

Insights:

China's 'War on Pollution' and its impact on climate change mitigation

Key Points

- Measures to address regional air pollution, including ambitious coal consumption caps in key regions, have significant potential to reduce China's greenhouse gas (GHG) emissions from 'business-as-usual'.
- Three developments could offset this co-benefit from the 'War on Pollution':
 - Relocation of industry to regions with no, or less stringent, coal caps.
 - The development of 'coal bases' away from eastern urban centres, facilitated by construction of Ultra High Voltage transmission lines.
 - The development of a significant coal-to-gas industry, with much higher carbon emissions than regular coal-fired power.
- China's position at UN Climate Summit this week will be bolstered by the announcement of an approaching national coal cap. Further important announcements are to be expected in the following 12 months in the lead up to COP21 and the announcement of targets for China's 13th Five Year Plan.

The 'War on Pollution'

China's approach to emissions reduction will likely continue to be dictated by domestic priorities rather than international pressure. This is to be expected for the foreseeable future. Therefore, whether China signs up to a 'legally binding' international agreement at the Paris COP late next year may matter less for the climate than the impact that domestic policies will have on China's emissions over coming years.

The emergence of market-based measures such as emissions trading in China is certainly a positive development, however their potential to impact on emissions in the early years may be limited, judging by international experience as well as teething problems with the seven existing pilot emissions trading schemes. In the meantime, China's regulatory measures remain the most potent tools for bringing down the rapid growth in emissions in coming years.

In particular, China has embarked on an ambitious program to reduce local air pollution. In September 2013 the State Council released an 'Air Pollution Prevention and Control Action Plan'. While the Plan primarily targeted local air pollutants, it may provide significant co-benefits for reducing GHG emissions. The Plan announced the government's ambitions in a range of areas, including the removal of heavy industry from the regions most affected by air pollution, as well as specific goals for reducing coal consumption that may have a significant impact on GHG emissions.

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The plan set out the following objectives:

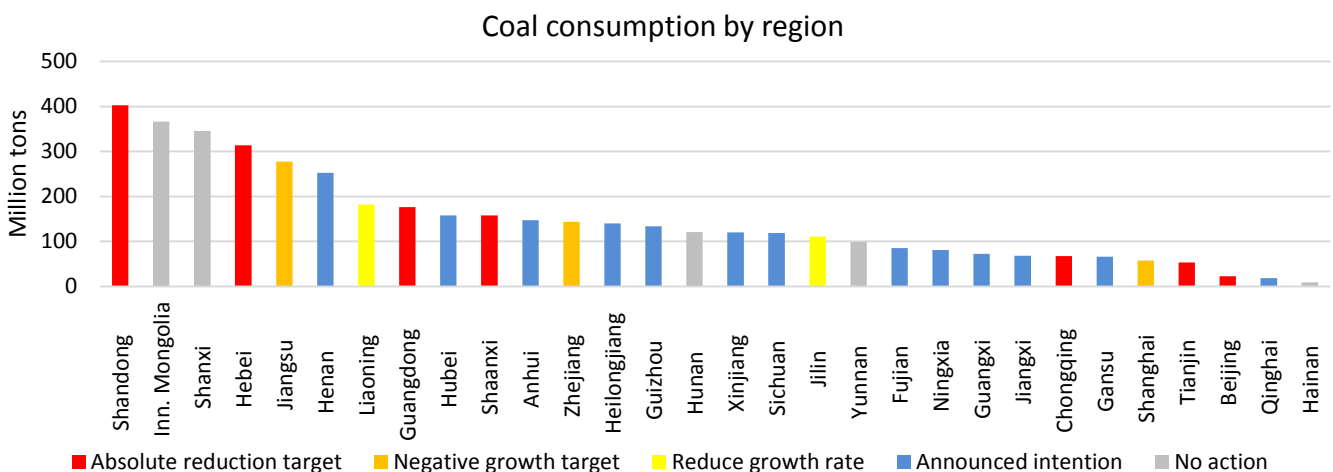
- Sets mid and long-term national coal consumption cap targets.
- Aims to decrease the share of coal in total energy consumption to less than 65% by 2017.
- Beijing-Tianjin-Hebei, Yangtze River Delta and Pearl River Delta regions will aim to have negative growth of coal consumption by 2017, with coal to be replaced by increasing imported electricity, natural gas supply and use of non-fossil energy.
- Prohibits the building of new power plants in the key regions listed above.
- Requires that any projects requiring new coal consumption should offset the same or more amount of coal.

In March, Premier Li Keqiang emphasised the sense of urgency, stating that the government would “declare war against pollution”. A recent Greenpeace report suggested that coal consumption caps, especially in the three major eastern industrial regions, may reduce emissions by 700 MT in 2017 and 1,300 MT in 2020 from business-as-usual. Reduction of this scale could bring China’s emissions trajectory close to its proportionate contribution within a global agreement limiting global warming to 2 degrees (International Energy Agency 450ppm scenario). It would also represent the largest single emissions reduction effort from business-as-usual by any country, including the EU and US. Finally, earlier this month, the State Council released draft revisions to the *Air Pollution Prevention and Control Law*. This document committed to “establish mid- and long-term targets to cap coal consumption”.

Obstacles to achieving a climate co-benefit

While these are hopeful developments, CCF suggests three important provisos that should be considered in relation to the overall GHG mitigation effort.

1) Relocation of heavy industry. The existing coal caps cover some of the heaviest coal-consuming regions, however there are some key regions not currently covered. The chart below shows that while existing caps cover important polluting regions such as Shandong and Hebei, equally significant provinces such as Inner Mongolia and Shanxi are not covered. If industries are forced out of regions such as the Beijing-Tianjin-Hebei region as a result of the regional coal caps, there is a danger that they could relocate to neighbouring regions either not covered by a cap or with a much less stringent requirement. It is important that while the central government decides how to implement its national coal consumption targets, western provinces do not become home to rapid growth in industrial coal consumption.



2) Development of western ‘Coal Bases’. Three solutions proposed in the ‘Air Pollution Action Plan’ to displace coal consumption in the urbanised east were: increased use of gas, more non-fossil energy sources, and increased importing of electricity. The first two of these strategies promises significant co-benefits for the reduction of greenhouse gas emissions, while the third may prove to undercut many of the benefits. Until recently, coal from China’s coal-rich western provinces was mostly transported via train to central and eastern regions for the generation of electricity locally. Now, the development of western coal bases is being encouraged, together with investment in UHV transmission lines, so that power generated close to the coal source can be sent to eastern urban centres efficiently. Already, “2 AC and 4 DC UHV lines have been built to transmit electricity from these bases to loading centers in the east to meet the demand of the economy and pollution control objectives”, according to Mou Dunguo at the Centre for Energy Economics at Xiamen University. This strategy has been promoted heavily by prominent figures such as State Grid’s CEO Liu Zhenya, and in a statement by President Xi Jinping during a meeting with central leaders on China’s energy security strategy in June.

3) Plans to develop coal-to-gas technology. There are currently plans for over fifty coal-to-synthetic gas plants that are in planning, preparation or under construction. If all of these enter into full production by 2020, “they will generate 402 million tons of carbon dioxide per year, slightly higher than USA’s 2020 emission reduction target and slightly below the European Union’s carbon 2020 emission reduction target”, Greenpeace found. This could significantly offset the emissions reduction benefits of the regional coal caps. In reality, Greenpeace Climate & Energy Campaigner Li Shuo says that by 2020 it is likely the economics of coal-to-gas - in addition to the associated water challenges - will make further development unviable. The extent to which projects gain approval between now and then, however, will have major implications for China’s greenhouse gas emissions.

Conclusions

While there is great potential for China’s attempts to reduce coal consumption to provide co-benefits to the climate change agenda, there are also significant challenges. For the purpose of China providing impetus to international climate efforts, it is worth noting that these domestic efforts remain disconnected from the international negotiation process. As EU Climate Change Commissioner Connie Hedegaard stated at a CCF event earlier this year, there is a paradox that progress in China is not reflected at the international negotiating table. The sooner China’s efforts are fully reflected at the UNFCCC, the more likely that a successful outcome at Paris can be reached, especially given that China’s policies are getting ever closer to its ‘fair share’ in a global agreement.

At the same time, it is important the climate change community does not forget that China’s domestic measures, such as regional coal caps and air pollution targets, do not share the same end-goal of reducing GHG emissions overall. Instead, they largely represent the priority given to ameliorate discontent in eastern urban centres over the smog issue. Developments such as western coal bases, industry relocation, as well as a surging coal-to-gas industry have the potential to eliminate the benefits from coal caps entirely. The Chinese leadership will have the opportunity to address these issues in the coming 12-18 months, more specifically when they attend the UN Climate Summit in New York this week (Sep. 23), and in 2015 as COP21 approaches and the 13th Five Year Plan takes shape.

The announced intention to move to a national coal consumption cap is important. Ensuring that such a cap is enshrined in the 13th Five Year Plan, with ambitious caps for each province, would go a long way to addressing these concerns. The Climate Summit this week in particular is an ideal opportunity for such an announcement.

Key dates



Key Voices

State Grid of China.

State-owned power and coal enterprises.

Provincial leadership, esp. in energy intensive regions such as Shandong, Hebei and Jiangsu.

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