

CGN Energy International Introduction



中国广核能源国际控股有限公司
CGN Energy International Holdings Co., Limited



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1
CGN Profile



1 **CGN Introduction**

CGN Looking back

1979



1994



2004



2011



2018



Starting

2 x 984 MW PWR based on French technology, in collaboration with EDF and Areva (Framatome)

Mandated by the late Chinese leader Deng Xiaoping, development of Daya Bay NPP was the first large-scale nuclear power plant in China, via a JV between CGN and China Light & Power of Hong Kong

Developing

Daya Bay NPP: COD
LNPS I: began construction

Fast expanding

Presence all over China

- NPPs
- Clean Energy such as gas, wind, hydro, solar, etc.

Going global

Acquired CGN New Energy (formerly 'Meiya Power Company') in 2010

Currently operating in 20 countries

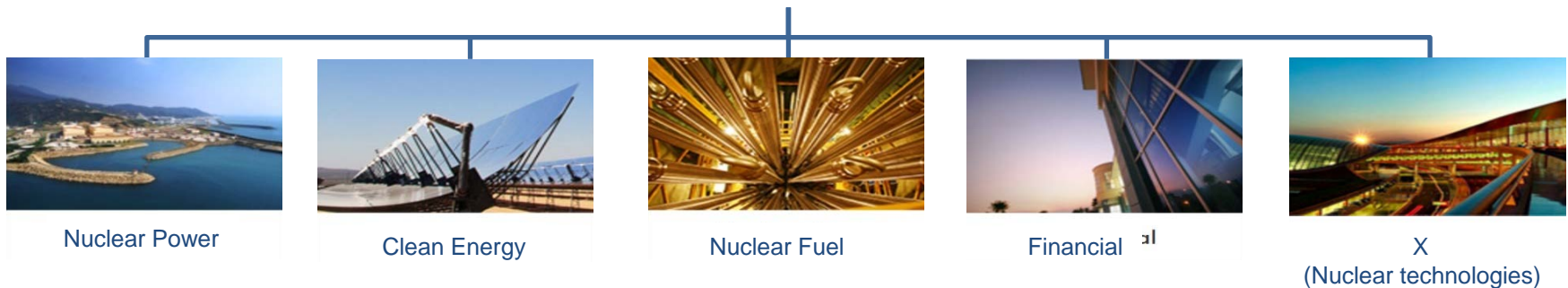
Total operational capacity:
21 GW NPP
23 GW Non-nuclear

Total capacity under construction:
13 GW NPP
7 GW Non-nuclear

CGN Configuration

- As of the end of 2017, CGN reached a total asset of 630 billion RMB.
- Hold operating new energy generation with a capacity of 45000MW
- China's biggest and world's third nuclear generation enterprise as well as the biggest nuclear generation station constructor.

“4+X”platforms



3 HK-listed subsidiaries, 1 Shenzhen-listed subsidiary



Nuclear power

China

By 2017



x20 21.47GW 60% domestically

20 units in operation: No.1 in China, Top 5 globally



x8 10.27GW 46% domestically

8 units under construction: the largest nuclear power constructor in the world

United Kingdom

Hinkley Point C - 3200MW

Final contract signed with UK government and EDF

First new nuclear power station to be built for last 20 years



Sizewell C and Bradwell B

Pipeline nuclear projects in UK. Proposed adoption of HPR1000 technology and an international consortium led by CGN



Nuclear Power: No.1 in China, leading in the World

Nuclear power

Continuous R&D and Vertical Integration

HPR 1000



- Chinese Generation-III nuclear power technology with self-owned proprietary IPRs
- Comes with advanced technological safety and economic advantages
- Being implemented in FNPP 3,4
- Applying for Generic Design Assessment (GDA), under UK nuclear regulation

ACPR 50S - Offshore Small Modular Reactor



- Multi-purpose small modular reactors with full IPRs
- Apply to the island economies and offshore oilfield exploitation
- First project be completed by 2020

Husab uranium mine in Namibia



- The world's third-largest uranium mine
- Target to operate in 2017, annual output will rank No.2 in the world
- One of China's biggest single investments in Africa

Development Strategy and Corporate Value



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CGNEI profile

1

Business Development

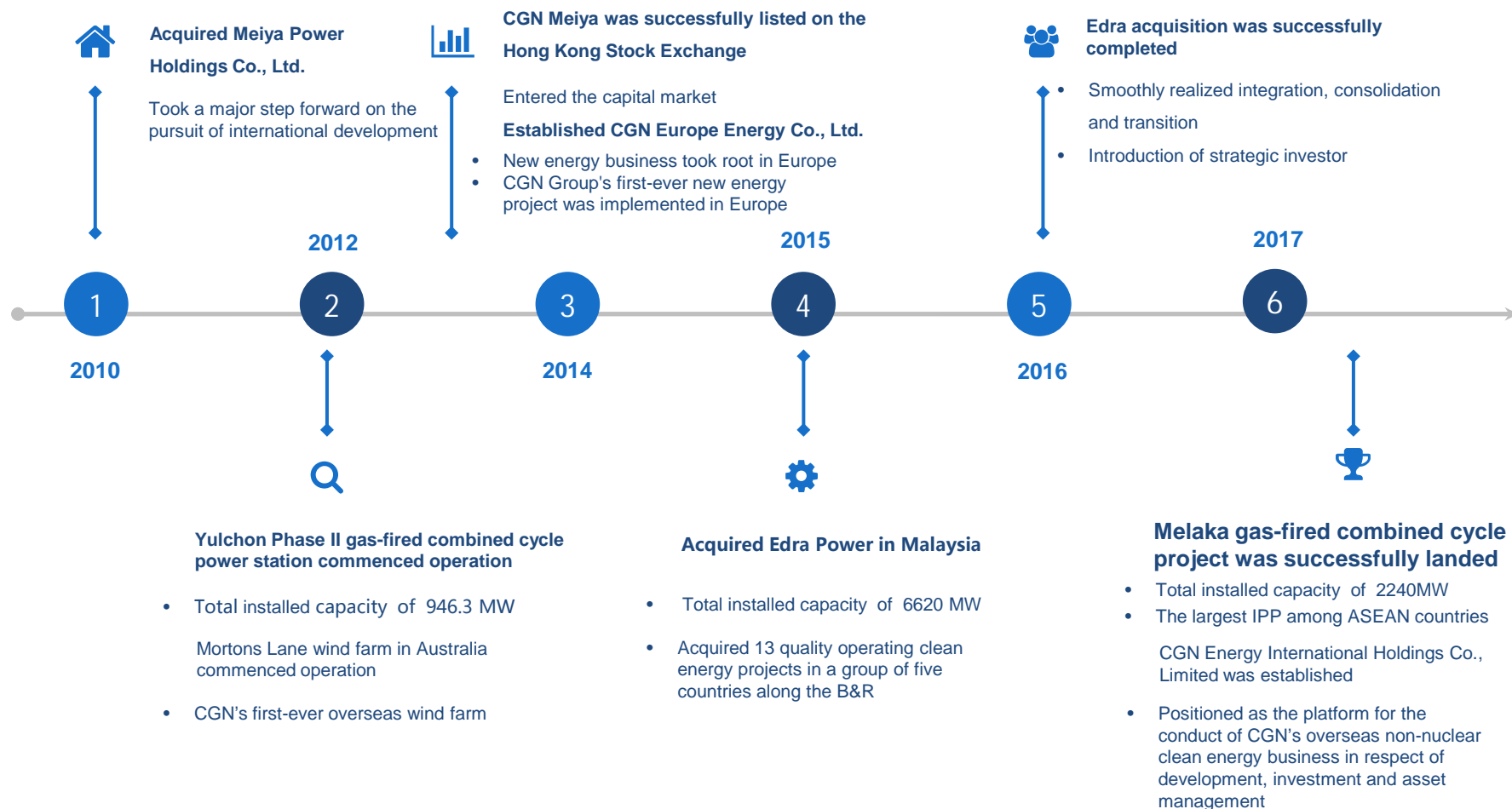
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Core Capabilities

3

Highlighted Projects

Review of Development of CGN's Overseas Non-Nuclear Clean Energy Business



Business Development

- CGN Group's new platform for overseas non-nuclear clean energy development, investment and asset management
- one of the largest SOEs and the largest state-owned natural gas-fired power producer in terms of overseas installed capacity.

As of the end of 2017, CGNEI owns 28 holding clean energy projects in 14 countries or regions around the world with a capacity of 11660MW.

Currently CGN Energy International owns



Currently CGN Energy International owns

Total assets of **520** billion



30 controlling interests
projects worldwide



Providing stable power to
14 countries or regions



Aggregate installed capacity of

11,660 MW

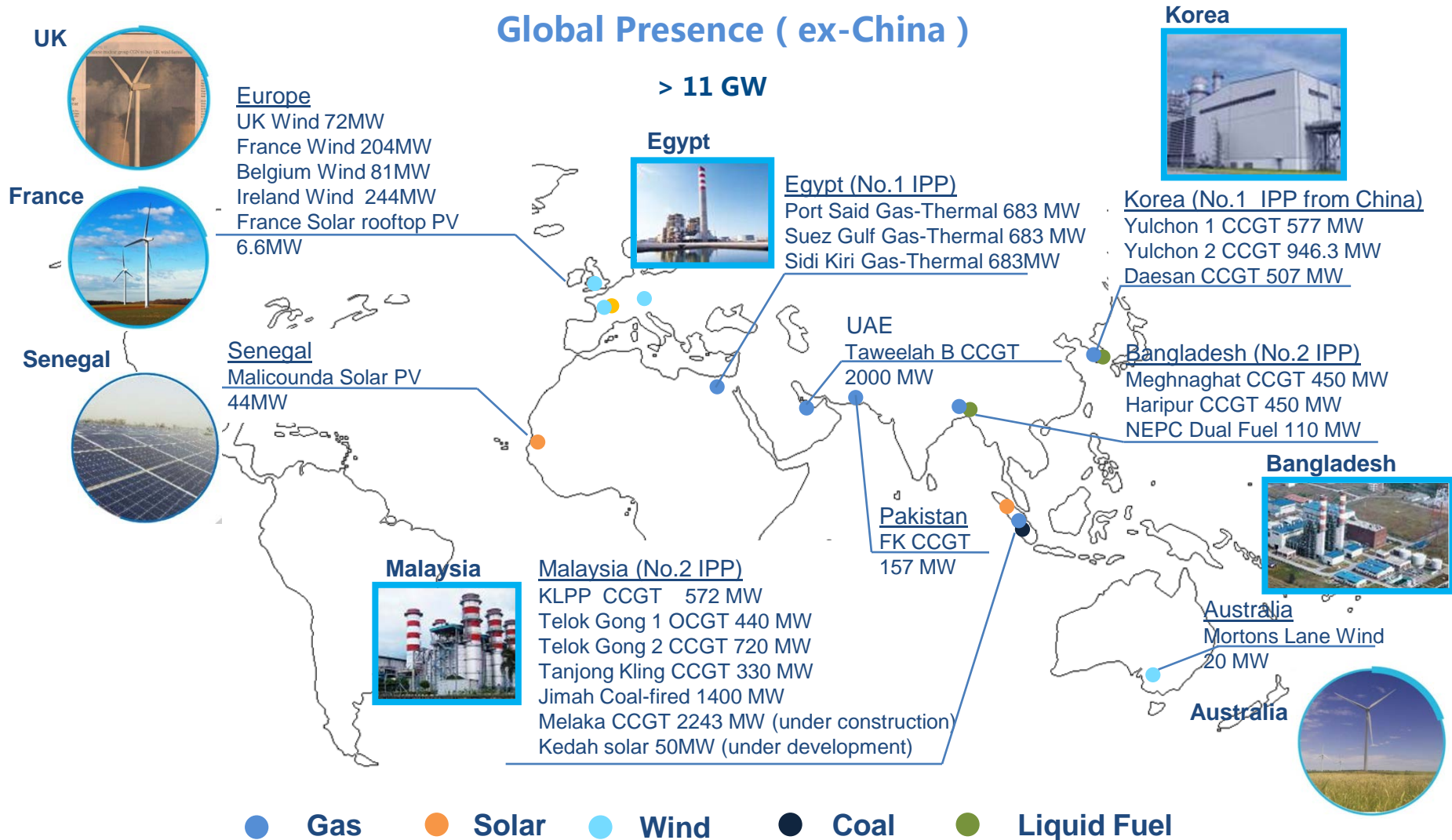


Annual on-grid power supply of

44.7 billion kWh

Business Development

Global Presence (ex-China)



Business Development



- The largest IPP in Southeast Asia



- The biggest foreign direct investor and the largest IPP in Malaysia



- the leading independent gas-fired power producer in Korea in terms of installed capacity



- The largest IPP in Egypt



- The Largest Chinese enterprise in Ireland



- The biggest onshore wind farm in Belgium

Core capability



- Overseas investment, M&A and project development
- Has achieved leapfrog development in our non-nuclear clean energy business overseas
- Operating and under-construction non-nuclear clean energy projects of more than 700MW in Europe
- Has projects in many major European countries
- Has successfully developed the Malaka gas-fired combined cycle project involving an installed capacity of 2240MW
- Obtained the grant letter for the 50MW project in Kedah
- Has independently developed the Yulchon gas-fired combined cycle project phase II & the fuel cell project phases I, II, III and IV



- Yulchon phase II gas-fired combined cycle project set a record at that time for the shortest construction period, the highest thermal efficiency, and the maximum capacity in operation among gas combined cycle project in the world
- Has successfully completed financing for Melaka project & officially commenced construction
- Has formally commenced the construction of the first overseas onshore wind farm in Brenig in the UK, in a self-reliant way

Core capability



- Has ranked the top in various operational indicators compared with external benchmarking organizations for the four consecutive year
- Has set a zero incident record for more than 10 consecutive years
- Multiple bases & projects
- Is currently actively exploring O&M services market
- Is actively promoting the independent O&M management of the acquired projects
- FUJIN wind farm in France has achieved independent O&M management



- CGN Meiya has been successfully listed on the Hong Kong Stock Exchange
- Has basically completed the introduction of strategic investor
- Moving forward the listing of Edra

Highlighted projects: The EDRA Company

13 new energy projects along the “one belt one road” countries or regions



- The allocation of the projects reaches Malaysia, Egypt, Bangladesh, United Arab Emirates and Pakistan, it has a total capacity of 6620MW with a energy combination of gas-fired power, wind power as well as solar power.
- In 2017, the order of commencement for Melaka project has been issued. It has 2 separately sets of generation units with a total installed capacity of 2240 MW and a total investment of 2 billion dollars. The equipment in that utilization reaches the highest efficiency as well as has the most-advanced technology, which are the combined-cycle gas turbine (CCGT) generation units.

Highlighted projects: The Europe company

Invest renewable energy in Europe such as onshore and offshore wind farm as well as solar power station



- Total asset of over 10 billion RMB and total holding capacity of 773 MW.
- Locations of Projects range from France, England, Northern Ireland, Belgium and Senegal etc..
- The sixth largest new energy operator.

Highlighted project: The Korean company

the leading independent gas-fired power producer in Korea in terms of installed capacity



- Total asset of more than 8.2 billion RMB and total holding capacity of 2046 MW
- Korean companies manages 577MW gas-fired CCPP (Yulchon I), 946MW gas-fired CCPP (Yulchon II), 15MW Fuel Cell power plants in Yulchon site, and 507MW oil-fired CCPP (Daesan I) in Daesan site.
- Yulchon phase II gas-fired combined cycle project set a record at that time for the shortest construction period, the highest thermal efficiency, and the maximum capacity in operation among gas combined cycle project in the world



Enhance cross-culture integration, fulfill corporate social responsibility



Malaysia

- Edra sponsors the Melaka United Soccer Association (MUSA)

Egypt

- In Egypt, Sidi Krir Power Plant donates new beds and ceiling fans to the Amerya Public Hospital, so it is able to cater to the increasing number of patients from the local communities which are generally quite poor areas.

France

- In France, during “The global wind power day” event, The Europe company welcomes approximately 50 pupils from the Normandy district to its wind farm to get a degree of hands-on experience.

Enhance cross-culture integration, fulfill corporate social responsibility



Malaysia

- Edra supports the WOW's project for their beneficiaries (who are mainly single mothers and underprivileged women) to earn extra income by sell food, clothing and other handmade products.



Bangladesh

- In Bangladesh, Edra conducts free health checks for the underprivileged communities each year, especially for mothers and children.



Bangladesh

- In Bangladesh, Primary school children receive their academic excellence award set up by Edra.

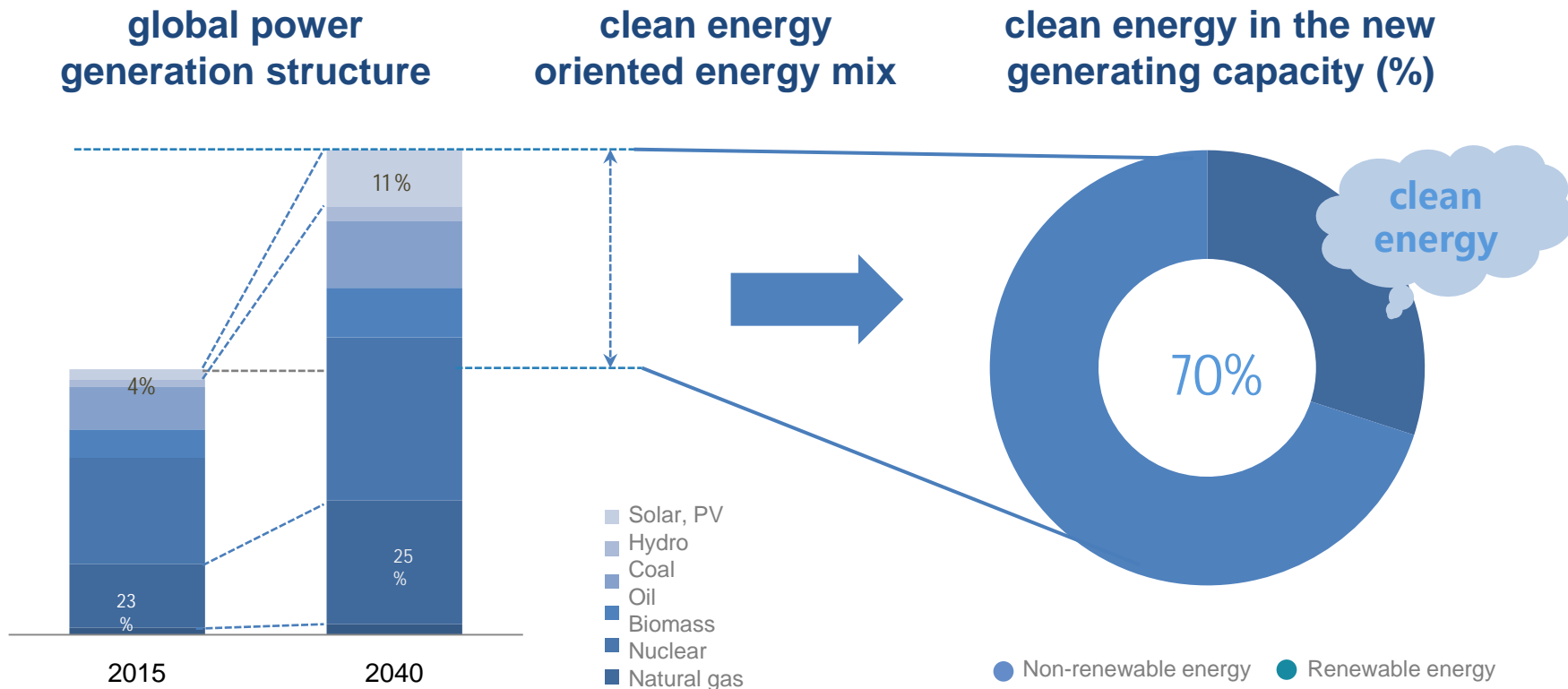
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Looking
ahead

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Development prospects

Development of clean energy is promising.



- The amount of clean energy power generation continues to increase. In particular, the total wind and solar power generation will rise sharply to 11% in 2040 compared with 4% in 2015
- In the total new generating capacity, renewable energy and gas power generation will reach about 70%

■ A glimpse into the future of CNGEI

- As of the end of 2018, achieves the goal of 2000MW new installed capacity and 1000MW greenfield project development rights .
- As of the end of 2020, strives to double the Company's current installed capacity.

What CGNEI is interested in

- **Business scope:** power generation and related businesses
- **Fuel types:** gas-fired, efficient coal, and renewables
- **Regions:**
 - Belt & Road (SE Asia, South Asia, Central Asia, MENA)
 - Europe
 - Africa
 - Central and Latin Americas (Brazil, Mexico, Chile etc.)
- **Selected investment criteria:**
 - Strong preference for accounting consolidation
 - Strong preference for PPA
 - EIRR (country by country)
 - Active role in O&M

Thanks for your attention!

