**1AC**

**A steady power supply is essential for sustaining productivity, protecting lives, and enabling the progress that shapes our future. Thus, Sophie and I have never been prouder to affirm the resolution, Resolved: The United States federal government should substantially increase its investment in domestic nuclear energy.**

**America’s plan to eliminate Russian uranium imports by 2028 is causing massive uranium shortages**

**McFall just 3 weeks ago writes** [Caitlin McFall (Caitlin McFall is a Reporter at Fox Business), 3-8-2025, “US eyes dangerous gap in nuclear fuel supplies in major threat to energy, national security”, Fox Business, <https://www.foxbusiness.com/energy/us-eyes-dangerous-gap-nuclear-fuel-supplies-major-threat-energy-national-security> DOA 3/27/25] // SH

The U.S. is facing a dangerous gap in its ability to access nuclear fuel and stares down a potential supply chain shortage in enriched uranium — which is vital for America's energy and national security. The U.S. relies almost entirely on foreign exports, including from Russia, for its nuclear fuel needs — **a factor that has put the U.S. in even greater jeopardy after Washington agreed to cut all uranium imports from Russia by 2028.**  But there’s a glaring problem with this move — **there is not enough enriched uranium in the world to make up for the amount of exports the U.S. relies on from Russia**, as well as the import cuts made by the European Union following Russia's invasion of Ukraine. "The whole world is dependent on Russia," Dan Leistikow, Vice President of Corporate Communications with American nuclear power company Centrus, told FOX Business. Leistikow explained that even under the most aggressive timetable to reboot U.S. production of its nuclear energy, it is estimated to take between six and seven years to replace what is imported from Russia — potentially leaving up to a four-year gap where there could be major nuclear fuel shortages. Enriched uranium is used in various vital sectors in the U.S., including as a fuel source for advanced reactors, energy security, providing fuel for the Navy's nuclear needs, as well as maintaining the U.S.' nuclear deterrence. While there are three major producers operating commercial enrichment plants in France, Germany, the Netherlands, the U.K., the U.S., and Russia, **the U.S. only supplies 5% of its domestic needs**, according to the World Nuclear Association. As of 2022, **Russia accounted for** nearly half of the world’s global enrichment capacity, including **20% of the U.S. market**, according to information shared by Centrus with FOX Business.

**Domestic mining will never be enough to make up for these losses**

**According to Gracelin Baskaran of Cambridge University** [Gracelin Baskaran (Gracelin Baskaran is director of the Critical Minerals Security Program at the Center for Strategic and International Studies (CSIS). Dr. Baskaran holds a doctorate from the University of Cambridge), 2-5-2025, “Fueling the Future: Recommendations for Strengthening U.S. Uranium Security”, Center for Strategic and International Studies, “Fueling the Future: Recommendations for Strengthening U.S. Uranium Security”, <https://www.csis.org/analysis/fueling-future-recommendations-strengthening-us-uranium-security#:~:text=U.S.%20domestic%20uranium%20mining%20will,uranium%20reserves%20and%20production%20capacity>. DOA 3/27/25] // SH

Tariffs are a bedrock of President Trump’s economic diplomacy tool kit. At a time when China and Russia already account for 62.6 percent of the world’s enrichment capacity, it is particularly important to foster collaborative policies with uranium-rich allies. Not only is **Canada** the second-largest producer and exporter of uranium in the world, behind only Kazakhstan, it **is the single largest supplier of uranium to the United States, providing** about **25 percent of its domestic consumption.** Canada does not enrich its own uranium, but it **provides critical feedstock for the United States** as it builds its own enrichment capabilities. President **Trump’s** announcement that he would impose a **25 percent tariff on** all **Canadian imports will have significant consequences for the United States’ uranium supply. The imposition of tariffs on this uranium** and/or the volatile tariff policies more generally have the potential to **displace Canadian uranium exports to other countries, exacerbating an existing uranium shortage in the United States.** Rather than imposing the proposed tariffs, the United States should enact a preferential supplier trade regime in the nuclear sector with key allies. Preferential trade status for nuclear suppliers in countries like Australia, Canada, France, Japan, and the United Kingdom can strengthen uranium security through trade, rather than weaken supply chains with tariffs. Enhance partnerships with key allies Canada and Australia through a Joint Uranium Supply Chain Partnership Initiative. **U.S. domestic uranium mining will not be enough—the United States sits on a mere 1 percent of the world’s** known **uranium resources.** Canada and Australia are two of the United States’ closest allies, from both economic and defense standpoints, with significant uranium reserves and production capacity. The next administration should deepen cooperation among these allies to advance the development of uranium supply chains for both civilian and defense purposes. A precedent of trade and defense agreements and partnerships already exists among these three nations; take, for example, the Canada-Australia Partnership on Emerging Missile Defence Research, the Quadrilateral Security Dialogue linking the United States and Australia, and the AUKUS agreement linking the United States and Canada. A multilateral joint partnership for uranium production and nuclear capabilities between these three governments and their private industry counterparts holds the potential to strengthen uranium supply chains for allies.

**Thus, because it is impossible for the US to expand nuclear energy through uranium mining, integral fast reactors are the most likely implementation of the resolution. IFR doesn’t require uranium as it recycles nuclear waste from nuclear weapons but requires federal support in order to expand**

**According to Tom Blees of the SCGI** [Tom Blees; ND; president of the Science Council for Global Initiatives, member of the selection committee for the Global Energy Prize, considered Russia's equivalent of the Nobel Prize for energy research, and a consultant and advisor on energy technologies on the local, state, national, and international levels; SCGI, “Retaking the Global Lead in Nuclear Technology,” https://www.thesciencecouncil.com/advisors/active-advisers/tom-blees-president/348-retaking-the-global-lead-in-nuclear-technology-2]

By 1994, this team had accomplished what they’d set out to do. The pride in their accomplishment was palpable, for they’d literally solved humanity’s energy problem. The **integral fast reactor (IFR) technology** they’d developed would be able to use **unwanted nuclear weapons** material, **spent** nuclear **fuel** (deplorably tagged with the misnomer “nuclear waste”), and even the vast stockpiles of depleted uranium for fuel, and leave **no long-lived** radioactive byproducts to bedevil future generation. So much potential fuel was already out of the ground that such reactors could power the planet with carbon-free energy for a **thousand years without** any **further mining** or enrichment. It seemed almost too good to be true. Alas, it seems that it was, but not through any fault of the technology. **Pure** misguided **politics killed** and essentially buried the project just as it was in its final demonstration phase, and it languished virtually unknown for over a decade. Russia still had a fast reactor running reliably (as it does to this day), but it lacked the key features that made the IFR so economical and fail-safe. After that brutal disappointment in 1994, groundbreaking nuclear development at the national labs pretty much ground to a halt. But the **need** for **nuclear power** was only **increased**, a realization that dawned on countless millions of people concerned about both climate change and global development. **France** and **Sweden** had demonstrated that entire countries could **convert** their generating systems to nuclear in a mere decade, and soon young nuclear engineering graduates and some of those who’d worked on the older and very promising projects began forming startup companies and creating reactor designs that built upon previous work to create nuclear power plants that promised to be walk-away safe and economical. Unfortunately, by this time the regulatory regime that had developed at the **N**uclear **R**egulatory **C**ommission had morphed into a virtually insurmountable obstacle to evolutionary development. Long-established companies like Westinghouse and GE found themselves having to spend upwards of a billion dollars and waiting a decade or more just to get approval to build reactors that were merely evolutionary modifications of existing light-water reactor concepts. Those (including GE) that wanted to build different types of reactors like the fast reactor patterned after the IFR faced hurdles even greater than that, for such designs had never been approved and it’s doubtful that the NRC even has sufficient qualified personnel to adequately put them through the certification process. Since the national labs are no longer developing new designs and a lot of startups are taking on that role, the **actual building** and deployment is essentially **moribund**. How can a small startup face a billion dollar (or more) hurdle in hopes of selling a product that’s never been built and tested yet? The license and certification system requires approval before anybody can even turn a wrench. The new reactor designs have to be built on paper and in computers. In the old days, at the national labs that gave birth to the nuclear power era, the system could be described as **test-then-license**. Today, that’s been **turned** on its **head**, to a **license-then-test** system. Unless we can turn this system around and return to a test-then-license development model, countries like China and Russia will be the future leaders of nuclear innovation. Those command economies make a test-then-license development model possible, and the advantages to leading the world in this important field are obvious. As they and other nations pass the USA in advanced reactor development, they’ll also be the leading voices when it comes to international oversight regimes that will apply to the dozens of countries where they’ll be selling their reactors. But there is a way to turn the situation around in the USA, and it could happen quickly. It would take very little legislative change, if any. Mostly it requires a different vision, and a recognition that trusting our eminently qualified national laboratories is as critical today as it was at the dawn of the nuclear age. Let’s illustrate such a vision with a hypothetical case. We’ll take a reactor designer called Newclear as an example, though it could be any of a number of reactor startups. Newclear wants to build 100MWe small modular reactors to be clustered as required, with a 10-unit (1000MWe) configuration being most frequently mentioned. How might that be done with a new developmental policy? In this scenario, instead of submitting their design to the NRC for review, Newclear submits it to a **national laboratory**. Idaho National Laboratory is the logical candidate, both for its variety of experts but also for its remoteness and large area, characteristics that led to it being chosen in the first place for nuclear reactor development. Newclear ponies up a certain amount to cover the initial costs to INL, say five million dollars. Their plan is to build a full-scale 100MWe reactor module. INL establishes a**n oversight group (OSG**) that will monitor the project from start to finish. The group brings in nuclear engineers, fuel specialists, chemists, materials scientists, and other needed specialists from outside if there aren’t suitable experts already at INL who are available to lend their talents to the OSG. The group would also include at least one person from the NRC, so that when the design is eventually submitted for licensing they will have been there since Day One and will have a greater understanding of both the reactor design and the process that led to its construction. The first duty of the OSG, which will work closely with Newclear’s people for the duration of the project, is to evaluate the design in detail to determine, primarily, its safety qualifications. The economics of Newclear’s reactor is beside the point as far as INL is concerned. If the prototype reactor can be built and started up safely in the estimation of the OSG, they get a green light. Now the site for the prototype is determined. It will be built along the perimeter of the INL property, within the security zone, but close to the edge since later on it will be excised from the lab’s property if the project is successful (more on that later). Alternatively, a sufficiently large annex just outside INL’s land can be chosen and temporarily incorporated into the lab’s security perimeter for the duration of the project. At this point Newclear gets to work. Access roads are built if necessary, and construction commences, all at the expense of Newclear. The OSG monitors all aspects of the project and evaluates and approves the construction in phases as it progresses. Newclear and the OSG will have already settled upon a stepwise process for construction, each step being approved by the OSG before the next is started. This process continues until the reactor is fully built and ready for pre-fission testing. Such testing and the subsequent fuel loading and stepwise fission testing of the reactor mirrors the development process that served perfectly well through the entire development phase from the dawn of nuclear power until the last major project, the aforementioned Integral Fast Reactor (**IFR**), was terminated in 1994. During all those years of impressive developments, our nation trusted the judgement of its national lab scientists and engineers. The logic of this new approach is to copy and **renew** that **old approach**.

**There is already some governmental interest in integral fast reactors, meaning that more investment is likely under the aff**

**Argonne ‘24 concludes** Nuclear Engineering Division Of Argonne National Laboratory, 7-2-2024, "The Integral Fast Reactor (IFR)", No Publication, https://www.ne.anl.gov/About/reactors/integral-fast-reactor.shtml

**The IFR**’s history is embedded in the history of nuclear power in the United States – in its ups and downs, and in the plusses and minuses of nuclear technology itself. Its story starts sixty years ago with the first reactor that ever [produced useful electrical power](https://www.ne.anl.gov/About/reactors/frt.shtml#fragment-4). IFR development began in 1984 with the “advanced reactor development program” that was carried out for a decade at Argonne. The **program** was cancelled in 1994 for non-technical reasons. But it **continues at a low level in studies and programs of the US Department of Energy** and in programs around the world today, due to its ability to provide a truly inexhaustible energy technology for entire nations.

**With that in mind, our sole argument is about Energy Prices**

**US electricity relies heavily on fossil fuels, as**

**the US Energy Information Association quantified in 2024 that** [U.S. Energy Information Association (The U.S. Energy Information Administration (EIA) is a principal agency of the U.S. Federal Statistical System responsible for collecting, analyzing, and disseminating energy information to promote sound policymaking, efficient markets, and public understanding of energy and its interaction with the economy and the environment), 7-15-2024, <https://www.eia.gov/energyexplained/us-energy-facts/> DOA 3/13/25] // SH

U.S. energy production has been greater than U.S. energy consumption in recent years U.S. total annual energy production has exceeded total annual energy consumption since 2019. In 2023, production was about 102.83 quads and consumption was 93.59 quads. **Fossil fuels**—petroleum, natural gas, and coal—**accounted for** about **84% of** total **U.S.** primary **energy production in 2023.** The percentage shares and amounts (in quads) of total U.S. primary energy production by major sources in 2023 were:2

**However, such reliance on fossil fuels is driving price spikes in two key ways. First is Pipelines, which are necessary for electricity generation from fossil fuels**

**Lehigh University confirms that**[Lehigh University, no date, "ELI: Energy: Support Materials: Fossil Fuels", Lehigh University, <https://ei.lehigh.edu/learners/energy/fossilfuels/fossilfuels11.html>] // SH

Transportation of Fossil Fuels Despite their negative environmental impacts, **fossil fuels are** still in high demand. This means they need to be **transported around the countr**y--and sometimes—around the world. Petroleum (crude oil) is relatively easy to transport, but can cause catastrophic damage if spilled. **The safest and cheapest way to transport large amounts of petroleum (crude oil) over land is** **via pipelines.** Construction, placement of the pipeline and control of the pipeline often figure heavily in politics between states and countries. When petroleum (crude oil) needs to travel overseas, oil tankers are used. **Natural gas is easy to transport over land in pipelines**, but difficult to transport over oceans due to its low density and thus large volume. Increasingly, countries are importing and exporting natural gas in a liquefied form. If natural gas is chilled to about -260°F, it changes to liquid form and can be easily transported and stored. It takes up much less space and can be loaded into domed tanks, like the ones pictured on the tanker above. The **tanks hold the gas in liquefied form until it’s needed, then it is converted back into gas and sent through pipelines to consumers.** Transporting coal can be costly but there are many ways to do it. Most of the coal in the USA travels by train, at least for part of its journey from mine to market. Near the mine, coal can be moved around by trucks and conveyors. River barges and ships are often a cheaper means of transport than trains but are obviously limited in where they can go. Finally, **if the coal is crushed and mixed with water, it can even travel through a pipeline**

**However, the US is facing a lack of pipeline space, hindering efficiency**

**Scott Disavino of Reuters wrote two weeks ago that** Scott Disavino, Scott Disavino Covers the North American power and natural gas markets. 3-13-2025, "AI, LNG demand to keep US natgas use at record highs but bottlenecks threaten", Reuters, https://www.reuters.com/business/energy/ceraweek-ai-lng-demand-keep-us-natgas-use-record-highs-bottlenecks-threaten-2025-03-12/

HOUSTON, March 12 - **U.S. natural gas use is** set to continue **hitting record highs** due to soaring liquefied natural gas (LNG) demand and power consumption from data centers, executives said at a conference this week, while also warning a lack of infrastructure could hurt the industry. The U.S. is the world's largest gas producer and is expected to produce some 105.2 billion cubic feet per day (bcfd) this year, according to U.S. government data. Demand has already hit a record nearly each year since 2010, but some **markets in the U.S. have been hampered by lack of** available **pipeline space. Pipeline capacity has not caught up** with production after a series of project cancellations over the last eight years, according to Toby Rice, CEO of EQT (EQT.N), the No. 2 U.S. gas producer. **This has contributed to a 35% rise in electricity costs for U.S. consumers in the last four years**, he said. "We have the gas, we just don't have the pipelines to get it to places, so now you see a situation where it doesn't matter how much we produce," Rice said in an interview on the sidelines of the conference

**Fortunately, nuclear energy solves**

**According to Kefan Zhang of the School of Nuclear Science** [Kefan Zhang a, Weixiang Wang a, Chengjie Duan b, Xiangliang Chen b, Wenshun Duan a, Xiao Luo a, Hongli Chen a (a: School of Nuclear Science and Technology, University of Science and Technology of China, Hefei, Anhui, 230026, China, b: China Nuclear Power Technology Research Institute Co., Ltd, Shenzhen, 518028, China), 8-24-2023, “A small modular lead-bismuth-cooled fast reactor for mobile energy supply”, Progress in Nuclear Energy, Volume 164, October 2023, 104860, accessed through Science Direct, <https://doi.org/10.1016/j.pnucene.2023.104860> DOA 3/26/25] // SH

The Argonne National Laboratory has developed several lead-cooled small transportable and autonomous reactors, the STAR-LM(Sienicki and Petkov, 2002a, 2002b), SSTAR (Sienicki et al., 2008; Smith et al., 2008) and SUPERSTAR (Sienicki et al., 2011; Bortot et al., 2011). SSTAR is a conceptual design for a Small Secure Transportable Autonomous Lead-Cooled **Fast Reactor.** It**s** development has focused on creating a small, modular, proliferation-resistant reactor suitable for international deployment in small grid applications. The reactor has a thermal power of 45 MW and uses S–CO2 Brayton cycles to convert power. The reactor vessel has a height of 12 m and a diameter of 3.23 m, and its design core lifetime is 30 years. The 100-MWe SVBR-100 (Zrodnikov et al., 2011), developed by the Russian Federation, is designed to supply both electricity and process heat for non-electrical applications. Its **important features include**: **an integral** (monoblock) **arrangement of primary circuit equipment, which eliminates** primary circuit **pipelines** and valves; **the ability to transport the reactor monoblock in factory-ready condition by railway or other transport**; and a core breeding ratio (CBR) that exceeds 1 when MOX fuel is used. The Xi'an Jiaotong University has developed an innovative small transportable lead‐bismuth cooled fast reactor (SPARK) (Zhou et al., 2018; Hashim et al., 2020), with a rated power of 20 MWth and capable of operating for 20 years without refueling. The Nuclear Transmutation Energy Research Center of Korea has developed a small, proliferation-resistant transportable power capsule known as PASCAR(Hwang et al., 2008) based on earlier large- and medium-scale burner designs of PEACER (Proliferation-resistant, Environment-Friendly, Accident-tolerant, Continual, and Economical Reactor). This design features an integral reactor capsule, an open-square lattice core of U-TRU-Zralloy fuel rods, and in-vessel steam generators with no pump. A capsule can deliver a reference thermal power of 100 MW cooled by LBE and operate for 20 years with the initial loading of the core.

**The second way fossil fuels cause price spikes is Canadian Exports, as the US is currently very reliant on Canada for fossil fuels**

**According to the USEIA in 2020**, The U.S. Energy Information Administration is a principal agency of the U.S. Federal Statistical System responsible for collecting, analyzing, and disseminating energy information 6-5-2020, "Canada is the largest source of U.S. energy imports", No Publication, https://www.eia.gov/todayinenergy/detail.php?id=43995d

**U.S. crude oil imports from Canada accounted for 56% of all crude oil imports to the U**nited **S**tates in 2019, averaging 3.8 million barrels per day (b/d)—up from 3.7 million b/d in 2018. In 2019, the United States exported 459,000 b/d of crude oil to Canada, which remained the largest destination for U.S. crude oil exports. U.S. crude oil exports to Canada are typically light, sweet grades that are shipped to the eastern part of the country. U.S. crude oil imports from Canada tend to be heavy and are sourced from oil sands in Alberta (Western Canada), and most of these exports flow to U.S. Midwest refineries.

**While this model may have worked in the past, Trump’s recent tariffs are pushing Canada to restrict oil exports**

**According to Jarrett Renshaw of Reuters from two weeks ago** [Jarrett Renshaw (Writer at Reuters) and Arathy Somasekhar (Houston-based energy reporter focused on oil markets and energy companies. Arathy closely tracks U.S. crude supply and its impact on global markets, ever changing crude oil flows, and reports on U.S. shale producers and oilfield service companies), 3-12-2025, CERAweek Canada could restrict its oil exports to US if Trump trade war escalates, Reuters, <https://www.reuters.com/business/energy/ceraweek-canada-could-restrict-its-oil-exports-us-if-trump-trade-war-escalates-2025-03-11/> DOA 3/13/25] // SH

HOUSTON, March 11 (Reuters) - **Canada could** impose non-tariff measures such as **restrict**ing its **oil exports to the U**nited **S**tates or levying export duties on products **if a trade dispute with the U.S. escalates further**, Canada's energy minister Jonathan Wilkinson said on Tuesday. "When we are talking about non-tariff retaliation, it could be about restricting supply, it could be putting our own export duties on products. It could be energy and minerals, **it could be broader than that**," Wilkinson said in an interview with Reuters.

**Canadian retaliation causes US oil prices to spike, as**

**David Goldwyn, former envoy for the US State Department, explained in January that** [David L. Goldwyn (David Goldwyn is president of Goldwyn Global Strategies, LLC, chairman of the Atlantic Council Global Energy Center’s Energy Advisory Group, and the former special envoy and coordinator for international energy affairs at the US State Department) and Joseph Webster (Joseph Webster is a senior fellow at the Atlantic Council’s Global Energy Center and Indo-Pacific Security Initiative and editor of the independent China-Russia Report), 1-30-2025, “Tariffs on Canada and Mexico could hurt Trump’s quest for US energy dominance”, Atlantic Council, <https://www.atlanticcouncil.org/blogs/new-atlanticist/tariffs-on-canada-and-mexico-could-hurt-trumps-quest-for-us-energy-dominance/> DOA 3/14/25] // SH

The Canadian energy partnership is a case in point. **Canada** is the United States’ largest crude oil partner, by far, and many landlocked US markets lack alternative suppliers. Through the first ten months of 2024, the True North **comprised about 62 percent of all US crude oil imports.** Mexico is also a significant player, accounting for about 7 percent of all crude oil imports over the same period (and more in markets along the southern border). It is also the largest purchaser of US natural gas and petroleum products, as well as a supplier of crude oil to US refineries. **Tariffs on Canada** and Mexico, the two largest crude oil exporters to the United States, **would have profound implications for US energy markets.** That’s because crude oil imports, including from these two countries, are transformed by US refineries into crude products for domestic consumption or export. Take heavy oil imports (HTS Code: 2709001000). Notice that **Canada is by far the largest exporter of heavy crude oil to the United States**. In some US markets, such as the Midwest, **there is no alternative import supplier of heavy oil.** **Nor can domestic US crude production completely replace imported crude.** US crude oil production is typically of light, sweet grades, while the United States’ “complex” refineries are optimized to run on heavier grades—such as Canadian and Mexican crude. Indeed, imports account for about 39 percent of the crude used by domestic refineries. Accordingly, **if the United States imposes 25 percent tariffs on imports of Canadian crude oil, domestic energy prices would** likely **spike**, especially in states in the US Midwest. **Most of the economic literature suggests that** **costs would be passed on immediately to consumers in the form of higher** retail gasoline and diesel **prices.** Tariffs on crude oil imports will also impair US exports of crude products, like fuel oil, diesel, and gasoline. Additionally, over time there could be negative impacts on the US natural gas trade, as countries in Latin America, Europe, and Asia potentially see reliance on US supply as a political vulnerability. Mexico, the largest recipient of US oil and gas exports, could also look to liquefied natural gas (LNG) to hedge against the reliability of the US supply. To see how tariffs could harm US exports, consider the recent US-Colombia trade spat. Due to a dispute over migration, Trump threatened a 25 percent tariff on Colombian imports, with a potential increase to 50 percent, while Colombia threatened its own retaliatory tariffs. While imports of Colombian crude only comprise about 3 percent of total US crude oil imports, this isn’t true across all markets and products. Colombia provides a significant amount of heavy crude oil imports (HTS Code: 2709001000) to the United States—and especially to Houston, where it shipped more than 137,000 barrels per day through the first eleven months of 2024, according to the US Census Bureau. Since Houston exports more refined products than any other US district, tariffs on Colombian oil would, all things being equal, raise the prices of heavy US crude products, such as marine fuel, diesel, and gasoline. Accordingly, tariffs on Colombian (or Canadian, or Mexican) imports would likely make US exports relatively more expensive and therefore less competitive in international markets—even before considering second-order consequences, such as reciprocal tariffs. Disruptions to US crude product exports could also have geopolitical ramifications across Latin America, including for the US-China competition. Several Latin American countries lack domestic refining capacity and rely on the United States for their energy security needs. To hedge against US unpredictability, Latin American countries may seek out other arrangements, including by finding alternative suppliers. If US crude products become less attractive for importers across Latin America and beyond, **China might attempt to exploit the opportunity.** China is the world’s largest refinery market, by capacity, and its domestic gasoline and diesel demand may have already peaked due to a combination of electric vehicles and LNG for trucking. Accordingly, Chinese refineries may increasingly seek to export crude products abroad, including to Latin America, although it’s worth noting that Chinese global fuel exports are currently subject to export quotas. US policymakers should think deeply before placing tariffs on energy imports to Canada or Mexico. Domestic markets will be impacted by higher taxes on crude oil imports because they will raise refiner acquisition costs. In many US markets, such as states in the US Midwest, there is no alternative to Canadian oil imports, so **the inflationary impact will be immediate and** likely **proportional to the size of the tariff.** The United States should also not discount the potential impacts of retaliatory tariffs. While Mexico is most likely to retaliate against US tariffs by imposing duties on agricultural products, any serious reduction of US exports of natural gas or petroleum products to Mexico would sharply lower prices in the United States, potentially impacting domestic crude oil production. Refinery economics would be punished to the extent that importers substitute crude oil from other countries. If Mexico and Canada are targeted, there’s no question that Brazil, Argentina, and other major markets in Latin America will be watching as well. Rather than establishing US energy dominance, tariffs on energy products could accelerate the desire of major US hydrocarbon partners to diversify trade with other countries, including China. Energy tariffs could impact the competition with China in other ways. Tariffs on Canadian electricity and advanced energy exports might hamstring the US artificial intelligence (AI) development complex and military capabilities. In 2023, the United States imported 33 terawatt hours of electricity from Canada, helping power US data centers needed for AI. If domestic electricity prices rise, then US AI capabilities would suffer. Additionally, Canada is a significant exporter of lithium-ion (Li-ion) batteries to the United States, and these batteries often have dual-use implications, including for drones. If the United States places tariffs on Canadian Li-ion imports, then it could diminish US and allied military capabilities. Trump has made it clear that he seeks to address migration and fentanyl trafficking, and that he intends to do so with the threat and possible use of tariffs. These threats have certainly drawn the attention of US neighbors. But the short-term gains earned by threatening or imposing tariffs could lead to harmful direct and second-order consequences. A number of factors need to be weighed, and it would be useful if the administration paused major actions until its appointees were in place so they can provide strategic thoughts and input before precipitous actions are taken.

**Fortunately, nuclear energy solves as increasing investments in nuclear energy decreases reliance on fossil fuel imports**

**As the World Nuclear Association contextualizes in 2025** [World Nuclear Association (World Nuclear Association is the international organization that promotes nuclear power and supports the companies that comprise the global nuclear industry), 1-6-2025, “World Energy Needs and Nuclear Power”, World Nuclear Association, <https://world-nuclear.org/information-library/current-and-future-generation/world-energy-needs-and-nuclear-power#:~:text=%22Nuclear%20plants%20can%20contribute%20to,price%20movements%20in%20international%20markets.%22> DOA 3/14/25] // SH

Increased awareness of the dangers and effects of global warming and air pollution has led decision-makers, media, and the public to realize that the use of **fossil fuels** must be reduced and **replaced by** low-emissions sources of energy, such as **nuclear power [is]** – **the only** readily available large-scale **alternative to fossil fuels for production of a continuous, reliable supply of electricity**. For more information see page on Nuclear Energy and Sustainable Development. Security of supply A major topic on many political agendas is security of supply, as countries realize how vulnerable they are to interrupted deliveries of oil and gas. The abundance of naturally occurring uranium makes nuclear power attractive from an energy security standpoint. For more information see page on Nuclear Power and Energy Security. Economics As carbon emission reductions are encouraged through various forms of government incentives and trading schemes, the economic benefits of nuclear power will increase further. For more information see page on Economics of Nuclear Power. Insurance against future price exposure **A longer-term advantage of uranium over fossil fuels is the low impact that variable fuel prices have on final electricity production costs. This insensitivity to fuel price fluctuations offers a way to stabilize power prices in deregulated markets.** Is a rapid expansion of nuclear power capacity possible? It is noteworthy that in the 1980s, 218 power reactors started up, an average of one every 17 days. These included 47 in the USA, 42 in France and 18 in Japan. The average power was 923.5 MWe. It is not hard to imagine a similar number being commissioned in the future. See also the page in this series: Heavy Manufacturing of Power Plants. Appendix IEA: World Energy Outlook Annual editions of WEO from the OECD International Energy Agency (IEA) make clear the increasing importance of electricity, with all scenarios expecting demand growth to outpace that of total final energy demand. Also clear across successive reports is the growing role that nuclear power will play in meeting global energy needs, while achieving security of supply and minimizing carbon dioxide and air pollutant emissions. WEO 2021 presents electricity generation growth of between 75% and 116% over 2020-2050 across its three main scenarios. In the report's Sustainable Development Scenario, nuclear generation increases by 2022 TWh (75%) over the same period, requiring capacity growth of about 254 GW, or 61%. WEO 2020 presents electricity generation growth of between 46% and 51% over 2018-2040 across its two main scenarios (the 2020 publication did not include a New Policies Scenario). In the Stated Policies Scenario, the report's central scenario, annual nuclear generation increases by 729 TWh (27%) between 2018 and 2040, requiring an increase in capacity of 59 GW, or 14%. In the report's Sustainable Development Scenario, nuclear generation increases by 1610 TWh (60%) over the same period, requiring capacity growth of about 179 GW, or 43%. WEO 2019 presents electricity generation growth of between 51% and 67% over 2017-2040 across its three scenarios. In the Stated Policies Scenario, the report's central scenario, annual nuclear generation increases by 839 TWh (32%) between 2017 and 2040, requiring an increase in capacity of 69 GW, or 17%. In the report's Sustainable Development Scenario nuclear generation increases by 1773 TWh (67%) over the same period, requiring capacity growth of about 188 GW, or 46%. WEO 2018 presents electricity generation growth of between 49% and 72% over 2016-2040 across its three scenarios. In the New Policies Scenario, the report's central scenario, annual nuclear generation increases by 1121 TWh (43%) between 2016 and 2040, requiring an increase in capacity of about 100 GW, or 25%. In the report's Sustainable Development Scenario nuclear generation increases by 2355 TWh (90%) over the same period, requiring capacity growth of about 265 GW, or 65%. WEO 2017 presents electricity generation growth of between 48% and 75% over 2015-2040 across its three scenarios. In the New Policies Scenario, nuclear generation increases by 1273 TWh (50%) between 2015 and 2040, requiring an increase in capacity of about 100 GW, or 25%. In the report's Sustainable Development Scenario, nuclear generation increases by 2774 TWh (108%) over the same period, requiring capacity growth of about 300 GW, or 75%. WEO 2016 presents electricity generation growth of between 43% and 78% over 2014-2040 across its three scenarios. In the New Policies Scenario, nuclear generation increases by 1997 TWh (78%) between 2014 and 2040, requiring an increase in capacity of about 200 GW, or 45%. In the report's 450 Scenario, nuclear generation increases by 3566 TWh (141%) over the same period, requiring capacity growth of about 300 GW, or 95%. WEO 2015 presents electricity generation growth of between 45% and 84% over 2013-2040 across its three scenarios. In the New Policies Scenario, nuclear generation increases by 2128 TWh (86%) between 2013 and 2040, requiring an increase in capacity of about 220 GW, or 55%. In the report's 450 Scenario, nuclear generation increases 3765 TWh (152%) over the same period, requiring capacity growth of about 450 GW, or 115%. In June 2015 the IEA’s World Energy Outlook 2015 Special Report on Energy and Climate Change was published, which “has the pragmatic purpose of arming COP21 negotiators with the energy sector material they need to achieve success in Paris in December 2015”. It outlines a strategy to limit global warming to 2°C, but is very much focused on renewables. The report recommended a series of measures including increasing energy efficiency, reducing the use of inefficient coal-fired power plants, increasing investment in renewables, reducing methane emissions, and phasing out fossil fuels subsidies. Half of the additional emissions reductions in its 450 Scenario come from decarbonisation efforts in power supply, driven by high carbon price incentives. In this scenario, an additional 245 GWe of nuclear capacity is built by 2040 compared with a moderate ‘Bridge’ option. The IEA acknowledges that nuclear power is the second-biggest source of low-carbon electricity worldwide after hydropower and that the use of nuclear energy has avoided the release of 56 billion tonnes of CO2 since 1971, equivalent to almost two years of global emissions at current rates. The report suggests that intended nationally determined contributions (INDCs) submitted by countries in advance of COP21 will have trivial effect, and its purpose is clearly to suggest more ambitious emission reduction targets in its ‘Bridge’ scenario. While the report confirms that nuclear energy needs to play an important role in reducing greenhouse gas emissions, it projects nuclear capacity of only 542 GWe (38% increase), producing 4005 TWh, by 2030 in its main ‘Bridge’ scenario. Most of the new nuclear plants are expected to be built in countries with price-regulated markets or where government-owned entities build, own, and operate the plants, or where governments act to facilitate private investment.WEO 2014 had a special focus on nuclear power, and extended the scope of scenarios to 2040. In its New Policies Scenario, installed nuclear capacity growth is 60% through 543 GWe in 2030, and to 624 GWe in 2040 out of a total of 10,700 GWe, with the increase concentrated heavily in China (46% of it), plus India, Korea, and Russia (30% of it together) and the USA (16%), countered by a 10% drop in the EU. Despite this, the percentage share of nuclear power in the global power mix increases to only 12%, well below its historic peak. The 450 Scenario gives a cost-effective transition to limiting global warming assuming an effective international agreement in 2015, and this brings about a more than doubling of nuclear capacity to 862 GWe in 2040, while energy-related CO2 emissions peak before 2020 and then decline. In this scenario, almost all new generating capacity built after 2030 needs to be low-carbon. "Despite the challenges it currently faces, **nuclear power** has specific characteristics that underpin the commitment of some countries to maintain it as a future option," it said. "Nuclear plants **can contribute to the reliability of the power system** where they increase the diversity of power generation technologies in the system. For countries that import energy, it **can reduce** their **dependence on foreign supplies** and limit their exposure to fuel price movements in international markets." Carbon dioxide emissions from coal use level off after 2020 in the New Policies Scenario, though CCS is expected to be negligible before 2030. CO2 emissions from gas grow strongly to 2040.

**Making the switch to nuclear energy is absolutely critical – otherwise, millions of families are thrown into poverty**

**Yuru Guan of the University of Groningen writes** [Guan, Y. (Integrated Research on Energy, Environment and Society (IREES), Energy and Sustainability Research Institute Groningen, University of Groningen, Groningen, Netherlands), Yan, J. (Integrated Research on Energy, Environment and Society (IREES), Energy and Sustainability Research Institute Groningen, University of Groningen, Groningen, Netherlands), Shan, Y. (School of Geography, Earth and Environmental Sciences, University of Birmingham, Birmingham, UK) et al. Burden of the global energy price crisis on households. Nat Energy 8, 304–316 (2023). https://doi.org/10.1038/s41560-023-01209-8

**High energy prices** impose cost burdens on households in two ways. On the one hand, fuel price rises **directly increase household fuel bills** (for example, for heating and cooling, cooking and mobility). On the other hand, energy **and** fossil feedstock inputs needed for the production of goods and services for final household consumption will **lead to higher prices of household-expenditure items**12,13. Due to the unequal distribution of income, reflected in different household consumption patterns, surging energy prices could affect households in very different ways11,14,15. **Unaffordable costs of energy** and other necessities would **push** vulnerable **populations into** energy poverty and even **extreme poverty**16. Understanding how global energy prices are transmitted to households through global supply chains and how they are affected is crucial for effective and equitable policy design.

**This causes thousands of deaths**

**Paul Mueller of John Hopkins concludes** [Paul S. Muller, medical professor @ UT, 4-20-2023, NEJM Journal Watch: Summaries of and commentary on original medical and scientific articles from key medical journals, NEJM, https://www.jwatch.org/na56040/2023/04/20/poverty-leading-cause-death-us]

Current poverty is associated with 42% excess risk for death. Cumulative poverty (i.e., 10 continuous years of poverty) is associated with 71% excess risk for death. Survival of people in poverty diverges from those not in poverty at age 40. Divergence peaks at age 70 and diminishes thereafter. In 2019, among people who were 15 or older, cumulative poverty was the fourth leading cause of death (296,000 deaths), behind heart disease, cancer, and smoking, and ahead of dementia and obesity. Current poverty was the seventh leading cause (183,000 deaths), ahead of accidents, chronic lung disease, stroke, suicide, and homicide.

**2AC**

**No rebuttal ev read, lay round**