

Lord Howell of Guildford opens the short debate .07/09/23

(Con)

Beg to move: That this House takes note of the role of nuclear energy in securing the future energy supply.

My Lords, I declare an indirect interest in that Mitsubishi Electric, which I advise, while not directly connected to nuclear power station building, is involved in the new transmission system that will be necessary to convey power from new nuclear sites and, even more so, in delivering greatly enlarged offshore wind power transmission flows from the north Atlantic via new coastal stations and a much more powerful and intelligent grid than anything we have today. Without that, of course, we will make no progress at all.

Our national policy on nuclear power development is at a crossroads. Some would say that it is at a Y fork in the road. One route would mean pushing ahead with the mega-nuclear giant projects as now at Hinkley Point C in Somerset and as planned at the so-called replica, where a repeat is planned of Hinkley C, at Sizewell C in Suffolk. Experience tells us—it certainly tells me—that that will take 10 or 15 years to complete. We have been at this point many times in the past 30 or 40 years.

The other route is to recognise that those giants have had their day and that instead we should concentrate resources and skills on smaller modular reactors, designed at a time of revolution in nuclear power technology worldwide—and which, it is claimed, can be built much more quickly and sooner and are much more attractive to private investors for that very reason. That is a very important point, to which I shall return.

There are also those who deny that there is any actual choice at all, and we just have to press ahead on all possible tracks. That is the sort of argument which says that there is a pipeline of new projects to replace our nuclear fleet, which we have allowed to shrink so drastically. It is embodied in the philosophy expressed by the American comedian and baseball player, Yogi Berra, when he said:

“When you come to a fork in the road, take it”.

This “let’s do it all” approach is to be driven forward now by the new Great British Nuclear office, just opened and announced, as an essential part of our affordable, all-electric economy by 2050. The goal is unambiguous and clear: we must build up our nuclear capacity to 24 gigawatts from its

present 13 or 14, which is about to fall to 5 or 6 in a year or two's time. Ministers predict that to be a quarter of the electric power that we will need by 2050—in other words, about 100 gigawatts—as all, or nearly all, fossil fuels are replaced.

When one considers that electric power today—roughly 60 gigawatts, of which 50% to 70% comes from renewables when the wind is blowing—represents less than one-fifth of total energy use in the UK, 200 gigawatts may be much nearer the mark than 100 gigawatts. This even takes into account all the wider hydrogen use that is clearly coming, much greater efficiency in energy use, better insulation and more interconnectors with our neighbours to balance the supply grid, such as the one from Morocco being mooted. This could bring as much as 10 gigawatts of solar power into the British grid—a reminder that there is no such thing as a purely homegrown energy system, as some officials in our Department for Energy seem to think. They are quite wrong.

This leaves open a large number of questions about the nuclear role. First, I gather that the start button on Sizewell C may very shortly be pressed by the new Secretary of State. We welcome her and wish her well in her very difficult new job. Before this button is pressed, may we have some up-to-date assessments of likely capital costs and completion dates for this Sizewell replica? Is the plan to continue with six more such gigawatt-generating plants, as various Prime Ministers have called for in the last decade, or to make this the last and move on to a new, cheaper and possibly less risky smaller design for the next phase?

Secondly, has account been taken of the EPR—the European pressurised water reactor design family of reactors, as developed by Électricité de France for Finland, France and China, and now for the UK? It has a most unfortunate history in construction timing, costs and reliable operation. The EPR at Olkiluoto in Finland has taken 20 years to complete and is many billions over budget. At Flamanville on the Cherbourg peninsula—which I have visited—they are running 11 years late. It is still not ready and is also €10 billion over budget. There was a much-vaunted, allegedly successful EPR model in Taishan in China, but there too a reactor had to be closed down because of fuel rod problems. Our own first EPR, at Hinkley Point, was originally supposed to be powering our ovens for Christmas turkeys by 2019. Now the forecast is for 2027 and it could easily slide to 2029. It is already £8 billion over budget—in today's money the figure is nearer £15 billion. France is said to be looking at a new, simpler design for further replacement of its ageing PWR fleet. They call it the EPR2 but it is different from and not a direct replica of what we are trying to build here. The other day, the former EDF chief told the French Assembly that the EPR is “too complicated, almost unbuildable”.

Then there is the central question of finance. The sums are eye-watering. The last estimate for Sizewell C—the only one we have at the moment—was £20 billion. From Hinkley and other previous experiences, we know it is bound to be much nearer £30 billion. The present hope is that a funding scheme which has already been used elsewhere can somehow be mobilised. It is called the regulated asset base, which in effect makes would-be consumers start paying their energy bills from the day the scheme is launched—years before a single kilowatt of electricity is produced. The Science and Technology Select Committee in the other place warned that this RAB system contained “significant uncertainties and downsides”. On the figures we have, the Government will still need to put in about £6 billion, over and above the £1 billion or so already publicly committed. We hope that Électricité de France may come up with the same amount. Some £100 million has already been set aside to buy out the Chinese interest in both Sizewell C and an all-new Chinese plant at Bradwell-on-Sea which was once promised as part of a deal with China in times gone past when relations were happier. We thought then that they should take a major role in our nuclear progress, which we do not think any longer.

Perhaps my noble friend would care to update these estimates and figures and tell us how matters are going with the Chinese, who of course remain financially heavily involved in Hinkley Point C. Can we have the latest view on the state of play there, please?

What of the other nuclear power way forward, the other branch in the road towards much smaller units and new technology? I do not accuse, and no one could accuse, the Government of neglecting interest in the SMR possibilities, but mere interest is not really the question. The question is whether smaller and newer reactors should be not just an interest but the absolute spearhead UK priority, as other countries are making it, or whether the giant EPR replica, which remains the centrepiece of British nuclear policy, continues to be there, as appears to be the situation. Japan, America, Russia, France, China, South Korea, Canada, Germany, Argentina, Australia and Finland are a few of the countries giving priority attention to these new designs.

Most of the SMR projects under way are geared to operational readiness in the early 2030s or before, using existing or disused nuclear sites for sets of four or six, producing green, low-carbon electric power on the same scale as the old big ones. Here, Great British Nuclear is running a competition that is said to favour three SMR types: GE Hitachi, with its boiling water BWRX-300 megawatt design, which it says will be completed—I am not sure what that word really means—by 2028; our own Rolls-Royce, with its years of marine nuclear engine experience, which has linked up with US

NuScale and also has Japanese backers; and Holtec, which I think is the third favourite. All these are ready to deliver before the end of this decade.

There is one oddity here that I would greatly value the Minister's comment on. What about firms that do not need taxpayers' money and say they are already fully funded and ready to produce and sell into the British system? For example, I was visited the other day by a firm called Newcleo—I have no interest in or connection with it—which explained that it and several other similar firms have zero-waste small machines. They are zero waste because they use old plutonium waste from older reactors as their fuel, and could be ready by 2030. It has been excluded from the competition and is not getting any of the papers. Why? Matters seem to be very much upside down.

Is there not a major choice, after all, between smaller, sooner, around 2030, and larger, later, around 2036 to 2038 at best—and between mainly private finance and billions more from the state, which mostly means from taxpayers and hapless consumers who already face huge increases in their electricity bills? Should we not instead face the reality that smaller nuclear power plants, ready much sooner, offer far the best hope in our NZ ambitions, based on new technology, on streamlined approval procedures, which are certainly needed, and, above all, primarily on private finance? That is the key advantage and the sort of advantage that would bring in pension funds and sovereign wealth funds. With sets of SMRs built off-site and ferried in, this would also avoid all the local chaos and disruption of a prolonged 10 to 12-year construction site, not forgetting the long-term decommissioning problems and costs that these mammoths necessitate.

To me the priority is obvious. Further ahead, we know, lies fusion, but it will not be ready for 2050. Frankly, it is not on the nuclear mega-dreams of the past, which took decades to build and are still bulging with growing risks, that we will depend for our clean, reliable, low-carbon electricity supply. Size no longer wins in the digital age. This is an immense subject involving enormous sums of money, and there are those in this House with far more expertise than I about many of its different aspects. My own view, putting all these aspects together, is based simply on 40 years or more of experience in grappling with the nuclear power issue. We now have the chance, for once, to get it right and be a little ahead of the curve. I beg to move.

Summing up the Debate: Lord Howell

6.21pm

Lord Howell of Guildford

(Con)

My Lords, I thank the Minister for his comprehensive wind-up. He answered many of our questions—almost all, I think, although perhaps not one or two. I thank all those who have taken part in this debate with an excellent mixture of expertise, judgment and wisdom, all of which are needed in this issue. The debate has been short but the issues are absolutely vast, and we will have to return to them again and again in the coming months and years. I am particularly grateful that the general tone is very strong support for the newer technologies, the smaller machines, the quicker build and the better prospect of attracting private investment.

If anything is missing, it is slightly that question of finance. I see shadows of the magic money tree again. The *FT* ran an article yesterday based on the view of the noble Lord, Lord Stern, that the energy transition is going to cost £100 trillion spread over the next 27 years. Yet we know that there is no more money—indeed, the Labour shadow Chancellor always recognises that. It is rather like in 2010; there was no more money then, although for different reasons, and now there is no more money. Where is it going to come from? The answer is that there is masses of money around the world, in the pension funds and the sovereign wealth funds, but it will come into our system only if it is investable. If we build giant white elephants on yesterday's technology, no one will touch it, and certainly not investors. That is my only regret.

There is expert knowledge and, I hope, a momentum from this short debate for us to move forward into areas where we can attract the private money, the waste is limited, popular understanding of and support for what has to happen is increased, and we are able to move forward towards our goals of a low-carbon, green energy economy and a prosperity that at the moment seems to be eluding us.

Motion agreed.