

# China

## The quest for clean air



## China: The quest for clean air

*Global air pollution costs add up to more than USD160 billion in lost productivity every year<sup>1</sup>, China is the world's largest emitter of greenhouse gases<sup>2</sup> and the cost to China of carbon emissions is estimated at USD7.6 billion<sup>3</sup>. As China implements countermeasures to ensure clean air, what does that mean for its economy? Will there be a clean-tech silver lining?*

### China's air pollution chokes its economy

More than 80 per cent of Chinese people face regular exposure to dangerous levels of air pollution, which is the cause of death for more than 4,000 people per day on average<sup>4</sup>. The country's economy grew by approximately 10 per cent year-on-year from 1980 to 2010<sup>5</sup>, but the phenomenal pace of growth came at a big cost to the environment.

China's environmental crisis first became a discussion point during the 1970s with widespread concern over the black smoke emanating from its industrial cities<sup>6</sup>. The primary causes of pollution are the burning of coal in factories and power plants as well as vehicle use<sup>7</sup>. Studies have shown that China emits about a third of the planet's greenhouse gas output and is home to 16 of the world's most polluted cities<sup>8</sup>.

### Root cause of pollution

Only eight of 74 cities in China met the prescribed (health) air quality criteria in 2014<sup>9</sup>. The cause of rising pollution levels in China are:

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<sup>1</sup> Air pollution costing global economy €143bn – World Bank, European Federation for Transport and Environment AISBL, Greg Archer, 4 July 2015

<sup>2</sup> China, the world's biggest polluter, commits to cap-and-trade carbon emissions, The Atlantic Monthly Group, Robinson Meyer, 25 September 2015

<sup>3</sup> China wants to spend \$7.6 billion on cleaning up air pollution in order to host the winter Olympics, Business Insider Inc., Ben Blanchard, 21 March 2015

<sup>4</sup> China air pollution far worse than thought: Study, CNBC LLC., Robert Ferris, 18 August 2015

<sup>5</sup> The great China growth debate, Fortune – Time Inc. Network, Chris Mathhews, 5 November 2014

<sup>6</sup> China's Environmental Crisis, Council on Foreign Relations, Beina Xu, 25 April 2015

<sup>7</sup> Air Pollution causes 4,400 deaths in China every single day: Study, TheHuffingtonPost.com, Inc., Dominique Mosbergen, 14 August 2015

<sup>8</sup> China's Environmental Crisis, Council on Foreign Relations, Beina Xu, 25 April 2015

<sup>9</sup> Most China cities fail to meet air quality standards, BBC News Services, 3 February 2015

## **Rapid industrialization and urbanization**

Gas emissions in China are increasing by the day due to fast-paced industrialization and urbanization. Up to 200 hazy days are on record every year in many cities<sup>10</sup>.

*An average of two billion tons of coal is consumed each year to meet China's growing energy needs.*

Furthermore, China burns coal on a massive scale. An average of two billion tons of coal is consumed each year to meet China's growing energy needs – adding to the pollution crisis<sup>11</sup>.

*Seven of China's most polluted cities, all in Hebei province, saw GDP growth drop from 8.2 per cent to 6.5 per cent 2014.*

The country's economy now faces a direct threat from rising pollution. Its Gross Domestic Product (GDP) growth slackened from 7.7 per cent in 2013 to 7.4 per cent in 2014. Furthermore, seven of the most polluted cities – from Hebei province – faced even steeper decline in GDP from 8.2 per cent to 6.5 per cent in the same year<sup>12</sup>. Seven of China's most polluted cities, all in Hebei province, saw GDP growth drop from 8.2 per cent to 6.5 per cent 2014.

## **Surging population**

With a population of 1.36 billion<sup>13</sup>, China's resource and energy needs are ballooning. This has been driven by a burgeoning middle-class, with Chinese consumers purchasing more televisions, washers, refrigerators, heaters and cars. Moreover, a total 20 million cars were sold in 2013 to make China the world's largest car market – adding to toxic emissions in the air<sup>14</sup>.

<sup>10</sup> Rapid urbanization contributes to air pollution, China Internet Information Center, Zhang Fang, 16 March 2013

<sup>11</sup> China's pollution and economy are a double whammy for the world, Los Angeles Times, Kenneth R., Weiss, 22 July 2012

<sup>12</sup> The Cost of Clean Air, The Economist Newspaper Limited, 7 February 2015

<sup>13</sup> China's population tops 1.36 billion, China Daily Information Co (CDIC), 26 February 2015

<sup>14</sup> Can China win the war on air pollution?, East Asian Bureau of Economic Research, Daniel K. Gardner, 9 April 2014

## What measures is China taking?

Studies have shown that pollution costs the Chinese economy approximately USD100 billion a year. This comes about because of factors such as illness, premature deaths and lost productivity<sup>15</sup>.

Under these circumstances, it becomes imperative for China to step up its environment protection plans and kick-start the idea of going green. What does China need to do to fix this nagging problem?

### **Monitoring pollution emissions<sup>16</sup>**

*Metrological towers and satellites with remote sensing to track pollutants are in use in many cities.*

As part of the government's five-year action plan, the country is aggressively monitoring its air pollution levels. Both public and private sector computer models help simulate various effects of emissions from power plants, transportation and industry. Metrological towers and satellites with remote sensing to track pollutants are in use in many cities. These initiatives have prompted authorities to take measures such as reducing traffic and limiting industrial emissions.

### **Fostering renewable energy development<sup>17</sup>**

Using renewable energy is one of the best solutions to control pollution. This is exactly what China is doing – increasing its reliance on renewable energy to meet the needs of its huge population. The nation plans to invest a sum of USD300 billion in renewable energy by the end of 2015 to reduce its carbon footprint.

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<sup>15</sup> Chinese Smog: At What Cost?, The Financialist, Meena Thiruvengadam, 4 March 2013

<sup>16</sup> China seeks to curb worst air pollution in 50 years, Guardian News and Media Limited, Jimmy Fung, Julian Hunt, 18 December 2013

<sup>17</sup> Ibid

## **Regaining tourist inflow**

Although China's economy faces sluggish growth, tourism continues to flourish. Beijing recorded a huge drop in tourist inflow of ten per cent between 2012 and 2013<sup>18</sup>. Now, it is all set to promote tourism by giving longer weekends to employees to boost inbound tourism<sup>19</sup> and further marketing popular tourist destinations such as the Yellow River in Baiyin<sup>20</sup>.

## **Safekeeping relations with other countries**

Smog from China travels across to neighbouring countries such as South Korea, Japan and the Philippines all the way to the United States. Aerial particulate matter has been found in California that can be traced back to China<sup>21</sup>.

To curb this issue, China is reaching out to collaborate with other nations to take the necessary initiatives. For instance, China and the U.S. have announced a commitment to bring down emissions from greenhouse gasses in Beijing<sup>22</sup>. Furthermore, China will spend CNY760 billion to cut emissions in the capital and improve air quality by 2017<sup>23</sup>.

## **Lessons from China's pollution crisis**

In July 2013, the government pledged to spend another USD275 billion by 2018 to reduce pollution levels<sup>24</sup>. With more amendments to the country's environmental laws being passed in 2014, authorities will have the power to detain company heads for 15 days if they refuse to comply with environmental impact assessments or ignore warnings to stop polluting<sup>25</sup>.

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<sup>18</sup> China's air pollution is driving away international tourists, Quartz, Zainab Mudallal, 27 January 2015

<sup>19</sup> China promotes longer weekends to boost tourism, Want China Times, 13 August 2015

<sup>20</sup> NW China promotes Yellow River tourism, China Daily, Li Xiaoxu, 10 August 2015

<sup>21</sup> Air pollution in China: What's at Stake, Cheung Kong Graduate School of Business, Randy Wang, 4 August 2014

<sup>22</sup> How China can tackle air pollution, CNBC LLC., Terry Tamminen, 18 November 2014

<sup>23</sup> Beijing to spend £76bn to improve city's air quality, Guardian News and Media Limited, Jennifer Duggan, 23 January 2014

<sup>24</sup> Inside China's desperate effort to control pollution – Before it's too late, Center For American Progress Action Fund, Ari Phillips, 26 November 2013

<sup>25</sup> China strengthens environmental laws, Guardian News and Media Limited, Jonathon Kaiman, 25 April 2014

Delhi – the capital city of India – is also troubled by pollution with 80,000 trucks plying the streets of Delhi every night<sup>26</sup>. This is where Delhi can take a cue from China for pollution preventive measures.

Like Beijing, Delhi also repositioned its polluting industries outside the perimeter of the capital as one of its first responses to its pollution crisis.

Beijing significantly reduced coal consumption by urging residents to use electric energy for domestic needs. Delhi may well replicate this model through outreach efforts to households<sup>27</sup>.

Research suggests that by doubling its current natural gas consumption, China stands a chance to save USD820 billion<sup>28</sup>. This could be another learning point for Delhi.

### **Pollution control is big business in China<sup>29</sup>**

Rising pollution concerns in China have given marketers a chance to tap into a new market opportunity – pollution control products. Various Do-It-Yourself (DIY) instruments are manufactured to reduce the harmful effects of air pollution on individual health.

For instance, HEPA air filters and air purifier devices can be purchased at a cost of USD30. These products are taking the Chinese market by storm. 3 million air purifiers were sold in 2013 alone.

Entrepreneurs are keen on providing many other affordable products to satisfy the demand for clean air. O2ganic provides plant packages that clean air naturally. Many such products are also available online. Typically,

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<sup>26</sup> Learning from Beijing: Tackling Delhi's air pollution challenge, Institute for Defence Studies and Analyses, Avinash Godbole, 27 April 2015

<sup>27</sup> Ibid

<sup>28</sup> Ibid

<sup>29</sup> China's Newest Market Opportunity: Pollution control, The Atlantic Monthly Group, Gabrielle Jaffe, 5 September 2013

vendors highlight specifications on how many milligrams of indoor pollutants their plants can get rid of.

### **What lies ahead?**

China still struggles to control its pollution problem amidst rapid urbanization and industrialization. The Governments of both China and the U.S. propose to set in motion a national emission trading system in 2017. This system would include green development in industrial sectors such as power generation, steel, electricity along with others.

China also plans to fund USD3.1 billion in aid to developing nations to help them battle global warming and develop low-carbon emitting industries<sup>30</sup>.

China's aggressive efforts, enhanced enforcement powers and huge spending in environmental protection measures will surely yield some results. Once China succeeds in curbing air pollution, this will have a huge demonstration effect on emerging economies world-wide which face the same kinds of problems.

The flourishing air pollution mitigation industry in China also means that Chinese companies are developing advantages in marketing clean air technologies and products. These advantages, coupled with overseas aid from the Chinese government that may partly flow to these vendors, are likely to be immensely beneficial to China's economy, given that air pollution remains a persistent problem in many parts of the world.

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<sup>30</sup> China to create national carbon-trading market, China Daily, Lan Lan, 26 September 2015