The Future Ain't What It Used to Be – Rethinking Nuclear Finance

David Stearns, senior advisor with London-based Portland Advisors, offers a potential solution to the challenge of raising capital for nuclear newbuild projects — assigning value to new capacity. Stearns helps raise capital for energy and energy infrastructure projects.

Ten years ago, a small, privately-owned energy cooperative in Finland placed an order for a pressurized water reactor, raised €2 billion in bank debt to fund it, and all of a sudden it was the dawn of a new era. Looking to turn the page on a 50-year global legacy of state-to-state procurement and funding, the industry touted its Finnish project as proof that nuclear energy was compatible with private sector balance sheets, low-cost bank debt and competitive markets. Helping direct the flow of capital were concerns about greenhouse gas emissions, energy security and fossil fuel price volatility. Before long, joint ventures were springing up across Europe, the US and China, hoping to take advantage of the precedent set by the world's first greenfield nuclear financing in a deregulated energy market by investor-owned utilities and banks. The project was TVO's Olkiluoto 3, and 2002 was the dawn of the "Nuclear Renaissance."

Over the next decade, the investment narrative was to be further bolstered by rising and persistently high oil prices. Targeted measures would increasingly attract funding in long-term projects. In renewable energy, natural gas pipelines, water and wastewater treatment, power transmission, airports and roads, new classes of investors and lenders were to emerge alongside traditional utilities and infrastructure owners, creating a professional investor market for capital projects. In the decade to 2012, an estimated $320 billion would be raised for such projects in the OECD, an increase of some 300% over the preceding ten years.

But the fate of the nuclear renaissance proved the wisdom of one of baseball player's Yogi Berra's most widely quote aphorisms: "the future wasn't what it was supposed to be." Between 2002-2012 the OECD's 34 countries, representing over 80% of nuclear generation capacity worldwide, were host to a mere 17 gigawatts of new nuclear investments, less than half of the world's new nuclear development over that period. Excluding Japan and South Korea, this figure falls to a mere 4 GW (10% of the total). During that period, nuclear newbuild was outspent in its traditional markets by newcomers in offshore wind, undersea power transmission and solar parks by a factor of 14 to 1.

Now nuclear renaissance fatigue has set in. With no improvement in sight, investor-backed utilities are shrugging off the loss of their historical markets, blaming it on whimsical financial markets and public policy, and seeking consolation in distant regulated markets where, if risk is lower, so are returns. But accepting this prognosis would be a mistake of historic proportions. The challenge of financing OECD newbuild is the exam question facing the industry, and to skip it would be to forego opportunities in the world's most liquid and profitable energy markets for the next generation. When the next opportunity does arise, it may be someone else answering the question.

Investors have not responded to newbuild opportunities in the OECD for many reasons, but only one really matters: the inadequacy of risk allocation kit available. Tail risks are not possible, or simply too expensive, to mitigate. Sponsor and lender models alike blow up under any combination of downside scenarios involving cost overruns, completion delays and baseload power price forecasts, whilst bank credit committees grapple with the implications of nuclear liability, bilateral nuclear cooperation agreements and the absence of any room for creditors in the regulatory decision-making process. Making necessary adjustments to debt structures and covenants torpedoes project economics. Much time and ink is wasted between sponsors and would-be lenders on these points, since the answer is not in the room.

Building a nuclear power plant represents a damaging amount of risk for the nuclear utilities whose business models are already facing severe headwinds. Several trends underline the current dilemma in the OECD:

• Nuclear utility financing capacity will not return soon.

• Shareholder support is not an option.

• The nuclear window of opportunity is closing.

The experience of the Finnish Olkiluoto 3 project, beset by delays and cost overruns, has shown how the size and financial limitations of the investor-backed industry prevent it from being able to set straight an errant project, or write it off entirely. Oil majors can afford to drill dry holes because they would never commit themselves to a project worth over 50% of their market value. The nuclear industry requires sponsors large enough to absorb tail losses (significant but low probability), and knowledgeable enough to deliver projects and achieve scale. In the OECD, these are not the same two investors. Nuclear projects are not getting cheaper, and the industry is not today a place for the professional investor class.

As utilities continue to be unbundled, some governments are recognizing the fact that generation revenues do not fully reflect or differentiate between the value of different plants on the system. Incentives related to the value of capacity, security of supply, system stability and/or carbon emissions – if they were introduced - could hold far greater credit capacity than nuclear newbuild economics do today.

In the UK, the Electricity Market Reform process is proposing a number of experimental revenue structures to facilitate the post-construction refinancing (and de-equitizing) of new nuclear plants and other technologies. Numerous countries are similarly assessing the potential value of new nuclear units on the grid. Though financing would necessarily be distinct in each market, the most competitive projects will need to be attractive to investors that are today still far removed from the discussion.

The industry has a chance in its core markets to re-apply for its job, or more charitably, to re-state its investment case. The way ahead is clear. Returning to the wisdom of the non-nuclear expert Yogi Berra, "When you arrive at a fork in the road, take it."