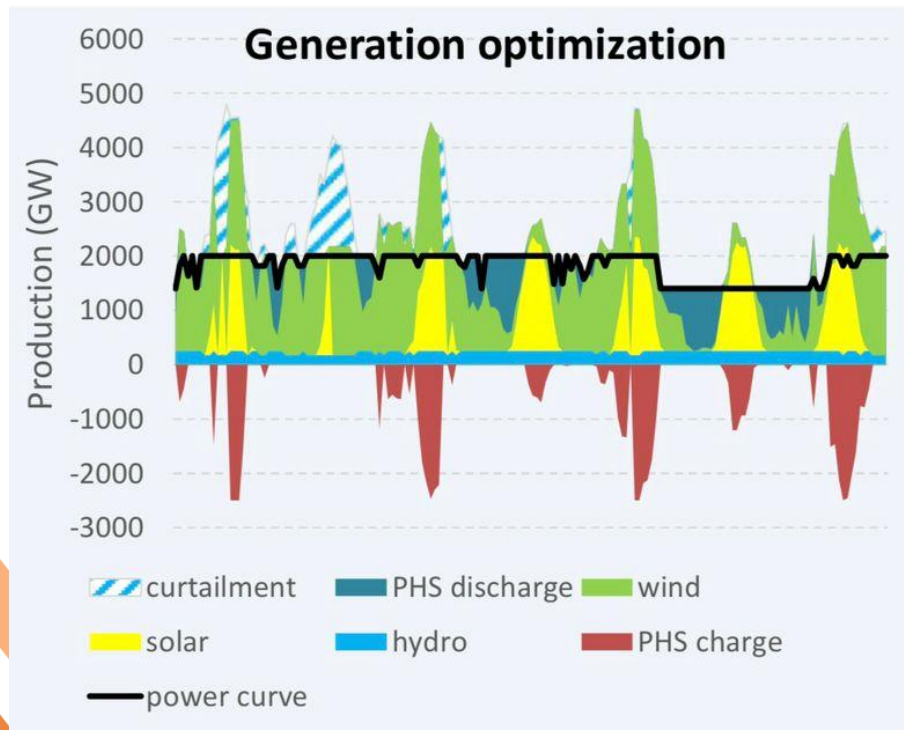


| Hydropower         | No         | MW              |
|--------------------|------------|-----------------|
| Existing           | 81         | 9615.14         |
| Under-Construction | 21         | 1259.3          |
| CA                 | 18         | 2466.2          |
| PDA                | 109        | 6431.95         |
| MOU                | 245        | 8143.43         |
| <b>Total</b>       | <b>474</b> | <b>27916.02</b> |

| Solar              | No        | MW           |
|--------------------|-----------|--------------|
| Existing           | 8         | 56           |
| Under-Construction | 0         | 0            |
| CA                 | 4         | 2688         |
| PDA                | 13        | 873          |
| MOU                | 25        | 12147        |
| <b>Total</b>       | <b>50</b> | <b>15672</b> |

| Wind               | No        | MW            |
|--------------------|-----------|---------------|
| Existing           | 0         | 0             |
| Under-Construction | 0         | 0             |
| CA                 | 1         | 600           |
| PDA                | 1         | 187.2         |
| MOU                | 17        | 13.000        |
| <b>Total</b>       | <b>19</b> | <b>13.787</b> |

# Planning of Clean Energy Base





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**Thank You**  
**“Khop Jai”**

