

Nuclear Energy Tax Issues: Tax Reform Position Paper

by the
Nuclear Energy Institute

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The Nuclear Energy Institute (NEI¹) has prepared this paper to provide its views on tax issues affecting nuclear energy, as the tax-writing committees consider reform of the federal tax code.

I. Background on Nuclear Energy in the United States

Ninety-nine operating nuclear power plants are a strategic part of the electric supply portfolio, providing approximately 20 percent of U.S. electricity supply and two-thirds of emission-free electricity. The nuclear plants are the most reliable on the grid, operating on average 90 percent of the time.

Each nuclear energy facility generates about \$470 million annually in sales of goods and services in the local community. Approximately \$40 million is spent annually in wages at each facility. Nuclear companies procure over \$10 billion each year in materials, fuel and services from domestic suppliers. Nuclear procurement takes place in all 50 states (30 states have nuclear power plants). The average procurement per state each year is over \$270 million. Materials, fuel and services are procured from over 22,500 different vendors across the country. The average nuclear power plant also pays about \$16 million in state and local taxes annually. These tax dollars benefit schools, roads and other state and local infrastructure. The average nuclear plant also pays federal taxes of \$67 million annually.

The U.S. nuclear energy industry is currently building five new nuclear reactors: Georgia Power Co. and its partners are building two new plants (Vogtle Units 3 and 4); South Carolina Electric & Gas is building two identical reactors (Summer Units 2 and 3), and the Tennessee Valley Authority is completing a plant (Watts Bar Unit 2) on which construction had been suspended in the late-1980s. Taken together, these five units are projected to supply over 5,600 megawatts (MW) of new, baseload, zero-emission electric generation, and represent a combined investment of over \$28 billion, approximately 11,500 total construction jobs and 2,500 permanent jobs.

In addition to these five new plants, the Nuclear Regulatory Commission is reviewing applications from companies to build and operate an additional 10 new reactors.

II. Federal Subsidies for Nuclear Energy

The nuclear energy sector currently receives limited federal government financial support – through the tax code or otherwise. Analysis² shows that the federal government's primary incentive to nuclear energy has been in the form of R&D (see table below). Nuclear energy received about one-half (\$74 billion)

¹ The Nuclear Energy Institute (NEI) is responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including regulatory, financial, technical and legislative issues. NEI members include all companies licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

² *60 Years of Energy Incentives: Analysis of Federal Expenditures for Energy Development*, October 2011, Management Information Services, Inc.

TYPE OF INCENTIVE	ENERGY SOURCE (Billion \$)						
	Oil	Natural Gas	Coal	Hydro	Nuclear	Renewables ³	Geothermal
Tax Benefits	194	106	35	13	-	44	2
Cost of Regulation	125	4	8	5	16	-	-
R&D	8	7	36	2	74	24	4
Other (grants, cost of services and programs provided by federal government, etc.)	41	4	26	70	- 16	6	2
Total	369	121	104	90	73	74	7
Share	44%	14%	12%	11%	9%	9%	1%

of the government's spending on energy R&D, but almost 60 percent of the total spent on nuclear energy research since 1950 was spent before 1975.

III. Tax Issues Affecting Nuclear Energy

A. Tax Rate on Earnings in Nuclear Decommissioning Trust Funds

Every nuclear power plant in the United States is required, by the Nuclear Regulatory Commission, to set aside sufficient funds to decommission the plant when it reaches the end of its useful life. These monies are collected from electricity consumers and deposited in a trust fund. These nuclear decommissioning trust funds are not the property of the electric utility. (Even in bankruptcy, these funds cannot be attached by creditors.) The trust funds are outside the electric utility's control, managed by a trustee, and cannot be spent for any other purpose.

Until 1992, the earnings in nuclear decommissioning trust funds were taxed at the general corporate rate. In 1992, in the Energy Policy Act, Congress reduced the tax rate on earnings to 20 percent. Because the nuclear decommissioning trust funds are the property of customers and dedicated irrevocably to decommissioning, Congress determined that earnings in the trust funds should be subject to an average tax rate representative of the tax rate paid by average Americans. After consultations with, and analysis by, the Joint Committee on Taxation and the U.S. Treasury Department, Congress found that a 20 percent tax rate was representative of the average tax rate paid by consumers of electricity.

As Congress searches for ways to reduce federal spending and increase federal revenues, some have suggested that the tax rate on earnings in nuclear decommissioning trust funds should be increased to the general corporate rate.

Increasing the taxes paid by nuclear decommissioning trust funds would be unwise and unfair, and would basically represent a new tax on consumers of electricity, since consumers would be forced to make up the difference between the lower tax rate and the higher tax rate.

This result would also represent bad public policy. The rationale for the 20-percent tax rate on earnings in nuclear decommissioning trust funds is as sound today as it was in 1992, when Congress changed the tax rate on earnings.

³ Renewables are primarily wind and solar energy.

B. Nuclear Production Tax Credit (§45J)

The 2005 Energy Policy Act (2005 EPAct) provided a limited production tax credit of 1.8 cents per kilowatt-hour of electricity produced by new nuclear power plants. The tax credit is available only for the first 6,000 megawatts of new nuclear generating capacity, and lasts only for the first eight years of operation. The §45J credit was designed to stimulate capital investment in new nuclear generating capacity.

To qualify for the nuclear production tax credit, a new nuclear power plant must be in service on or before December 31, 2020. Because of this, only two projects currently appear likely to qualify – the Vogtle 3 and 4 plants being built by Georgia Power Co. and the Summer 2 and 3 plants being built by South Carolina Electric & Gas. These projects together represent approximately 4,400 megawatts of generating capacity. The companies cannot claim the tax credit until the new reactors start producing electricity.

The challenge for new nuclear plant financing is one of scale: These are large capital investments – approximately \$6-7 billion for a single new reactor – being built by relatively small companies.⁴ The U.S. electric power sector consists of many relatively small companies, which do not have the size, financing capability or financial strength to finance power projects of this scale on their own, in the numbers required – particularly since the same companies will also be investing in other forms of generating capacity, transmission and distribution, efficiency and demand response programs, and environmental controls. New nuclear projects will likely require financing support to offset the disparity in scale between project size and company size. Financing these first new nuclear power projects in the United States in decades requires a partnership between the private sector, state governments and the federal government. State governments in Georgia and South Carolina are doing their part – allowing the companies to recover financing costs through rates during construction (thereby easing stress on cash flow and credit metrics) – and providing strong assurance that prudent capital investment can be recovered. The federal government’s support – through the §45J credit – is equally important.

Georgia Power Co. and South Carolina Electric & Gas based their decisions to build these projects partly on the availability of the production tax credit. The public service commissions in Georgia and South Carolina based their approval of, and support for, these two projects partly on the existence of the federal production tax credit. It is worth noting that the tax credits for the projects in Georgia and South Carolina flow directly to the consumers who purchase electricity from the plants.

In summary, because the two projects have been undertaken in reliance on the production tax credit, Congress should not do anything in tax reform that limits availability of the credit for new nuclear power projects. Reducing or eliminating the §45J credit retroactively would seriously compromise the two projects already under construction and any others that might be placed in service on or before December 31, 2020.

C. New Tax Proposed For the Decontamination and Decommissioning Fund

In the 1940s and 1950s, the federal government built three uranium enrichment plants for its nuclear weapons and national defense programs. The first of the three plants in Oak Ridge, Tenn., was built in 1945 as part of the Manhattan Project. The second (in Paducah, Ky.) began operations in 1952, followed by the Portsmouth, Ohio, plant in 1954.

⁴ The largest U.S. investor-owned power company has a market value of approximately \$50 billion. The other U.S. companies in the sector are significantly smaller. By comparison, major oil companies are 5-10 times larger. They routinely undertake \$6-7 billion projects, but they have the financial strength and balance sheets to support them.

These plants operated for approximately 25 years as part of the national defense effort – until 1969 when the Atomic Energy Commission determined that some portion of their production capacity could be dedicated to production of commercial nuclear fuel. When the enrichment plants began producing enriched uranium for commercial uses in 1969, the plants were already fully contaminated from almost 25 years of operation as part of the U.S. nuclear weapons program.

The government privatized the uranium enrichment enterprise in 1992. The Department of Energy retained ownership of the three enrichment plants, however, and the obligation to decommission them.

Enriched uranium was sold to commercial customers in the U.S. and around the world. Approximately 25 percent of these sales were to foreign utilities. The Department of Energy and its predecessor agencies received payments for these enrichment services. U.S. government pricing for enrichment services to commercial customers was based on full-cost recovery. These costs included plant decontamination and decommissioning (D&D) so D&D costs were factored into the price utility customers paid to the U.S. government. Although DOE included D&D in its price for enrichment services charged to utility customers, it did not accrue the money in a special fund. Instead it used these funds for other purposes.

The Energy Policy Act (EPAct) of 1992 created the Uranium Enrichment Decontamination and Decommissioning Fund (D&D Fund) to finance clean-up at the three government-owned gaseous diffusion plants. (The same legislation also privatized the uranium enrichment enterprise.) Beginning in fiscal year 1993, electric utilities were assessed up to \$150 million per year (adjusted for inflation) for 15 years to help finance cleanup of the facilities. The fee was based on each company's historic purchases of federal uranium enrichment services. The Energy Policy Act of 1992 specifically provided for termination of the assessment against electric utilities after the earlier of: (1) 15 years after October 24, 1992, or (2) the collection of \$2.25 billion, adjusted for inflation.

Although the industry supports environmental cleanup of these sites, the government should not impose costs for this program on electricity consumers for a third time. According to the last data made available (2012 fiscal year),⁵ the D&D Fund had a balance of approximately \$4.3 billion and an annual outlay of approximately \$475 million to \$600 million.

The electric utility industry believes no further assessment from utility customers for the D&D Fund is appropriate or necessary, and opposes the Obama Administration's proposal (in its FY2016 proposed budget) to tax electricity consumers for this program.

Utilities have already paid twice for D&D activities at these sites. The original cost charged to utilities for enriching uranium included a portion to cover D&D costs. The electric companies also met their obligation to the D&D Fund, as specified by the law, with a total contribution of \$2.6 billion. Despite this, electric utilities are being asked to pay a third time for the same D&D program. This is unacceptable and represents a new "hidden" tax on consumers of electricity.

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⁵ *Department of Energy's Uranium Enrichment Decontamination and Decommissioning Fund's Fiscal Year 2012 Financial Statement Audit*, Department of Energy Office of Inspector General, March 2014