China clean air plan to slow coal consumption

The implications of the National Action Plan on Air Pollution

September 2013

China has announced a detailed air pollution action plan to cut fine particle PM2.5 pollution, after 1.5 years of intensive public debate over air pollution and its sources. The plan

- sets ambitious timelines for reducing PM2.5 in Beijing and other key cities;
- calls on key economic areas – Beijing-Tianjin-Hebei, Yangtze River Delta and Pearl River Delta – to peak and decline their coal consumption by 2017; and
- bans the approval of new conventional coal-fired power plants in these key regions.

Most importantly, the plan has been already accompanied by very ambitious targets for cutting coal consumption in the provinces of Shandong, Hebei and Beijing, as well as in the 16-million people megacity of Guangzhou. Motivated by the major role of coal in the overall air pollution problem in China, the targets require an absolute coal consumption reduction of 40 million tonnes in Hebei, 20 million tonnes in Shandong, and 13 million tonnes in Beijing.

The three provinces consumed more coal in 2011 than all of the European Union. Shandong is the largest coal consumer among Chinese provinces and Hebei is the fourth largest. [1] The provinces have been growing their coal consumption at 6% year, so the absolute reduction targets require a rapid and dramatic reversal of the coal consumption trend.

However, Greenpeace analysis and modelling indicates that the PM2.5 reduction targets are unlikely to be met without significant further reductions in coal consumption. Hence, more coastal provinces are expected to make their respective announcement following the national plan.

The ban on new coal-fired power plants covers China's most important coal importing regions, the Pearl River Delta and Yangtze River Delta, responsible for more than 50% of thermal coal imports. With the power sector the main importer of coal, this will very significantly curb future import demand.

Greenpeace has been campaigning for controlling coal use and air pollution in China for the past three years, calling for regional coal caps in key coal burning provinces in eastern China as the main tool to tackle the pollution. We see this as an important first victory for our campaign.

[1] Energy Statistical Yearbook 2011, 2012, National Bureau of Statistics of China.

How large is the impact?

The specific “coal caps” announced so far for Hebei, Shandong and Beijing require an absolute reduction in coal consumption of a total of 73 million tonnes from 2012 levels by 2017. However, compared with business-as-usual growth, this is a reduction of over 150 million tonnes, or more than the total consumption of Germany. The pace of the reductions required is quite remarkable – approximately 2.5% per year, which is much faster than the CO2 emission reduction rates industrialized pledged in Copenhagen climate conference.

These coal caps were eventually not included in the national clean air plan, but left for each province to announce separately. The three Yangtze River Delta provinces and Guangdong province are expected to announce their own clean air plans soon, potentially including coal caps or other measures to limit coal consumption.

China’s “three key regions”, the Beijing-Tianjin-Hebei region, Yangtze River Delta and Pearl River Delta, combined with the Shandong province, consume one third of all coal in China. Coal-burning is heavily concentrated around Beijing: one third of China’s coal is burned within 600 kilometers of Beijing, when the heavily industrialized areas in Shanxi and Inner Mongolia are taken into account. Slowing down and reversing coal consumption growth in these areas is key for meeting the air quality targets.

What are the solutions for reducing coal?

The Clean Air plan includes targets and measures to boost renewable energy and energy efficiency, to close down outdated industrial capacity, and to accelerate the transition from heavy industry to services-based economy. However, the main focus of the plan is on increasing the use of natural gas in the key regions, including coal-to-gas projects. Greenpeace believes that further ambition on renewable energy will make the targets more beneficial for the environment and the economy.

Chinese central government and even many provincial governments have set a target of diversifying the economy from over-reliance on heavy, coal using industries. At present there is an overcapacity situation in several heavy industries like steelmaking, so there are also economic policy reasons for cutting down most energy intensive and polluting capacity.

Change towards less coal will be helped by the fact that coal use has already significantly slowed down compared to previous years. During the last 1.5 years coal-fired power generation growth has slowed down from growth rates of over 9 % in 2010 and 2011, to 0.8 % in 2012[2] and 2.6 % in the first half of 2013[3]. However, because of coal use in the heavy industry, total coal use has still grown over 6 % in 2012, slowing down to 1.8 % in the first half of 2013.[4]

Also renewable energy has been growing fast. Last year wind power grew to become the third biggest power source in China, after coal and hydro power. Share of renewables is growing faster because of slow

[2] China Electricity Council. In Chinese. http://www.cec.org.cn/yaowenkuaidi/2013-02-22/97555.html
[3] China Electricity council press release, 2013/7/19. http://www.cec.org.cn/yaowenkuaidi/2013-07-19/106023.html
[4] China Coal Industry Association, press release. 2013/7/18. In Chinese. http://www.coalchina.org.cn/page/info.jsp?id=126566

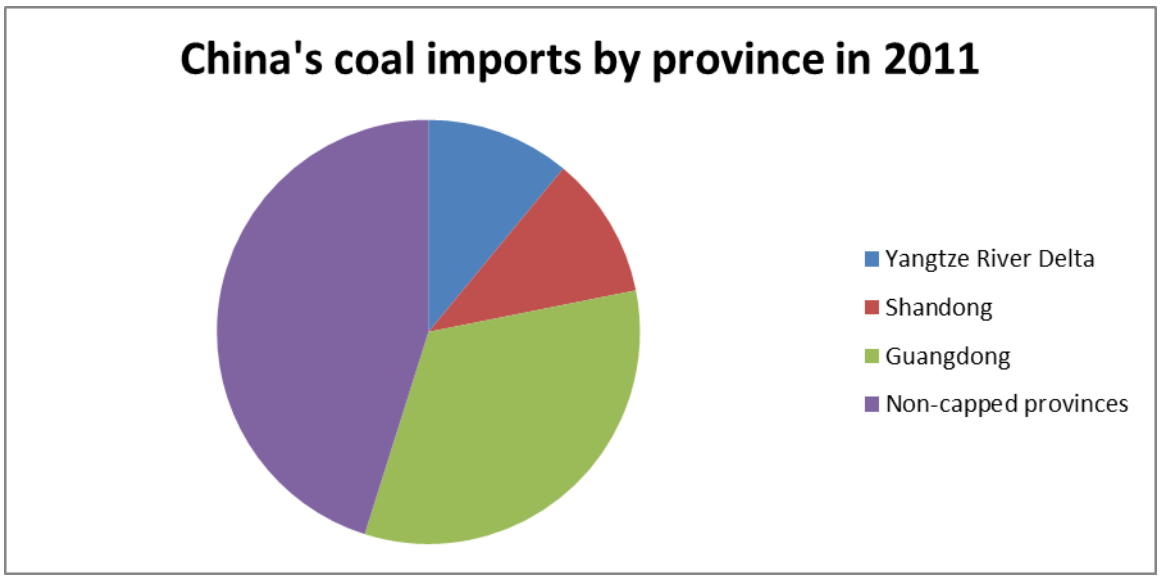
down of total electricity consumption growth during the last 1.5 years to 5 %, from two digit numbers in the years before that.[5]

Further control of coal needed

Even if coal cap is a bold and promising step, Greenpeace believes that regional caps should be expanded to cover more provinces even ultimately into a national target. In the 12th five year plan China set a non-binding indicative coal use target of 3.9 billion tons, and this target should not be exceeded. The Clean Air Plan commits to setting a national coal consumption limit, but without a clear timeline. Greenpeace believes China should set concrete policies of controlling coal for the 13th five-year plan, with the clear ambition to stabilize and peak its coal use during 2016-2020.

Implications for international coal trade

The announcements will have major impacts on international coal trade and exporting countries. All of the most important coal importing provinces are covered by either an absolute coal consumption cap or a ban on new coal power plants. These provinces use 57% of the Chinas imports of coal. The capped provinces' total share of coal import growth between 2006 and 2011 is also over 50%. Declining coal consumption in these provinces means that China's total coal import demand will peak and decline, even assuming that the share of imports out of total coal consumption stays constant. Furthermore, as the caps will reduce volumes of coal use, this will make it easier to remove domestic supply bottlenecks, further eating into coal imports. The caps are a big blow for U.S, Australian and Indonesian miners in particular.



[5] China Electricity Council. Press release, 2013/2/22 In Chinese. http://www.cec.org.cn/yaowenkuaidi/2013-02-22/97555.html, China Electricity council press release, 2013/7/19, http://www.cec.org.cn/yaowenkuaidi/2013-07-19/106023.html