

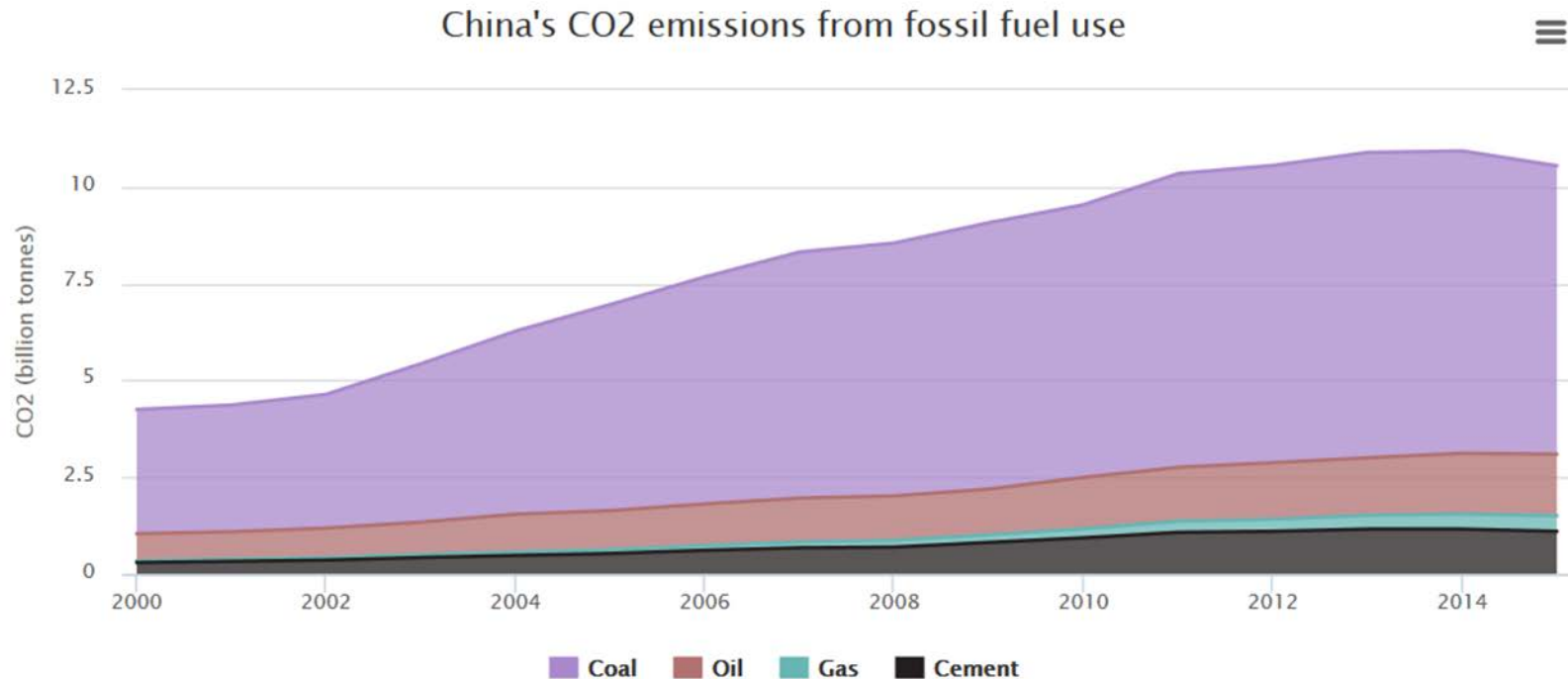
# Chinas Energy Challenge; curb the greenhouse gas emissions while safeguarding energy supply



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# The carbon challenge



Source: Lauri Myllyvirta, "China's CO2 emissions likely fell 3 % in 2015" 2016.01.19, Greenpeace Energydesk,



# Yongdingmen Inner St AQI

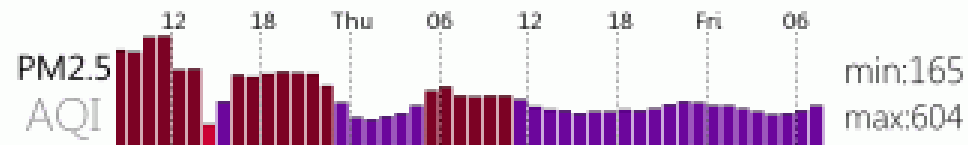
on Friday, Jan 6th 2017, 08:00 am



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# 267

## Very Unhealthy



# Nuclear energy increase

- 35 nuclear power reactors in operation (26 GW)
- 20 reactors under construction
- Goal to reach 58 GW by the end of 2020 and by 2030 reach up to 150 GW!
- Inland reactors?
- 40 different sites identified for new reactors

# China's Electricity Generation Capacity and targets for 2020 (GW)

|                | 2014   | 2015   | GW added | Targets for 2020 |
|----------------|--------|--------|----------|------------------|
| Thermal        | 918,6  | 990,2  | 71,6     | 1210 (gas 110)   |
| Hydro          | 304,5  | 319,4  | 14,9     | 340              |
| Wind           | 96,9   | 129,3  | 32,5     | 210              |
| Solar          | 24,9   | 43,2   | 18,3     | 110              |
| Nuclear        | 20,1   | 26,1   | 6,0      | 58               |
| Biofuel        | ?      | ?      |          | To reach 15      |
| Total capacity | 1365,0 | 1508,3 | 143,3    | 1943             |

Source: China's National Bureau of Statistics and Chinese Energy 13th Five year plan

# Chinas electricity generation (TWh)

|                        | 2014   | 2015   | The share in 2014 | The share in 2015 |
|------------------------|--------|--------|-------------------|-------------------|
| Thermal                | 4359,7 | 4242,0 | 75,3 %            | 73,0 %            |
| Hydro                  | 1072,8 | 1126,4 | 18,5 %            | 19,4 %            |
| Renewable              | 228,2  | 271,4  | 3,9 %             | 4,7 %             |
| Nuclear                | 132,5  | 170,8  | 2,3 %             | 2,9 %             |
| Total generation (TWh) | 5793,2 | 5810,6 | 100%              | 100 %             |

Source: China's National Bureau of Statistics

# What are the driving forces for the increase in nuclear and other fuels?

- Energy security
- Increased standard of living
- Environmental
- China's Emission's Trading System
- Export potential and national pride

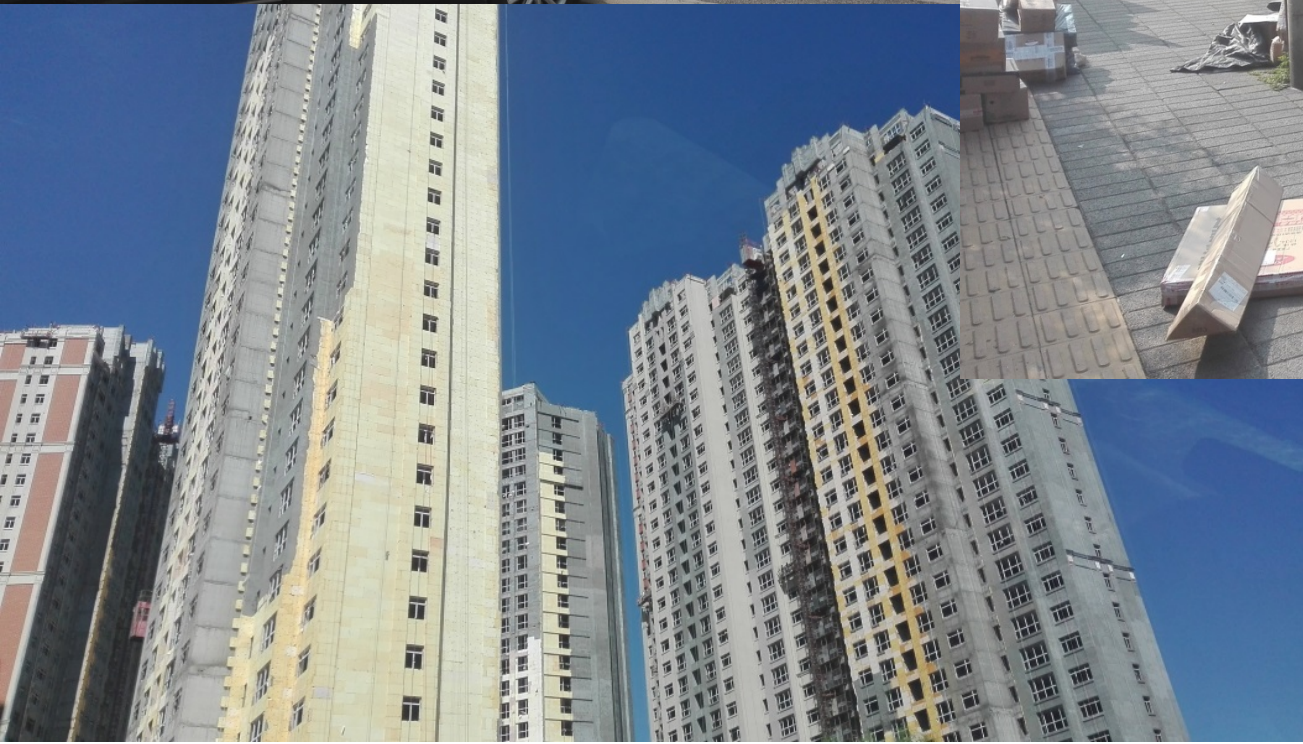
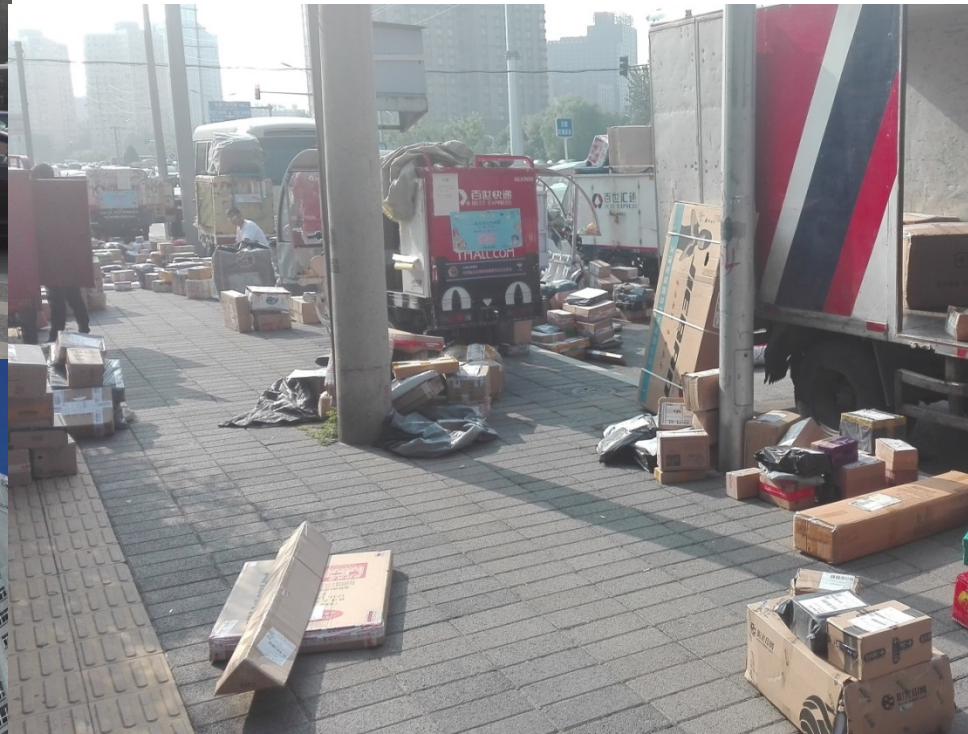


# Security





# Increased standard of living

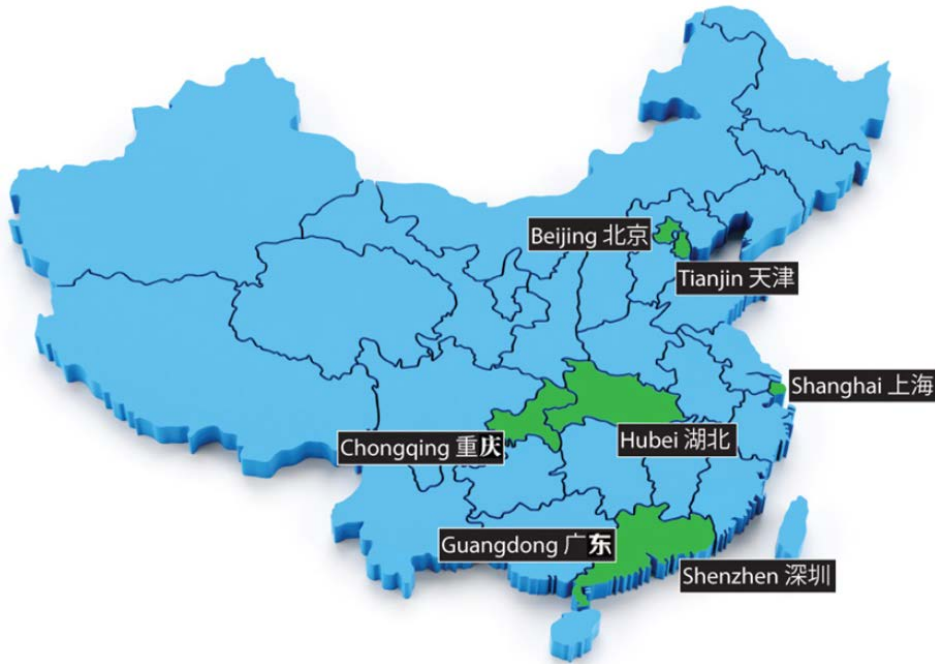




# Environment



# China's Emissions Trading System



| SECTORS           | SUB-SECTORS  |
|-------------------|--|
| PETROCHEMICAL     | Crude processing, Ethylene production  |
| CHEMICAL          | Chemical raw material / Fertilizer / Pesticide production / Synthetic material |
| BUILDING MATERIAL | Cement clinker production, Plate glass production                              |
| IRON AND STEEL    | Crude steel production / Steel rolling   |
| NONFERROUS METAL  | Electrolytic Aluminum, Copper smelting   |
| PAPER MAKING      | Pulp production, Paper making  |
| POWER             | Generation, Cogeneration, Grid   |
| AVIATION          | Passenger air transport, Air cargo transport, Airports                         |

Source: NDRC



# Export and national pride

上海日报

Shanghai Daily

.com



Tuesday 1 November 2016  
Overcast 12/16°C



Shanghai Call Center:  
(86-21) 962288

## • 15 killed in mine blast



Rescuers at work at a coal mine in southwest China's Chongqing City yesterday after an underground gas explosion. Authorities have confirmed that 15 miners are dead and 18 are missing. Only two miners escaped the blast at the privately owned Jinshangou mine in Yongchuan District. The city has ordered a safety overhaul at all local collieries.  
— Xinhua

## XI SAYS UK NUCLEAR SUCCESS IS CRUCIAL

Both China and France will gain if Britain's Hinkley Point is 'properly implemented'

PRESIDENT Xi Jinping said yesterday China and France should properly implement the Hinkley Point C nuclear project in Britain, the first new UK nuclear power plant for two decades.

Xi made the remarks when meeting with visiting French Foreign Minister Jean-Marc Ayrault.

Chinese and French companies signed the agreement to build an 18 billion pound (US\$21.9 billion) nuclear power plant at Hinkley Point C during Xi's state visit to Britain in October last year. The CGN-led Chinese consortium and French company EDF respectively take 33.5 percent and 66.5 percent stakes.

The Hinkley Point project finally got the go-ahead after Britain's new prime minister Theresa May delayed the deal because of national security concerns.

As part of the agreement, EDF will help CGN to gain a license to build its own nuclear reactor, Hualong, in Britain, whose nuclear regulatory regime is seen as one of the most stringent in the world.

China is keen to establish itself as an exporter of nuclear expertise so successfully building a plant in the UK would open the door to other markets.

"Both sides should properly implement the Hinkley Point C nuclear project and other major projects, and expand coopera-

tion," Xi said.

He urged more people-to-people exchanges as well as cooperation at the local level and in international affairs.

China and France should work to promote the implementation of the Paris Agreement on climate change and the outcome of the G20 Hangzhou summit last September, Xi said. He added that China had always viewed its relations with the European Union from a strategic perspective and firmly supported Europe's integration process.

China hoped France will continue to back and facilitate the synergy of Beijing's Belt and Road Initiative and Europe's development strategy, the president said.

Ayrault said France supported the Belt and Road Initiative and was willing to strengthen trade and investment ties with China. He said France looked to properly implement the Hinkley Point C nuclear project, as well as explore partnership with China in medicine, health, sustainable development, urban construction, education and film.

The French minister expressed a desire to enhance cooperation with China in the United Nations Security Council, believing that the EU should continue to be a reliable partner for China.

France and China would set up a fund for joint investment in overseas projects, he said yesterday. "Hinkley Point is a very

good example of what we're going to do together, to win contracts in third markets and in all sectors."

The project to build the UK nuclear power plant station was "a model that we see everywhere, including in Africa and Asia," he said.

The new joint fund would be set up, he said, without giving further details. Chinese Foreign Minister Wang Yi said China welcomed foreign companies' investment in China and defended his country's investment environment. "If you look at the speed and the extent to which China has opened up compared to other developing countries, it's one of the leaders. It may even be faster than some developed countries."

"Of course, we are aware that China's investment environment needs to be improved," Wang added. What I want to emphasize is that China will become more and more open, and our investment environment will become better and better."

China and France also signed an insurance agreement yesterday that will assign company employees assigned in each other's countries from their own social insurance contributions.

SEE 'LAW TO BOOST NUCLEAR SAFETY' ON TOP NEWS/3

# What are the challenges for nuclear?

- Overcapacity
- Cost and public opinion
- Staff, quality and safety
- The regulatory body
- Crisis management in the case of an incident
- Grid capacity





Thank you for your attention!

