



中国中煤能源集团有限公司

China National Coal Group Corporation

Strategy and Practice of Clean Coal Development

Yang Lieke

Deputy General Manager China Coal
Group Corp.

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Contents

1. Overview of China Coal Group Corp.
2. Development Strategy of China Coal Clean Coal Technology
3. Development Practice of China Coal Clean Coal Technology
4. Sino-US Cooperation of Clean Coal Technology
5. Conclusions



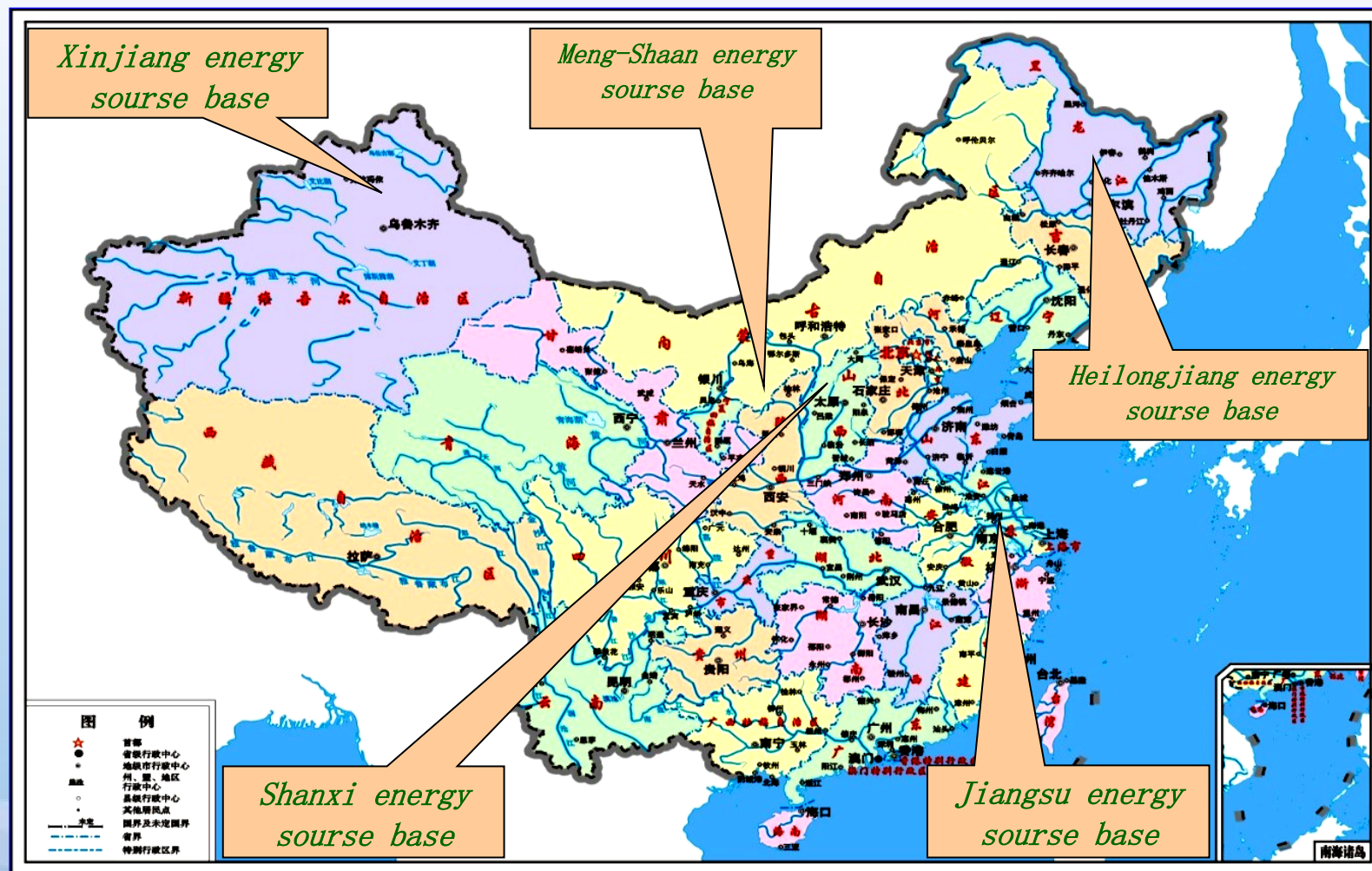


1. Overview of China Coal Group Corp.

- China Coal Group Corporation(China Coal) was founded in 1982, with the following five primary business, which are Coal production&trading, coal chemical industry, pit head power generation, mine construction, coal machine manufacturing and related engineering technical services.
- China Coal Energy Co.,LTD was listed in Hongkong in 2006, returned to A stock market in 2008.
- By the end of 2014, China Coal has totally 52 subcompanies including wholly-owned subsidiaries, holding companies and all shares companies. 4 overseas subsidiaries, with the total assets of 3.127 hundred billion yuan, a total of 94,000 employees.
- Coal output of 2014 was 183 million tons, with the revenue of 96.5 billion yuan.



1. General introduction of China Coal



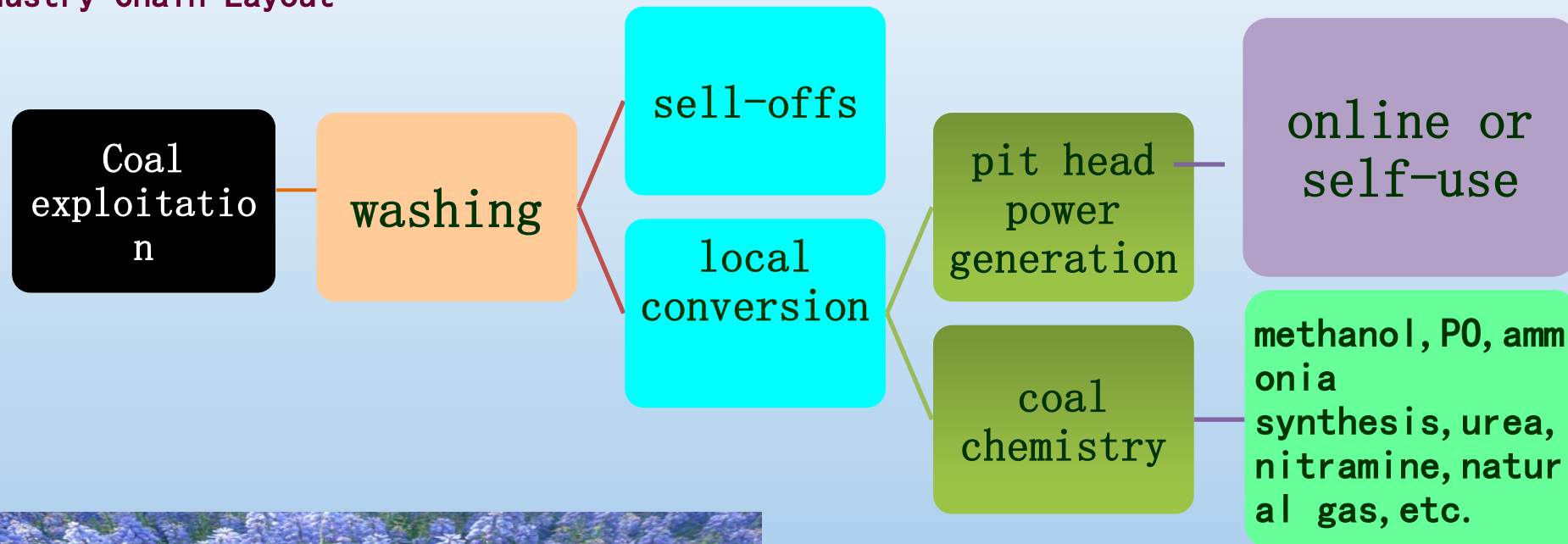


2. Clean Coal Technology Development Strategy of China Coal

- Strategic guideline: economy, cleanliness, safety, efficiency.
- Idea of development: coal based, coal optimized, coal extended, coal exceeded.
- Work thought: Focus on 'Storage adjustment, incremental optimising', Intensively develop coal core industry, develop coal chemical industry and coal based power generation with green energy.
- Coal Industry: Devote great efforts to clean and efficient coal development according to the 'safe, green, intensive and efficient' principles, with main construction of four large-scale coal base of Shanxi, Inner Mongolia, Shaanxi and Xinjiang, improve the local conversion ratio of low calorific value coal and sulfur coal constantly.
- Devote great efforts to the construction of four large-scale coal chemical base of Inner Mongolia, Shaanxi, Shanxi and Xinjiang according to the principles of clean&efficient, water-based, demonstration highlighting and independent innovation, gradually realize the new type coal utilization of 'quality-divided and grading, energy-chemical combination, integration and recycling economy'.

2. Clean Coal Technology Development Strategy of China Coal

Industry Chain Layout





3. Clean Coal Technology Development Practice of China Coal

➤ coal mining:

46 existing coal mines, general capacity of 247 million tons, mainly located in Shanxi, Shaanxi, Inner Mongolia, Jiangsu, Heilongjiang and Xinjiang, with major construction of the two Hundred Million tons Energy Base of Shanxi and Meng-Shaan area, single mine maximum capacity of Shuozhou, Shanxi province is 30 million tons/year.

➤ Coal washing:

28 existing coal washing plant with washing capacity of 253 million tons

Washing of the existing coal mines or the mines under construction all match the mining capacity

Mainly located in Shanxi, Inner Mongolia, Jiangsu, Heilongjiang and Xinjiang, etc, with maximum washing capacity of 20 million tons/year.





3. Clean Coal Development Practice of China Coal

➤Pit head power generation:

Installed capacity of the existing low heating value coal electricity plants and plants under construction is 1,860,000kW

Located in Shanxi, Shaanxi, Heilongjiang and Jiangsu. Area.

Planning construction capacity of low heating value coal and fired power plants in 2020 is 10,000,000kW.

Located in Shanxi, Shaanxi, Inner Mongolia and Xinjiang.

➤Coal Chemistry (Pit head local conversion) :

MT0 1.2 million tons/year, in Shaanxi and Inner Mongolia

Coal methanol a million tons/year, in Innermongolia and Heilongjiang

Coal to Urea2 million tons/year, in Innermongolia and Shanxi

Coal to ammonium nitrate600,000 tons/year, in Shanxi.



3. Clean Coal Development Practice of China Coal

Typical case of Coal chemical projects:

- MT0 project in Yulin Shaanxi, with the scale of construction of 1.2 million tons/year, put into operation in 2014, primary phase, PE capacity of 300,000 tons/year, PP capacity of 300,000 tons/year.
- Chemical fertilizer project in Tooker town, Innermongolia, with the construction scale of 2 million tons/year synthesis ammonia converting to urea 3.5 million tons/year, put into operation in 2014, primary phase, nominal 1 million tons/year synthesis ammonia converting to urea 1.75 million tons/year.



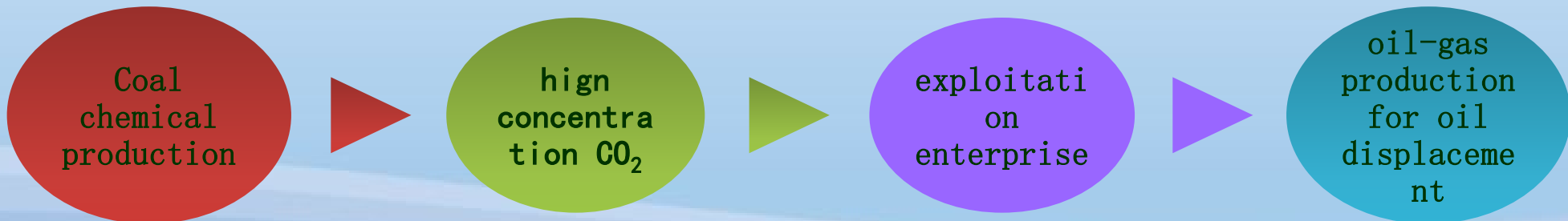
中煤陕西榆林能源化工有限公司甲醇醋酸系列深加工及综合利用项目



3. Clean Coal Development Practice of China Coal

CO₂ disposal:

High concentration CO₂ from Meng-Shaan area coal chemical projects pipelining to oil-gas recovery plants for oil displacement.





4. Sino-US Cooperation of Clean Coal Technology

Coal production and equipment technology cooperation cases

China Coal and GE are in cooperation for many years, GE has supplied many technical and installation services to China Coal for mine production and technology upgrading.

Electric driven Technology and electric wheel from GE are widely applied in strip mine in Pingshuo.

China Coal Equipment Company conducts wide-ranging cooperation with GE from the underground trackless rubber-tyred car project, and has made great progress on the joint development project of thin seam continuous miner complete set of equipment. .

4. Sino-US Cooperation of Clean Coal Technology

Typical cooperation case of Coal chemical projects:

Cooling process pressurized coal-water slurry gasification technology from GE are used in the 1.8 million t/a methanol converting to 600,000t/a PO primary phase project in Yulin, Shaanxi (coal -feeding 1500t/d)

Half waste boiler process pressurized coal-water slurry gasification technology from GE is planned to be used in the second phase project. (coal-feeding 3000t/d)

Coal chemical industry wastewater zero emissions technology



5. Conclusions

China Coal has a good foundation for collaboration with GE in clean coal development area. We would go forward to further collaboration with US full of confidence and expectation, continue developing and spreading the new clean coal technology, give play to our advantages and expand cooperation for win-win result.

Let's work together, seize opportunities and move forward!

Thank you!

