The British are coming – new nuclear committed in the UK

After many years of effort, this month it finally happened. The UK government and EDF Energy, the French-owned UK integrated energy company, agreed to a strike price making the first new nuclear build in the UK in a generation, at Hinkley Point C, a reality.

It was a long hard road. New nuclear first came up about a decade ago when it became clear that Britain's nuclear fleet was aging and would soon need to be retired. At that time British Energy was advocating to replace the existing fleet with a new fleet over the coming two decades. Unfortunately the timing was not right. Late in 2002 British Energy got into severe financial trouble requiring a significant restructuring to keep it solvent and early in 2003 the British government declared war in Iraq. Both of these events made it difficult for the then Labour government to take on the issue of new build nuclear. So in 2003 the Energy White Paper issued by government focused on reducing carbon emissions primarily with renewables and nuclear was but a footnote as government declared its intention to "keep the nuclear option open".

What a difference a decade makes. Over the ensuing years as it became clear that renewables on their own would not be able to carry the load if carbon targets were to be met and concerns about security of supply as the UK became a net importer of energy (primarily Russian gas); once again government turned to nuclear energy. The history of events over this decade it too long to describe here although I think it would make an excellent business or public policy school case study.

Slowly the issues were tackled one by one through aggressive

policies that resulted in among other things: EDF Energy buying British Energy, the creation of a generic design approval process by the regulator, changes to the electricity market to support non carbon producing projects to be built; and most of all – continuing effort to support positive public opinion even after the Fukushima accident in Japan.

And this is all in the context of the UK slowly and deliberately dismantling its domestic nuclear industry. The UK was an early leader in the development of nuclear power in the 1950s. Over the next 40 years it developed a large domestic infrastructure culminating with the transition to PWR technology at Sizewell B to the extent that in the 1990s BNFL actually bought the Westinghouse nuclear business – Britain was back in the nuclear business as a vendor.

Yet over the past decade, Westinghouse was sold to Toshiba, British Energy was sold to EDF and British Nuclear fuels Limited (BNFL) was completely dismantled (all at great profit to government). The new UK nuclear industry is comprised of a domestic manufacturing and services sector using foreign technology with plants being built by new nuclear operators also owned by foreign companies.

After all the hard work, the agreement reached this week is of tremendous importance to the global nuclear industry for a number of reasons.

The UK is forging ahead with a strong nuclear program while others in Europe are going in the opposite direction. Germany is abandoning its nuclear industry and even France is looking to reduce its reliance on nuclear over time. The lesson learned here is that need trumps all else. The UK is strongly committed to reducing carbon emissions; recognize they can't do it with renewables alone and are not prepared to become overly dependent upon fossil fuel imports.

The project is being built in a liberalized (deregulated)

market. Although there is much discussion about subsidy being provided by government, this project will demonstrate that a new nuclear plant can be built with outside investment in a western open market. The CFD (contract for difference) model is necessary to provide the stability needed to invest the huge sum of money required (estimated at £14 billion) with a very long payback period. In Canada this model has been used successfully to refurbish the Bruce Units 1&2 reactors but this will be the first time it is used for a longer duration and higher cost new build project.

While some are critical of the price (€92.50 /MWh) it should be clearly noted that this price is below all other forms of carbon free electricity even if it is higher than imported gas at the moment. Just imagine trying to set a rate today for a project coming into service in 2023 and then lasting for 35 years. And most of all, it has been reported that EDF Energy is expecting about a 10% return on its investment – very reasonable given the expected risk profile of a large nuclear project, especially with the experience so far in Finland and in France with new build.

So why can EDF Energy take such a risk? Primarily because this will be the 5th and 6th EPR built and the third project in Europe after Finland and France. At this point, the design is well developed, the supply chain is in place and the costs are well understood. What is new is that it is to be done in the UK and there will be new local suppliers likely taking on a significant scope.

The UK government has accepted a significant Chinese investment in the project. CGNPC, the Chinese operator of a number of nuclear plants and the constructors of the two EPRs at Taishan and its Chinese partners will bring about 30 to 40% of the money needed for this project. This is huge! First of all it is a clear acceptance of the size and strength of the Chinese nuclear program – CGNPC has the most active nuclear

construction program anywhere. And it opens up the potential to ensure the expertise from the Taishan project, arguably the most successful EPR to date, will be available to support Hinkley Point C.

The public is supportive of this project. Public support for new nuclear in the UK has become somewhat more positive in recent years, with similar proportions of people now supporting (32%) and opposing (29%) the use of nuclear power, compared to 26% (supporting) and 37% (opposing) in 2005. And of more interest, a similar number of people want to continue nuclear at current levels or with expansion (43% in 2005, 46% in 2010 and 44% in 2013), while fewer people now want to see nuclear power phased out or shut down (50% in 2005, 47% in 2010 and 40% in 2013). This is a result of a number of factors. First, there is a need for energy and nothing drives support more than worrying if the lights will go out. Second, the environmental sector is behind nuclear. The British are very serious about their commitment to reducing carbon emissions. George Monbiot came out in favour of nuclear energy within a month of the Fukushima accident. Mark Lynas has become a strong supporter and has been profiled in the recent documentary “Pandora’s Promise”.

So what can we all learn from this process? First of all developing new nuclear takes time. With a decade of effort behind this agreement, the time it took to reach agreement is just as long as the anticipated time to build the plant. A decade to get ready and now a decade to get the project into service (scheduled for 2023). Amazing isn’t it?

So to all of our friends in the UK, you have reached a critical milestone on your journey. Keep up the good work and we wish you all the best as you move to the next phase of your new build programme.