

Power Sector Roundtable 3rd Workshop

Role of Nuclear Power in China's Power Sector Transition

And

2015 World Nuclear Industry Status Report (Chinese Version) Release

December, 2015

NRDC, in collaboration with the International Forum of Clean Energy (Macao), convened a roundtable on “The Role of Nuclear Power in China’s Power Sector Transition” on December 21, 2015. Independent energy policy expert, Mycle Schneider, the convening lead author of the 2015 World Nuclear Industry Status Report (WNISR), kicked off the roundtable with the release of the first Chinese language edition of this report. China’s top nuclear energy experts from the China Nuclear Energy Association, Development Research Center of the State Council, and Peking University, along with Mr. Schneider, then engaged in a robust discussion on the WNISR’s findings and implications for China, including both the financial risks to nuclear energy developers facing increasing competition from renewable energy and potential safety risks of new technologies. While the experts’ views differ, all emphasized the need for vigilance when it comes to nuclear safety. The Power Sector Roundtable raised great interest from the attendees and received extensive media coverage.

Background

China is building the most nuclear power plants of any country in the world, and has plans to complete up to 58 GW of nuclear capacity by 2020 as part of expanding its non-fossil energy sources. However, the Fukushima nuclear accident highlights the importance of ensuring the safe operation of nuclear power plants and views differ on the extent to which nuclear power can and should play a role in China’s future power sector.

Takeaways and Outlook

Mycle Schneider, convening lead and publisher, launched the *World Nuclear Industry Status Report (WNISR) 2015*. The WNISR2015 provides a comprehensive overview of nuclear power plant data, including information on operation, production and construction. The report assesses the status of new build programs in current nuclear countries as well as in potential newcomer countries. This year’s edition of the report also provides an analysis of nuclear plant construction starts over time, describes delays in Generation III+ reactor projects (including the EPR, AP1000, AES 2006), looks at the history and development status of advanced reactors, and provides an update of ongoing issues from the 2011 Fukushima nuclear accident. The final part of the meeting was a panel attended by Mycle Schneider, Ziyong Lan, senior engineer from the China Nuclear Energy Association (CNEA), Yinan Wang, researcher from Development Research

Center of the State Council, and Yi'an Lei, associate professor from Peking University. Panelists mainly discussed three topics: 1) should China speed up the development of inland power plants, 2) what key technological breakthroughs will bring more opportunities to nuclear power, and 3) how to evaluate the relationship between nuclear power and renewables. Below is a brief summary of the experts' comments on the three topics above:

- **Should China speed up the development of inland power plants**

Yi'an Lei: China, especially its inland area, has a high population intensity, which makes it almost impossible for the public to evacuate if a serious problem occurs nuclear power plant.

Moreover, since lifespan of current nuclear power plants are extended, this threat will remain for longer times.

Ziyong Lan: strict safety regulations are applied to both inland and coastal nuclear power plants. Strengthening management of nuclear power plants and improving its construction quality are two key components to the safe operation of nuclear power plants.

Mytle Schneider: it's not easy to simply differ inland nuclear power plants from coastal nuclear power plants, but they do have certain differences, especially in their cooling systems. Also, we can't ignore the fact that climate change is making threats to both coastal and inland nuclear power plants, yet specific effects are different.

Yinan Wang: I oppose development of inland nuclear power plants in China as we can't ensure absolute safety. Nuclear power can only play a supplemental role in China's energy system.

- **What key technological breakthroughs will bring more opportunities to nuclear power**

Yi'an Lei: from my perspective, the biggest problem of nuclear power plant is its radioactive waste, if a technology could solve this problem, it will greatly enhance the utilization of nuclear power.

Mytle Schneider: from my perspective, China's nuclear power target is too ambitious to achieve. There are delays in Generation III+ reactor projects, as such, more research on this will be demanded.

- **How to evaluate the relationship between nuclear power and renewables**

Mytle Schneider: from full life cycle assessment, nuclear power and renewables are about the same in terms of carbon emissions, and in a foreseeable future, both nuclear power and renewables will keep growing.