Experiences from nuclear projects around the world

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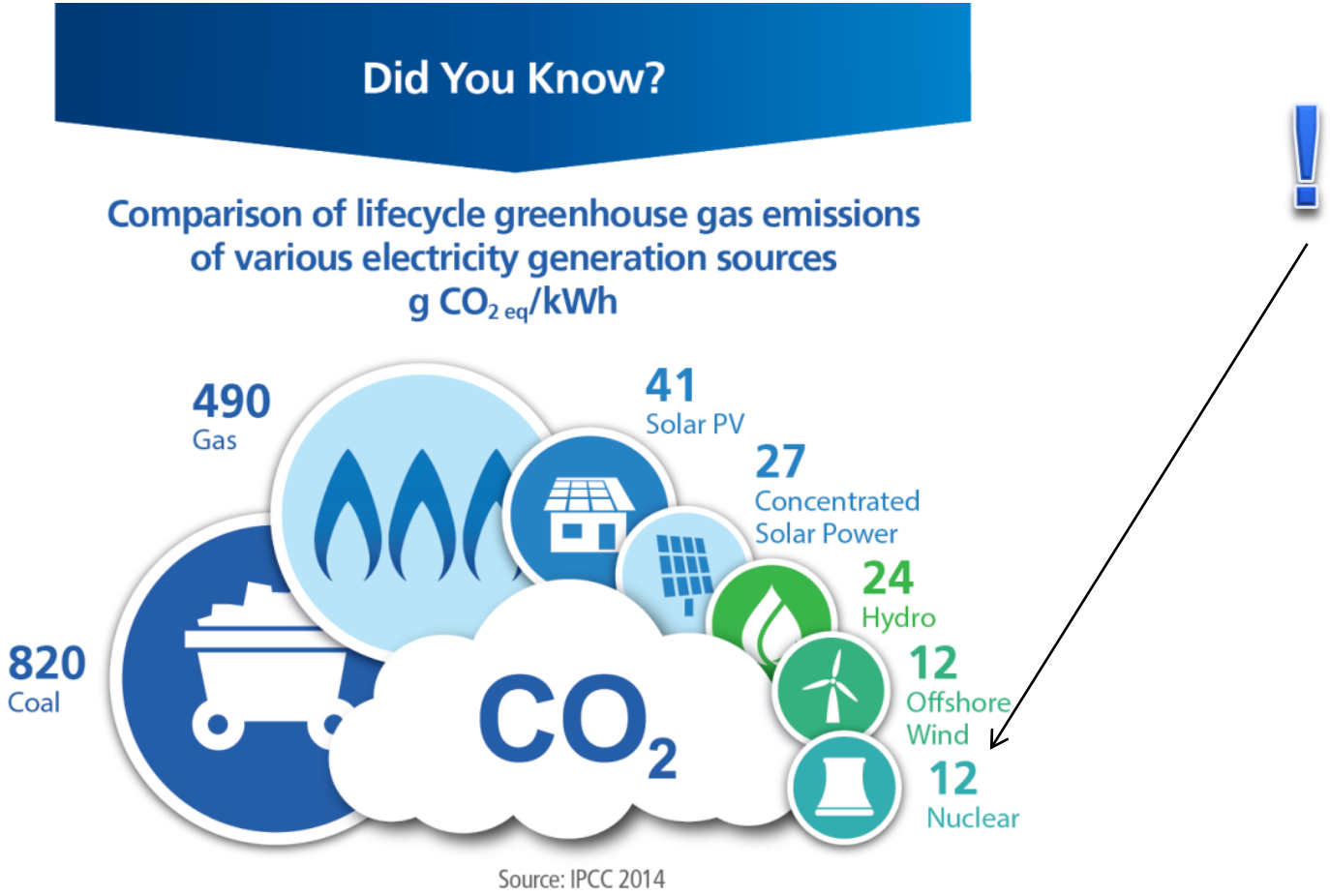
CEO Westinghouse Sweden

Nuclear energy in a global perspective
November 24, 2015

Nuclear Energy's Role in Mitigating Climate Change



Nuclear Energy in Europe

131 nuclear power plants in the EU — in — **14** EU Member States

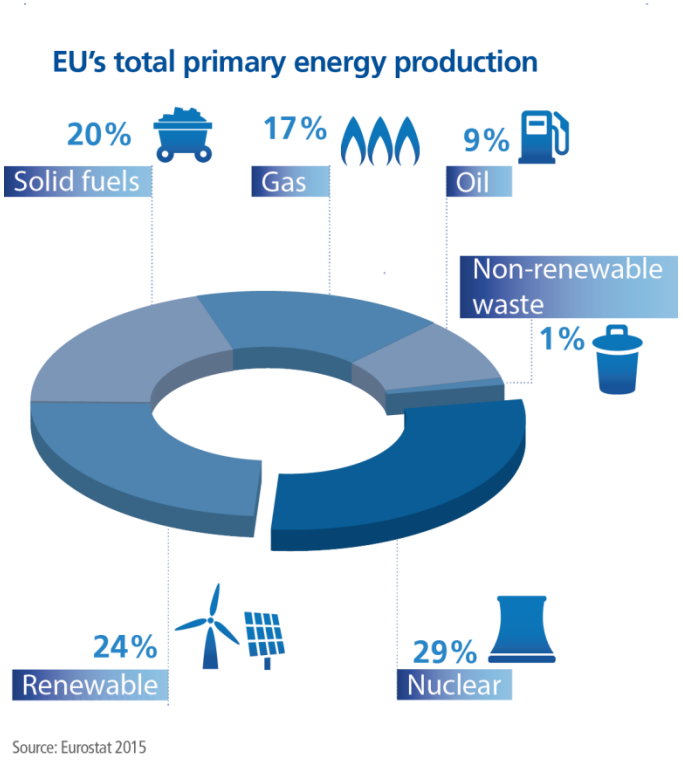
600 million tons of $CO_{2\,eq}$ per year avoided in the EU due to nuclear generation

55% of the EU's low-carbon electricity

24/7 365

Essentially available **24/7, 365 days/year**

800,000 jobs supported by the nuclear industry in Europe



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Customer Needs and Expectations

- **Clean, secure** and **diverse** energy supply
- Efficient and reliable generation to power future economic growth
- Highest levels of safety
- Strong reference plant design established
- Licensed in country of origin
- Multiple plants built and operating
- Commitment to sustainable localization
- Vendor ability to add value throughout plant lifetime

Westinghouse AP1000™ plant is designed to meet customer needs by generating safe, clean, reliable electricity for many decades

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Westinghouse Global Capabilities and Experience

Operating Plants Business

Delivers operating plant products and services, including global field services, instrumentation and control, welding and machining, and installation-related functions

New Plants & Major Projects

Delivers both new-plant projects and major projects for new and operating plants on a global basis

Decommissioning, Decontamination & Remediation

Deploys global technologies and forms local partnerships to carry out long-term projects

Nuclear Fuel & Manufacturing

Designs and delivers fuel for PWR, BWR, VVER and AGR reactors, and oversees manufacturing operations worldwide

Engineering Center of Excellence

Supports all product lines by driving common engineering capabilities and accelerating innovation

Westinghouse technology is the basis for nearly 50 percent of nuclear power plants operating worldwide!

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Westinghouse in Europe

1962
first Pressurized Water Reactor (PWR) in Europe was built by Westinghouse

60%
of the nuclear power plants in the EU are based on Westinghouse technology

25
commercial reactors designed and supplied by Westinghouse across Europe

4,000
highly-skilled and trained people across Europe, plus an additional 1,500 contractors

- **54 out of the 58 French reactors** are based on Westinghouse licensed technology.
- **65 nuclear reactors in Europe** are currently fuelled by Westinghouse (PWR – including VVER, BWR, AGR and Magnox).
- We have operations in **10 European countries.**
- **Our AP1000® reactor is the safest, most efficient and reliable** design currently available in the worldwide marketplace.

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AP1000 Plant Value Proposition

Proven Technology and Innovative Passive Safety Systems

Passive safety replaces mechanical and electrical systems – harnesses natural forces like gravity, convection and condensation to achieve safe shutdown

Delivery Certainty

Standard design, experience from current projects and modular construction enable "nth of a kind" delivery performance

Regulatory Certainty

Reviewed by multiple countries; first Generation III+ reactor to receive design certification from the U.S. NRC

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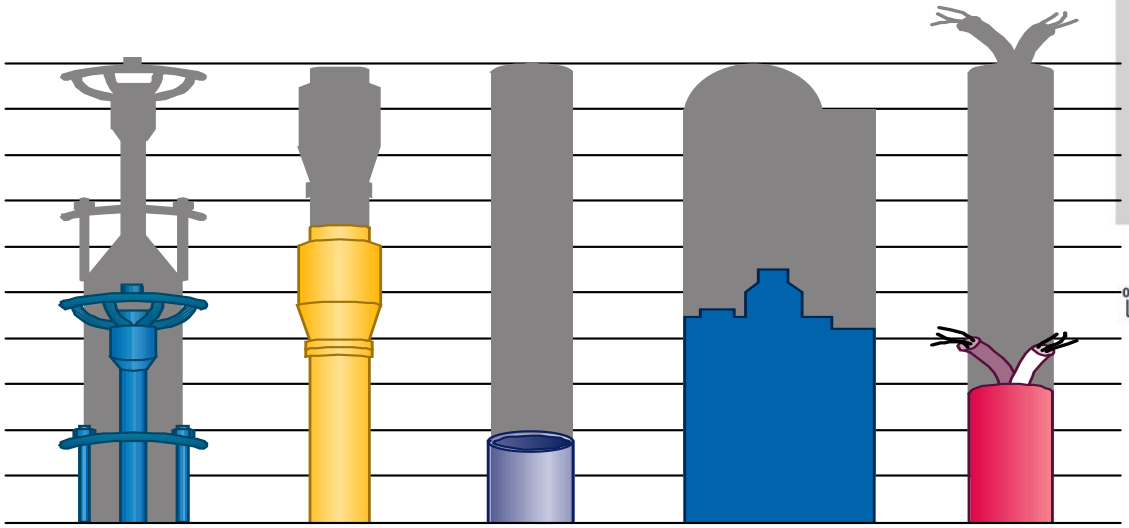
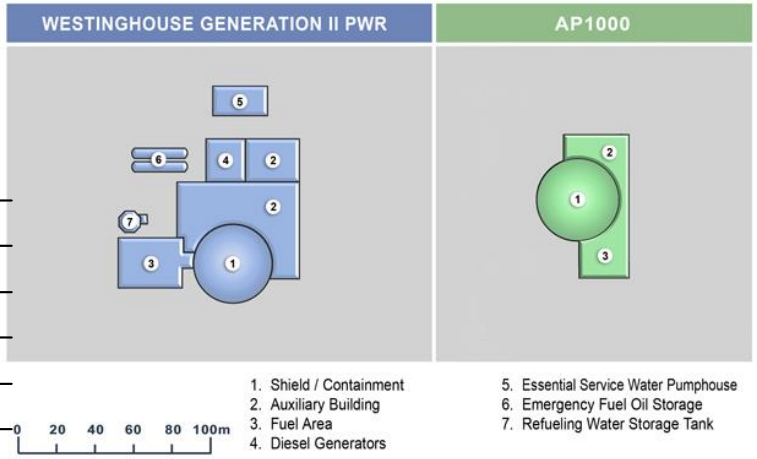
Simpler Design Requires Less Equipment & Less Concrete, and Fewer Human Resources





Comparison of Buildings

50% Fewer Valves

35% Fewer Pumps

80% Less Pipe

45% Less Seismic Building Volume

85% Less Cable

- ***No safety related pumps***
- ***No safety related AC power***
- ***Eliminates safety related support systems: HVAC, cooling, pneumatics.***

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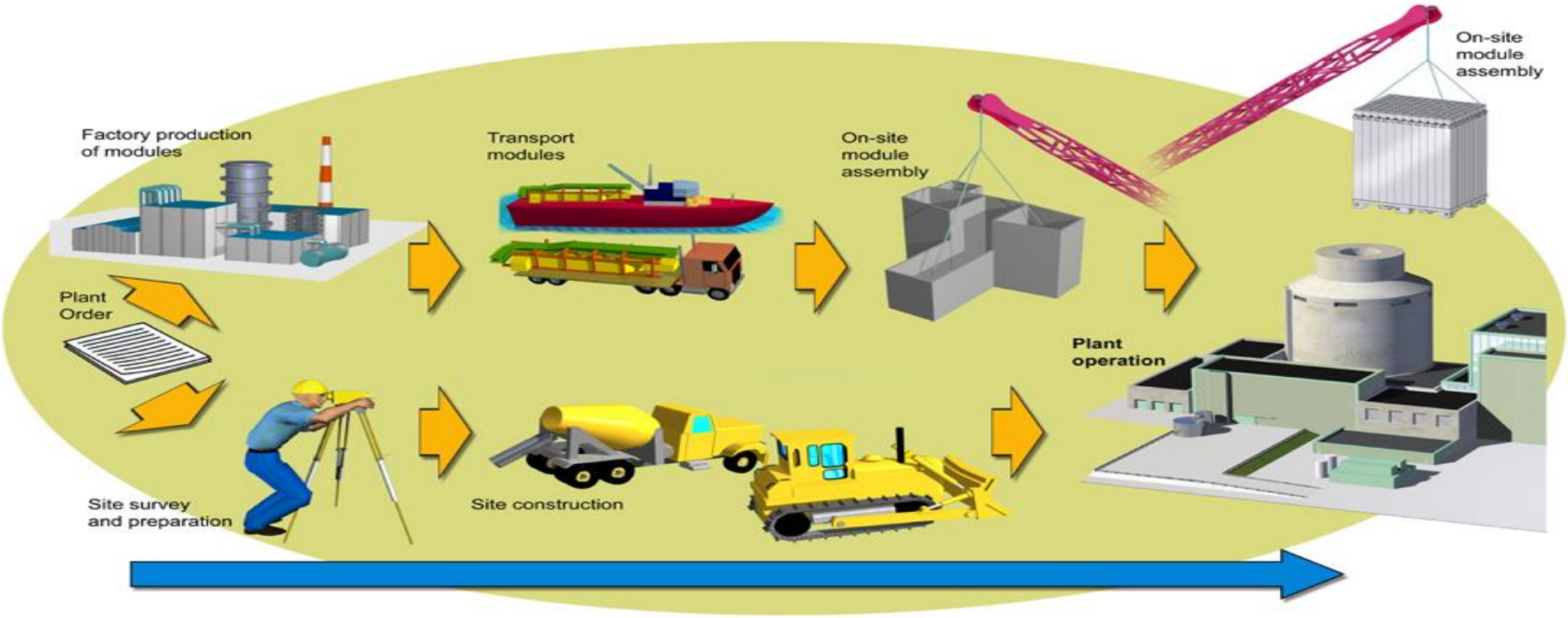
The **AP1000** PWR: Designed for Certainty

Modular Construction Leads to a Shorter Construction Schedule

Modular construction means more work done in parallel

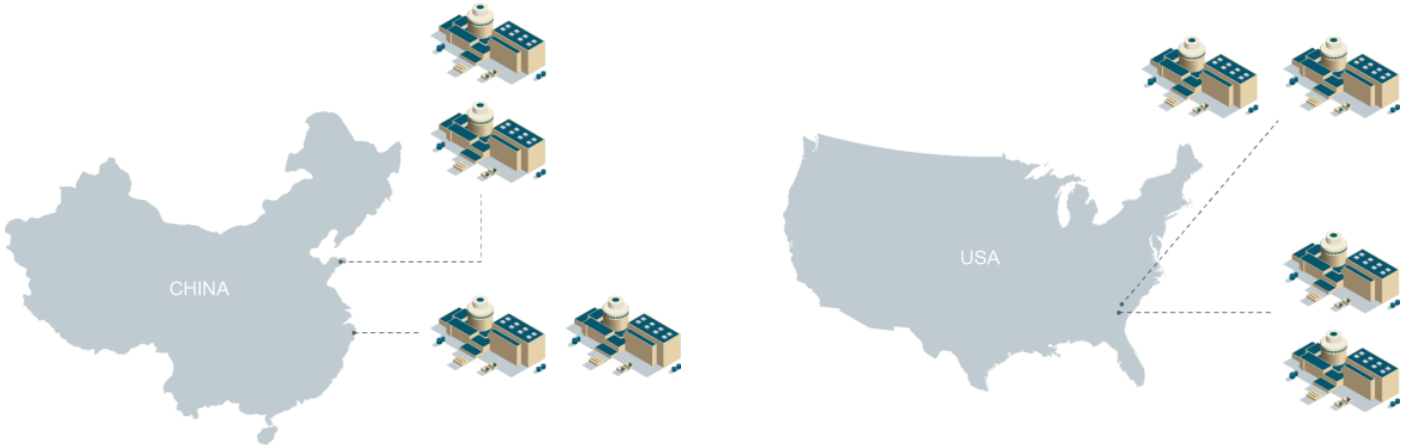


Shorter schedule – Increased safety – Improved quality

Current Westinghouse New Build Opportunities

An Emerging Global Fleet

- Eight **AP1000** units under construction in China and U.S.
- Shareholder agreements signed for additional units



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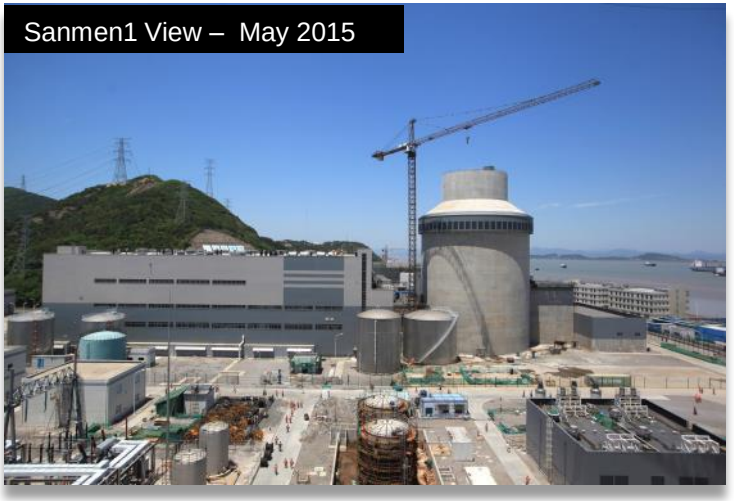
China **AP1000** Plant Progress

Sanmen Site – January 2015

Sanmen1 View – May 2015



Haiyang 1 – December 2014

Haiyang 2 Reactor Vessel Lift – September 2014

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U.S. **AP1000** Plant Progress

Vogtle 3 Nuclear Island – February 2015

Vogtle 3 CA01 Module Assembly – February 2015

V.C. Summer 2 SG Delivery – January 2015

V.C. Summer Site – December 2014

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Sanmen Site Progress: Time Lapse View *2009 to 2015*

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Photos © Sanmen Nuclear Power Company Ltd.

Summary

- *Long-term safe, clean, power generation is dependent upon:*
  - *Globally reducing dependence on fossil fuels*
  - *Introducing clean, renewable energy forms*
  - *Providing safe, clean, reliable baseload generation of nuclear power*
- *AP1000 plant technology and delivery experience are ready to meet the need for safe, clean, reliable energy*
- *Eight AP1000 units under construction in China and U.S.*
- *Shareholder agreements signed for additional units*

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AP1000 plant technology and delivery experience are ready to meet the need for safe, clean, reliable energy!

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Thank you!