State Options to Support New Nuclear Plants

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Recent interest in new nuclear generation has led some States to consider options to support the industry's development of new nuclear technology, generating facilities and the associated supply chain. The following is a list of options available to States, some of which could also be made applicable to currently operating reactors as documented in the National Conference of State Legislatures *State Options to Keep Nuclear in the Energy Mix.*

Valuing Carbon-Free Electricity Generation

There is recognition of the benefits of generating electricity with reduced or no carbon emissions; however, most markets do not have adequate mechanisms in place to enable generators to monetize this value. The following options are available to states to incentivize new carbon-free generating capacity:

- **Zero Emissions Credits** – Similar to programs adopted by Illinois and New York for operating nuclear facilities. Zero Emissions Credits (ZEC) for new nuclear, and other carbon-free sources, would provide a payment at a set rate for every megawatt-hour of carbon-free electricity generated. The rate would be set based on the State's calculation for the environmental and health benefits of avoided carbon emissions.
- **Carbon-Free or Low-Carbon Standards** – Numerous States have renewable portfolio standards that require utilities to sell a specified percentage or amount of renewable electricity. Nuclear generation could be included in a revision to these standards to incentivize a diverse carbon-free or low-carbon portfolio that benefits from fuel diversity.
- **Carbon Tax or Cap and Trade** – State taxes on carbon emissions, similar to those in British Columbia and Alberta, are a mechanism to transfer the economic burden of environmental costs of carbon directly to the generating source. Cap and trade policies would also create a price for carbon and a system for rewarding low-carbon generation.

Lowering Financing Costs

Financing costs for new nuclear facilities can be significant due to the large up-front capital and long construction times required. The following options are available to help reduce the overall cost of the new nuclear facility by helping to reduce financing costs:

- **Advanced Cost Recovery** – Also known as Construction Work in Progress (CWIP), States with regulated utilities may enact policies to allow a utility to collect costs from customers during construction, similar to Georgia, South Carolina and Florida. CWIP reduces the overall amount needed to finance a project and may reduce the total project costs that eventually are included in the customer rate base.
- **Loan Guarantees** – U.S. Federal loan guarantees (or direct Federal Financing Bank loans as used by the Vogtle project) are available to new nuclear facilities and help reduce the borrowing rates. States could supplement the Federal loan guarantee program by helping the owner with the program costs. In cases where Federal loan guarantees are not available or suitable for a project, States could provide loans or loan guarantees.
- **Integrated Resource Plan (IRP)** planning horizons could be extended to better evaluate the difference in lifetimes of generating assets. Nuclear facilities typically take about ten years to build and operate and have lifetimes of 60-80 years. Other generating assets often have much

shorter durations to construct and shorter lifetimes. A 20-year financial analysis period would not provide a consistent basis for comparison, since nuclear assets have many decades of life remaining at the conclusion of the financial analysis period while other assets may be nearing the end of their useful lives.

Providing Tax Incentives

States routinely use tax breaks to incentivize business to make investments that achieve State goals in areas such as economic development, job creation, and infrastructure improvements. Tax incentives, similar to those in Utah, could be broadly focused on carbon-free technologies or focused solely on nuclear generation and the associated supply chain. Tax credits would specify the value, duration and conditions that must be met in order for it to be received, and could be in the form of deductions or reductions in existing special purpose taxes, such as the Business and Use Tax. The following are examples of some types of credits available to states:

- **Production Tax Credit** – Based on the generation and sale of electricity.
- **Investment Tax Credit** – Based on the amount invested.
- **Job Creation Tax Credit** – Based on the number or payroll value of jobs created.
- **Property Tax Credit** – To reduce or eliminate property taxes for a defined time period.

Purchasing Power

Direct sale of electricity from nuclear sources to State agencies and facilities would provide long-term price predictability of nuclear project revenue. State policies could allow these agencies and facilities to purchase a significant portion of the power directly from the generator over a long time period. Long duration contracts help projects obtain financing and provide States with predictable pricing of carbon-free energy with high reliability. Pricing could be structured to value the benefits of reduced carbon and higher reliability/availability.

Providing Infrastructure Support

State infrastructure has a significant influence on the success of new nuclear facilities and supply chain. The following are examples of policies that would be supportive of new nuclear development within the State:

- **Training** – States could develop State University and Community College programs to train nuclear facility workers in areas such as radiation protection, maintenance, chemistry and engineering.
- **Innovation Grants** – States could provide funds directly to the developers of advanced technology and manufacturing.
- **University R&D** – States could provide funds that support State University R&D that is directly applied to the development of advanced technology and manufacturing.
- **Siting** – States could provide funds to study the feasibility of siting new nuclear facilities.
- **Transportation improvements** -- States could enhance the appeal of particular locations by implementation of transportation improvements such as rail spurs, roads, barge access, and other improvements that make construction and operation safer and more economical.