

# *Country Presentation by CSG*

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Nov. 2019

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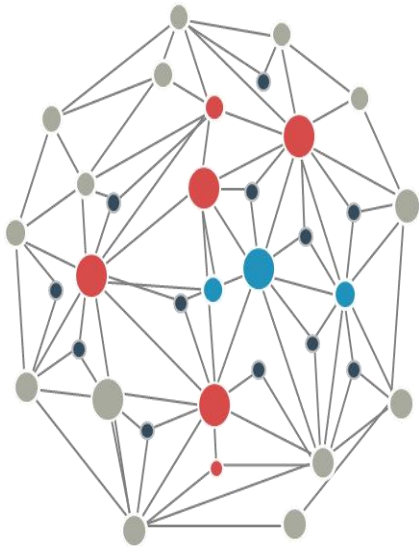
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## A Brief introduction of CSG



Established on  
December 29, 2002



Employees(2018):  
About 300,000



Population (2018):  
254 million.



Clientele (2018):  
87.41 million end users



Sold electricity (2018):  
970.3TWh

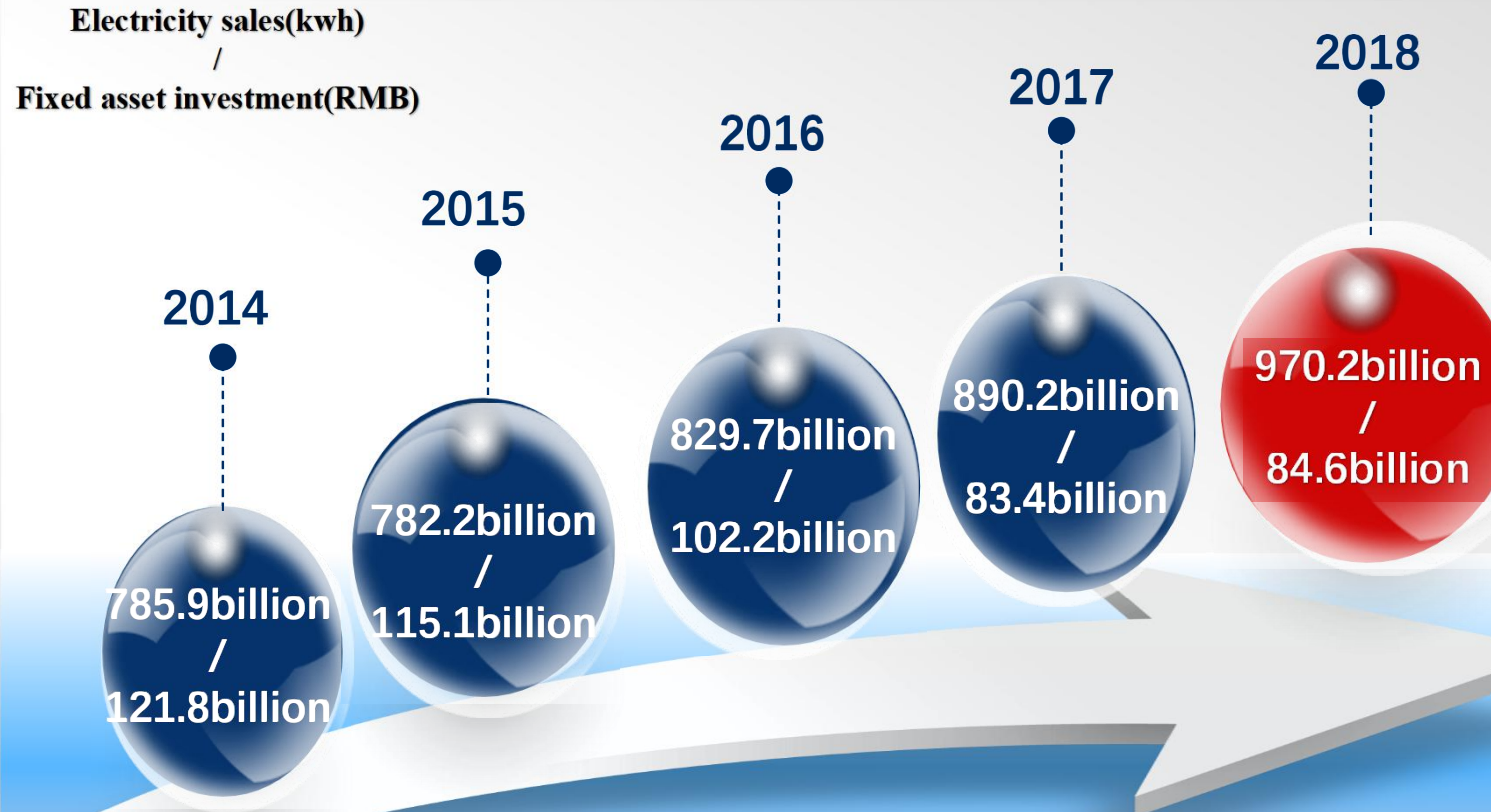


Revenue (2018):  
79.2 billion USD



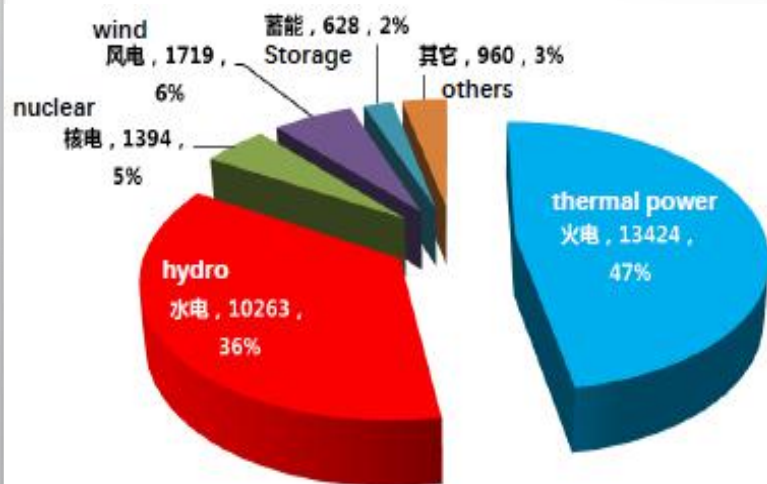
Fortune Global 500: **110<sup>th</sup> in 2018**

## Development Overview

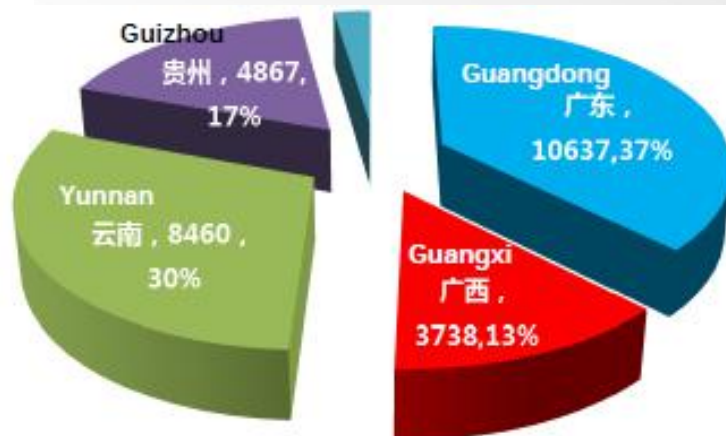






By the end of 2019, the total installed capacity is expected to be about 323GW. Energy resources include hydro, coal, nuclear, pumped hydro, oil, natural gas, wind and so on. The proportion of clean energy in the total installed capacity will be up to 54%.

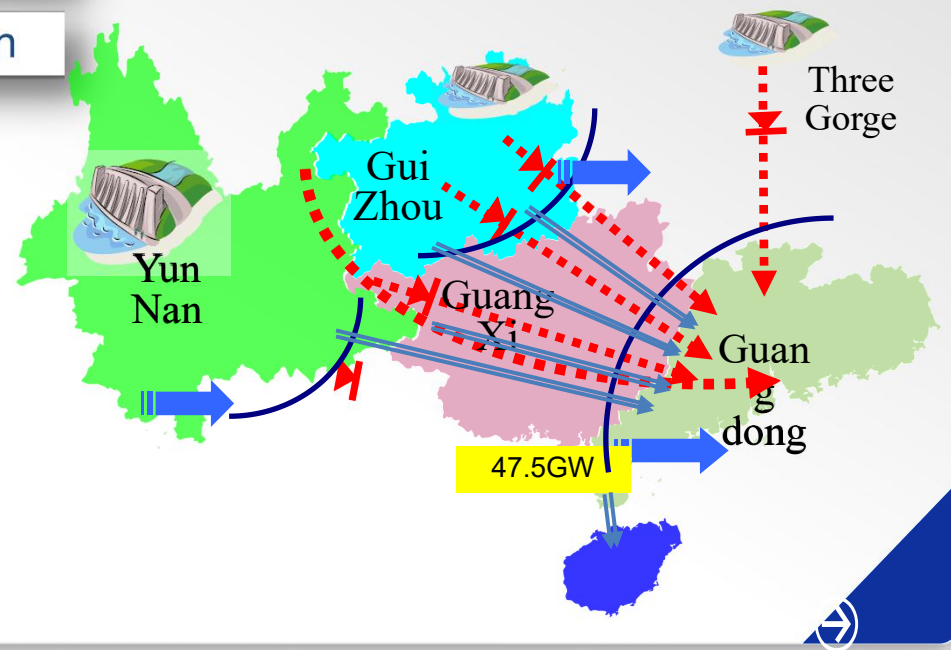
Divided by Types



Divided by Province



-  Long Distance **2000km**
-  Bulk Capacity **47.5GW**
-  Ultra-high Voltage **800kV**
-  AC/DC Hybrid Operation



West-to-East Power Transmission Projects of CSG : 18 channels, 8 AC and 10 DC.





By the end of 2018, the electricity consumption of clean energy is about 51%.



In 2018 , Hydro power generates 370TWh, wind power generates 39TWh, biomass energy generates 5TWh and PV power generates 8TWh in CSG.



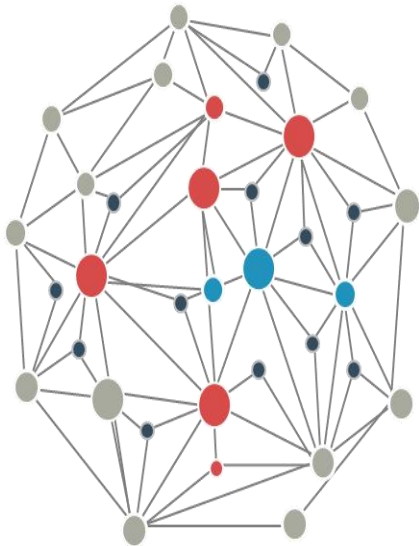
# Power Grid Interconnection

- 8 transmission lines (110kV and above) have linked CSG with other GMS countries, promoting the regional social and economic development.



Power transmission	Myanmar	Laos	Vietnam
Transmission lines	1×500kV AC 2×220kV AC & 110kV AC	1×115kV AC	3×220kV AC 3×110kV AC
Since	2008	2009	2004
Sub Total GWh	17584	1055	35306
Total GWh (Till Dec. 2018)	<b>53945 (Import 17104)</b>		

Transacted Electricity with the neighboring countries (by the end of 2018): **53.94TWh** in total. (36.84TWh export, 17.1 TWh import)



## On-going Efforts in Power Grid Interconnection

## Selected Cross-border Green-field and M&A Investment Cases

### Nam Tha 1 BOT Hydropower Plant in Laos

Laos Nam Tha 1 HPP is CSG's first overseas hydropower project under the framework of "Belt and Road" initiative, its total investment amount to **447 million** US dollars, jointly invested by CSGI and Laos National Power Co., Ltd. Its total capacity is **168MW**, the project is put into operation in the end of 2018.



### Vinh Tan 1 BOT Coal-fired Power Plant in Vietnam

Vietnam Vinh Tan 1 coal-fired Power Project is China's first BOT and so far the largest investment in Vietnam, its total investment amounts to **1.76 billion** USD dollars, jointly invested by CSG, China Power Int'l and Vinacomin of Vietnam. the project adopts two 600MW units, already put into operation in 2018.



### Edra Power Holdings Sdn Bhd in Malaysia

CSG, as the second largest shareholder, holds **37%** of the share of the Edra Power Holdings Malaysia since Apr, 2018. Edra is one of South East Asia's leading international independent power producers, have a portfolio of 13 power plants with gross installed capacity of **6.5GW**



## Selected Cross-border Green-field and M&A Investment Cases

### Power Supply Project for Laos-China Railway

On November the 8th 2019, The opening ceremony of Laos-China Power Investment Co., Ltd. was held in Vientiane, Laos.

Construction Scale	
Length of 115KV Transmission Line(KM)	Extension of 115KV Transmission Linesbays (Numbers)
268	11



### Seo Chong Ho Hydropower Power Plant

Vietnam-China Power Co., Ltd. is established in 2005 to invest Seo Chong Ho Power Plant Project, of which the Chinese side holds 49% shares, and the Vietnamese side holds 51%.The project was put into operation in December, 2012, with an installed capacity of 22 MW and an annual energy output more than 100 GWh.



# Ban Boun Tai 230kV Switching Station Expansion Program



国产 230 千伏主变压器

The Ban boun Tai 230kV Switching Station is located in Phongsaly province, Laos. The project, spanning four provinces in Laos, was contracted by CSG and placed into operation in 2015. The current improvement plans call for the installation of a 230/115/22kV main transformer at the station.



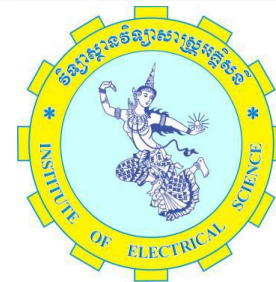
# Outlook on Power Interconnection in GMS

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

Ongoing key projects include:

- China-Laos-Thailand power interconnection
- China-Vietnam power interconnection
- Myanmar-China power interconnection
- Bangladesh-Myanmar-China power interconnection





**Thank you!**