

Nuclear energy is China's weapon of choice to fight pollution

☒ Westinghouse Electric is poised to win more contracts in China for the construction of eight new third-generation AP1000 nuclear reactors. This represents the first major nuclear energy program since the 2011 Fukushima disaster in Japan. China needs to reduce its dependence on coal in order to reduce air pollution, which has reached intolerable levels. If left unaddressed, the government risks considerable social and political unrest given the growing concerns for cleaner air coming from China's growing middle class. The eight reactors are estimated to cost USD\$ 24 billion. It is noteworthy, in the context of China's sovereignty dispute with Japan over the Senkaku/Diaoyu islands that the US based Westinghouse is actually controlled by Japan's Toshiba. The eight new reactors will be built on four sites including Sanmen in coastal Zhejiang province, and Haiyang in the northern province of Shandong, where four AP1000 reactors are already under construction. CNNC and the China General Nuclear Power Group are also negotiating the construction of four additional reactors to be built in the Liaoning and Guangdong provinces. These projects have already received the green light from the government.

China already has 20 nuclear reactors in operation and 28 under construction. The China National Nuclear Corporation (CNNC) is expected to start building 20 additional reactors over the next six years in order to achieve 88 gigawatts (GW) of power by the end of the decade; now, China generates 15.69 GW according to the latest official figures – the longer term goal is 200 GW. China's nuclear program attracts many foreign OEMs and suppliers such as Westinghouse and France's Alstom SA and Areva SA. Alstom said it expects to provide the lion's

share of the steam turbines that will be used in conjunction with China's new reactors. China is the country with the highest growth in the field of atomic energy. Despite Fukushima, the nuclear market in China has enormous growth potential because China's nuclear industry is still at an embryonic stage. Electricity production from nuclear power plants accounts for less than 2% of demand; in a global context, it is still far behind other countries as far as installed capacity is concerned.

The Chinese government plans to sustain this sector's growth with a high level of security that fully meets the standards of the International Atomic Energy Association. Since the effort to curb pollution has become a key component of efforts to improve the economy – and to abandon coal – nuclear energy has become an essential element in the country's energy mix. Last March, Chinese Premier Li Keqiang pledged to make greater efforts to change the way energy is produced and consumed" by the development of nuclear energy and renewable deployment of smart grid electrical transmission and promoting low carbon green technologies.

China's growing appetite for nuclear energy will also fuel the market for uranium and Canada may have a big role to play in addressing that demand. Canada is one of China's main sources for natural uranium and Chinese officials, addressing the 13th International Nuclear Energy Industry exhibition in Beijing, stated they intend to promote bilateral cooperation in nuclear energy. This suggests China will be increasing its uranium purchases from Canadian miners. One of the reasons for this privileged relationship is that Canada's Candu Energy Inc. nuclear is cooperating with the China Nuclear Energy Industry Corporation to develop a new Candu reactor tip which can run on recycled uranium or thorium as an alternative fuel. Canada is the world's second largest producer of natural uranium.

China has clearly chosen the nuclear route to help reduce emissions. In the West, this solution has not been getting the

currency it deserves even if it is one of the most practical solutions to address climate change. The Intergovernmental Panel on Climate Change (IPCC) itself has all but confirmed that nuclear energy is among the most efficient – by that read free of carbon emissions – energy sources. Nuclear power and wind turbines, in fact, generate 12 grams of CO₂/ kWh, which means that nuclear energy is even ‘cleaner’ than hydro and solar, which produce, 24 and 28 grams of CO₂ /kWh respectively. Fossil fuels, using CO₂ sequestration (something of a technology pipe dream) are always believed to achieve between 160 and 220 grams/KWh. The bigger surprise is that the IPCC report holds nuclear energy as the safest! Perhaps, the energy strangle that Russia holds over Europe with its control of vast gas resources shall force EU governments to reconsider their current nuclear energy reduction schemes (i.e. Germany) in order to score major geopolitical points with Moscow.