



China Coal Low Carbon Development

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I. Current Situation and Development Target of China Coal Industry

Coal is Cornerstone of China Energy

- **China's lacking of oil and gas, and abundant with coal**
 - **Coal supports 60% China power generation.**
 - **Fossil energy will still be main energy resource in near future (non-fossil energy accounts for 25% of energy mix in 2030)**
 - **Gradual withdrawal of traditional energy should be based on safe and reliable replacement of new energy.**
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Coal Output & Import

- **China has 4500 coal mines, over 2 million employees.**
- **Produced 4.13 billion tons coal in 2021, 5.7% increase YoY.**
- **Major Coal Exporter to China in 2021 are Indonesia, Russia, Mongolia, Australia, USA and Canada.**

No.	Exporter	Import Volume	Proportion
1	Indonesia	196 Mt	60.5%
2	Russia	57 Mt	17.6%
3	Mongolia	16.5 Mt	5.1%
4	Australia	11.7 Mt	3.6%
5	USA	10.6 Mt	3.3%
6	Canada	10.4 Mt	3.2%

Prospect of China Coal Industry under Dual Carbon Target

- **China will strive to achieve emission peak by 2030 and carbon neutrality by 2060.**
- **High efficient and low-carbon coal mining will form a new mining pattern, which can cope with complicated mining environment, and efficiently produce mineral resources.**
- **Clean coal utilization is significant for improving ecological & environmental protection, alleviating oil and gas shortage, and guaranteeing national energy supply.**





II. High Efficient and Low Carbon Development of China Coal Industry





Pathway one: Intelligent Coal Mining



Pathway I. Intelligent Coal Mining

Digital & intelligent technology is widely used in coal mining, promoting intelligent extension to whole system, and continuously improving coal mine intelligent level.

- China has 813 intelligent mining work surface, including 477 mining surface and 366 tunneling surface.
- 29 types of coal mining robots utilized in more than 370 coal mines.






Pathway two: Coal Clean Utilization

- ◆ Coal Preparation
- ◆ Coal Chemical
- ◆ HELE Coal Power Plants
- ◆ CCUS



Coal Preparation

- **In 2021, China's raw coal preparation rate reached 72% with 3 billion tons.**
 - **China has 2,300 scaled coal preparation plants, among which 80 plants with 10 million tons annual capacity, ranking world's first in total number of coal preparation plants.**
 - **Coal preparation technologies for high-precision dense medium cyclone, flotation and dry coal preparation, and slime water concentration reached top level.**
 - **Coal preparation equipment has realized largest single-machine processing capacity , widest sorting grade, highest accuracy, and most efficient & energy-saving coal preparation system.**
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Coal Chemical

Capacity and output of 4 typical coal chemical products reached high level by end of 2021

- Coal liquefaction and gasification units
- Coal to olefin units
- Coal to glycol units
- Coal hydrogenation





HELE Coal Power Plants

- **China's coal-fired power generation reached 5 trillion kWh in 2021, accounting for 60% total power generation, low emission capacity is over 90%. China has built the world's largest clean coal power supply system.**
- **China Coal-fired power plant emissions standard for dust, SO₂ and NO_x is same as gas-fired power plants.**
- **2021-2025: 350 million kilowatts coal-fired power carbon-reducing transformation, with 50 million tons coal consumption reduction.**

CCUS

- **Current CCUS in thermal power industry**
- **Trends of CCUS in thermal power industry**
- **In addition to CCUS, CO₂-EOR and CO₂-EBCM(coalbed methane), CO₂ can be widely used in industry, agriculture, food, medicine, fire protection and other fields**





III. Brief introduction of CNCA





China National Coal Association (CNCA) is the largest coal organization in China and was established in 1998 after Ministry of Coal dissolved. CNCA has more than 1100 members comprised of large coal companies and institutions, covering areas of coal production, sales, infrastructure, machinery manufacturing, geological exploration, technology design, etc.

- **Policy recommendations for government decision-making**
- **Establishment of mid- and long-term coal contract pricing mechanism**
- **Appraisal and promotion of scientific and technological achievements in coal industry**
- **Conduct education and training in coal industry**
- **Selection and recognition of advanced coal mines and individuals**
- **International exchange and cooperation of coal industry**



CNCA is the main channel of international cooperation of Chinese coal industry

Four Going Global

- ◆ Overseas investment
- ◆ Geological exploration
- ◆ Infrastructure construction
- ◆ Technology & equipment

Three Bringing In

- ◆ Imported coal
- ◆ Advanced technology & equipment
- ◆ International capital



国际合作 International Cooperation

- CNCA is Vice-Chairman organization of World Mining Congress (WMC)
- CNCA is Chairman organization of Technology Committee of World Coal Association(WCA)
- CNCA is China IOC of International Coal Preparation Congress (ICPC)



- ◆ Regularly carrying out exchanges and cooperation with foreign government, associations, research institutions and enterprises, and currently signing MOU with over 80 foreign units. The cooperation between U.S. Department of Labor and CNCA is listed as one of outcomes of U.S.- China Strategic and Economic Dialogue.
- ◆ Periodically hosting International Coal Summit, WCA Technology Committee Meeting, China Coal & Mining Expo, Exhibition on Clean and Efficient Utilization of Coal and other international conferences and exhibitions to create important platforms of mutual exchange and cooperation between China and world coal industry.
- ◆ Organizing CNCA members to explore business opportunities in major coal producing countries, participating in WMC, ICPC, WCA meeting, Worldskills Conference, Las Vegas MINEXPO and other important conferences and exhibitions at abroad.



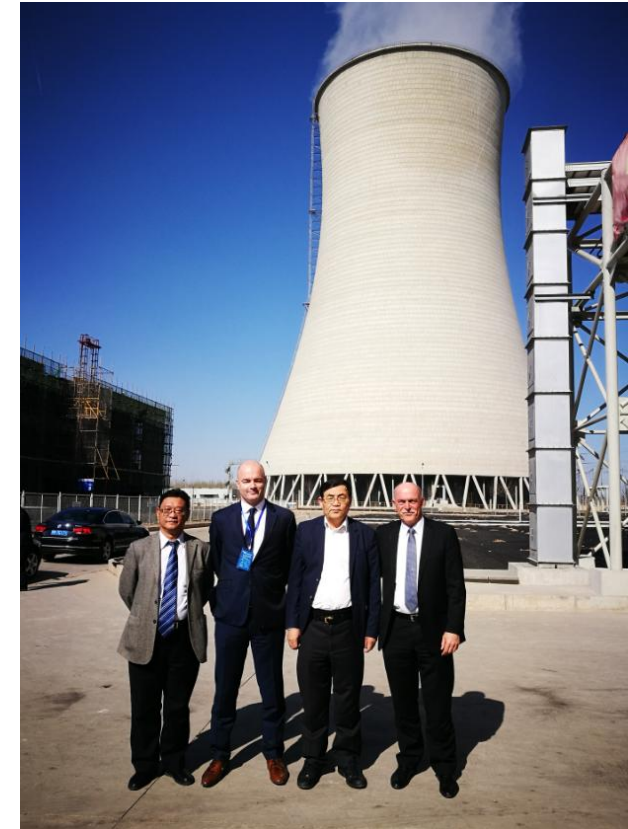


Multilateral cooperation



22nd World Mining Congress, Turkey

18th International Coal Preparation Congress, Russia



WCA Technical Visit to China HELE coal-fired power plants



Bilateral cooperation



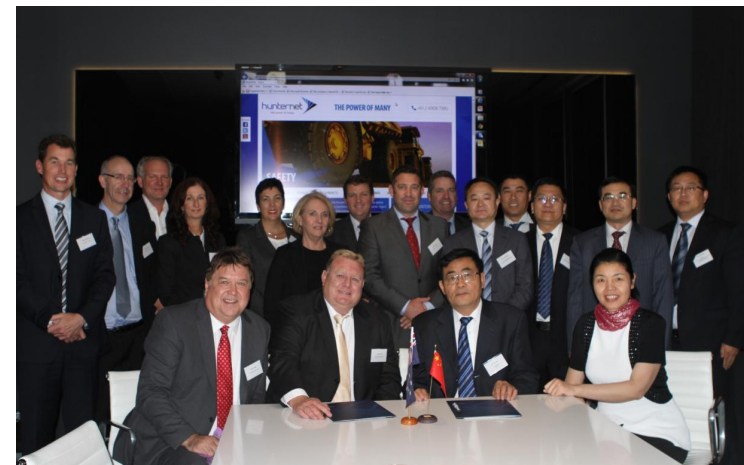
MOU with Japan



MOU with Brazil



MOU with India



MOU with Australia





Thank you for your attention