

# Energy Sector Development in Lao PDR

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# Country Background



- Area of 236,800 sq km
- Population of 6.4 mil. or ~26 people/square kilometers;
- Mountainous area with major tributaries of the Mekong River covering 35% of total Mekong River basin.
- GDP per capita was US\$ 1,200 (2013) and GDP is expected to grow at an average rate of 8% during 2013-2015;

# Country Background (Cont')

- National Goal to graduate from a least-developed country status by 2020.
- Energy sector is one of important driving forces to economic growth.
- Upgraded and revised the policy on sustainable hydropower development to ensure that hydropower development is truly sustainable in the longer term and effective mitigation of negative impacts on the local environment and affected population, including protection of the watershed.
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# Current Energy Policy and Measures

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There are four basic concepts for national policy listed below:

- Maintain and expand affordable, reliable and sustainable electricity supply; Electrification Ratio to exceed 90% by 2020.
- Improve and expand transmission networks to support the industrialization and modernization policy, and to integrate the power sector in the ASEAN community through its power exchange programs.
- Tap the country's large hydropower potentials with the participation of private developers.
- Promotion of renewable energy to reach 30% by 2025 with reasonable feed-in tariff.

# Current Energy Policy and Measures (Cont')

National policy on Environment and Social Sustainability of Hydropower:

- Was adopted in 2005
- During 2006-2012, a number of laws, regulations related to the implementation of national policy and the utilization of natural resource have been changed
- Government has updated the national policy on Environment and Social Sustainability of the Hydropower Sector in Lao PDR to be in line with the current situation and shall be officially launched within June 2014.

## Current Energy Policy and Measures (Cont')

- Aims to provide policy guidance to the related agencies for overseeing the implementation of investment projects.
- Informs and encourage project developers/investors to be aware of the Government policy toward achieving sustainable development in Lao PDR.

# Current Energy Policy and Measures (Cont')

The main aspect of this policy includes

- Environmental Perspective
- Social Perspective
- Technical Perspective
- Economic/Financial Perspective



# Energy Sector Development in Lao PDR

- In 1993, Lao PDR and Thailand signed the first MOU to supply electricity of up to 1,500 MW to Thailand.
- Two Governments have extended the MOU for many times and newly agreed in 2007 to supply the electricity to Thailand up to 7,000 MW by 2020.
- In 1998, Lao PDR and Vietnam has also signed MOU for exporting electricity 2,000 MW and increased to supply up to 5,000 MW
- In 1999, the Agreement on Cooperation in Energy Sector was signed with the Government of Cambodia.

# Energy Sector Development in Lao PDR (Cont')

- By 2013, about 3,217 MW of the capacity had been developed and is operational for both domestic consumption for 25% and export to Thailand and Vietnam for 75%.
- There are 23 hydropower plants in the country in operation.
- Further 33 projects with an installed capacity of 5,570.3 MW or expected energy generation of 29,882.3 GWh are under construction.

# Existing Hydropower Plants in Lao PDR

- \* Hydro Power Plants are wholly owned by Electricity du Lao (EDL) and EDL-Gen are as follow:

No.	Power Plant	Installed Capacity
1	Nam Ngum 1	155
2	Nam Mang 3	40
3	Nam Leuk	60
4	Nam Ko	1.2
5	Nam Dong	1
6	Nam Ngay	1.2
7	Xeset 1	45
8	Xeset 2	76
9	Xelabam	5
10	Nam Song	7
11	Nam Sheir	0.08
12	Nam Mong	0.08

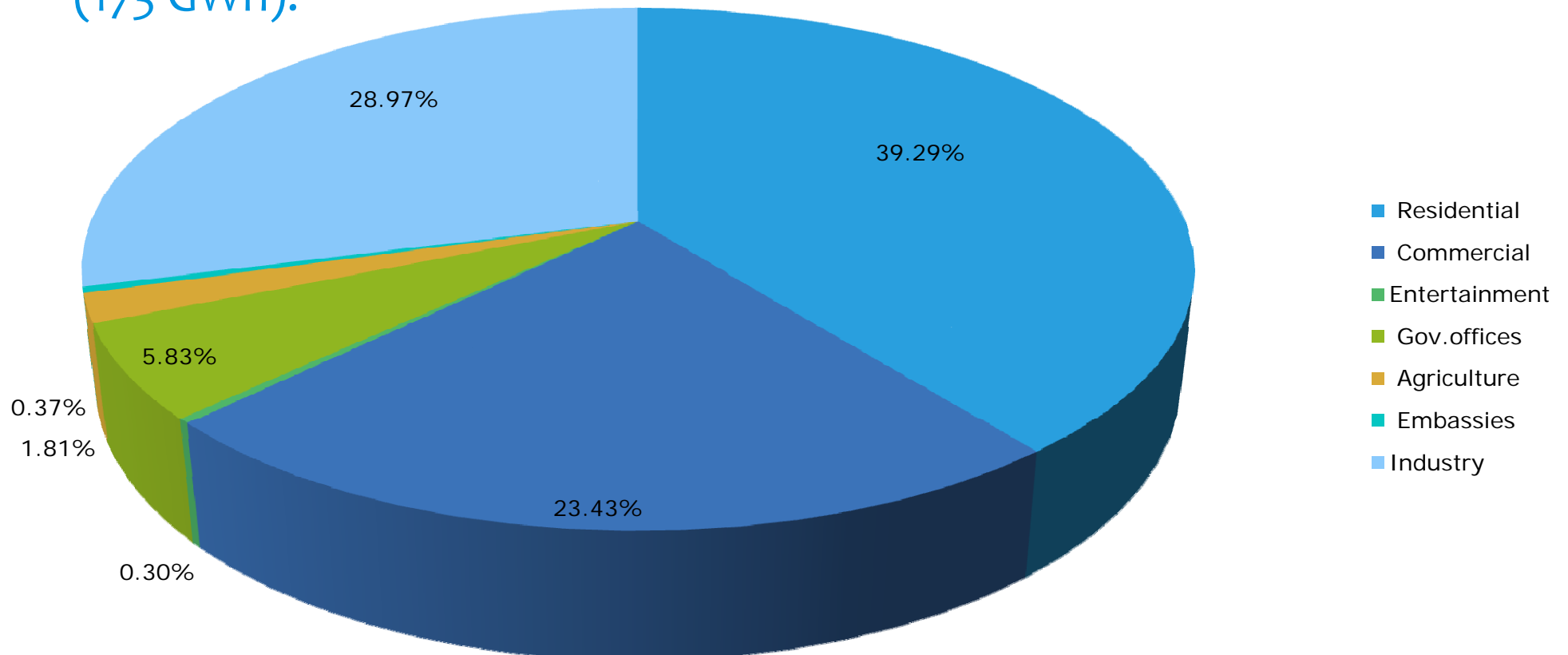
# Existing Hydropower Plants in Lao PDR (Cont')

- \* Hydropower Plants are wholly owned by Independent Power Plants are as follow:

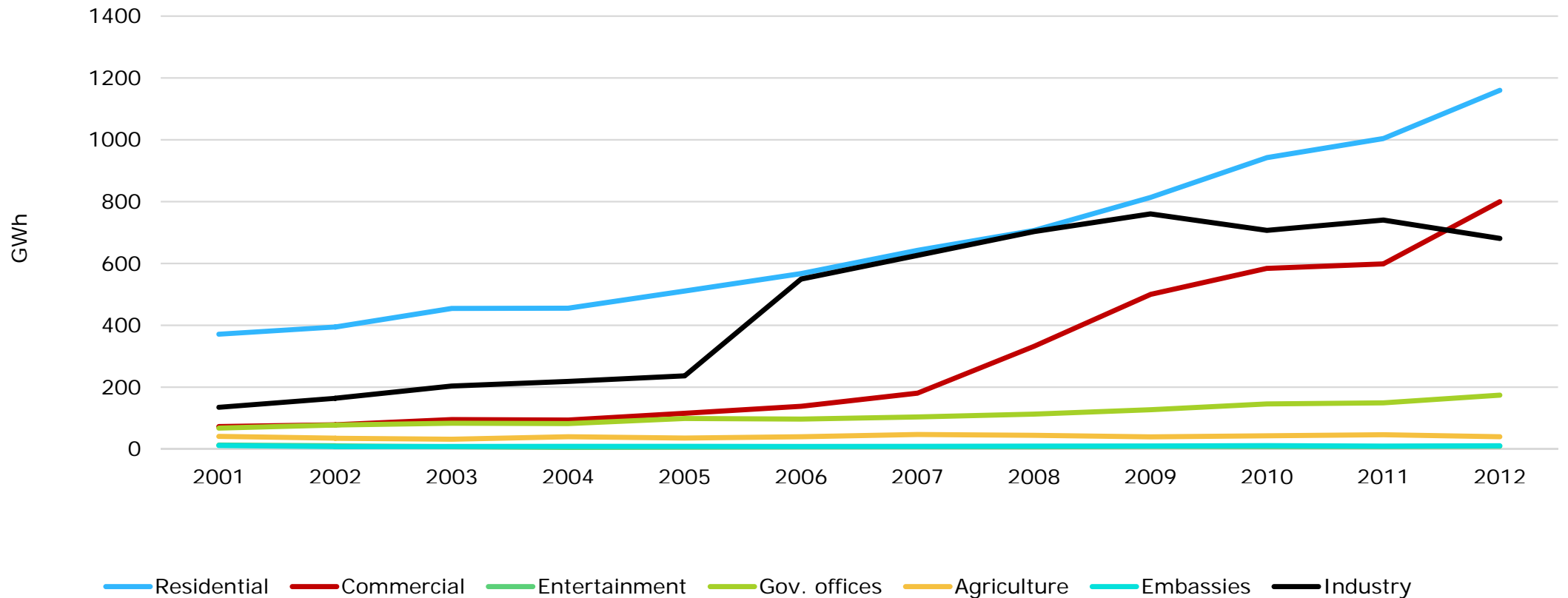
No.	Power Plant	Installed Capacity (MW)
1	Nam Nhone	3
2	Nam Tha 3	1.5
3	Nam Lil 1/2	100
4	Nam Phao	1.8
5	Nam Ngum 5	120
6	Nam Theun Hinboun	500
7	Nam Theun 2	1,088
8	Houy Ho	152
9	Nam Nguem 2	615
10	Nam Gnuang 8	60
11	Xekaman 3	250

# Energy Demand and Supply Current Situation

- \* During 2012, the residential sector accounted the biggest share in the total electricity consumption which was 39.29% (1,160 GWh), followed by commercial sector: 28.97% (800 GWh), Industry sector: 23.43% (681 GWh), Government's offices: 5.83% (173 GWh).

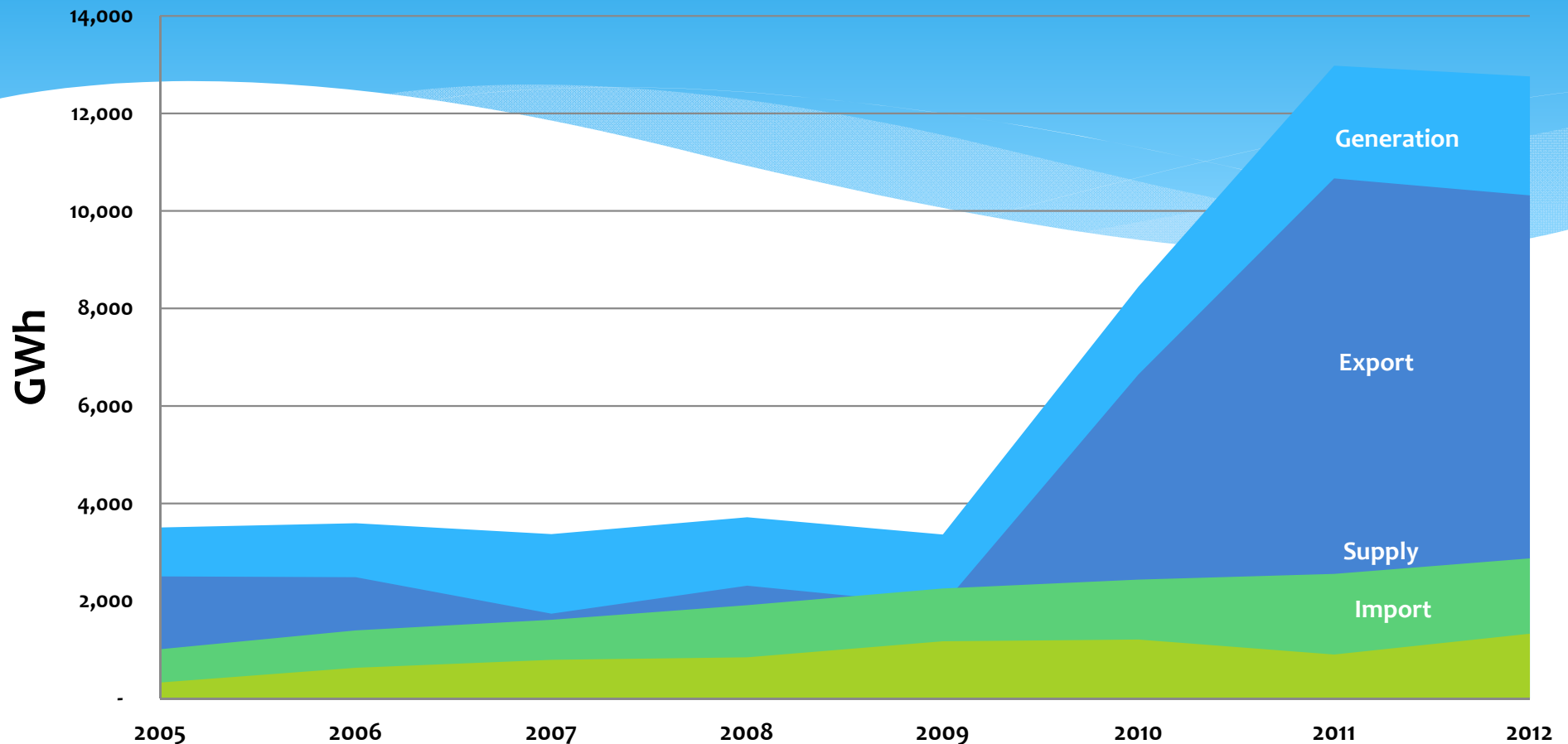


# Energy Demand and Supply Current Situation



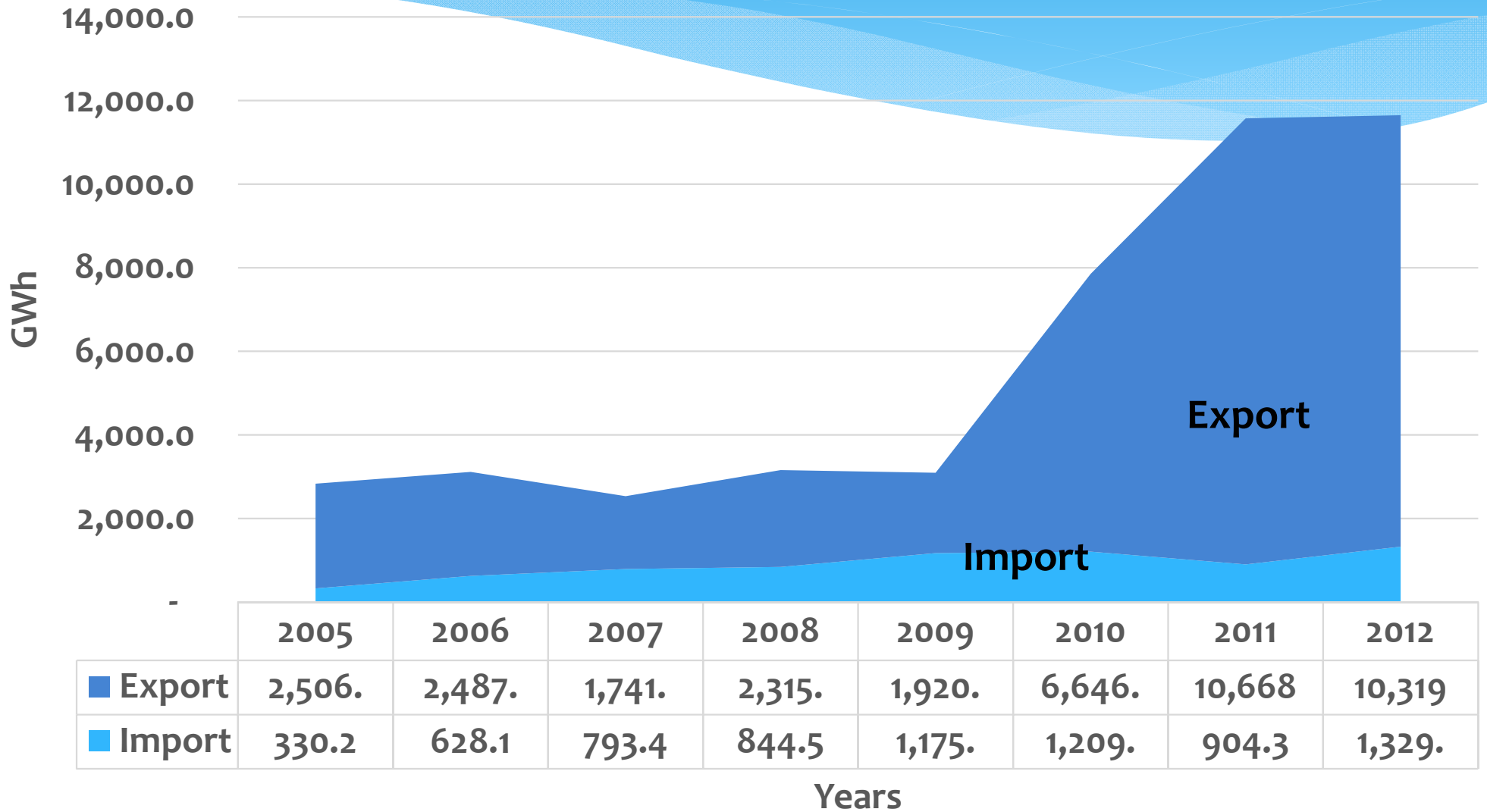
The country's power consumption has divided into 7 categories as shown in the figure 2 below. The total consumption in 2012 was 2,873 GWh.

# Energy Generation and Trade



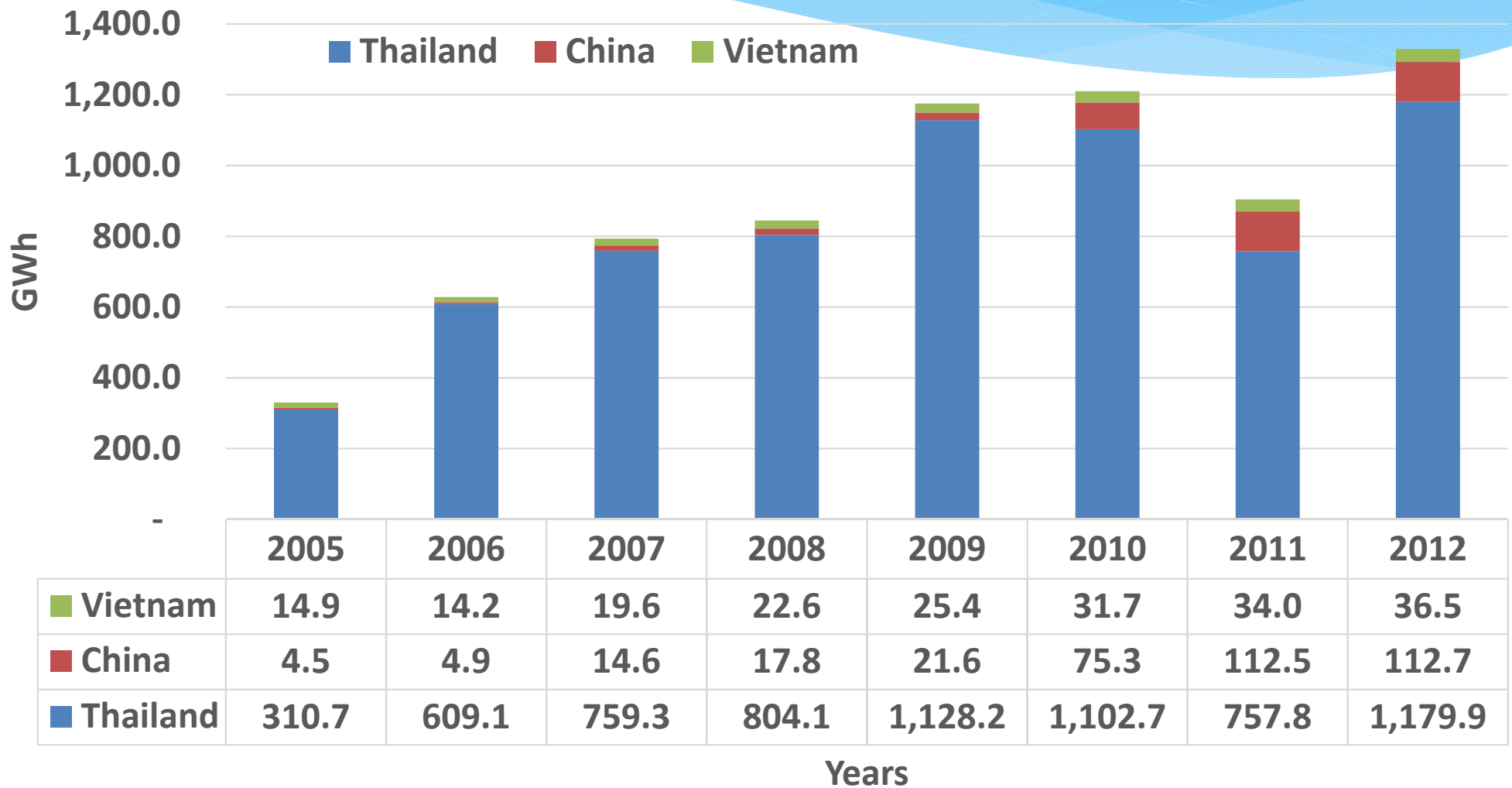
- In 2012, Laos has generated 12,760 GWh, exported 10,320 GWh, supplied for its consumers 2,874 GWh and imported 1,329 GWh of power electricity.
- Except for Myanmar, 4 of the 5 countries in GMS are already trading electricity. Among the 4 countries, Lao PDR was the net exporter being able to export about 80% to Thailand.

# Energy Export vs Import

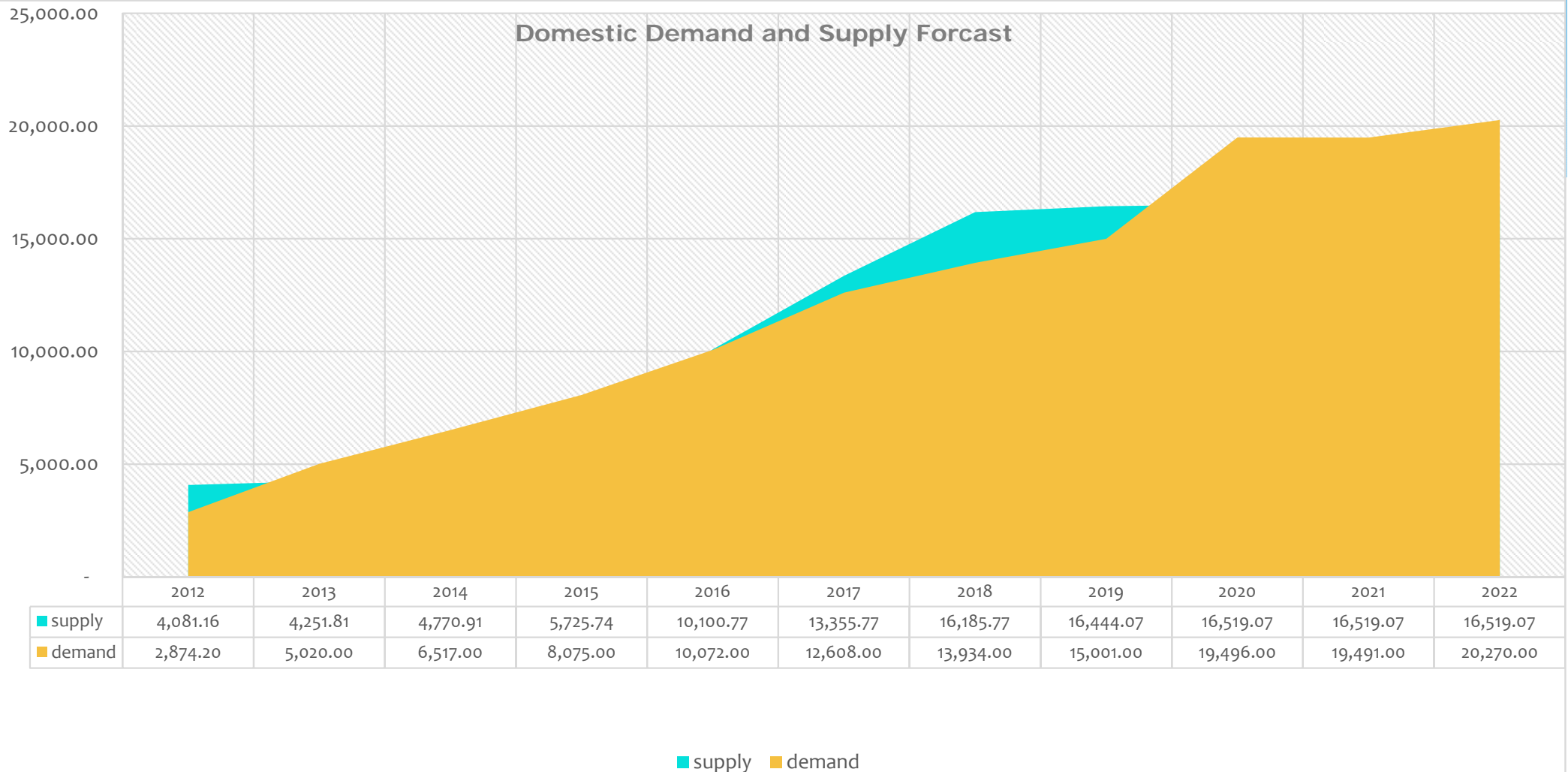




# Energy Import



# Energy Domestic Demand and Supply Outlook



- The domestic demand grows gradually from 2014 to 2022, as a result, it would be shortage of supply from the hydropower for domestic supply.

# Major difficulties and bottlenecks currently faced in formulating energy

- No integrated national energy policy and no clear on existing vision to cover all energy sub-sector.
- Certain energy policy mainly focuses on electricity.
- Manpower with the sufficient and strong knowledge of know-how, experiences and skills in strategic planning is still limited.
- Responsibilities among related agencies are not clearly described and coordinated.

# Expectation from the Training

- \* Understand the concept, method and critical issue in the design of Energy Policy.
- \* Build the capacity on how to address and oversee the implementation the Policy.



**Thank you for your  
kind attention**

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