MISSOURI HOUSE OF REPRESENTATIVES

WITNESS APPEARANCE FORM

BILL NUMBER: **HB 225**	DATE: **2/22/2023**
COMMITTEE: **Utilities**	

TESTIFYING: ☑ IN SUPPORT OF ☐ IN OPPOSITION TO ☐ FOR INFORMATIONAL PURPOSES

WITNESS NAME

BUSINESS/ORGANIZATION:

WITNESS NAME: **CHRISTINE CSIZMADIA**	PHONE NUMBER: **202-352-3489**
BUSINESS/ORGANIZATION NAME: **NUCLEAR ENERGY INSTITUTE**	TITLE: **SENIOR DIRECTOR, STATE GOVERNMENT AFFAIRS & ADVOCA**
ADDRESS: **1201 F STREET NW**	
CITY: **WASHINGTON**	STATE: **DC** ZIP: **20004**

EMAIL: **cmc@nei.org**	ATTENDANCE: **Written**	SUBMIT DATE: **2/21/2023 8:37 AM**

THE INFORMATION ON THIS FORM IS PUBLIC RECORD UNDER CHAPTER 610, RSMo.

The Nuclear Energy Institute (NEI) applauds Missouri for considering HB 225, a bill that allows for advanced cost recovery for new nuclear deployment. This is an important piece of legislation that will help enable the development, demonstration, and deployment of advanced nuclear power systems. The electricity sector in the United States has undergone significant transformation over the last decade and that transformation will continue. Ensuring that state energy policies are in place that enable commercial deployment of advanced reactors by the early 2030s is essential to ensuring an affordable, secure, and resilient electricity sector well into the future. Supportive state policies such as HB 225 will have important benefits that reach beyond Missouri's borders. While the United States once led the world in nuclear energy technology exports, we are no longer the leading supplier of nuclear reactors; we are in a race against other countries to capture a growing international market share, and by creating a pathway to commercial deployment here at home, we will unlock markets for U.S. technology across the globe. Nuclear power is vital to the electricity systemCurrently, 92 commercial nuclear power reactors provide nearly 20 percent of America's electricity and more than half of the nation's carbon-free electricity. Because electricity generation from nuclear energy does not release carbon dioxide and other harmful air pollutants, by maintaining a strong nuclear fleet, the United States will not have to choose between the health of its electric grid and the health of its citizens. Nuclear plants run 24 hours a day, 7 days a week producing power with unmatched reliability and have the added benefit of having their fuel on site, only requiring refueling every 18-24 months. This makes nuclear energy the ideal complement to variable generation from wind and solar power. In addition, nuclear plants are hardened facilities that are protected from physical and cyber threats, helping to ensure we have a resilient electricity system in the face of potential disruptions. New advanced reactor designs are being developed by entrepreneurial U.S. companies seeking to expand the value of nuclear technology to our energy system. These designs will be commercially available this decade and will be ready for large-scale deployment by the early 2030s to meet domestic and global clean energy needs. Enacting state policies that encourage the use of these new nuclear technologies is particularly timely, as the U.S. Energy Information Administration forecasts the retirement of 140 gigawatts of capacity by 2040 across the U.S. In addition, the EIA estimates that demand for electricity in the U.S. will expand by almost 15 percent during that time. Advanced nuclear plants to replace this retired generation and to meet this growing demand can be a vital part of the clean domestic electricity landscape. In fact, a recent Vibrant Clean Energy survey found that utilities were expecting to bring more than 300 gigawatts of advanced nuclear online by 2050.Focusing only on the need for additional electricity in the U.S. in the upcoming decades would mistakenly overlook the

likelihood of and the need for a significant increase in electricity demand worldwide. There are still nearly 1 billion people in the world without access to electricity, and many more live in nations with terrible air pollution that will only get worse unless clean energy options like advanced nuclear energy are deployed. Providing these people with a clean, affordable, reliable source of electricity will significantly raise their standard of living. In addition, many countries are looking to a rapid expansion of nuclear generation to address their growing electricity needs. Therefore, it is imperative that new U.S. advanced reactors be available soon for both domestic and international deployment. Nuclear energy is poised for a rebound the U.S. NEI believes our nuclear energy future will include safe long-term operation of our existing nuclear power reactors through subsequent license renewals to allow operation out to eighty years; additional large light water reactors (LWRs); and widespread deployment of advanced reactors including both advanced water-cooled small modular reactors (SMRs) and non-light water reactors. The existing domestic nuclear fleet is a central part of our nation's critical infrastructure and should not be taken for granted. Over the last nine years, thirteen reactors that produced more than 9,000 megawatts of power have closed prematurely because electricity markets do not value nuclear energy for its low carbon attribute. Fortunately, policymakers in states across the country have taken action to preserve sixteen reactors that were at risk of closing prematurely, by valuing those reactors for their emissions-free generation. These actions have had the added benefit for preserving more than ten thousand family-wage jobs. As policymakers in Washington DC and in the states place more emphasis on clean energy and jobs, we are confident that they will enact additional policies that more fully value nuclear energy for all it delivers.Looking to the future, there is a wide range of new nuclear energy technology available today or coming to market soon. Evolutionary LWR designs are already commercially available, with two AP1000 units under construction at the Vogtle site in Georgia and expected to come online in2023. Advanced water-cooled SMRs will be available by the mid-2020s and larger advanced non-LWRs are expected to be available in the late 2020s or early 2030s while micro-reactor technology is expected to be commercially available in the mid-2020s. Although the U.S. led the world into the age of nuclear energy, we have lost ground to other countries with substantial, state-funded advanced reactor programs. The Russians are operating two commercial liquid-metal fast-reactors and the Chinese are bringing a commercial high-temperature gas pebble-bed reactor online. By the time the U.S. has an operational pebble-bed reactor, the Chinese will likely have 10 years of operational experience. Despite this loss of U.S. dominance, we are pleased to report that the U.S. government has stepped up its efforts to help our innovative companies develop new technologies so they can better compete with state-owned enterprise in Russia and China. In recent years we've seen members of Congress and administrations from both parties focus on nuclear regulatory reform, R&D infrastructure, and development and deployment of new technologies. All these developments and more have the U.S. nuclear energy sector well positioned for a bright future.Planning for the futureThe electric utility sector in the United States is rapidly evolving. NEI believes it is in the best interest of the U.S. that nuclear power remain a significant and growing supply of clean electricity as this evolution continues. Therefore, it is imperative that the commercial nuclear industry in the U.S. continue to rapidly innovate new products and designs so that these products are available when the market needs them. According to a recent SMR Start report, advanced reactors can be a cost competitive and highly valuable part of our future energy system. The report also outlines the tremendous benefits to jobs and the economy, stating: "Construction and operation of a 400 megawatt SMR plant with multiple reactors is estimated to employ about 600 manufacturing and construction workers for about 4 years and about 200 permanent positions for the 60+ years the SMR operates. The data shows that each permanent position creates a multiplier effect resulting in 1.66 additional jobs in the local community and 2.36 additional jobs in the rest of the state. Nuclear jobs pay 36 percent more than average salaries in the local area."Based upon experience with a 1,000 MWe nuclear facility, a 400 MWe SMR plant is expected to generate over $377M in direct and indirect economic output annually. This includes over $181M in the plant's electricity sales and induced spending at the local, state and national levels of $7M, $32M, and $157M, respectively. The SMR plant is expected to pay about $6M in state and local taxes and $27M in federal taxes annually." The advanced reactor supply chain could also create thousands of jobs to support a domestic and international market. SMR Start identified options available to states that wish to support the commercialization of advanced reactors. ConclusionWe appreciate and applaud the continued support for nuclear energy that inspired HB 225 With this continued support and the dedication of the industry, NEI is confident that the U.S. will regain its leadership role in nuclear technology and generation.On behalf of NEI and its members, we thank Representative Black for introducing this important legislation. The legislation also will ensure that these economic engines continue to be the backbone of the nation's electric infrastructure. Legislation such as HB 225 will facilitate the development and deployment of innovative nuclear reactor technologies.Contact:Christine CsizmadiaSenior Director, State Government Affairs & AdvocacyNuclear Energy Institute 1201 F Street, Suite 1100Washington, DC 20004(202) 739-

8000cmc@nei.org

MISSOURI HOUSE OF REPRESENTATIVES

WITNESS APPEARANCE FORM

BILL NUMBER: **HB 225**	DATE: **2/22/2023**
COMMITTEE: **Utilities**	

TESTIFYING: ☑ IN SUPPORT OF ☐ IN OPPOSITION TO ☐ FOR INFORMATIONAL PURPOSES

WITNESS NAME

REGISTERED LOBBYIST:

WITNESS NAME: **ELIZABETH SMITH**		PHONE NUMBER: **573-674-5707**	
REPRESENTING: **MISSOURI PUBLIC UTILITY ALLIANCE**		TITLE:	
ADDRESS: **2200 MAGUIRE BOULEVARD**			
CITY: **COLUMBIA**		STATE: **MO**	ZIP: **65201**
EMAIL:	ATTENDANCE:	SUBMIT DATE: **2/22/2023 12:00 AM**	

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MISSOURI HOUSE OF REPRESENTATIVES

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WITNESS NAME

REGISTERED LOBBYIST:

WITNESS NAME: **FRED DREILING**		PHONE NUMBER: **816-806-6335**	
REPRESENTING: **CITY UTILITIES OF SPRINGFIELD**		TITLE: **LOBBYIST**	
ADDRESS: **1025 W 64TH TERR**			
CITY: **KANSAS CITY**		STATE: **MO**	ZIP: **64114**
EMAIL: **freddreilingllc@gmail.com**	ATTENDANCE: **In-Person**	SUBMIT DATE: **2/22/2023 10:39 AM**	

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MISSOURI HOUSE OF REPRESENTATIVES

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WITNESS NAME

REGISTERED LOBBYIST:

WITNESS NAME: **FRED DREILING**		PHONE NUMBER: **816-806-6335**	
REPRESENTING: **MISSOURI ASSOCIATION OF MUNICIPAL UTILITIES**		TITLE: **LOBBYIST**	
ADDRESS: **1025 W 64TH TERR**			
CITY: **KANSAS CITY**		STATE: **MO**	ZIP: **64114**
EMAIL: **freddreilingllc@gmail.com**	ATTENDANCE: **In-Person**	SUBMIT DATE: **2/22/2023 10:37 AM**	

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MISSOURI HOUSE OF REPRESENTATIVES

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WITNESS NAME

REGISTERED LOBBYIST:

WITNESS NAME: **REBECCA EICHELBERGER**		PHONE NUMBER: **573-230-1458**	
REPRESENTING: **ASSOCIATION OF MISSOURI ELECTRIC CO-OPS**		TITLE:	
ADDRESS: **3805 TIMBER RUN DRIVE**			
CITY: **COLUMBIA**		STATE: **MO**	ZIP: **65203**
EMAIL:	ATTENDANCE:	SUBMIT DATE: **2/22/2023 12:00 AM**	

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MISSOURI HOUSE OF REPRESENTATIVES

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WITNESS NAME

INDIVIDUAL:

WITNESS NAME: **ARNIE C."HONEST-ABE" DIENOFF-STATE PUBLIC ADVOCATE**	PHONE NUMBER:	
BUSINESS/ORGANIZATION NAME:	TITLE:	
ADDRESS:		
CITY:	STATE:	ZIP:

EMAIL: **arniedienoff@yahoo.com**	ATTENDANCE: **Written**	SUBMIT DATE: **2/22/2023 11:40 PM**

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I am Opposed to this Legislation. This Bill will cause an increase in the Cost of Producing Energy. This Bill is Pro-Electric Power Companies and against the Missouri Consumer.

MISSOURI HOUSE OF REPRESENTATIVES

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TESTIFYING: ☐ IN SUPPORT OF ☑ IN OPPOSITION TO ☐ FOR INFORMATIONAL PURPOSES

WITNESS NAME

INDIVIDUAL:

WITNESS NAME: **DON CROZIER**	PHONE NUMBER:	
BUSINESS/ORGANIZATION NAME:	TITLE:	
ADDRESS:		
CITY:	STATE:	ZIP:

EMAIL: **doncrozier@gmail.com**	ATTENDANCE: **Written**	SUBMIT DATE: **2/19/2023 1:37 PM**

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This bill allow utilities to charge Missouri customers for all capital costs of constructing a nuclear power plant prior to the completion of the project. If the plant is never completed, electric customers still bear the costs. In South Carolina a similar bill enabled a utility to charge ratepayers for the construction of two nuclear reactors that were never completed. South Carolina ratepayers were charged Billions of Dollars until the project faltered and finally collapsed.

MISSOURI HOUSE OF REPRESENTATIVES

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WITNESS NAME

REGISTERED LOBBYIST:

WITNESS NAME: **DOUG GALLOWAY**		PHONE NUMBER: **573-230-3112**	
REPRESENTING: **FORD MOTOR COMPANY**		TITLE:	
ADDRESS: **227 JEFFERSON STREET**			
CITY: **JEFFERSON CITY**		STATE: **MO**	ZIP: **65101**
EMAIL:	ATTENDANCE:	SUBMIT DATE: **2/22/2023 12:00 AM**	

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WITNESS NAME

BUSINESS/ORGANIZATION:

WITNESS NAME: **ED SMITH**		PHONE NUMBER: **314-644-1011**	
BUSINESS/ORGANIZATION NAME: **SIERRA CLUB**		TITLE:	
ADDRESS: **PO BOX 432010**			
CITY: **ST. LOUIS**		STATE: **MO**	ZIP: **63143**
EMAIL:	ATTENDANCE:	SUBMIT DATE: **2/22/2023 12:00 AM**	

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WITNESS NAME

BUSINESS/ORGANIZATION:

WITNESS NAME: **JAY HARDENBROOK**	PHONE NUMBER: **816-810-2066**	
BUSINESS/ORGANIZATION NAME: **AARP**	TITLE: **ADVOCACY DIRECTOR**	
ADDRESS: **4031 PARKER AVE**		
CITY: **ST. LOUIS**	STATE: **MO**	ZIP: **63116**
EMAIL: **jhardenbrook@aarp.org**	ATTENDANCE: **In-Person**	SUBMIT DATE: **2/22/2023 11:06 AM**

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MISSOURI HOUSE OF REPRESENTATIVES

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WITNESS NAME

REGISTERED LOBBYIST:

WITNESS NAME: **JOHN COFFMAN**		PHONE NUMBER: **573-424-6779**	
REPRESENTING: **CONSUMERS COUNCIL OF MISSOURI**		TITLE:	
ADDRESS: **871 TUXEDO BOULEVARD**			
CITY: **ST LOUIS**		STATE: **MO**	ZIP: **63119**
EMAIL:	ATTENDANCE:	SUBMIT DATE: **2/22/2023 12:00 AM**	

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WITNESS NAME

BUSINESS/ORGANIZATION:

WITNESS NAME: **MELISSA VATTEROTT**	PHONE NUMBER: **314-727-0600**	
BUSINESS/ORGANIZATION NAME: **MISSOURI COALITION FOR THE ENVIRONMENT**	TITLE: **POLICY DIRECTOR**	
ADDRESS: **725 KINGLAND AVENUE, SUITE 100**		
CITY: **UNIVERSITY CITY**	STATE: **MO**	ZIP: **63130**
EMAIL: **mvatterott@moenvironment.org**	ATTENDANCE: **Written**	SUBMIT DATE: **2/22/2023 2:05 PM**

THE INFORMATION ON THIS FORM IS PUBLIC RECORD UNDER CHAPTER 610, RSMo.

February 22, 2023Chairman Bob BromleyUtilities CommitteeMissouri House of Representatives201 West Capitol Avenue, Rm. 401-AJefferson City MO 65101 Dear Chairman Bromley and Members of the Committee, Missouri Coalition for the Environment (MCE) is a statewide, advocacy nonprofit organization that works to empower Missourians to protect their environment and health. We have two main concerns with HB 225 we wish for the members of the committee to be aware of:1. This bill will shift the liability for potential nuclear energy projects to consumers rather than the company tasked with constructing and receiving the necessary permits for their operation.2. This bill will incentivize the creation of new nuclear power plants in Missouri and further add to the quandary of what to do with the radioactive waste created by these plants. Due to these concerns, MCE is opposed to this bill and therefore we urge you to vote "no" on HB 225. There are consumer inequity concerns and climate change concerns associated with this framework facilitating the development of nuclear power plants. Other individuals are testifying today to speak to those concerns and MCE echoes them. Our testimony intends to highlight our second concern with this bill, incentivizing the creation of new nuclear power plants and the subsequent radioactive waste that comes with them.The United States currently lacks a plan for the long-term storage of spent nuclear fuel rods, and it has lacked this plan since the creation of nuclear power plants many decades ago. All nuclear power plants throughout the country store radioactive fuel rods on site in concrete encasings lined with steel, and the creation of any new plants will necessitate the storage of these materials on site at those plants. While the greatest minds in the world helped develop this energy technology and on-site storage solution, there is no guarantee these current solutions will last long enough to protect the public. Depending on the stage of decay and usage of the nuclear fuel, it can remain a public health threat for 24,000 to billions of years. We cannot extrapolate the population shifts and movements of people over that long of a timeframe. Furthermore, it is well documented that human error and natural disasters at nuclear power plants have created public health consequences for surrounding communities. These have occurred in older facilities with dated technology as well as newer ones that were marketed as being secured from natural disasters. In conclusion, the health impacts seen with nuclear power plant disasters across the world, the lack of a safe long-term storage plan, and the inevitable failure of human designed systems should make clear that Missouri should not support any industry that generates radioactive waste. In short, we are leaving the health and safety of the land we are borrowing from our children and grandchildren to chance and the promises of an industry driven by profit, not the public's well-being. As such, MCE respectfully urges you to vote "no" on HB 225. Thank you for your time. Sincerely, Melissa VatterottPolicy DirectorMissouri Coalition for the Environmentmvatterott@moenvironment.org(314) 727-0600

MISSOURI HOUSE OF REPRESENTATIVES

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WITNESS NAME

REGISTERED LOBBYIST:

WITNESS NAME: **PHILIP FRACICA**		PHONE NUMBER: **816-752-6630**	
REPRESENTING: **RENEW MISSOURI ADVOCATES**		TITLE: **DIRECTOR OF PROGRAMS**	
ADDRESS: **409 VANDIVER DRIVE BUILDING 5 SUITE 205**			
CITY: **COLUMBIA**		STATE: **MO**	ZIP: **65201**
EMAIL: **philip@renewmo.org**	ATTENDANCE: **In-Person**	SUBMIT DATE: **2/22/2023 1:06 PM**	

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WITNESS NAME

BUSINESS/ORGANIZATION:

WITNESS NAME: **RAY MCCARTY**		PHONE NUMBER: **573-634-2246**	
BUSINESS/ORGANIZATION NAME: **ASSOCIATED INDUSTRIES OF MISSOURI**		TITLE: **PRESIDENT/CEO**	
ADDRESS: **3234 W TRUMAN BLVD.**			
CITY: **JEFFERSON CITY**		STATE: **MO**	ZIP: **65109**
EMAIL: **rmccarty@aimo.com**	ATTENDANCE: **In-Person**	SUBMIT DATE: **2/21/2023 3:48 PM**	

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Associated Industries of Missouri strongly opposes removal of the protection against utilities assessing costs to energy consumers prior to placing a new facility online.

MISSOURI HOUSE OF REPRESENTATIVES

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WITNESS NAME

INDIVIDUAL:

WITNESS NAME: **THOMAS J. SAGER**	PHONE NUMBER:	
BUSINESS/ORGANIZATION NAME:	TITLE:	
ADDRESS:		
CITY:	STATE:	ZIP:

EMAIL: **yushasager@yahoo.com**	ATTENDANCE: **Written**	SUBMIT DATE: **2/21/2023 11:15 AM**

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Rate payers should never be asked to pay for what they may receive absolutely no benefit from. Missouri needs no more toxic nuclear plants. Nor does it need any more radioactive waste.Please vote no on HB 225.Thank you.

MISSOURI HOUSE OF REPRESENTATIVES

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WITNESS NAME

INDIVIDUAL:

WITNESS NAME: **WINIFRED COLWILL**	PHONE NUMBER:	
BUSINESS/ORGANIZATION NAME:	TITLE:	
ADDRESS:		
CITY:	STATE:	ZIP:

EMAIL: **Colwillw@gmail.com**	ATTENDANCE: **Written**	SUBMIT DATE: **2/21/2023 2:32 PM**

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HB 225 would repeal Missouri's ban on billing ratepayers for construction work in progress (CWIP). Current Missouri law protects utility customers by requiring a plant to be "used and useful", that is, online and fully operational, before construction costs can be added to customers' utility bills. HB 225 would allow Missouri's investor-owned utilities to bill ratepayers for all costs during construction of a new power plant, including pre-construction planning and site preparation. In other words, customers would be billed throughout all the years of construction, even if the plant is never finished, without receiving one kilowatt of electricity from that plant. HB 225 would pass the risk of financing construction of nuclear plants to ratepayers because even large Wall Street banks refuse to underwrite them. Multi-billion cost overruns and cancellations of nuclear plants have been financial disasters for utility customers in other states with CWIP laws, such as South Carolina and Georgia.This bill is unnecessary for three reasons: 1. Ameren, Evergy and Liberty-Empire, the privately owned utility companies for which this bill is applicable, do not have nuclear in their long-term generation plans. 2. These companies have more generation than they need to supply their customers and meet reserve margin requirements. 3. CWIP is not needed to build renewable energy. Each of these utilities has added wind and solar to their electricity supplies without CWIP and plans to add more. For example, Ameren recently purchased 700MW of wind and will invest approximately $4.5 billion on 3100MW of wind and solar by 2030.In brief, HB 225 would put extra financial burdens on Missouri ratepayers that are unnecessary and unfair. PLEASE VOTE NO ON HB 225.Thank you for this opportunity to express my views.

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WITNESS NAME

BUSINESS/ORGANIZATION:

WITNESS NAME: **DANIEL SHEA**		PHONE NUMBER: **720-713-0312**	
BUSINESS/ORGANIZATION NAME: **NATIONAL CONFERENCE OF STATE LEGISLATURES (NCSL)**		TITLE: **PROGRAM PRINCIPAL - ENERGY**	
ADDRESS: **7700 EAST 1ST PLACE**			
CITY: **DENVER**		STATE: **CO**	ZIP: **80230**
EMAIL: **daniel.shea@ncsl.org**	ATTENDANCE: **Written**	SUBMIT DATE: **2/17/2023 11:17 AM**	

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Missouri House of Representatives, Utilities CommitteeRe: Missouri House Bill 225February 22, 2023Written testimony of:Dan Shea Program PrincipalNational Conference of State LegislaturesChairman Bromley and members of the Committee, thank you for the opportunity to submit testimony on Missouri House Bill 225. My name is Dan Shea. I am a program principal in the energy program at the National Conference of State Legislatures (NCSL), where I have covered nuclear energy policy for NCSL since 2015 and have also worked on utility regulatory issues.NCSL is the only bipartisan organization serving all state legislators and legislative staff in the 50 states, commonwealths and territories. NCSL does not take a position on Missouri House Bill 225 but submits this written testimony for informational purposes. I will provide background on Construction Work in Progress (CWIP) laws, in addition to providing some information on the broader transitions and state policies that are reshaping the energy sector in the United States. House Bill 225 and CWIP LawsCWIP is a financing mechanism which enables utilities to finance capital projects by allowing them to incrementally collect costs from customers throughout the course of construction, with approval and oversight from the state utility regulatory commission. These laws lower the risk to utility companies and shareholders and can reduce the overall amount needed to finance a project. Due to the high up-front costs of developing nuclear power plants, CWIP has been instrumental in helping developers overcome financing hurdles, although opponents argue that it shifts too much risk onto customers. Missouri and New Hampshire are the only two states in the U.S. with outright bans on CWIP. Idaho and Texas have enacted legislation to discourage its use, but ultimately leave it to the discretion of state utility regulatory commissions. In Georgia and South Carolina, state lawmakers decided to repeal CWIP laws designed specifically to support new nuclear power projects following cost overruns on projects developed under the policies. As introduced, House Bill 225 would provide an exemption to the state's ban on CWIP by allowing developers of new nuclear power plants and renewable power facilities with a rated capacity of 200 megawatts (MW) or greater to apply for advanced cost recovery on these projects. The bill, if enacted, would enable a new financing mechanism for larger capacity carbon-free power projects and encourage the development of these types of resources.The Energy TransitionTwo decades ago, coal accounted for more than half of electricity generation in the U.S., while nuclear and natural gas together made up another 35%. Since then, an enormous shift has begun as some states and utilities have moved to decarbonize the electricity sector. In 2021, natural gas generated nearly 40% of the nation's electricity, while coal, nuclear and renewables each made up around 20%, according to the U.S. Energy Information Administration. In terms of renewables, wind energy generated around 9%, hydropower around 6%, solar around 3%, with the remainder a combination of biomass and geothermal.These shifts have taken place due to a complex set of circumstances that

include:• Sustained low natural gas prices resulting from the development of new domestic resources through innovative drilling techniques in the late 2000s, known as the Shale Revolution;• State and federal policies to support and grow renewable generation such as solar and wind, aided in recent years by the falling cost of renewable projects;• Federal and state regulation of greenhouse gas emissions (GHGs), including the U.S. Environmental Protection Agency's Mercury and Air Toxics Standards (MATS), which applied primarily to coal units and went into effect in 2014;• Market dynamics and competition, with low-cost natural gas and renewables driving power prices below the threshold at which legacy resources can compete economically in wholesale power markets.All of these factors have created an economic environment that has been unfavorable to traditional, legacy resources, such as coal and nuclear power plants. A number of states have worked to preserve existing nuclear plants through policies that compensate those resources for their carbon-free attributes, while Congress recently enabled a similar mechanism at the federal level through the Infrastructure Investment and Jobs Act. The bipartisan $1.2 billion infrastructure package included up to $6 billion to support existing nuclear reactors, in addition to a $3 billion carve-out to support the development of advanced nuclear projects.However, the coal industry has continued to decline as utility initiatives and public policy, driven by public sentiment, have shifted to embrace cleaner resources. These dynamics are likely to continue—and even accelerate—in the coming years. The recent increase in electricity prices, combined with reliability concerns and decarbonization efforts, could also affect the rise of natural gas as an electric generating resource in the coming years. The cost of natural gas tripled over the course of 18 months, causing electricity prices to increase substantially across the country. Additionally, several winter weather events in recent years have exposed reliability concerns when natural gas supply failed and caused significant outages among natural gas generators.The current economic environment and the implementation of new federal and state policies to further reduce carbon emissions in the electric sector could prove beneficial to carbon -free or -neutral resources over the coming decade. In particular, the Inflation Reduction Act provided a variety of incentives for carbon-free and -neutral technologies, including the following incentives that could be applied to new nuclear power facilities:• Investment tax credit for owners of new carbon-free generation, worth 30% of the amount paid to build a facility;• A new clean electricity production tax credit for any carbon-free generator that begins construction in 2025 or later, worth at least $25 per MWh of electricity generated;• Coal-to-nuclear bonus tax credit, offering a 10% addition for new facilities sited in coal and other fossil fuel communities that are affected by the clean energy transition;• Clean hydrogen production tax credit based on the carbon-intensity of the hydrogen production;• Nuclear power production tax credit for existing reactors of up to $15 per MWh from 2024 through 2032 to prevent premature closure.Relevant State Policies House Bill 225 would permit CWIP financing for new nuclear power and renewable facilities rated at 200 MW electric generating capacity or greater, facilitating the development of carbon-free resources for the state's utilities. Over the past decade, many states have enacted policies to incentivize the development of carbon-free resources. I will outline several of the most relevant policies below.Renewable Portfolio Standards & Clean Energy Standards To date, 30 states, Washington, D.C., and three territories have adopted renewable portfolio standards (RPS) that set renewable energy requirements and goals for their electric utilities. Over the past several years, more than a dozen of those states and territories have set aggressive targets nearing and up to 100% renewable or carbon-free by 2050. At least nine of those states have expanded the types of resources that qualify under those programs to include "carbon-free" or "carbon-neutral" resources, which allows for nuclear power or fossil fuel-fired generation with carbon capture and sequestration (CCS) technology to help meet portions of those requirements. Utility carbon-reduction goals have complimented many of these state policy initiatives. At least 64 electric utilities in the U.S., representing nearly 70% of total electric customers, have publicly committed to carbon or emissions reduction. Of those, 40 utilities have established goals to be carbon-free or net-zero emissions by 2050. Most of the goals set by utilities are defined broadly enough to include nuclear or fossil fuel-fired generation with CCS.Support for SMRs & Advanced ReactorsIn recent years, a growing number of states have enacted legislation to support the development of small modular reactors (SMRs) and advanced reactors as dispatchable, carbon-free resources to support decarbonization and grid reliability. These technologies are generally rated at under 300 MW electric generation and are designed to benefit from modular factory fabrication of components and economies of series production to reduce costs.The Wyoming legislature enacted HB 74 in 2020 to establish a preference and pathway for redeveloping retired coal-fired power plants as SMR facilities. In 2022, the legislature amended the law to allow for advanced nuclear reactor development more broadly. Similarly, Indiana enacted a new law in 2022, which aims to incentivize the development of SMRs on the site of retired coal or gas generators. Montana studied the feasibility of replacing certain coal-fired units with advanced nuclear generation.Meanwhile, Nebraska extended existing incentives for renewable generation under the ImagiNE Nebraska Act to apply to companies that build advanced nuclear reactors, while Alaska enacted a new law to streamline the permitting process for microreactor

projects—defined as reactors with a capacity of 50 MW or less.Utah and Idaho have also passed legislation in support of the development of SMRs in recent years, often citing the potential economic benefits that the advanced nuclear industry could bring to their states. Idaho, in particular, enacted two tax exemptions to support the development of an SMR project planned in the state. Meanwhile, five states have commissioned studies to explore everything from coal-to-nuclear transitions to the role nuclear power can play in the clean energy transition.Opening the Door to New NuclearThere are currently 12 states with restrictions or moratoriums on the construction of new nuclear facilities. In recent years, four states—Kentucky, Montana, West Virginia and Wisconsin—have fully repealed these statewide restrictions on the development of new nuclear power facilities, while Connecticut enacted a partial repeal that provided an exemption to permit the development of an SMR at the state's only nuclear power plant.While these do not provide direct incentives to companies interested in building new nuclear, these measures do open the door to the development of nuclear power facilities in these states in the future.ConclusionOnce again, I would like to thank Chairman Bromley and the members of the Committee for the opportunity to submit testimony on Missouri House Bill 225. Please feel free to reach out to me with any questions or research requests. You can reach me either by email (daniel.shea@ncsl.org) or phone (303-856-1534).

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