

CHINA ANNOUNCES BREAKTHROUGH TIMELINE FOR IMPLEMENTATION OF ULTRA-LOW SULFUR FUEL STANDARDS

ICCT POLICY UPDATES

SUMMARIZE
REGULATORY
AND OTHER
DEVELOPMENTS
RELATED TO CLEAN
TRANSPORTATION
WORLDWIDE.

On February 6, 2013, China's State Council announced a detailed timeline for upgrading nationwide motor fuel quality to the "China V" standards, with maximum sulfur content of 10 parts per million (ppm) for both gasoline and diesel.¹ With the announcement, which came after a meeting chaired by Premier Wen Jiabao, China becomes one of the first - and largest - developing countries to commit to introducing exclusively ultra-low sulfur fuels for motor vehicle use nationwide.

The short announcement specifically issues the following four decisions:

1. China's nationwide fuel quality should be upgraded as follows:
 - » The nationwide "China IV" diesel fuel quality standard (maximum sulfur content of 50ppm) should be issued as soon as possible and fully phased-in by the end of 2014;
 - » The nationwide "China V" diesel fuel quality standard (maximum sulfur content of 10ppm) should be issued before the end of June 2013 and fully phased-in by the end of 2017;
 - » The nationwide "China V" gasoline fuel quality standard (maximum sulfur content of 10ppm) should be issued before the end of December 2013 and fully phased-in by the end of 2017.
2. China's state-owned oil companies PetroChina, Sinopec, and CNOOC should urgently complete the refinery upgrades required to guarantee the supply of ultra-low sulfur fuels by the deadlines.
3. Fiscal incentives or fuel pricing policies may be used to compensate for the increased costs of cleaning up the fuels.
4. Fuel quality supervision—including industry self-supervision—should be improved; penalties should be increased; and oil companies should publicly commit to product quality.

¹ Announcement available online at: http://www.gov.cn/lhdh/2013-02/06/content_2328473.htm

On the day after the announcement, the Standardization Administration of China (SAC) fulfilled the first requirement by issuing the nationwide China IV diesel fuel quality standard.² (The China IV gasoline standard was previously issued in May 2011, with phase-in through the end of 2013.³)

The following tables summarize China's current roadmap to nationwide ultra-low sulfur gasoline and diesel.

China gasoline fuel quality roadmap

Stage	Standard	Maximum sulfur level (ppm)	Date standard issued	Date standard implemented
-	GB 17930-1999	lead-free requirement	28 Dec 1999	1 Jan 2000
-	GB 17930-1999 (revised) ⁴	500	2 Dec 2004	1 Jul 2005
China III	GB 17930-2006	150	6 Dec 2006	31 Dec 2009
China IV	GB 17930-2011	50	12 May 2011	Phased-in by 31 Dec 2013
China V	TBD	10	Before 1 Jan 2014	Phased-in by 31 Dec 2017

China diesel fuel quality roadmap

Stage	Standard	Maximum sulfur level (ppm)	Date standard issued	Date standard implemented
-	GB 252-2000	2000	27 Oct 2000	1 Jan 2002
-	GB/T 19147-2003	500 (voluntary)	23 May 2003	1 Oct 2003
China III	GB 19147-2009	350	12 Jun 2009	Phased-in 1 Jan 2010 – 1 Jul 2011
China IV	GB 19147-2013	50	7 Feb 2013	Phased-in by 31 Dec 2014
China V	TBD	10	Before 1 Jul 2013	Phased-in by 31 Dec 2017

BACKGROUND

Reducing fuel sulfur levels to near-zero levels is an essential prerequisite to implementing global best-practice vehicle tailpipe emission standards. Removing sulfur from fuels directly reduces emissions from vehicles, but, more importantly, it enables the introduction of more advanced, sulfur-sensitive emission control technologies.

Nationwide fuel quality standards in China have consistently lagged behind levels required for corresponding vehicle emission standards, resulting in major barriers to upgrading China's fleet with more advanced emission control technologies. For example,

² Available online at: <http://www.spc.net.cn/news%5Cshowonenews.asp?strid=67>

³ Available online at: <http://www.spc.net.cn/produce/showonebook.asp?strid=50226>

⁴ Revision announcement available online at: <http://www.caam.org.cn/guojiabiao zhui/20110513/1005055894.html>

the nationwide implementation of the China IV heavy-duty diesel vehicle emission standard, which aims to reduce PM and NOx emissions by 80% and 30%, respectively, has been delayed twice over the past three years due to the lack of nationwide availability of high-quality diesel fuel.⁵

For the past decade, regulatory agencies and oil companies in China were unable to reconcile on a firm timetable for nationwide lower sulfur fuel supply. In January 2013, this stalemate was finally ended by an unprecedented high pollution episode occurring in hundreds of major cities throughout the nation,⁶ catalyzing the government at the highest level to intervene with concrete action.

The new timetable for fuel quality improvement will enable China’s Ministry of Environmental Protection to establish a clear timeline for upgrading China’s vehicle emission standards to global best practice. With a roadmap to 10ppm sulfur gasoline and diesel finally established, MEP can begin immediately developing the “China 6/VI” tailpipe emission standards for both light and heavy-duty vehicles. These standards will dramatically reduce emissions of key pollutants contributing to urban smog and dangerously elevated PM_{2.5} levels in Chinese cities. These standards, especially the China VI heavy-duty diesel standard which will require the use of particulate filters, will also result in dramatic reductions in emissions of black carbon – a key climate forcing pollutant.

COMPARISON TO OTHER DEVELOPING COUNTRIES AND SUB-NATIONAL REGIONS IN CHINA

China’s new nationwide standards will place its fuel quality on par with international best practice precedent, as highlighted in the following tables:

Selected gasoline fuel sulfur levels (ppm) in countries and regions around the world

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Brazil	1000					50								
China	500					150				50		10		
EU	50				10									
India	500					150								
Japan	50			10										
US	30/90/300	30 (average), 80 (max)												

Note: nationwide standards are shown; Brazil, China, and India have stricter fuel quality in some sub-national and municipal areas

Selected diesel fuel sulfur levels (ppm) in countries and regions around the world

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Brazil	2000					1800-500 (transition)				500				
China	2000					350				50		10		
EU	50				10									
India	500					350								
Japan	50			10										
US	500	15												

Note: nationwide standards are shown; Brazil, China, and India have stricter fuel quality in some sub-national and municipal areas

⁵ Announcement available online at: http://www.zhb.gov.cn/gkml/hbb/bgg/201201/t20120110_222376.htm

⁶ See: <http://www.theicct.org/blogs/staff/turning-conversation-about-beijings-air-pollution-toward-solutions>

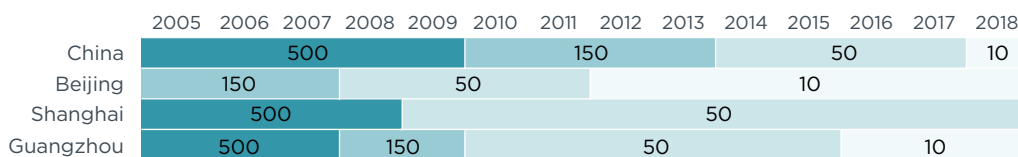
The State Council announcement is particularly important because it applies to nationwide fuel supply. Nationwide standards are critical to enable long-distance trucks and other vehicles traveling between cities to have access to high-quality fuel wherever they travel.

Even before the nationwide standards take effect, though, cities and sub-national regions in China can and are moving even more aggressively to improve local fuel quality and reduce emissions within their urban boundaries. Beijing, historically China's leader in implementing progressive environmental standards, began to supply 10ppm gasoline and diesel fuel starting on May 31, 2012; this enabled the city's early adoption of China V vehicle emission standards in February 2013.⁷ However, Beijing's local standards do not prevent emissions from trans-boundary trucks fueled outside of the city with much higher sulfur fuel. The full benefits of Beijing's stringent controls cannot be realized until ultra-low sulfur fuel is available throughout the nation. In addition to establishing a critical nationwide implementation date, the recent State Council announcement empowers Beijing to take the opportunity to work closely with neighboring provinces to develop incentive policies that enable even earlier supply of 10ppm sulfur fuels.

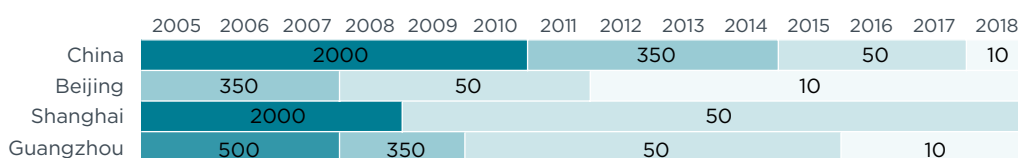
Guangzhou also plans to implement the China V fuel standards by 2016.⁸ This makes stronger regional emissions control possible for the Pearl River Delta area.

The following tables summarize fuel quality at the national and sub-national levels in China:

Selected gasoline fuel sulfur levels (ppm) in selected regions of China



Selected diesel fuel sulfur levels (ppm) in selected regions of China



NEXT STEPS – FISCAL POLICY SUPPORT

The State Council announcement calls for the issuing of the China V gasoline and diesel fuel quality standards before the end of 2013. In addition, it is expected that China will soon issue some sort of fiscal policy adjustment (either a pricing or tax structure adjustment) to encourage the supply of higher quality fuel.⁹

If the cost of the transition to higher quality fuels is passed on to consumers, experience in Beijing and Shanghai suggests that the retail price adjustment when upgrading from

7 Announcement available online at: <http://www.bjepb.gov.cn/portal0/tab189/info9754.htm>

8 See: http://news.xinhuanet.com/auto/2013-02/08/c_124338013.htm

9 The use of progressive fiscal policies was also called for in a 2011 State Council opinion, available online at: http://www.gov.cn/zwgk/2011-10/20/content_1974306.htm

Phase III to Phase IV fuel standards (gasoline) could be between 0.2 and 0.3 RMB (\$0.03 to \$0.05) per liter.¹⁰ And, it is projected that the retail price increase when upgrading from Phase IV to V in Beijing will be an additional 0.3 RMB (\$0.05) per liter.¹¹ These costs are slightly higher than those estimated by a 2011 ICCT study, which suggested that the incremental costs of producing 10ppm diesel and gasoline in China would be just 0.11 RMB (\$0.017) and 0.04 RMB (\$0.007) per liter, respectively.¹²

At this stage however, it is not clear that the new standards will result in a price change at the pump at all. China's National Development and Reform Commission sets the retail price of fuel, and the Chinese government is currently exploring other fiscal options for subsidizing the higher quality fuel that may not affect consumers directly.

10 See: http://www.chinadaily.com.cn/china/2013-02/07/content_16209597.htm

11 See: http://news.xinhuanet.com/auto/2013-02/08/c_124338013.htm

12 See: <http://www.theicct.org/technical-and-economic-analysis-transition-ultra-low-sulfur-fuels-brazil-china-india-and-mexico>