China
Market Status & Outlook

To
US NIC Global Markets Summit

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China Electricity

- Installed capacity 1508 GW – 2015
- 73% Coal, 20% Hydro & Renewables, 3% Oil & Gas, 2% Nuclear
- Largest in the world. (70% built within last decade)
- Expected 1600 GW by 2020
- 2016 – Wind 22GW, Hydro 16 GW, Nuclear 6 GW, Solar 18 GW
- Per Capital-3500 kwh (5500 kwh by 2030 & 8500 kwh by 2050)
CO₂ Emission

• Overtook US in 2010
• 9.3 billion tonnes by 2030 (52 % world projected total)
• 2014 – Effort to reduce emissions, 40-45% from 2005 level by 2020
• COP21 – 60-65% by 2030
• Increase efficiency & renewables
• Vigorous Development of nuclear 120-150 GWe (8-10% of generation)
Reactors

- Operation: 23 in 2014; 33 in 2015 (3 more)
- Under Construction: 21 in 2015
- Construction Approval: 6/yr to 10/yr
- 85 GW by 2020, 100 GW by 2025 & 150 by 2030
- Self-sufficient in design & construction
- Go Global – Hualong One, CAP1000 & HTR
Locations of nuclear power plants

Source: Ministry of Environmental Protection's Nuclear and Radiation Safety Center
DOC-ITA Market Category

- New Emerging Market
- Existing Market & Expanding Fleet
- Mature & Maintaining Fleet
- Mature Market & Decommissioning

China falls between 2&3
Major Players

- China National Nuclear Corp (CNNC)
- China General Nuclear Power Corp (CGN)
- State Power Investment Corp (SPIC)
  Focus on AP1000 – CAP1400

Technologies
- Hualong One
- AP1000
- CAP1400
- HTR
- AC100S & ACPR50S
13th 5 year Plan (2016-2010)

Continue to increase energy efficiency and to increase use of non-fossil energy (30 GW nuclear)

* Complete construction of AP1000s
  - Construction of Hualong One (Fuling #5 & #6)
  - Construction of demo CAP1400
  - Construction of phase III Tianwan Project #5 & #6 - ACPR1000
  - Inland plants to be carried out
  - Floating nuclear plants - SMR
Global Markets & Export

- NDRC - Determined to export nuclear Technology, global market focus on CAP1400, Hualong One & 600 MW HTR. AP1000?
- Heavy manufacturing - annual 8000MW
- Asia, Argentina, Brazil, Romania, Turkey, Egypt, South Africa & UK
- CPI & SNPTC merger
Conclusions

• China will continue nuclear vigorously & explore exporting
• Imported technologies & standards - help safety regulations & domestic technologies
• Localization successful - major equipment - ASME ”N” stamps. QA & NEQ
• Partnership with SOE for access to new market
• Plant life extension
• Back end fuel cycle
Thank you!

Q & A