

SPOTLIGHT REPORT

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Nuclear and Solar After the Election

What's Happening: America's energy future is at a crossroads, and the path will be determined by the outcome of the November elections.

Why It Matters: Increasing emphasis on climate change has led governments around the world to reorient their economies around greener forms of energy. Additionally, the Russian invasion of Ukraine and resulting sanctions led to a disruption in the global supply chains of natural gas. The price of oil rose to six times the depths it reached during the Covid-19 recession in mid-2022, which resulted in elevated gasoline prices. **The topic has managed to wrap in industrial policy, climate change, culture wars, inflation, and labor fights. In 2024, everything's an energy issue. And — surprise! — the two parties have diametrically different worlds.** Democrats are championing the 2021 Infrastructure Investment and Jobs Act and the 2022 Inflation Reduction Act (IRA) as their vision. The two laws collectively contain hundreds of billions of dollars in direct government spending and/or tax credits focused on and emphasizing clean energy: solar, wind, nuclear, electric vehicles, etc. **And while President Biden entered the White House introducing a moratorium on federal oil and gas leases, increasing energy prices have led him to take a “more of everything” approach.** His ambitious policies supporting a zero-carbon future have not prevented oil and natural gas from hitting record production levels under his presidency. **Republicans have a simple policy: “drill, baby, drill.” Nuclear plants have found themselves the beneficiary of both worldviews.** The prospect of zero-carbon energy has softened Democrats' anti-nuclear activism while approval has been rising in both parties. **Politicians on both sides of the aisle are loath to let plants in their districts shut down, which would cost hundreds of jobs and raise prices.** As a result, a new bipartisan consensus has emerged to preserve the nuclear status quo as well as cautiously support experimental research. **Democrats are split in their priorities over solar energy, though. The green faction wants to promote clean electricity under any circumstances, while labor, industry, and national security groups would rather build solar components in the US.** Thus, the Biden administration has sought to balance their competing interests. That means Biden waived solar tariffs for two years (expiring this summer), allowing cheap Chinese products to enter the country, assuaging solar installers and environmentalists. Starting soon, tariffs and 45X credits for domestic production will kick in, boosting the prospects of home-grown companies like **First Solar (FSLR).**

What's Next: We currently have two divergent base cases for the outcome of the 2024 elections. The GOP is already primed to take control of the Senate, and current indicators suggest the White House and House are both a toss-up. The latter two are more likely than not to go the same way. **Thus, the first base case is a Republican sweep, and the second is divided government under a Democratic White House and House with a GOP-controlled Senate.** It's too early for political data to determine anything certain and it's best to currently think of the two as a coinflip (with the understanding there are obviously other permutations). **It goes without saying that under anything but a unified Republican government, there would not be major changes to the IRA. Status quo bias is strong in Washington, and with an effective veto over the process, Democrats would fight tooth and nail to preserve their gains. The situation gets interesting following a GOP sweep, however.** Republicans are not only ideologically opposed to the IRA but will almost need to repeal and/or modify large portions of it to find payfors ahead of major tax reform in 2025. **That doesn't mean the IRA will be all gone. The current question is whether solar can entrench enough to gain the sort of political protection nuclear already has.** While Democrats support it ideologically, Republicans are actually receiving the majority of the benefits resulting from clean energy tax breaks. **The survival of credits supporting them will depend, in part, on the investment red districts receive over the next year.**

Solar Faces 2024 Risk

Solar tax credits are in danger. Republicans have a real chance of winning the House, Senate, and presidency in 2025, and they have multiple reasons to target the IRA. First, many Republicans are ideologically opposed to the legislation. Not a single Republican voted for the bill in 2022. Since then, campaigning on eliminating it has become GOP orthodoxy, and repeal attempts have been common in the House of Representatives. Second, individual tax provisions in the 2017 Tax Cuts and Jobs Act expire at the end of 2025, essentially forcing Congress to respond. Trillions in tax policy lay on the line next year. **Given the opportunity to unilaterally reshape the tax code via party-line reconciliation bills, cuts would be at the top of the GOP's agenda.** Any cuts, however, would have to be offset in the long term, meaning savings would have to be found elsewhere. And where better to cut spending than the hundreds of billions found in Democrats' marquee legislative prize, the IRA? **The math almost necessitates some level of cuts to the IRA to find the pay-fors of the size needed.**

That doesn't mean that you can fully write off the IRA following a GOP sweep. To understand why, one must understand why nuclear power is thriving in Washington.

How Nuclear Was Saved

As background, the nation's 54 currently operating nuclear power plants supply a full fifth of the nation's electricity. That's about as much as either all coal generation or all renewables combined. The number of reactors peaked in 1990 and has been falling ever since as expensive maintenance costs asserted themselves and cheap natural gas flooded the market. **Before the Biden administration took office, more than half of the nuclear fleet was predicted to retire.** While renewables began to receive tax breaks during the Obama administration, nuclear plants (which also produce no greenhouse gasses) received nothing. This was nuclear('s) winter.

The specter of plant closures reshaped traditional alliances and prompted a bipartisan effort to save the industry. Solar would do well to follow the dynamics that powered this rescue.

First, a growing share of Americans (now [57 percent](#)) favor more nuclear plants for making [electricity](#). Republicans have always favored it more than Democrats. The current environmental movement has its roots in anti-nuclear and anti-proliferation activism. These groups took issue with the waste plants created and the risks associated with accidents. **Crucially, nuclear has rebranded itself as green and now commands majority support (50 percent) from Democrats, up from a low of 37 percent.** The previous stalwart opposition of environmental groups has been split by an increasing emphasis on climate change. While nuclear plants require fuel rods to operate (and are thus not renewable), they nevertheless remain a source of zero-carbon, greenhouse gas-free energy. Now both parties could get on board.

Second, politicians had incredible incentives to step in to prevent plant closures. Each plant single-handedly supports hundreds of jobs, many of which are high-paying. Additionally, closures would likely cause increases in electricity prices. A single plant creates roughly enough energy to power 100,000 households. Such a sudden drop in generating capacity is difficult to fill, leading to less supply available and higher rates for customers. One extra fact that helped win over environmentalists was the realization that the energy that would replace a nuclear plant was going to be dirty. Over 75 percent of lost generation would be replaced with [fossil fuels](#) (largely natural gas), meaning the country would actually regress on decreasing emissions.

Third, nuclear energy has kept itself from becoming politicized. The right loves talking about fossil fuels, and the left loves renewables. Nuclear energy is often forgotten about when speaking about America's electricity sources and that's mostly been a good thing for the industry.

In all, there are 54 plants dispersed among 49 districts and 27 states [across the country](#), and they proved too valuable to let close.

As a result, the 2021 Infrastructure Investment and Jobs Act (IIJA) included:

- \$6 billion credit to prevent premature plant shutdowns; and

- \$3.2 billion authorized and \$2.4 billion appropriated for advanced reactor demonstrations.

The next year, the IRA contained a \$15 per megawatt-hour tax credit for electricity sourced from existing nuclear plants. The Congressional Budget Office projected the provision to provide \$30 billion over the eligibility period (2024-2032).

Nuclear Doesn't Need Saving Anymore

The very same forces that aligned to support nuclear in the first place are the same reason that the industry's previously-won gains are unlikely to be fully rolled-back. Nineteen Republican senators voted for the IIJA, along with thirteen Republicans in the House. Fourteen of these senators remain in office, and those with elections this year are likely to win (six of the House representatives are still there). The bipartisan nature of the bill puts it on an especially firm footing. It's not an easy thing to undo something a quarter to a third of your members supported.

The IRA, however, is much more vulnerable to change than the IIJA. Indeed, some rollbacks would be essentially required to achieve the GOP's wished-for tax reforms. But on a spectrum between a full repeal and leaving the IRA untouched, any successful repeal attempt would likely fall in a range of probabilities in the middle. **There are certain parts more likely to survive and nuclear is one of them.**

Of the 49 districts with nuclear plants, 37 are held by Republicans. Of special note is the Arkansas Nuclear facility, located in House Natural Resources Chair Bruce Westerman's (R-AR) district. More lie in the districts of former House Majority Leader Rep. Steny Hoyer (R-MD) and the longest-serving woman in congressional history, Rep. Marcy Kaptur (D-OH). House Majority Whip Tom Emmer (R-MN)'s got one. The spectrum ranges on the GOP side from seven House Freedom Caucus members to a Republican who voted to impeach former President Trump. The other Republican to impeach Trump remaining in the House, Rep. David Valadao (R-CA), meanwhile, is being attacked by Democrats for not being pro-nuclear [enough](#). **There's at least one in six of the seven states that will most likely decide the presidential election.** In fact, the combination of the difficulty of reopening plants with the sharp decrease in power generation that would result gives operators a good amount of political leverage. The Biden administration approved a \$1.1 billion aid package this [week](#) to keep California's last operating plant alive for a few more years, and the state of Michigan is giving [\\$150 million](#) to reopen a recently closed location.

Will Solar Be Saved?

The extent of solar credits' survival under a unified Republican government depends on the level of investment red states and districts receive over the next year. Can the solar industry make itself indispensable, like nuclear before it?

While Republicans are firmly opposed to the IRA, analyses from [Bloomberg](#),

[Politico](#), [Credit Suisse](#), and the [Rocky Mountain Institute](#) all agree that red states and red districts are generally reaping the most benefits from the IRA, both in total and per capita. Two-thirds of new major projects announced since the IRA's passage are in red districts. Republican-held congressional districts are now home to more than [80 percent](#) of all utility-scale wind, solar farms, and battery projects currently under development. GOP states in the middle of the country are eminently fertile for both wind and solar production. Many have cheap land, low cost of living, and anti-labor laws. The [top four](#) states by wind power are red.

So far, investments have been flowing in. Goldman Sachs reports that [\\$282 billion](#) in clean energy projects were announced in the IRA's first year. They also found that private fixed investment in manufacturing facilities has spiked. This investment has been broadly distributed throughout the entire country. **“This regional distribution of announced projects translated into [\\$225 billion](#) of investment planned in Republican congressional districts as of July 25, compared with [\\$38 billion](#) in Democratic districts.** The jobs count so far also tilts in favor of Republican districts, which were in line for 96,216 new jobs, compared with 64,418 in Democratic districts.”

Another necessary fact: the IRA may be two or three times bigger than originally thought due to greater utilization of its tax credits. The Congressional Budget Office originally determined that the climate provisions of the law would cost [\\$391 billion](#) over the next decade. The Joint Committee on Taxation has since suggested a higher [\\$663 billion](#) cost, and other estimates from [Credit Suisse](#), [Goldman Sachs](#), [Penn Wharton](#), and the [Brookings Institution](#) now range from \$800 billion to \$1.2 trillion. This also suggests uncertainty in estimates that may narrow as time goes on and more data comes in. This is both good and bad news for the IRA. **While it reflects that people are using the credits, allowing it to become entrenched, cutting provisions will also generate more money than originally thought. This is yet another reason to believe in an intermediate outcome vis-a-vis an IRA repeal.** It means it is no longer necessary to restrict the credits as much to save the same amount of money while also increasing the political power demanding some of it be preserved. Turning the larger-than-expected spigot partially off allows representatives to find payfors for desired legislation while also allowing a large number of funds (in absolute terms) to flow into their districts.

That doesn't mean IRA investment doesn't face obstacles. At the front end, there's plenty of reason not to invest, at least right now. High-interest rates and material costs, geopolitical risk, remaining supply chain hang-ups, and doubt about the future of government support all threaten success. One Brookings Institution analysis [warns](#) that “macroeconomic conditions may have larger impacts on IRA investments than IRA investments have on macroeconomic conditions.” **Even after a project is announced, logistical issues may postpone operations past the point of helpfulness, and inflation has forced some companies to recant.** This is a problem shared by the Biden administration. Most of these announced projects remain in their early stages without much commitment. Only 23,000 manufacturing jobs were added nationally last year, and crucial swing states Michigan, Wisconsin, and Pennsylvania actually *lost* such [jobs](#). If these jobs do not exist well in time for the election, they won't persuade voters of the merits of Biden's

industrial policy. **Energy projects are getting clogged in the permitting and grid connection systems.** Seventy-two percent of interconnection requests are eventually withdrawn, and those wind and solar farms that do make it to the end, on average, take almost [four years](#) to be connected to the grid. National Environmental Policy Act reviews take [4.5 years](#). These problems following the decision to undergo a clean energy project are themselves another barrier preventing projects from being taken up in the first place.

The state of public approval is a mixed bag. There is broad bipartisan support for more renewable power in the country. **Seventy percent of Republicans favor more solar power, and 60 percent favor more [wind](#).** While high, both of these numbers have been declining over time, and the partisan gap on these energy sources is **growing**. Furthermore, even if majorities of both parties do support more renewables (and/or government support for them), it doesn't matter if people don't connect the dots between those policies and specific legislation. [Sixty percent](#) of registered voters have heard little or nothing about the IRA, even one year in. Another survey found only [24 percent](#) said they knew about tax credits to manufacture solar panels and 33 percent knew about the credits to install them.

Domestic Solar: A Winner Either Way?

Democrats are divided in their priorities over solar energy. Environmentalists and solar installers are in favor of more and cheaper solar, regardless of origin. Practically, that would mean low-cost panels imported from China. On the other side, domestic industry, labor, and national security hawks would like to emphasize increasing production at home, even if it means the green transition is delayed. The Biden administration has navigated these stormy waters by postponing a waiver of solar imports rerouted from China to other Southeast Asian countries until this June. This decision led Congress to pass a resolution in opposition that was ultimately [vetoed](#). The fact this question divided [both parties](#) in both chambers highlights the competing forces on politicians. **While the tariff moratorium is an undeniable concession to solar installers, it's clear the long-term priority is domestic production. Recently released guidance for the [45X](#) advanced manufacturing credit lays out the rules for a per-unit cost for manufacturing solar components in the US.** One report finds that after incorporating the credit, domestic production will be cheaper than foreign [imports](#).

Republicans, with no activist environmental flank, are united in supporting US production. Almost all GOP members voted to overturn the Biden tariff waiver last year. **Interestingly, the [45X](#) provision has no foreign entity of concern (FEOC) restriction in the statute.** That means corporations of any nationality could theoretically set up shop in the US and earn the credit. The released guidance introduces no such restriction though it remains preliminary and subject to change. The idea that tax credits could potentially end up in the hands of Chinese businesses has led to outrage from the GOP. Senator Marco Rubio (R-FL) and Rep. Carol Miller (R-WV) have since introduced a [bill](#) that would prevent that. **Introducing FEOC rules are among the most likely changes Republicans would make.** Instituting such a change would also represent a

middle ground for legislators. They could point to the perseverance of the statute on paper while still saving money due to decreased uptake, in addition to looking tough on China, advancing domestic industry, and rerouting vulnerable supply chains. **Were the credit to be preserved with an FEOC rule added, that would perfectly situate domestic producers, like First Solar (FSLR), to succeed.** If the GOP institutes the further protectionist move of allowing only American firms to benefit (rather than just non-Chinese ones), it would further limit the universe of eligible credit recipients to a lucky handful. While solar production would decrease in absolute terms, manipulation of the credit could result in bigger winners and more losers.

Nuclear Stemmed the Bleeding. Can It Grow?

The industry's policy successes have been well-documented above. However, **for all the government support, it's done little more than preserve the status quo.** Only one new plant has been licensed since 1975. **Nevertheless, the government is taking flyers on R&D on the off chance that it unlocks a new era of nuclear power.**

As mentioned above, the IIJA contained billions for the Department of Energy's Advanced Reactor Demonstration Program. **The hopes of a flourishing and expanding nuclear sector depend on the success of a new, "advanced" generation of reactors. The biggest hope of nuclear advocates is to crack the case on small, modular reactors (SMRs) that can be mass-produced and require much less capital each.** These would ideally be transportable, modular units taking advantage of economies of scale. This effort was dealt a big blow in November as the first expected SMR was canceled due to a lack of expected customers buying [electricity](#). **Some of these innovate on the fuel side.** The IRA contains \$700 million to support a domestic supply chain for high-assay low-enriched uranium (HALEU), which is currently only available from Russia. While current reactors use fuel that's three to five percent uranium, HALEU contains more (five to 20 percent), allowing for smaller reactors. **Centrus Energy (LEU)** produced the first domestically manufactured HALEU last year, and the DOE issued a final request for proposals this [month](#) to establish a domestic supply chain. Other designs choose to experiment with the [coolant](#) used to prevent meltdowns. Interestingly, the IIJA credit meant to prevent premature plant shutdowns prioritizes plants with domestic fuel supply chains. **This year's National Defense Authorization Act (NDAA) included the [Nuclear Fuel Security Act](#), which includes further funding for domestic HALEU production. If this effort goes well, a long-discussed Russian ban on HALEU may finally become realistic.** Another nuclear package, the ADVANCE Act, fell out of the NDAA at the last minute. This bill would [have](#):

- banned Russian imports,
- streamlined the regulatory process for advanced reactors,
- extended the Price-Anderson Act from 2025 to 2045 (which covers indemnities from nuclear accidents), and
- established prizes for certain advanced reactor achievements.

Changes to the Nuclear Regulatory Commission (NRC) are among the most discussed reforms. Some lawmakers are reconceptualizing the agency as one that encourages and promotes new designs rather than a purely safety and compliance-oriented body. A group of Senate Democrats [ended](#) a Biden nomination to the NRC this week, citing a general appetite for a broader shake-up.

Tweaks to nuclear energy have a chance of passing but getting anything out of Congress this term has been a struggle. A theoretical passage would almost certainly be as an amendment to a larger, “must-pass” bill, given limited Senate floor time.



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