

Radiation protection challenges and opportunities for nuclear power in China

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Economy growth needs nuclear power

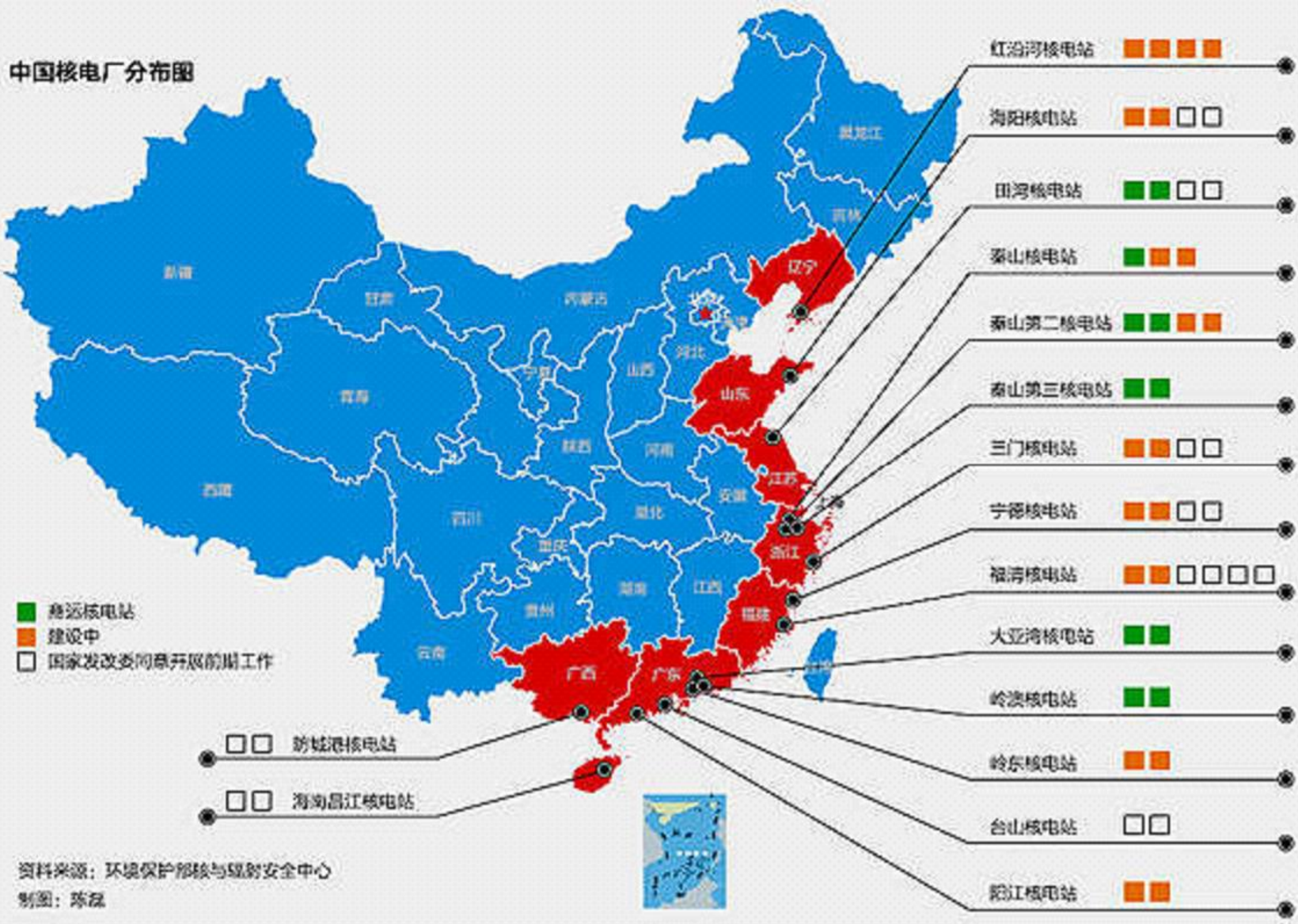
Actively development of nuclear power for electricity is China's energy strategic policy.

- Nearly 10% of world GDP, more than 20% energy consumption, 25% of greenhouse gases emission.
- PWR---fast reactor---fusion
- Nuclear energy is not only nuclear power stations for China, is also a long industrial chain.
- Nuclear fuel cycles and other related industries

After Fukushima accident

- All of nuclear power stations and fuel cycle facilities are experienced a thorough safety assessment and inspection.
- Approval of new station construction is paused up to now.
- Reinforced government structure
 1. National Development and Reform Commission sets up a new department for nuclear energy.
 2. State Administration for Science, Technology and Industry for National Defense (SASTIND) sets a new department for nuclear safety and emergency.
 3. National Nuclear Safety Administration is enlarged from one dept. to 3 depts..

中国核电厂分布图



资料来源：环境保护部核与辐射安全中心
制图：陈磊

中国大陆至2012年5月，有15台机组运行，发电量约占2%。在建26台机组。

Opportunities

- National nuclear developing program and nuclear safety program are going to be issued later this year.
- 15 units in operation in mainland, ~ 12 GWe , 2% of electricity
- 26 under construction
- By 2020, capacity of nuclear power reaching ~ 70 GWe, and by 2030, maybe over 150GWe.
- 70 more new sites are listed for assessment. Sites for coastal and in-land are halves respectively.

Challenges

- The in-land sites facing more pressure.
- More difficulties to communicate with the public and stakeholder.
- Some areas hesitate to construct the new stations.
- Too many kinds of reactors, AP-1000, EPR, AES-91, EDF, home-made type(3), CANDU, HTGR, and FBR

To be done

- Strengthening emergence preparedness and response
- Old mines and facilities decommissioning and tailing management
- Management of ever-growing medical and industrial uses of radioisotopes

**THANK YOU
FOR YOUR ATTENTION**

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