

# Country Presentation by CSG

China Southern Power Grid Yunnan International Co., Ltd. (CSG YNIC)

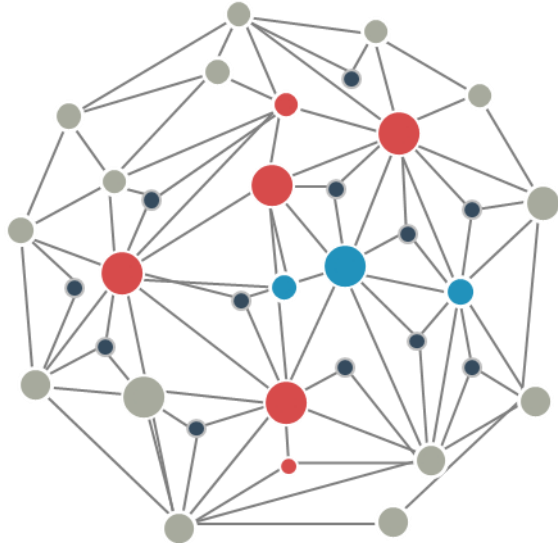
August 26, 2021

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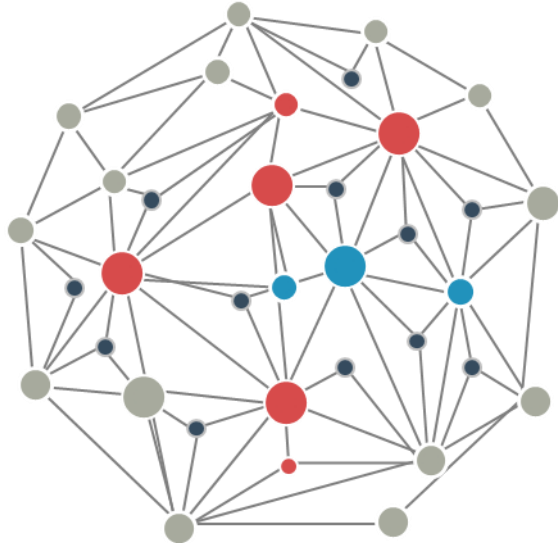
CSG Status Update

**2**

CSG's Plan to build New-Energy-Dominant Power System

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International Cooperation



# 1. CSG Status Update

# CSG Status Update



Established on:  
**December 29, 2002**



Employees (2020):  
**About 300,000**



Population serving (2020):  
**254 million**



No. of customers (2020):  
**96.7 million**



Electricity sold (2020):  
**1106 TWh**

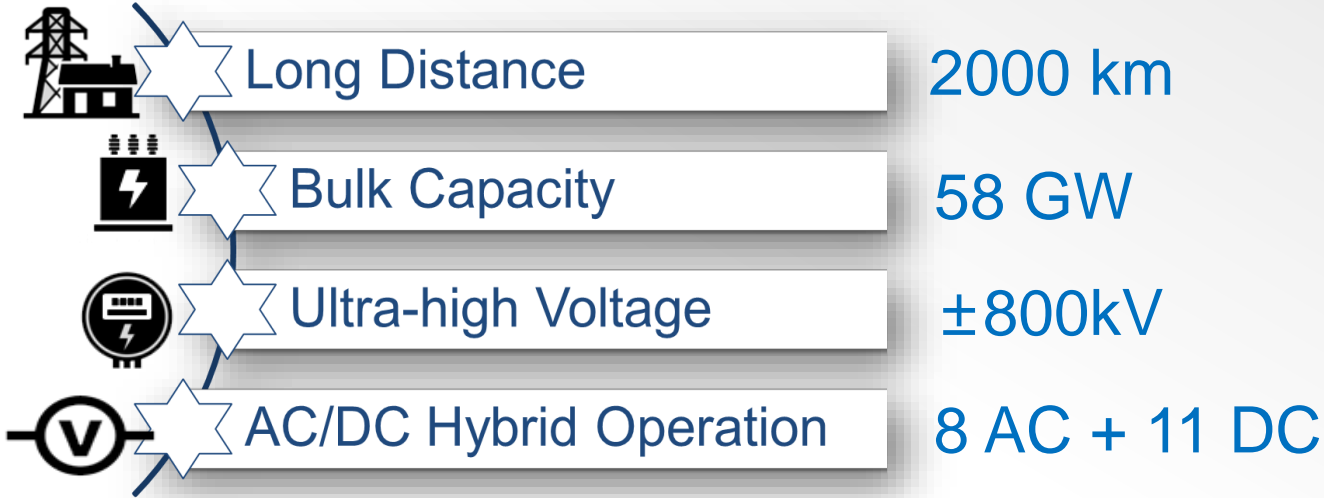


Revenue (2020):  
**83.7 billion USD**

The 2021 Fortune's Global 500 ranking: **91th**



# CSG Status Update



West-to-East Power Transmission Projects of CSG (2020):  
19 channels, 8 AC (500kV) and 11 HVDC ( $\pm 500\text{kV}$  &  $\pm 800\text{kV}$ ).

110kV & above network	
T/L length	>248,000 km
S/S capacity	>1.1 billion kVA



# Kun-Liu-Long DC Project

## Kunbei

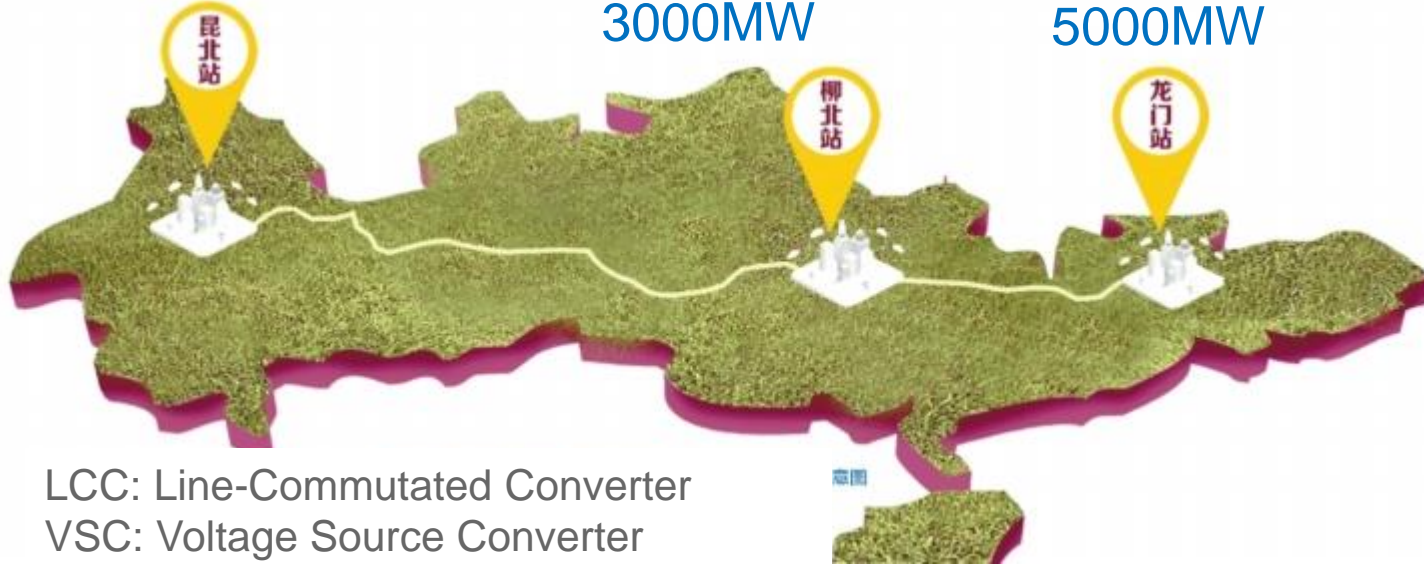
LCC Station  
8000MW

## Liubei

VSC Station  
3000MW

## Longmen

VSC Station  
5000MW



LCC: Line-Commutated Converter  
VSC: Voltage Source Converter

- World's first  $\pm 800\text{kV}$  multi-terminal VSC-UHVDC Project
- Capacity: 8000MW
- Distance: 1452km
- Partial operation: July 2020
- Fully operation: December 2020



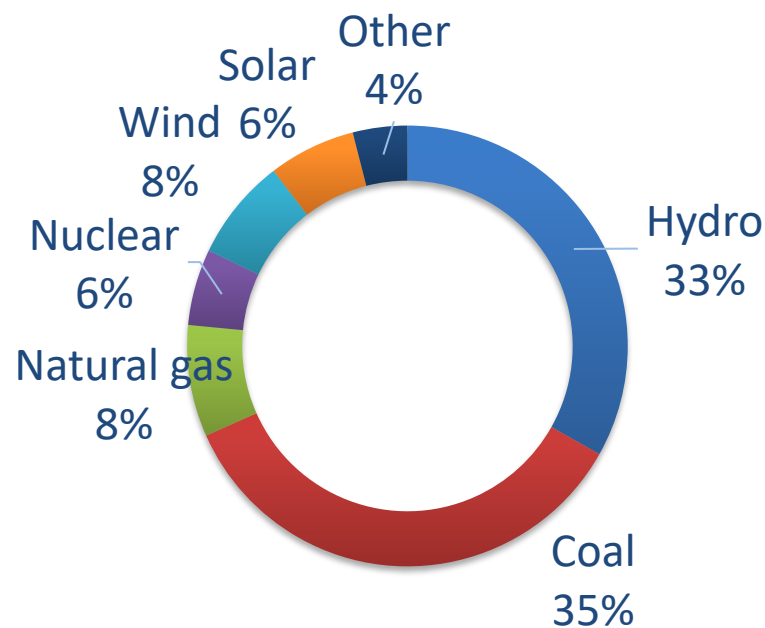
# CSG Status Update

Total installed capacity (2020): **350 GW**,

Non-fossil generation capacity (2016~2020): **>50%**

Electricity generated by non-fossil fuel (2020): **53.2%**

Type	GW
Thermal	150
Hydro	120
Nuclear	19.6
Wind	26.2
Solar	22.4



In 2020,  
Wind added: **6.2GW**  
Total generation: **56 TWh**  
Growth: **21%**

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In 2020,  
Solar added: **8.3 GW**  
Total generation: **20 TWh**  
Growth: **36%**



# Impact of COVID-19

Early 2020, demand  
dropped due to pandemic.

July 2020, cumulative  
electricity consumption  
rebounded to grow.



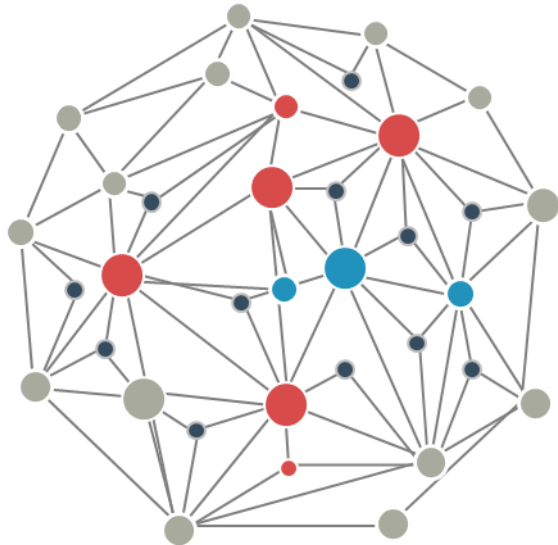
Mid-March 2020, demand  
increased (compared with  
previous year) for the first  
time since Spring Festival.

Reduce user's costs by **20  
billion** CNY during 2020 to  
support economy recovery.

**Peak demand (2020): 199.8 GW** (annual growth rate 7.0%)

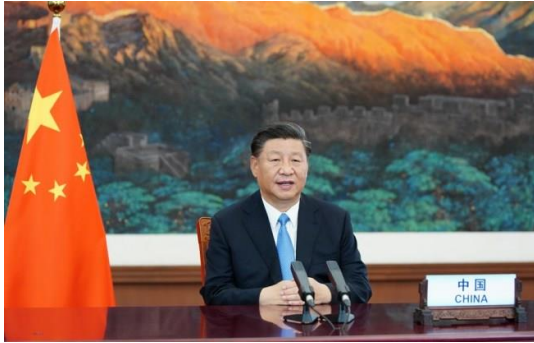
**Electricity consumption (2020): 1305.6 TWh** (annual growth rate 5.0%)

**Electricity consumption (Jan-Jul 2021): 17.4% higher than 2020.**



## 2. CSG's Plan to build New-Energy-Dominant Power System

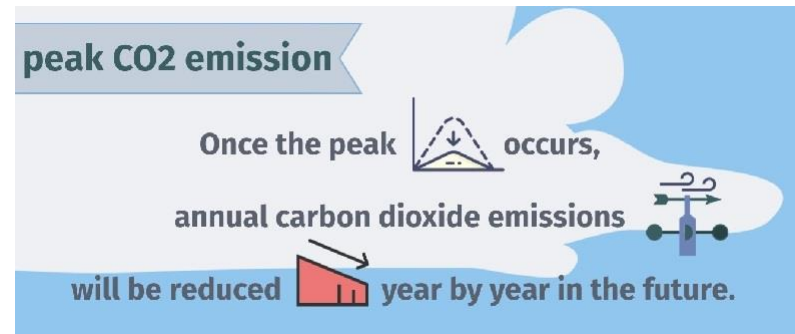
# China's '30·60' decarbonization goal



*Chinese President Xi Jinping addresses the general debate of the 75th session of the UN General Assembly via video on Sept. 22, 2020*

“The Paris Agreement on climate change charts the course for the world to transition to green and low-carbon development. It outlines the minimum steps to be taken to protect the Earth, our shared homeland, and all countries must take decisive steps to honor this Agreement. China will scale up its Intended Nationally Determined Contributions by adopting more vigorous policies and measures.

We aim to have **CO2 emissions peak before 2030** and achieve **carbon neutrality before 2060.**”



## CSG's New Plan to Build a New-Energy-Dominant Power System

- **Demand annual growth rate forecast:**  
6.5% during 2021-2025; 3.5% during 2026-2030.
- **New-energy generation integration to grid:**  
Increase 100 GW by 2025; Increase 200 GW by 2030.
- **Generation Mix:**  
non-fossil fuel: >60% by 2025; >65% by 2030.
- **Energy storage:**  
Add 5 GW pumped storage and 20 GW various type of storage during 2021-2025;  
Add 15 GW pumped storage and 20 GW various type of storage during 2026-2030.
- **DSM:**  
Able to shave 5% peak load by 2030.

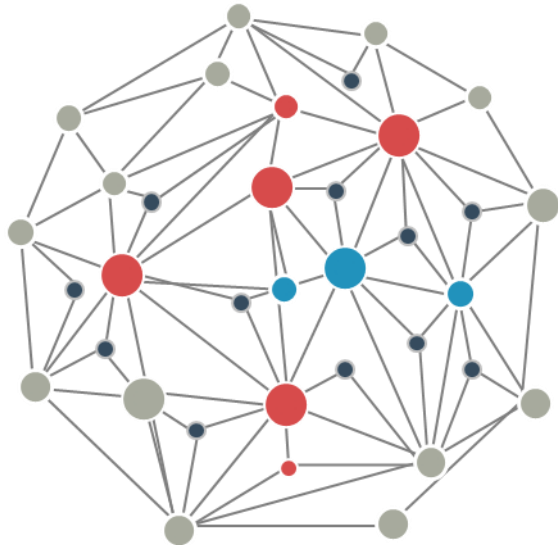
### New-energy generating capacity added during 2021-2025 :

On-shore wind: 24 GW

Off-shore wind: 20 GW

Solar : 56 GW






## 3. International Cooperation

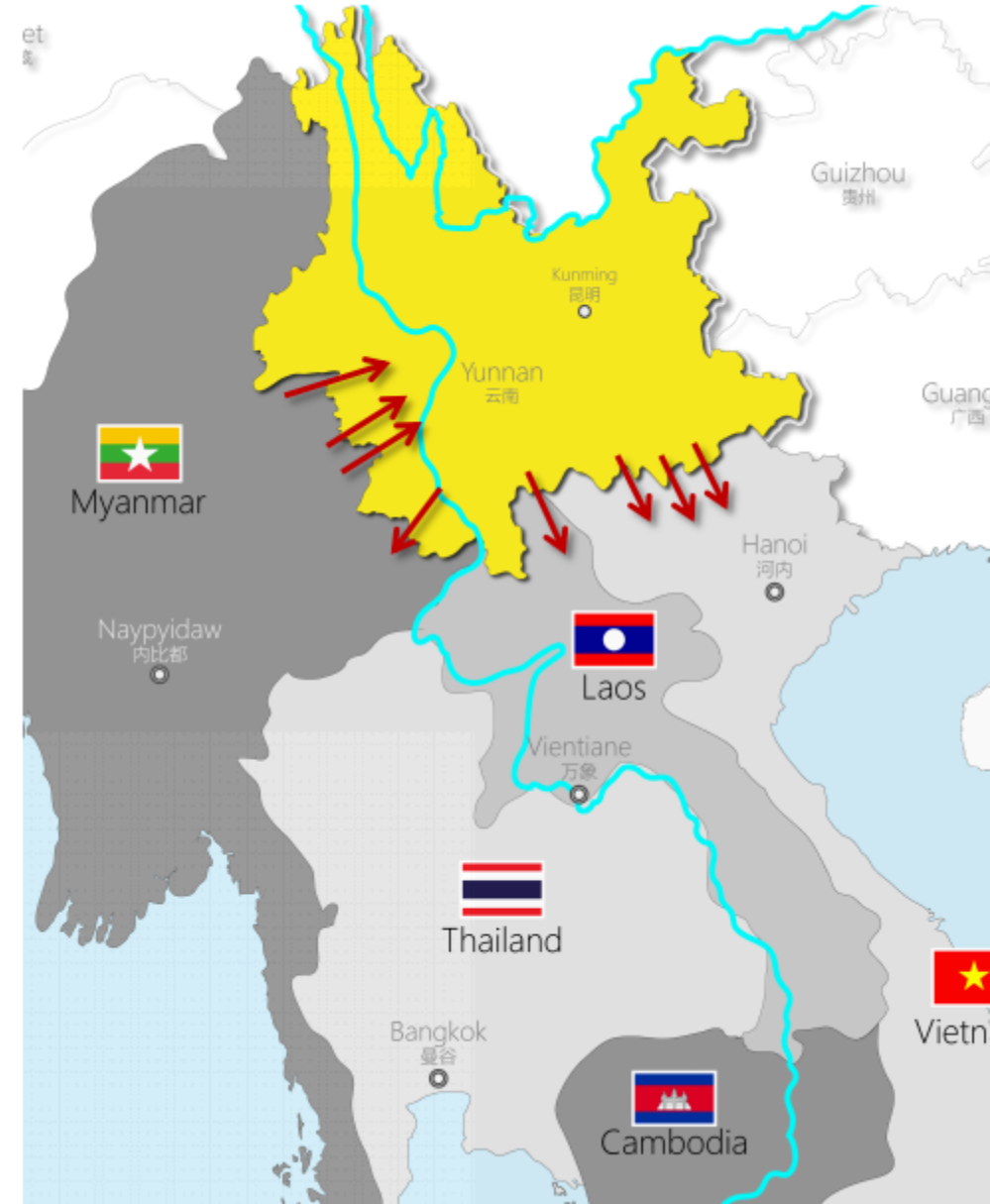


# Power Grid Interconnection

➤ Actively push forward power grid interconnection with neighboring countries.

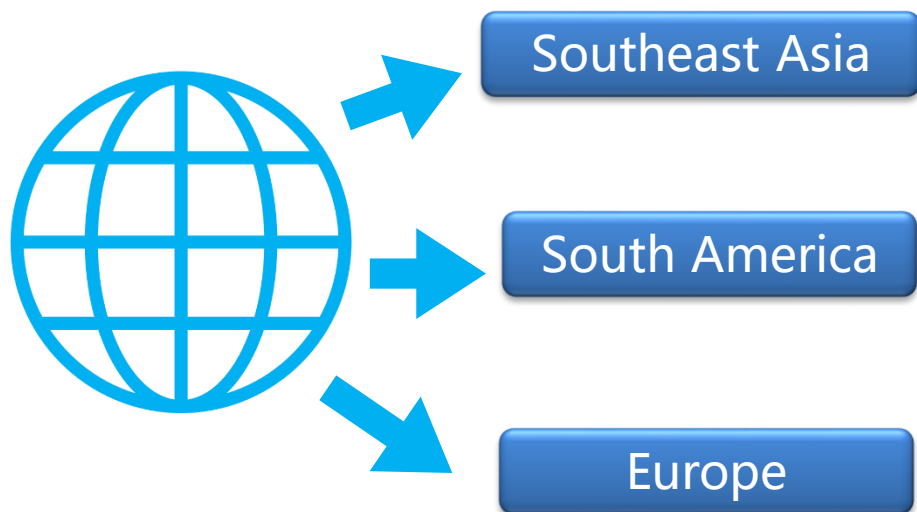
Inter-connection	 Myanmar	 Laos	 Vietnam
Cross border T/L	1×500kV AC 2×220kV AC 3×110kV AC	1×115kV AC	3×220kV AC 4×110kV AC
Start from	2008	2009	2004

- The first cross-border T/L was put into operation in September 2004
- 14 T/Ls of 110kV and above with neighboring countries
- effectively relieve power shortage in neighboring countries, and realize resource optimization in wider area.



# Overseas Investment

- Overseas green-field project, equity investment, EPC project.



**Vinh Tan 1 coal-fired BOT power plant, Vietnam.**  
2x620MW, COD 2018



**Nam Tha 1 hydropower BOT project, Laos.**  
168MW, COD 2019



**Power Supply Project for Laos-China Railway, transmission BOT project, Laos.**  
20 cct 115kV T/Ls,  
construction complete March 2021.

# Promote Connectivity

CSG is committed to promoting regional connectivity and common development with neighboring countries through power interconnection projects.

Ongoing key projects include:

- China-Laos 500kV power interconnection
- China-Vietnam power interconnection
- Myanmar-China power interconnection





**Thank you**