

# Lao PDR Power Policy and Development Program



By Dr. Daovong PHONEKEO, Director General  
Department of Energy Policy and Planning, MEM

# Table of Content

- ▶ Development History
- ▶ Existing and Planned Projects
- ▶ Participation of Private Sector
- ▶ Other Tangible Benefits of Hydropower
- ▶ Vision 2030





# Development History



## By Year 1975

- Only 3 hydro power plants with 32 MW, 240GWh
- Population ~ 3 millions
- Only 5 main cities electrified
- Estimated less than 10% of families have access to electricity ;



## **1<sup>st</sup> Power Sector Policy was formulated in 1990:**

1. Earn foreign exchange through electricity export to finance the country's economic and social programs;
2. Increase access to electricity by grid extensions and off-grid rural electrification;
3. Maintain an affordable tariff to promote economic and social development;
4. Replace dependence on imported fuels for energy generation.



➤ **In early 2005, the power sector played more significant and strategic role when the Govt' laid out important targets in the NSEDP:**

- Provide a source of foreign exchange to fund economic and social development and alleviate poverty;
- Meet the commitments under intergovernmental MOUs and Agreements with Thailand, Vietnam and others;
- Extend rural electrification to promote better socio-economic development and reach the government target of 70% and 90% by year 2010 and 2020 respectively;



- Integrate power sector and maintain its economic development as a whole with international communities through its power exchange programs and foreign direct investment.

## Projects supported by International Financing Institution

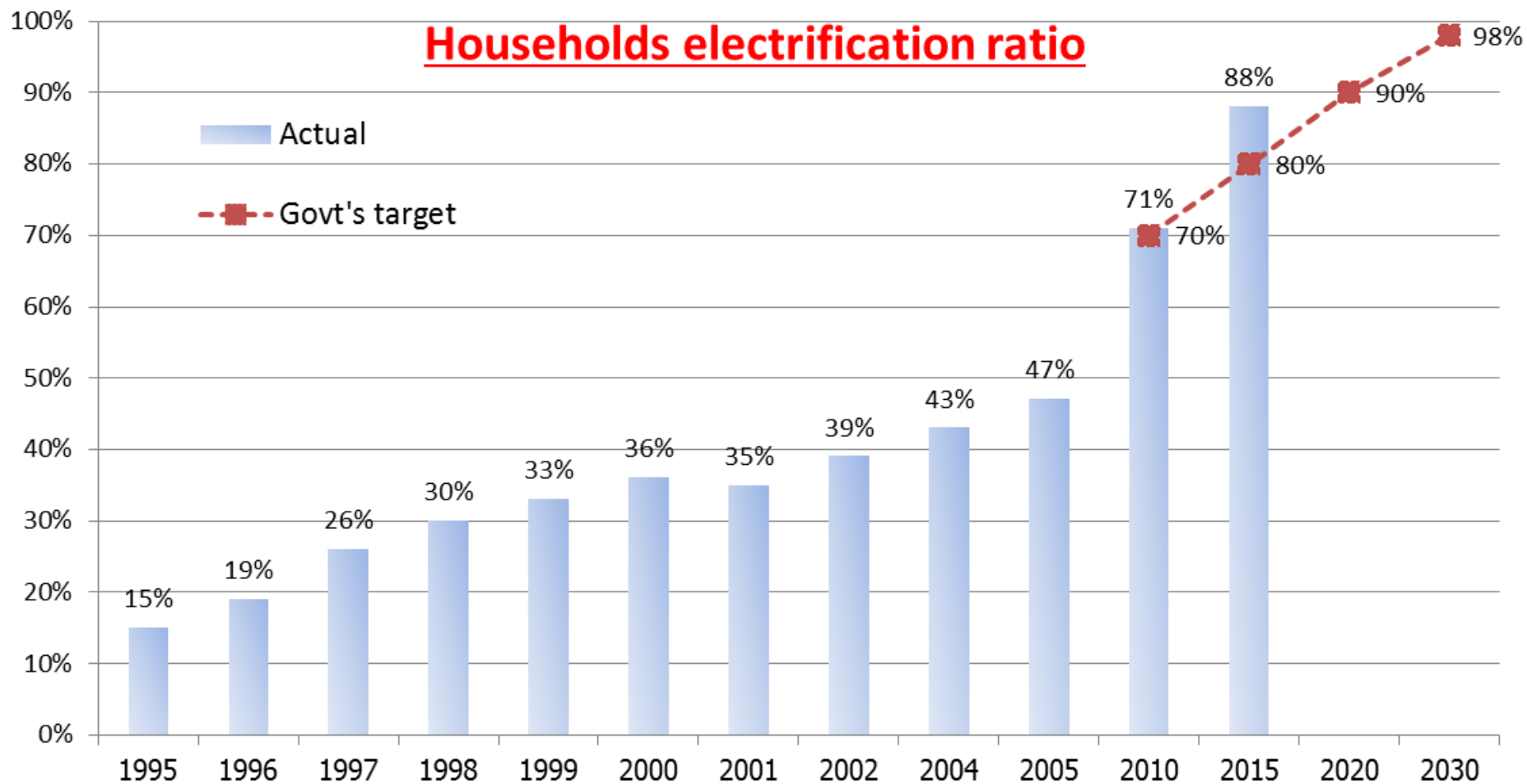
**NamNgum-1**: UN-ESCAP, USaid, Japan, Netherland, Canada, Thailand, France, Denmark, Australia, New Zealand, Germany, India, Swisserland, WB, OPEC, SKF

**Xeset-1, NamLeuk, Namsong, NamMang-3, TheunHinboun**: ADB, NORAD

**NamTheun-2**: WB, ADB



## Households electrification ratio



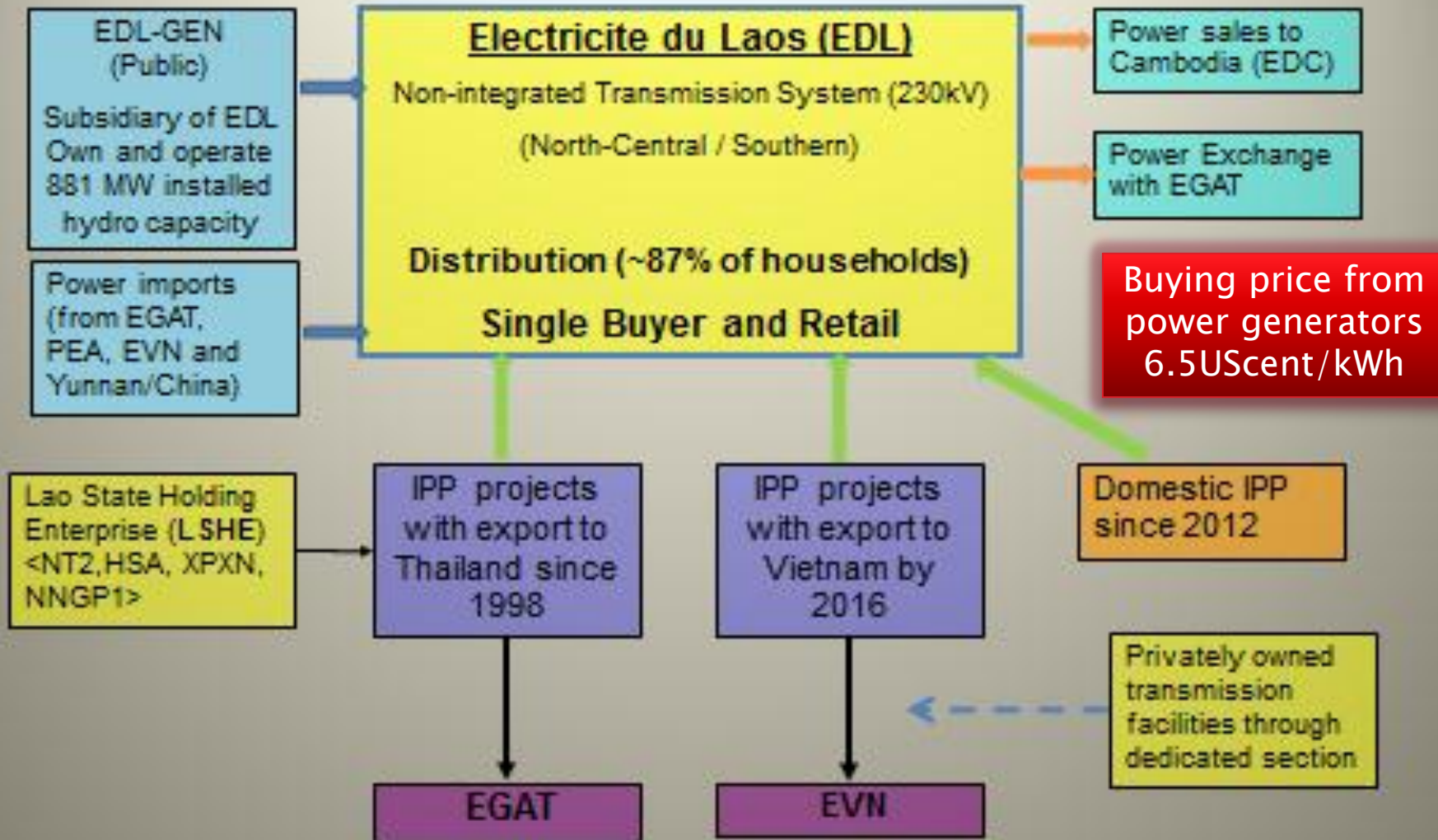
# Development History

## Present day

- ❑ **Population of 6.4 mil. or ~27 people/square kilometers;**
- ❑ GDP is US\$ 11 Billions (2013) and expected to grow at an average rate of 7.7%;
- ❑ **Electrification ratio reached 87% of total households in 2014, increased 36% from 2000;**
- ❑ Per Capita Electricity Consumption of 470 kWh/a but has been growing at an average rate of more than 10% in the last 15 years;
- ❑ **Electricity export ~ 15% of total country's export revenues; Power sector's contribution to GDP is projected to increase to ~16% in 2020;**



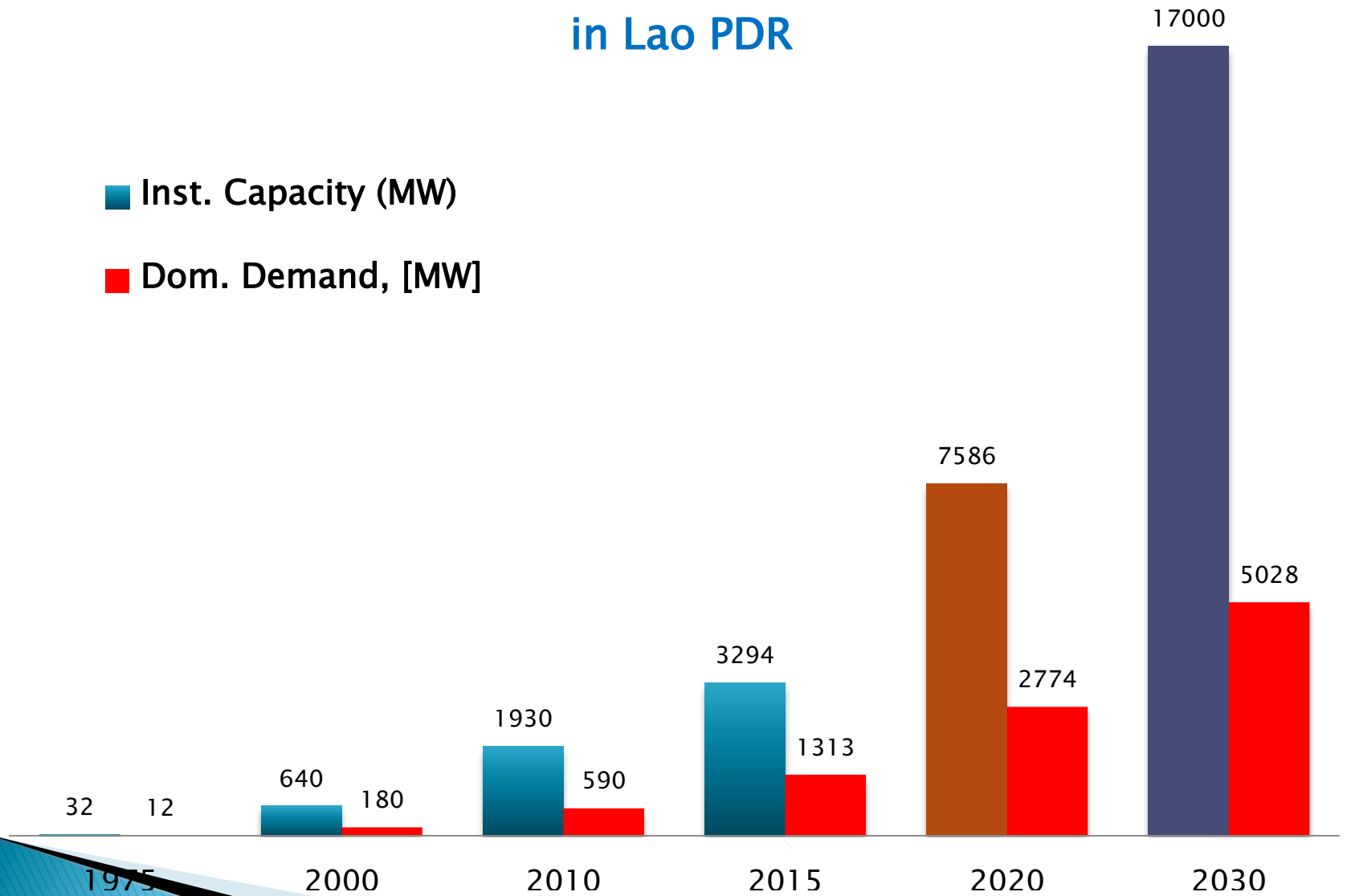
# Current Structure of Lao PDR Power Sector



Dept. of Energy Policy and Planning, MEM  
(Dec. 2014)

# Development of Hydropower in Lao PDR

■ Inst. Capacity (MW)  
■ Dom. Demand, [MW]



# Existing and Planned Projects

(as per March 2015)

1. 27 hydro Projects in operation: **3,294MW** with energy output 15,887GWh
2. 2 Biomass power plants: **35MW** with 163GWh
3. 44 hydro + 1 thermal projects under construction: **6,185MW** with energy output 32,866GWh
4. 24 hydro projects under final preparation / negotiation and F/S: **1,642MW** with energy output 7,305GWh
5. Hydro potential in Laos is about 26,000 MW





## List of Potential Hydropowers on Mekong Mainstream

- |                 |                       |
|-----------------|-----------------------|
| 1. PakBeng      | 921MW                 |
| 2. LuangPrabang | 1,200MW               |
| 3. Xayabouri    | <b>1,285MW</b>        |
| 4. Paklay       | 800MW                 |
| 5. Sanakham     | 660MW                 |
| 6. PhouNgoy     | 651MW                 |
|                 | <b><u>5,517MW</u></b> |

## Distributary of Mekong River

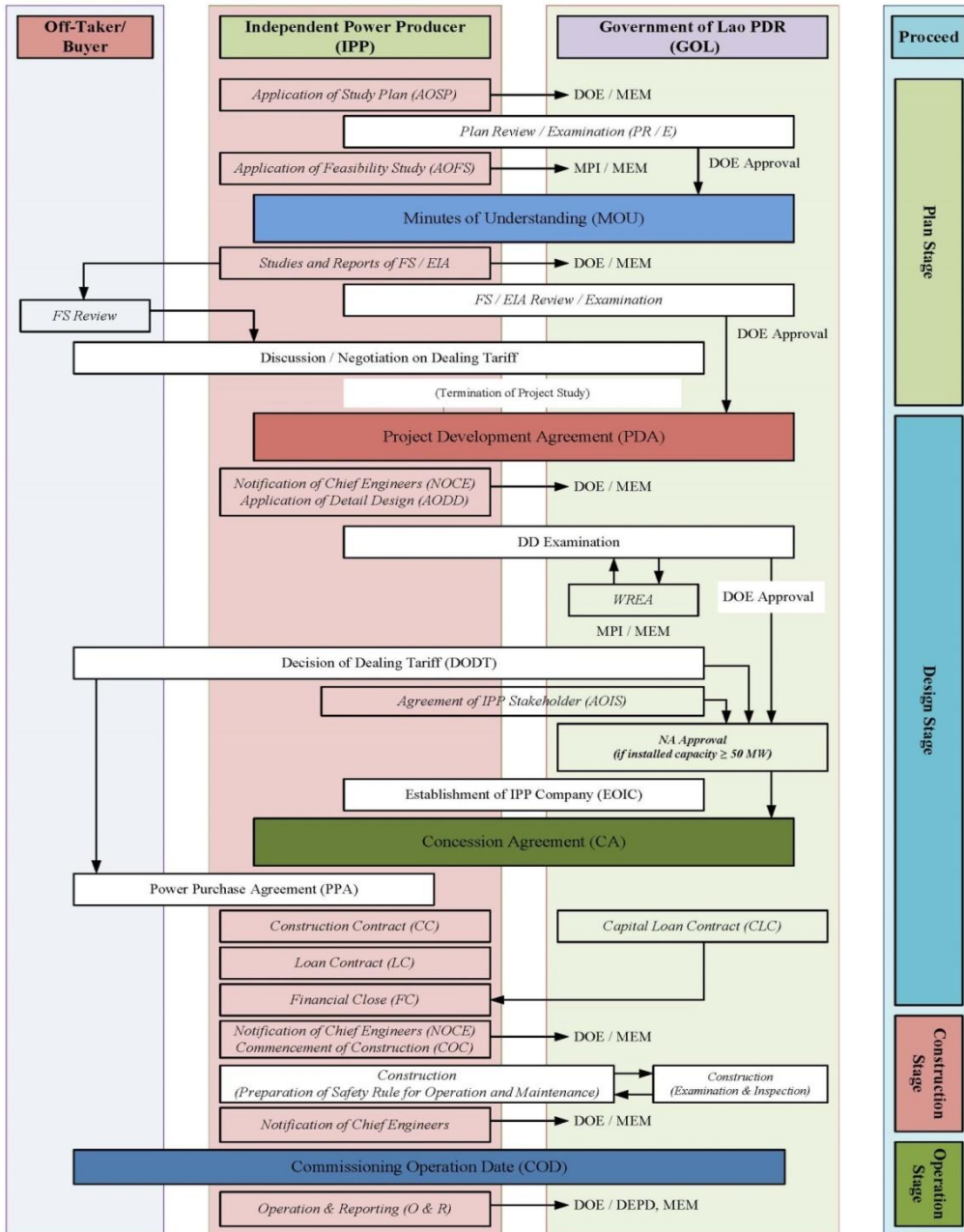
- |              |       |
|--------------|-------|
| 1. Donsahong | 260MW |
|--------------|-------|

# Alternative energy project

- ▶ Wind:
  - ▶ 500MW (1st phase: 250MW) under negotiation for development
  - ▶ 3 additional projects under field investigation
- ▶ Solar:
  - ▶ Only Home Solar System (SHS) (50–100W) (25,000 HH)
  - ▶ 100kW demonstration project (Japan grant)

Proceeding on Independent Power Producer (IPP) Business in Lao PDR

Figure II



# Participation of the Private Sector

Major Players:

Buyer- IPP/Lender -GOL

Major documents:

MOU- PDA - PPA- CA

Major Stages:

Planning- Design-  
Construction- Operation

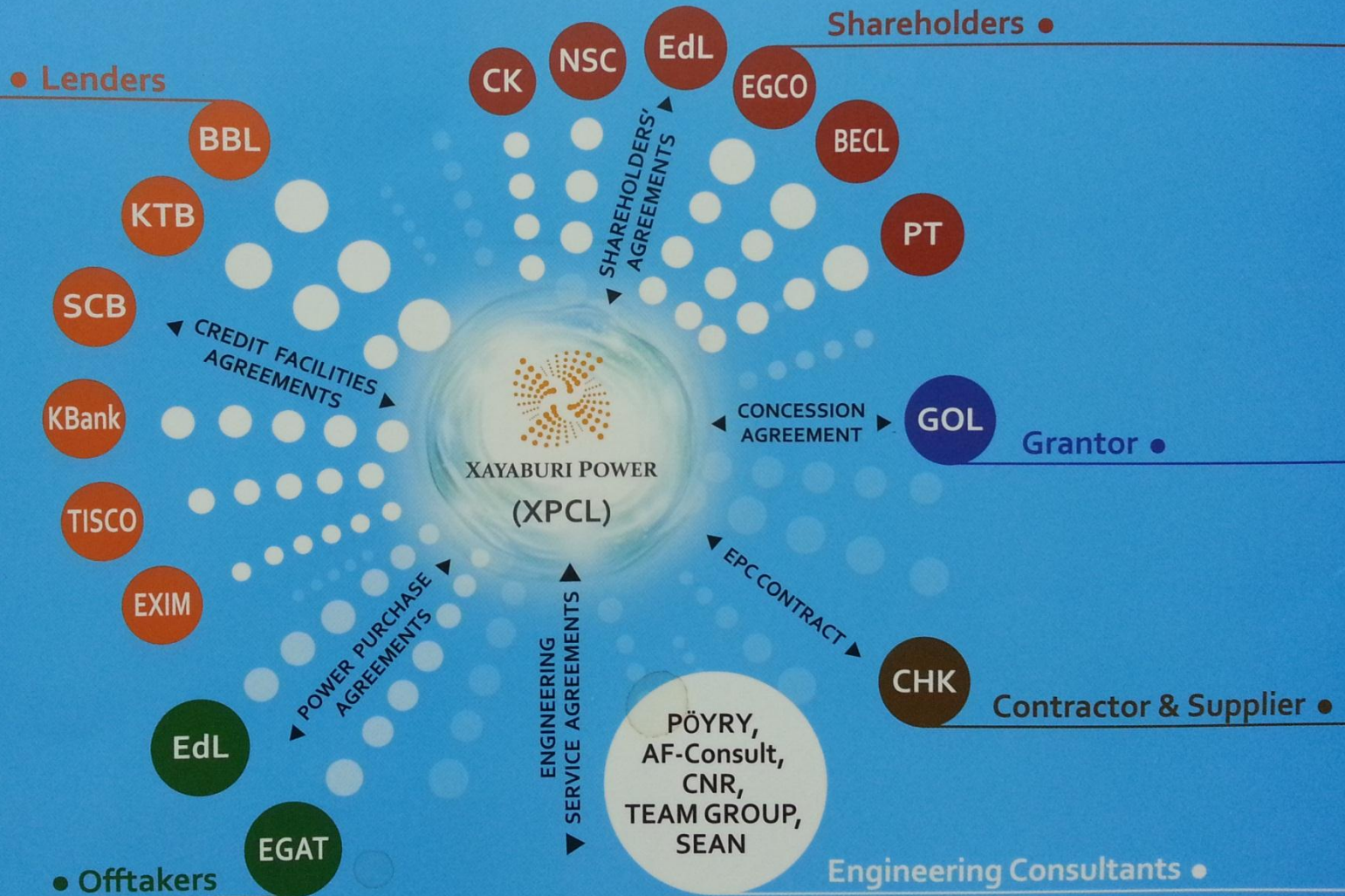
Remarks :

DOE : Department of Electricity, DEPD : Department of Energy Promotion and Development, MEM : Ministry of Energy and Mines, MPI : Ministry of Planning and Investment, WREA : Water Resource and Environment Agency, NA : National Assembly, EIA : Environmental Impact Assessment



# 5Ps MODEL:

Public – Private – Professional Partnership for the People



# Financial Incentives offered to Investors

- Reasonable tax holiday (5 years)
- Several taxes and other Government imposts waived
- Withholding tax on net profit repatriated to home/third countries waived
- Special rates of import duty for materials, equipment and supplies
- Foreign contractors/labors accepted
- Concession period of 25–30 years
- ROI of 12–15%
- Off-shore bank account permitted



# Other Tangible Benefits of Hydropower





# Advantages of Hydropower

- ▶ Hydropower is renewable
- ▶ .....is an enabler
- ▶ ..... is affordable
- ▶ .....is reliable
- ▶ ...is good for economic and social development
- ▶ .....is clean
- ▶ ..... is versatile
- ▶ ..... is lifesaving
- ▶ ..... is recreational
- ▶ .....is creating value-added property

# Why does Lao PDR choose Hydropower?

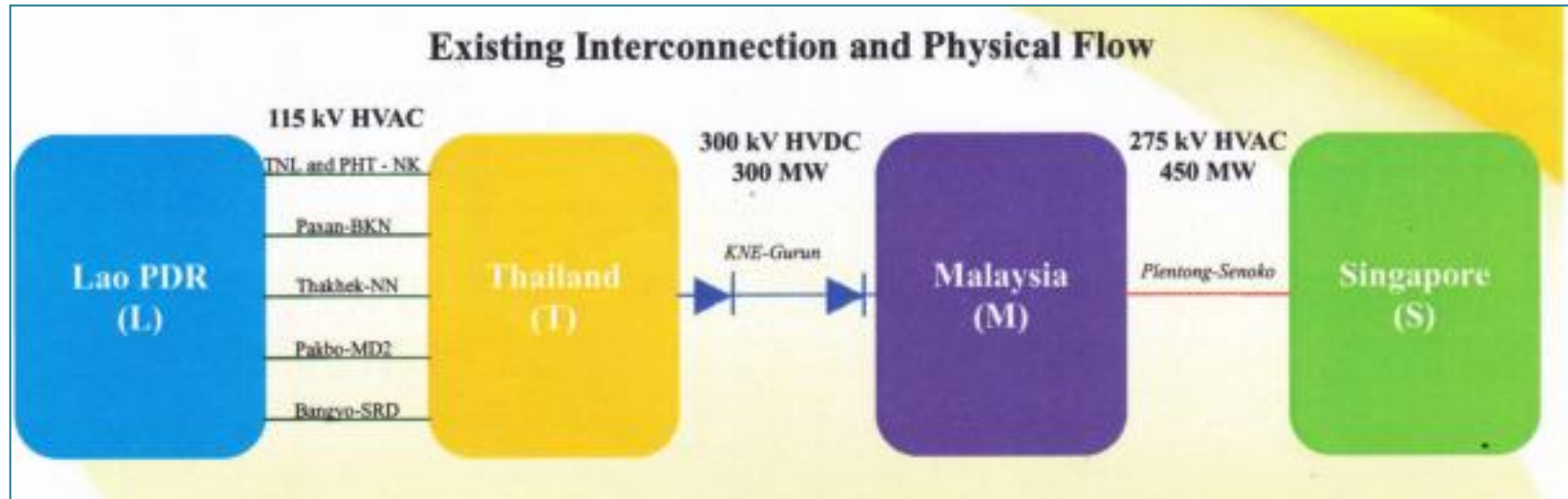
- ▶ Hydropower offers sustainable income resources;
- ▶ Lao PDR has 40 years experience starting with iconic NamNgum-1 hpp;
- ▶ Hydropower offers more than electric power;
- ▶ Hydropower is a non-consumptive use of water.

# Vision 2030 of the Power Sector

- ▶ Developing all potential renewable resources available based on competitiveness, sustainability and efficiency;
- ▶ Promoting the power interconnection with the region by harmonizing and strengthening the national power grid;
- ▶ Ensuring the reliable supply to all sectors in line with the industrialization and modernization policy;



# Lao PDR, Thailand, Malaysia, Singapore Power Integration Project or LTMS-PIP



- ▶ To study cross border power trade from Lao PDR to Singapore for 100MW with existing facilities.
- ▶ The pilot project will serve as a pathfinder to complement existing efforts towards realizing the APG.
- ▶ Aim at creating opportunities for multilateral electricity trading beyond neighbouring borders.

# Conclusion

- ▶ The Lao PDR's vast hydropower potential provides the opportunity to become a "battery" to stimulate the regional power trade and so optimizing the energy-mix of the GMS countries.
- ▶ However, this opportunity requires optimal development of the country's hydropower resources in a sustainable way by sharing the multifaceted benefits delivered.



Thank you !!!

[Please visit: www.laoenergy.la](http://www.laoenergy.la)