CHINA CENTRIC
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China Power Crunch (PART 1 OF 3):

Coal Consumption: To be or Not to Be

Since mid-September 2021, China was overwhelmed by unexpected electricity cuts. It has been very different compared to past practices in the last decades which advance scheduled notices would be given to manufacturing sectors (especially for those in continuous process industries) while household usages would not be affected. Moreover, the electricity rationing would normally take place in the summer when there is higher power consumption.

However, the power cut that happened this September was considered to be during the off-peak period. The situation went sour because most of the shutdown were not provided advanced notices. As a result, not only did manufacturing encountered big disturbances in this production peak season, a number of accidents were reported because of unexpected power cuts (e.g. smeltery workers caught gas poisoning as a result of ventilation utilities stopping during the production process).

In addition, households also faced non-scheduled power cuts which generated great inconvenience in daily lives. Inhabitants in North-East Provinces feel the panic most because their winter starts much earlier than other regions in the country. No electricity means no heating water circulation to the household.

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The CCA Newsletter is summary of articles about the Asia Business environment. This issue "Coal Consumption: To be or Not to be" is Part 1 of 3 of a series about China Power Crunch. Please follow-us on **Linkedin** for more.

About China Centric Associates

Since 2003, China Centric has assisted 250+ companies and 30+ Private Equity firms to develop and execute customized regional business strategies in China and Asia. We provide Consulting and Project Management, Outsourced Supply Chain Management and Hosted Facility and Administration.

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Your input is valuable to us

China Centric Associates always welcome your contribution of the questions and feedback to the subject of this newsletter. You are also welcomed to raise specific topics that you are interested. Our team members will make response to your request in quickest manner.

Places the Blame …

As more reports were publicized, different analysts and stakeholders tried to investigate what happened. It was discovered that some manufacturing hubs in the coastal areas such as Guangdong had started implementing power stoppage few days a week as early as May. When power stoppage happened in May, manufacturers considered this as a normal rationing as before; no critical action was taken.

Various theories, opinions and inside stories were widely discussed to explain "How did this happen?". The following are the few theories that are believed to the reasons (from CCA's observation, the outcome was a combination of these or more, no single reason is the sole source for the power stoppage):

- **Double Digit growth of Power Consumption** – because of COVID-19 disturbing the global supply chain and various countries boosting their economy by creating consumption, Chinese manufacturers received a surge of orders for various exports. The result is that industry sectors power consumption went up 13.1% for the first eight months in 2021 and household electricity consumption increased 7.5%.
- **Coal Supply Decreased** – in order to be more environmental-friendly, efficient, and safe in coal mining production, the Chinese government tightened the control of coal mining - reducing mining quota, cutting ineffective mines, etc. Imported coal is less than 10% of China's total electricity coal consumption and is used for backup and price buffer. However, the supply from the number one overseas supplier, Indonesia, was disturbed due to heavy rain. The importations from other countries were also affected by COVID-19, freight availability, and political reasons. These factors caused the total coal import to decrease in 2021. Therefore, both domestic and overseas supply slumped in the first few months of this year. *(Note: it is a wrong perception that China cuts coal supply from Australia causing its coal shortage.)*
- **Price Dilemma** – the coal price has ramped up since this May, but the electricity price level was capped by the authority. The current coal price has been well above the breakeven point and coal-fired power plants face net loss on electricity generation. Some power companies indicated that they lost RMB 1 million per day if they had all the generator sets in operation. This could be validated by the annual report of a publicly listed power generation company near Beijing: it mentioned that they had 28% (RMB 9.5 Billion) increase in operation cost which meant 136% (RMB 300 million) decrease in net profit in the first 6 months with Y-T-Y comparison. The profit lost demotivates coal-fired power generation industries to operate at full capacity production.
- **China's commitment to CO2 emission** – at the 75th UN General Assembly on September 22, 2020, Chinese President Xi Jinping announced China's goal of reaching CO2 emission peak by 2030. Even though the "Energy Dual Control Scheme" policy had been launched since 2015, this year will be the very first time that the state government has taken serious action with the municipal government performance assessment. During the half year review, many municipals' officers found out that their H1 consumption was already well above the quota because of boosting energy consumption and was very likely for no more consumption capacity for H2. Therefore, they steered the wheel to the other direction without any detailed plan. Unfortunately, these created issues out of their control.

Coal-fired Power Stations – still the backbone of China energy supply

Coal-fired Power Generation covers more than 65% of the total electricity generation of the country. Up until August 2021, the Y-T-D total power generation was 5,389 Terawatt-hour (TWh). Approximately 72% of total was from Thermal Power Generation with Hydo-Power providing another 14% power generation, and Nuclear Plant and Wind Farms contributed 5% and 6% respectively.

Both Hydo-Power and Nuclear Power Plants have long planning and construction cycle. It is very unlikely to increase more installations and having them operational in a short turnaround.

The total installed Wind Farm Capacity in China reached 281GW at the end of 2020, which made China the largest wind power generating country in the world. However, wind generated electricity in the total power generation mix is still low (at approximately 7%) when comparing to other developed countries (usually in double digit % within the electricity produced).

Within Thermal Power Generation, Oil-fired generation is negligible which is only in one-digit TWh/year.

Although Chinese LNG Power Generation annual output ranked #3 in the world (following the U.S. and Russia), the actual figure is only 247 TWh in 2020. China plans to construct more LNG Power Plants in the future. But China depends on importation of LNG (101 million tons imported vs 13 million tons domestically produced LNG in 2020) which limits the number of plants that can be installed.

China will still heavily depend on Coal-fired Power Generation in the foreseeable future. This is a fact well aware by the government, therefore the rules and regulations to produce and consume coal to be more environmentally friendly manner is a long-term national strategy.

The "Dual control system of total energy consumption and intensity" (a.k.a. Dual Energy Dual Control Scheme) is as follows:

Coal – a 3 Way Tug of War Game

- **Energy Dual Control Scheme**

  The fundamental idea of Energy Dual Control Scheme to "reasonably set state and municipals energy consumption dual control indicators. Improve the management of dual-control energy consumption indicators." The scheme is an important part of fulfilling the pledges of "carbon emissions should peak by 2030 and then decline, with a goal of reaching carbon neutrality by 2060". The indicators set by NDRC cover both "Total Energy Consumption" and "Intensity" (Energy Consumption per Unit of GDP) which are to be reduced and each municipal government is responsible for their targets. NDRC publishes an expected result score card which provides early warning color codes to indicate if municipals have issues.

  For the Intensity scores in H1 2021, 9 provinces were in code Red (Intensity increased instead of reduction); 10 provinces were in code Amber (Intensity reduction behind schedule) and only 11 provinces were in code Green (Intensity reduction on schedule). For Total Energy Consumption

scores: 8 provinces got code Red (Total Energy Consumption Increased); 5 provinces were in code Amber (Reduction plan behind schedule) and only 17 provinces were in code Green (reduction as planned). The poor results showed that many municipals could not meet the indicator plan unless they take drastic action to reduce power consumption.

- **Flour is more Expensive than Bread**

  Although more than 90% of thermal coal consumed in China is domestically produced, the price is highly influenced by the international market because of its commodity nature. The rocket high thermal coal price creates pressure to power generation industries because of the electricity price cap. This situation demotivates the power generation as more units are produced, more loss in the bottom line. Another side effect is that the coal stockpiles dropped to alarming levels that some major plants in Northeast China have coal inventory for approximately 10 days of use (against normally 20 days in the past).

- **Coal production and consumption - Back to Square one or Grit the Teeth**

  The government has spent a lot of effort and time to implement a coal production and consumption plan to fulfill its CO2 emission commitment. The recent power crunch might force the government to loosen its strict control of the coal mining and usage, which could mean everything would be back to square one. Authorities may need additional advisement to find a way to balance its current tight demand and long-term achievable goals to reimplement the appropriate plan.

Government announced measures: Getting Through the Maze – a Complicate Task

To tackle the power shortage issue, the state government announced the following measures of improvement including:

1. Reopening the shutdown mines or issue permits for new mines,
2. Encourage existing mines to increase output (under safe operation),
3. Allow more coal imported,
4. Use more alternative supply sources, and
5. Allow power plants to increase their electricity unit price by as much as 20%.

However, some of these measures were offset by the flooding in Shanxi, the biggest coal province. In early October, 60 mines were forced to be closed temporarily in Shanxi (these mines just recently re-opened). Coal price soared to all time high in mid-Oct (when this article was prepared) and has already been doubled this year.

The market is still observing how the measures will impact the supply chain in China; we will discuss this in the upcoming newsletters.