

**COMPARING THE CENTRALIZED GOVERNMENT’S ROLE IN
RENEWABLE ENERGY DEVELOPMENT IN THE UNITED STATES &
THE EUROPEAN UNION**

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ABSTRACT

The increase in electricity consumption across the globe since the beginning of the 18th century has caused a rise in the standard of living and triggered exponential wealth generation for human societies.¹ Many modern luxuries including, but not limited to, air conditioning, food refrigeration, permanent indoor lighting, and all our electronic gadgets were made possible because of our success at harnessing the power of electricity. The world was a much different place when Benjamin Franklin flew his kite on a stormy day in 1752, and those changes have had a drastic effect on our planet’s climate.² According to the National Oceanic and Atmospheric Administration, “Earth’s temperature has risen

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¹ See *History of Power: The Evolution of the Electric Generation Industry*, POWER MAGAZINE (Oct. 1, 2017), <https://www.powermag.com/history-of-power-the-evolution-of-the-electric-generation-industry/>.

² *Benjamin Franklin flies kite during thunderstorm*, HISTORY.COM (Nov. 24, 2019), <https://www.history.com/this-day-in-history/franklin-flies-kite-during-thunderstorm>; Nancy Gupton, *Ben Franklin and the Kite Experiment*, THE FRANKLIN INST. (June 12, 2017), <https://fi.edu/en/science-and-education/benjamin-franklin/kite-key-experiment>; *How is Today’s Warming Different from the Past?*, NASA EARTH OBSERVATORY, <https://earthobservatory.nasa.gov/features/globalwarming/page3.php> (last visited on Jan. 18, 2024).

by an average of 0.14° Fahrenheit (0.08° Celsius) per decade since 1880, or about 2° F in total.”³ Additionally, “the rate of warming since 1981 is more than twice as fast: 0.32° F (0.18° C) per decade.”⁴ This warming is a direct result of a human-induced greenhouse effect, which is caused by the trapping of greenhouse gases in the atmosphere.⁵ Fossil fuels, which have been our preferred source of energy generation for decades, have accounted for over 75% of global greenhouse gas emissions and nearly 90% of all carbon dioxide emissions, according to the U.N.⁶ Without a societal transition away from fossil fuels for electricity generation, the runaway greenhouse effect will produce devastating climatic changes and severe weather events that will negatively affect the future generations of all life on Earth.⁷

To stave off this unwanted future, it has become imperative that our economies transition to utilizing renewable energy to power our twenty-first century way of living. The task of sufficiently transitioning away from the old sources of energy generation that our economies have depended on will require significant effort from all aspects of our society. Both governments and the private sector must work together if we are to achieve what is necessary—establishing a carbon-neutral world while maintaining global economic prosperity. This paper will analyze how the two largest federally organized central governments in the Western world, the United States and the European Union (“EU”), are enabling this critical transition through policy and law. The EU has focused on top-down mandates, while the United States has instead pursued a chaotic yet effective tax credit regime.⁸ Additionally, this paper will examine how both jurisdictions’ regulatory frameworks came to be in the politics of their respective legislative processes. Lastly, this paper will identify any successful policies that could be implemented in Arizona to further assist the state’s energy transition.

I. EUROPE

Unlike the United States federal government, the EU has been consistently

³ Rebecca Lindsey & Luann Dahlman, *Climate Change: Global Temperature*, CLIMATE.GOV (Jan. 18, 2023), <https://www.climate.gov/news-features/understanding-climate/climate-change-global-temperature#:~:text=highlights,0.18%20c>.

⁴ *Id.*

⁵ *The Causes of Climate Change*, NASA, <https://science.nasa.gov/climate-change/causes/> (last visited Jul. 21, 2024).

⁶ *Causes and Effects of Climate Change*, U.N. CLIMATE ACTION, <https://www.un.org/en/climatechange/science/causes-effects-climate-change#:~:text=as%20greenhouse%20gas%20emissions%20blanket,the%20usual%20balance%20of%20nature> (last visited Oct. 22, 2023).

⁷ *Renewable energy—powering a safer future*, U.N. CLIMATE ACTION, <https://www.un.org/en/climatechange/raising-ambition/renewable-energy> (last visited Oct. 22, 2023).

⁸ Gregor Erbach, *Climate Policies in the EU and USA: Different Approaches, Convergent Outcomes?*, EUROPEAN PARLIAMENT THINK TANK BRIEFING (Nov. 2015), [https://www.europarl.europa.eu/thinktank/en/document/eprs_bri\(2015\)571347](https://www.europarl.europa.eu/thinktank/en/document/eprs_bri(2015)571347); *U.S. Federal Tax Policy and Decarbonization*, KPMG, <https://kpmg.com/us/en/articles/2023/us-federal-tax-policy-decarbonization.html> (last visited Jan. 18, 2024).

proactive in trying to reduce carbon emissions through centralized planning and governance since the first Intergovernmental Panel on Climate Change (“IPCC”) in 1990.⁹ The initial goal was solely to stabilize greenhouse gas emissions, but the EU broadened its mission to three goals: reducing greenhouse gas emissions, promoting renewable energy sources, and improving energy efficiency.¹⁰ Bettering energy efficiency standards has been a goal of both jurisdictions and plays an important role in reducing overall energy demand, though this paper will primarily focus on and compare the execution of the first two goals: (1) reducing greenhouse gas emissions and (2) promoting renewable energy sources.¹¹

Since 1990, the EU has implemented various climate policies to achieve these goals, such as the 1991 Specific Actions for Vigorous Energy Efficiency, the 1993 Altener Programme, the 1993 GHG Emissions Monitoring Mechanism, the 1999 Landfill Directive, the 2000 European Climate Change Programme, the 2003 Emissions Trading System (“ETS”), the 2008 Climate and Energy Package, and the 2012 Energy Efficiency Directive.¹² Additionally, the EU ratified the 2015 Paris Agreement, which committed the Union to reducing its greenhouse gas emissions to 60% of what their emissions were in 1990.¹³ This is substantially more than what the United States has committed itself to during the same period. There is less political polarization surrounding the climate change issue within the EU, and as a result, there is less fluctuation in overall policy direction, which stands in contrast with the United States.¹⁴ While dissenters do exist, most European voters and politicians have believed climate change to be a serious problem requiring international action, as even the conservative U.K. Prime Minister Margaret Thatcher noted in her 1989 address to the U.N. General Assembly.¹⁵ Additionally, the oil and gas lobby in Europe has primarily focused on watering down or slowing the implementation of policies.¹⁶ Unlike the United States, the EU’s political

⁹ Andreas Prahl & Elena Hofmann, *European Climate Policy—History and State of Play*, CLIMATE POL’Y INFO HUB (Nov. 14, 2014), <http://climatepolicyinfohub.eu/european-climate-policy-history-and-state-play.html>.

¹⁰ *Id.*

¹¹ *Energy Efficiency Directive*, EUROPEAN COMM’N: ENERGY, https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficiency-targets-directive-and-rules/energy-efficiency-directive_en#:~:text=eu%20countries%20are%20required%20to,1.9%20%25%20in%202028%2d2030 (last visited Jan. 18, 2024); BARACK OBAMA, *A PROMISED LAND 537* (Crown Publishing, 1st ed. 2020).

¹² Raul Orozco, Note, *Current Developments 2021–2022: The EU Volunteered to Lead the Vanguard in the Fight Against Climate Change, but Will the WTO Let It?*, 35 GEO. J. LEGAL ETHICS 1009, 1010–11 (2022).

¹³ *Id.* at 1012 n. 19.

¹⁴ Melissa Rossi, *Why the U.S. Lags Behind Europe on Climate Change Goals ‘by 10 or 15 years’*, YAHOO! NEWS (Sept. 13, 2021), <https://news.yahoo.com/why-the-us-lags-behind-europe-on-climate-change-goals-by-10-or-15-years-090008777.html>.

¹⁵ *Id.*; Heather Grabbe & Stefan Lehne, *Climate Politics in a Fragmented Europe*, CARNEGIE EUROPE (Dec. 19, 2019), <https://carnegieeurope.eu/2019/12/18/climate-politics-in-fragmented-europe-pub-80616>.

¹⁶ Sandra Laville, *Fossil Fuel Big Five ‘spent €251m lobbying EU’ since 2010*, THE GUARDIAN (Oct. 24, 2019), <https://www.theguardian.com/business/2019/oct/24/fossil-fuel-big-five-spent-251m-lobbying-european-union-2010-climate-crisis>.

dynamics have not been polarized with respect to climate policies, allowing their centralized government to initiate steady progress. A 2023 Eurobarometer survey conducted by the EU's European Commission found that 88% of EU citizens "agree that greenhouse gas emissions should be reduced to make the EU climate neutral by 2050."¹⁷ Europe's climate policy items, such as the Green Deal, Fit for 55, and the ETS, all fall under the umbrella of the European Climate Law.¹⁸ This legally binds the EU to carbon neutrality and to raising its "target of reducing net greenhouse gas emissions at least 55% by 2030 (from the current 40%)" by 2050.¹⁹

Adopted in April of 2023, the EU's Fit for 55 completed the goal of the Climate Law by giving the EU "legally binding climate targets across all key sectors of the economy."²⁰ The legislative package "includes emissions reduction targets across a broad range of sectors, a target to boost natural carbon sinks, and an updated emissions trading system to cap emissions, put a price on pollution and generate investments in the green transition, and social support for citizens and small businesses."²¹ It also implements a Carbon Border Adjustment Mechanism ("CBAM") whose goal is to ensure European industry can continue to compete with imports into the single market.²² However, this is under scrutiny from the World Trade Organization ("WTO") as a potentially protectionist trade policy.²³ Should the CBAM be implemented, the ETS and CBAM will have the combined effect of forcing the reduction in greenhouse gas emissions around the world and incentivizing the EU's energy transition.²⁴

A. The Emissions Trading System

Most notable among the EU's climate policies is the implementation of its cap-and-trade program, known as the Emissions Trading System ("ETS"). The ETS began in 2005 and, as of 2021, was "the largest cap-and-trade program in the world by traded value."²⁵ Originally, it allowed for a plethora of industry exceptions and

¹⁷ *Citizen support for climate action*, EUROPEAN COMM'N, https://climate.ec.europa.eu/citizens/citizen-support-climate-action_en (last visited Feb. 21, 2023).

¹⁸ *Reducing carbon emissions: EU targets and policies*, EUROPEAN PARLIAMENT (Oct. 27, 2023), <https://www.europarl.europa.eu/news/en/headlines/society/20180305sto99003/reducing-carbon-emissions-eu-targets-and-policies>.

¹⁹ *Id.*

²⁰ *Commission welcomes completion of key 'Fit for 55' legislation, putting EU on track to exceed 2030 targets*, EUROPEAN COMM'N (Oct. 9, 2023), https://ec.europa.eu/commission/presscorner/detail/en/ip_23_4754.

²¹ *Id.*

²² *Id.*

²³ Orozco, *supra* note 12, at 1009.

²⁴ *Id.*

²⁵ Antoine Dechezleprêtre et al., *The Joint Impact of the European Union Emissions Trading System on Carbon Emissions and Economic Performance*, 118 J. ENV'T. ECON. & MGMT. 1, 1 (2023).

free allowances to enable the economy to modernize and prepare.²⁶ The system puts a price on carbon (by the ton) and allocates allowances to countries that are then bid on at auction by the market participants producing carbon emissions, such as manufacturers and electricity providers.²⁷ The revenue generated from these auctions will go into the Social Climate Fund; this new fund is “intended to address the financial burden of citizens and micro-enterprises most impacted by energy price rises.”²⁸ Market participants need a permit for each ton of carbon they emit, and they may sell any excess allowances.²⁹ Following the 2008 financial crisis, demand for the allowances dropped while supply remained high.³⁰ The number of allowances was legislatively predetermined, and as a result, the ETS did not provide the indirect incentivization for developing renewable energy sources like solar or wind that was expected.³¹ Nor did it produce much reduction in EU-wide greenhouse gas emissions, with estimates ranging from only 2.5% to 5%, though the U.K. was found to have reduced emissions by 17% over the period measured (2005–2007).³² However, EU-wide reductions had reached around 10% by 2012 and accelerated to 23% by 2014 through the overall decrease in allowances.³³ This new success emboldened advocates by showing that the ETS will serve its function of pressuring the industry to reduce emissions, provided that the cost of carbon is significant enough to force private sector reductions. The new reforms will continue phasing out allowances for previously exempt industries like maritime transport, aviation, and buildings and maintain the progress being made.³⁴ These changes will broaden the ETS to “cover all major sectors of the economy except agriculture and land use” and ensure a carbon emission cut of 62% by 2030.³⁵

1. Carbon Border Adjustment Mechanism

The EU’s Carbon Border Adjustment Mechanism (“CBAM”) is an attempt to export the climate goals embodied in the ETS. Amongst the weight of inflation

²⁶ *The EU Emissions Trading System (ETS) and its reform in brief*, EUROPEAN PARLIAMENT (Apr. 18, 2023), <https://www.europarl.europa.eu/news/en/headlines/society/20170213sto62208/the-eu-emissions-trading-scheme-ets-and-its-reform-in-brief> [hereinafter *European Parliament*].

²⁷ *Id.*

²⁸ *EU Adopts Landmark ETS Reforms and New Policies to Meet 2030 Target*, INT’L CARBON ACTION P’SHIP: NEWS (May 3, 2023), <https://icapcarbonaction.com/en/news/eu-adopts-landmark-ets-reforms-and-new-policies-meet-2030-target> [hereinafter *Target*].

²⁹ *Carbon leakage: preventing firms from avoiding emissions rules*, EUROPEAN PARLIAMENT (June 30, 2023), <https://www.europarl.europa.eu/news/en/headlines/society/20210303sto99110/carbon-leakage-preventing-firms-from-avoiding-emissions-rules> [hereinafter *Clear Leakage*].

³⁰ EUROPEAN PARLIAMENT, *supra* note 26.

³¹ *Id.*

³² Dechezleprêtre, *supra* note 25, at 5.

³³ Dechezleprêtre, *supra* note 25, at 1.

³⁴ EUROPEAN PARLIAMENT, *supra* note 26; Target, *supra* note 28.

³⁵ Target, *supra* note 28.

post-COVID and the soaring energy prices as a result of Russia's invasion of Ukraine, pursuing climate priorities can be excessively expensive for European companies.³⁶ To insulate European economic players from foreign competitors who are not operating under similar climate restraints, CBAM will apply a carbon levy on imported goods.³⁷ The levy, which will only apply to goods being imported from regions with "looser greenhouse gas emissions constraints," will also discourage the off-shoring of operations by companies to avoid the costs of the ETS, also known as "carbon leakage."³⁸ Because the EU's ETS is the most sophisticated and stringent carbon market in the world, the levy will effectively apply to imports from everywhere until countries replicate the ETS.³⁹ Companies "will have to report on a quarterly basis the direct and indirect emissions from goods imported during the previous quarter as well as any carbon price paid abroad."⁴⁰ The CBAM allows the EU to implement its carbon pricing mechanism while simultaneously protecting domestic industries, preventing carbon leakage, and exporting carbon-reduction policies to areas of the globe with weaker emission standards.⁴¹ Because the ETS reduces the competitiveness of domestic industries, the CBAM is needed to protect European industries from competition based in countries without similar emissions costs.⁴² As such, the two policies should be seen to function in tandem.⁴³

The CBAM took effect in October of 2023 and required importers to declare only the carbon emissions from their products, but implementation of the levies will begin in 2026.⁴⁴ The levies will target the same industries as the ETS, specifically steel, cement, aluminum, fertilizers, electricity, and hydrogen.⁴⁵ There is a concern the CBAM could grow the EU's trade deficit by making imports more expensive, but the optimistic view is the policy will make domestic producers more competitive.⁴⁶ Under CBAM, importers will not be able to undercut domestic producers who must incorporate the carbon price into the pricing of their products in the market.⁴⁷ Starting in 2026, the importers will also need to incorporate the carbon levy into their market price.⁴⁸ The CBAM phase-in will directly correspond to the phase-out of ETS-free allowances and, thus, accelerate the reduction of ETS

³⁶ Carbon Leakage, *supra* note 29.

³⁷ *Id.*

³⁸ *Id.*

³⁹ Matt Reynolds, *The EU Just Kicked Off Its Biggest Climate Experiment Yet*, WIRED (Oct. 8, 2023), <https://www.wired.com/story/eu-carbon-tax/>.

⁴⁰ Carbon Leakage, *supra* note 29.

⁴¹ Orozco, *supra* note 12, at 1014–15.

⁴² Orozco, *supra* note 12, at 1015.

⁴³ *Id.*

⁴⁴ Reynolds, *supra* note 39.

⁴⁵ Neha Arora & Manoj Kumar, *India plans to challenge EU carbon tax at WTO*, REUTERS (May 16, 2023), <https://www.reuters.com/world/india/india-plans-challenge-eu-carbon-tax-wto-sources-2023-05-16/>.

⁴⁶ See Anouk Faure & Chimdi Obieniu, *EU Carbon Market: 2023 State of the EU ETS Report*, ECOACT (May 9, 2023), <https://eco-act.com/eu-ets/2023-state-of-eu-ets-report/>; Orozco, *supra* note 12, at 1014.

⁴⁷ Orozco, *supra* note 12, at 1014.

⁴⁸ *Id.*

allowances.⁴⁹ One of the standing reasons to continue allowances for certain industries is so they can remain competitive with foreign competitors located in countries without carbon pricing mechanisms.⁵⁰ Once foreign competitors are forced to account for the carbon levies, the allowances are no longer needed to assist the domestic industries.⁵¹ While the CBAM on its own may appear protectionist, its “inverse relationship” to the reduction in ETS free allowances ensures a fair playing field for economic participants—while finally pricing the externality of polluted greenhouse gas emissions.⁵²

The CBAM will also prevent carbon leakage and industry outsourcing due to the business prices imposed by the ETS.⁵³ If only the ETS were in place, companies would be incentivized to outsource their operations to countries without a carbon pricing mechanism to lower costs.⁵⁴ Beyond the negative economic consequences of the resulting job losses, these losses would also negatively impact the politics of the ETS and climate initiatives in general, potentially making further progress more difficult to implement.⁵⁵ Lastly, the CBAM forces exporting nations like India and China, who contributed 8% and 32% of global CO₂ emissions respectively in 2022, to engage with the EU's climate policies if they want to continue competing in the largest economic bloc in the world.⁵⁶

However, there may be a remaining obstacle before CBAM's implementation in 2026. The “BRICS nations” (Brazil, Russia, India, China, and South Africa) believe the CBAM violates international trade law and plan to file disputes at the WTO.⁵⁷ The Federation of Indian Export Organizations has warned exporters prices could rise almost 20% after the carbon levy and its subsequent economic reverberations.⁵⁸ Yet, since the increased price will also burden the domestic EU producers through the correlated ETS free allowances phase-out, it is unlikely the conjoined carbon pricing mechanism violates the General Agreement on Tariffs and Trade (GATT).⁵⁹ Although economically challenging, this is the cost of an externality finally being imposed on the cost of business. This method of a hands-on approach stands in contrast to the United States' use of tax credits to spur the private sector.

⁴⁹ Orozco, *supra* note 12, at 1014; Target, *supra* note 28.

⁵⁰ Orozco, *supra* note 12, at 1014.

⁵¹ *Id.* at 1015.

⁵² *See id.*

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ Orozco, *supra* note 12, at 1015–16.

⁵⁶ Doyle Rice et al., *Carbon dioxide emissions continue to rise worldwide. Graphics show which countries release the most*, USA TODAY (Apr. 14, 2023), <https://www.usatoday.com/story/graphics/2023/04/14/countries-emit-most-carbon-dioxide-emissions/11643011002/>; *see* Orozco, *supra* note 12, at 1015.

⁵⁷ Orozco, *supra* note 12, at 1017; Arora & Kumar, *supra* note 45; *BRICS Ministers support strengthening and reform of WTO, condemn CBAM*, AFR. CLIMATE WIRE (Aug. 16, 2023), <https://africanclimatewire.org/update/brics-ministers-support-strengthening-and-reform-of-wto-condemn-cbam/>.

⁵⁸ Arora & Kumar, *supra* note 45.

⁵⁹ Orozco, *supra* note 12, at 1018, 1023; Arora & Kumar, *supra* note 45.

2. Development of Renewable Energy Sources

The EU reached a deal in March of 2023 on the Renewable Energy Directive, a plan to increase the targeted share of total renewable energy consumption to 42.5% by 2030.⁶⁰ Additionally, the EU hopes to pass the Net Zero Industry Act (“NZIA”), which will scale up manufacturing technologies related to renewable energy production, such as wind turbines or solar panels.⁶¹ These are notable, but renewable energy development is expected to slow in the EU in the next few years, especially in wind development.⁶² However, solar investment across the continent is picking up, with installations increasing by 36% in 2022.⁶³ Twenty gigawatts (“GW”) of wind power were installed in 2022, which is substantial, but investment in new wind farms has fallen by 59%.⁶⁴ Three main issues have contributed to this decline in investment, in addition to dampening solar development’s potential: rising interest rates, rising steel prices, and permitting delays.

First, rising interest rates have affected renewable energy development in both the EU and the United States because such projects are very capital-intensive and require varying degrees of complex financing arrangements.⁶⁵ Rising interest rates effectively increase the developers’ cost of accessing the necessary capital to construct and operate a solar or wind project.⁶⁶ They can even have the effect of causing a project to be canceled due to lack of profitability.⁶⁷ Developers must lock in the price they will sell their generated electricity for in a Power Purchase

⁶⁰ *EU Agrees to Further Accelerate Renewables—But We Must Go Smart to Go Fast*, THE NATURE CONSERVANCY (Mar. 30, 2023), <https://www.nature.org/en-us/newsroom/european-union-renewable-energy-directive/#:~:text=this%20reform%20of%20the%20renewable,energy%20dependency%20on%20fossil%20fuels> [hereinafter *We Must Go Smart to Go Fast*].

⁶¹ *Council of the EU Adopts Position on the Net-Zero Industry Act, Confirming the Role of CCS in Europe’s Decarbonization Efforts*, GLOBAL CCS INST. (Dec. 12, 2023), <https://www.globalccsinstitute.com/news-media/latest-news/council-of-the-eu-adopts-position-on-the-net-zero-industry-act-confirming-the-role-of-ccs-in-europes-decarbonization-efforts/>; *The Net-Zero Industry Act: Accelerating the transition to climate neutrality*, EUROPEAN COMMISSION, https://single-market-economy.ec.europa.eu/industry/sustainability/net-zero-industry-act_en (last visited Jan. 19, 2024).

⁶² See Anna Hirtenstein, *Europe’s Green-Energy Push Struggles to Match U.S. Momentum*, WALL STREET J. (Apr. 28, 2023), <https://www.wsj.com/articles/europe-clean-energy-renewables-us-4ce5d3e1>.

⁶³ *Id.*

⁶⁴ See *id.*

⁶⁵ See *Project Development in the Midst of High Interest Rates*, LEYLINE RENEWABLE CAP., <https://www.leylinecapital.com/news/project-development-in-the-midst-of-high-interest-rates/#:~:text=interest%20rates%20significantly%20influence%20the,affect%20project%20feasibility%20and%20profitability> (last visited on Nov. 16, 2023).

⁶⁶ *Id.*

⁶⁷ *Id.*

Agreement with the electricity provider to get third-party financing.⁶⁸ As interest rates have risen, the financing options are not as profitable as they once were, and if the project becomes a financial liability, a developer will have no choice but to attempt to sell the project or cancel it altogether.⁶⁹ This has significantly dampened growth on both sides of the Atlantic.

Second, rising steel prices, similar to rising interest rates, just increase the overall cost of the project and reduce its eventual profitability.⁷⁰ Steel prices soared to record highs in 2022—seeing two separate uptrends in price in March and December.⁷¹ This in turn has raised wind turbine prices by as much as 40%.⁷² Also, the implementation of CBAM and the phase-out of free allowances will contribute to an eventual rise in steel prices that the renewable sector must overcome again.⁷³

The third logjam plaguing renewable development in both the EU and the United States is the incredibly long amount of time it can take to permit a project, with European projects sometimes facing several years to get off the ground.⁷⁴ This is mainly due to “complex administrative processes and a lack of resources at approval authorities.”⁷⁵ As of June of 2023, “around 80 GW of new wind capacity is tied up in permitting procedures, including 59 GW onshore, according to industry group WindEurope.”⁷⁶ Thankfully, recent revisions to the Renewable Energy Directive will “simplify and speed up the permitting process” by setting a two-year maximum for permitting new projects and a one-year maximum for repowering projects, requiring member states to create accelerated deployment areas and defining solar and wind as projects of overriding public interest.⁷⁷ The maximum

⁶⁸ Bo Harvey & Jennifer H. Martin, *The Law of Solar: A Guide to Business and Legal Issues—Power Purchase Agreements: Utility-Scale Projects*, STOEL RIVES LLP, <https://www.stoel.com/insights/reports/the-law-of-solar/power-purchase-agreements-utility-scale-projects> (last visited Sept. 9, 2024).

⁶⁹ Martin et. al., *Conflicts of interest: The cost of investing in the energy transition in a high interest-rate era*, WOODMACKENZIE (Apr. 2024), <https://www.woodmac.com/horizons/energy-transition-investing-in-a-high-interest-rate-era/>.

⁷⁰ See Hirtenstein, *supra* note 62.

⁷¹ Nicole Bastin, *Steel Prices Rise as Supply Tightens*, YAHOO! FIN. (Nov. 8, 2023), https://finance.yahoo.com/news/steel-prices-rise-supply-tightens-200000786.html?guccounter=1&guce_referrer=aHR0cHM6Y93d3cuz29vz2xllmnvbs8&guce_referrer_sig=aqaaae6lbyuyvih03denrombkamqp3_agqvctdnnbrbq3uvqqnb4gs56umimxvroc48ez3on678c2jpcqdh9a-ns6wc0tjxmtntygzhe4hswl2lq_v0dtkciimjxfsu4qrecj-sjrvctuuazs3u5-rklmolctypbatggapyv7idq#:~:text=the%20last%20three%20major%20uptrends,an%20average%20of%204.3%20weeks.

⁷² Hirtenstein, *supra* note 62.

⁷³ See Arora & Kumar, *supra* note 45.

⁷⁴ We Must Go Smart to Go Fast, *supra* note 60.

⁷⁵ Neil Ford, *Europe on verge of permitting leap for wind, solar farms*, REUTERS (June 1, 2023), <https://www.reuters.com/business/energy/europe-verge-permitting-leap-wind-solar-farms-2023-06-01/#:~:text=at%20the%20end%20of%20march,gross%20energy%20consumption%20by%202030>.

⁷⁶ *Id.*

⁷⁷ Briefing: *Fairer and faster permitting for a successful European renewable energy transition*, CLIMATE ACTION NETWORK EUROPE (Oct. 19, 2023), <https://caneurope.org/renewable-permitting-europe/>; Ford, *supra* note 75.

time periods will help, but the final piece will do more to propel development than anything else.⁷⁸ Permitting is often held up because of a separate environmental or ecological concern, and this change will allow policymakers to take a broader view of a project's effects on an ecosystem.⁷⁹ Rather than looking solely at whether a solar or wind project's placement may damage the habitats of endangered species, policymakers can consider the effects of overall carbon emissions reductions on the local and broader environment while balancing habitat and biodiversity questions.⁸⁰ In practice, this would mean balancing the local effects of habitat loss due to a solar farm project with the positive effect the potential solar farm would have on global emissions—and what this reduction in global emissions would mean for ecosystems across the globe, not just near the solar farm project in question. Additionally, the creation of accelerated deployment/development zones, where local permitting restrictions are overridden in favor of a quicker and easier process, is a novel concept that has potential applicability beyond the EU.⁸¹

When comparing the two jurisdictions, the conventional wisdom is that the EU is 10–15 years ahead of the United States in terms of its energy transition.⁸² This is due to the various policies that the EU has promulgated since the 1990 IPCC, but these top-down measures have had the effect of slowing economic growth.⁸³ In contrast, the United States' use of tax credits utilizes a bottom-up approach by lowering the cost of renewable energy development—ultimately helping it remain competitive with fossil fuel electricity generation.⁸⁴

II. THE UNITED STATES

Prior to the signing of the Inflation Reduction Act (“IRA”), the United States was not on track to meet its Paris Climate Agreement commitment to reducing its carbon emissions by 50% by 2030.⁸⁵ The United States had been unable or unwilling to give its federal government deeper central planning powers or

⁷⁸ Ford, *supra* note 75.

⁷⁹ *See id.*

⁸⁰ *Id.*

⁸¹ *Id.*

⁸² *See* Rossi, *supra* note 14.

⁸³ *See generally* Justus Böning et al., *Benefits and costs of the ETS in the EU, a lesson learned for the CBAM design* (European Cent. Bank, Working Paper No. 2764, 2023), <https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2764~3ff8cb597b.en.pdf>.

⁸⁴ Daniel Esposito, *Inflation Reduction Act Benefits: Clean Energy Tax Credits Could Double Deployment*, FORBES (Aug. 22, 2022), <https://www.forbes.com/sites/energyinnovati on/2022/08/23/inflation-reduction-act-benefits-clean-energy-tax-credits-could-double-depl oyment/?sh=2599c3f67272#:~:text=The%20IRA%27s%20clean%20energy%20tax,cleaner %20air%20and%20cheaper%20electricity>.

⁸⁵ *The Inflation Reduction Act's Implications for Biden's Climate and Environmental Justice Priorities*, ENV'T & ENERGY L. PROGRAM (Aug. 12, 2022), <https://eelp.law.harvard.edu/ira-implications-for-climate-ej-priorities/> [hereinafter *Environmental Justice Priorities*].

instruments to directly reduce carbon emissions.⁸⁶ The issue of climate change has become politically polarized, as American conservatives see efforts to reduce greenhouse gas emissions as economically harmful.⁸⁷ Even as climate-change-related weather disasters have increased, Republican voters continue to discount the issue's importance and would prefer the economy be prioritized.⁸⁸ However, opinions regarding the concept of tackling climate change were not always divergent depending on partisan affiliation. Former President George H.W. Bush took numerous actions targeting climate-related issues during his single presidential term, including signing the 1990 Clean Air Act Amendments, signing the Global Change Research Act of 1990 (which mandated the publication of National Climate Assessments every four years), and implementing the 1987 Montreal Protocol (the international agreement seeking to reverse the effects of depletion in the Earth's ozone layer).⁸⁹ Additionally, the Energy Policy Act of 2005, which was legislated by a Republican-controlled Congress and signed by a Republican president, extended renewable energy tax credits and required an acceleration of federal purchases of renewable energy (for the powering of federal buildings in Washington, D.C., and across the country).⁹⁰ In fact, arguably the most successful state at developing renewable energy is Texas, a state that has voted for the Republican presidential candidate in every election since 1976.⁹¹ This portion of the paper will outline the shift that has taken place and what its consequences have been for the United States' goal of accomplishing the green energy transition. The trend

⁸⁶ Ricketts et al., *States Are Laying a Road Map for Climate Leadership*, CTR. FOR AM. PROGRESS (Apr. 30, 2020), <https://www.americanprogress.org/article/states-laying-road-map-climate-leadership/>; Steven Cohen, *Dealing With the U.S. Federal Government's Failure of Climate Leadership*, COLUMBIA CLIMATE SCH.: STATE OF THE PLANET (Jul. 18, 2022), <https://news.climate.columbia.edu/2022/07/18/dealing-with-the-u-s-federal-governments-failure-of-climate-leadership/>.

⁸⁷ See Domenico Montanaro, *Three-quarters of Republicans prioritize the economy over climate change*, NPR (Aug. 3, 2023), <https://www.npr.org/2023/08/03/1191678009/climate-change-republicans-economy-natural-disasters-biden-trump-poll>.

⁸⁸ *Id.*

⁸⁹ Scott Waldman, *Bush Had a Lasting Impact on Climate and Air Policy*, SCI. AM. (Dec. 3, 2018), <https://www.scientificamerican.com/article/bush-had-a-lasting-impact-on-climate-and-air-policy/>.

⁹⁰ *H.R. 6—Energy Policy Act*, Pub. L. No. 109-58, 119 Stat. 594, (2005); The legislative history of the Act further points to the beginning of the issue polarization as the extensions of renewable tax credits were beneficial, but only achieved by the simultaneous incorporation of billions in subsidies to the fossil fuels industry. The bill was nicknamed the “Dick Cheney Energy Lobbyist Bill” by Hillary Clinton at the time. JANE MAYER, *DARK MONEY* 260 (Anchor Books, 1st ed. 2017).

⁹¹ Sam Becker, *Texas' Unique Energy Industry Is Helping the State Become a Renewables Leader*, CNET (Jan. 1, 2024), <https://www.cnet.com/home/energy-and-utilities/texas-unique-energy-industry-is-helping-the-state-become-a-renewables-leader/#:~:text=Texas%20has%20a%20lot%20of,power%20production%2C%20as%20of%202023>; Stephanie Weaver, *2020 Election: Texas Hasn't voted Democrat since 1976, but the state is in play this year, experts say*, FOX10 PHOENIX (Sept. 22, 2020), <https://www.fox10phoenix.com/news/2020-election-texas-hasnt-voted-democrat-since-1976-but-the-state-is-in-play-this-year-experts-say>.

toward issue polarization has produced legislative gridlock, but the incremental measures that have been achieved have given the private sector a realistic chance at meeting the moment—without slowing economic activity or forcing a top-down reshaping of emissions policy.

A. Polarization Takes Root

Prior to the IRA and its previous iteration as part of President Joe Biden's Build Back Better initiative, the most recent piece of major climate legislation to be seriously considered by Congress was the American Clean Energy and Security Act, otherwise referred to as the Waxman-Markey Bill. This bill passed the House in June of 2009 but was never brought to the Senate floor out of fear it would be unable to overcome a Republican filibuster.⁹² This bill would have provided millions of dollars in subsidies for renewable energy technology along with creating a “cap-and-trade” system for the regulation of carbon emissions.⁹³ This would have been a monumental development for the United States' energy transition goals, and its failure marked the last realistic effort at significant climate change legislation until the IRA.⁹⁴ Before discussing the IRA and what it will mean for the American economy, it is important to understand why the Waxman-Markey Bill failed and how the IRA's political circumstances differed.

During the 2008 presidential election, the creator of the famous “hockey stick graph,” which showcased the extreme acceleration of rising temperatures caused by the greenhouse effect, insisted he would be happy with whichever candidate was victorious.⁹⁵ Michael Mann had heard both Democrat (Barack Obama) and Republican (John McCain) speak about the necessity of tackling human-induced climate change and was confident action would be taken.⁹⁶ Following President Barack Obama's first inauguration, the Democrats controlled both houses of Congress with significant majorities.⁹⁷ Even though a sizable portion of both the Democratic House and Senate caucuses were from conservative-trending areas, Democratic leadership and the White House decided to pursue a “cap-and-trade” bill—believing the market mechanisms created under such a system alongside the direct subsidies would provide a successful environment to cause a shift toward greater renewable energy consumption.⁹⁸ The prospect of an American cap-and-trade system receiving Republican support today seems unlikely at best, but in early 2009, Democratic leadership was confident it would.⁹⁹ President

⁹² John M. Broder, *House Passes Bill to Address Threat of Climate Change*, N.Y. TIMES (June 26, 2009), https://www.nytimes.com/2009/06/27/us/politics/27climate.html?_r=1&hp.

⁹³ *Id.*

⁹⁴ Craig Gannet et al., *Biden Signs Historic Climate Legislation*, DAVIS WRIGHT TREMAINE LLP (Aug. 18, 2022), <https://www.dwt.com/blogs/energy--environmental-law-blog/2022/08/inflation-reduction-act-ira-climate-change>.

⁹⁵ Mayer, *supra* note 90, at 243.

⁹⁶ *Id.*

⁹⁷ Gannet, *supra* note 94.

⁹⁸ *Id.*

⁹⁹ OBAMA, *supra* note 11, at 501.

Obama remarks in his memoir that “one of the reasons everyone had converged on a cap-and-trade proposal (rather than a carbon tax) was that it (cap-and-trade) had already been successfully tried—and by a *Republican president*, no less.”¹⁰⁰ He continues by saying, “[b]ack in 1990, George H.W. Bush’s administration had put a cap-and-trade system in place to curb the sulfur dioxide coming out of factory smokestacks and contributing to acid rain.”¹⁰¹ We have the benefit of hindsight, but this example shows how Democratic leadership failed to consider the conservative blowback that President Bush received for pursuing the environmental goals he did.¹⁰² Because of the trending apathy of conservative voters and politicians toward the issue, the Markey-Waxman Bill would have needed to be pursued through budget reconciliation rather than believing from the start that a filibuster could have been overcome.¹⁰³ Between this lack of strategic foresight and the well-funded, organized opposition from fossil fuel interests, the United States went over ten years without any legislative action to tackle climate change.¹⁰⁴

Besides the decision not to pursue the bill through reconciliation, the Waxman-Markey Bill’s defeat was due to two factors that did not exist when the IRA was considered in the summer of 2009.¹⁰⁵ First, the opposition to any advancement of climate legislation was much more organized and politically adept in 2009.¹⁰⁶ President Obama’s election and near super-majorities in Congress inspired the backlash known as the “Tea Party” movement within the Republican Party.¹⁰⁷ This movement, centered around fiscal responsibility and opposition to any of Obama’s legislative priorities, such as the Affordable Care Act and Waxman-

¹⁰⁰ OBAMA, *supra* note 11, at 501.

¹⁰¹ *Id.*

¹⁰² Waldman, *supra* note 89.

¹⁰³ Kelly Kennedy & Sanjay Patnaik, *Why the US should establish a carbon price either through reconciliation or other legislation*, BROOKINGS INST. (Oct. 7, 2021), <https://www.brookings.edu/articles/why-the-us-should-establish-a-carbon-price-either-through-reconciliation-or-other-legislation/>.

¹⁰⁴ Greg Walden & Rich Powell, *Give Republicans the climate credit they deserve*, THE HILL (Apr. 4, 2021), <https://thehill.com/blogs/congress-blog/energy-environment/546386-give-republicans-the-climate-credit-they-deserve/#:~:text=congressional%20republicans%20hated%20the%20plan,against%20the%20waxman%2dmarkey%20legislation.>

¹⁰⁵ The Waxman-Markey Bill was not pursued through the reconciliation process, which only requires 50 votes plus the Vice President, due to the necessity of utilizing the process for President Obama’s signature healthcare initiative, the Affordable Care Act (ACA). The timeline of complexities regarding the legislative history of the ACA is beyond the purview of this Note. For further reading, see Kevin Gogardus & Amanda Reilly, *7 years later, failed Waxman-Markey Bill still makes waves*, E&E NEWS BY POLITICO (June 27, 2016), <https://www.eenews.net/articles/7-years-later-failed-waxman-markey-bill-still-makes-waves/>; see Timothy Stoltzfus Jost, *A Political History of the ACA*, HEALTH AFFAIRS (June 2021), <https://www.healthaffairs.org/doi/10.1377/hlthaff.2021.00685> (reviewing Jonathan Cohn, *The Ten Year War: Obamacare and the Unfinished Crusade for Universal Coverage* (2021)).

¹⁰⁶ Walden & Powell, *supra* note 104; Mayer, *supra* note 90; see OBAMA, *supra* note 11, at 499–503.

¹⁰⁷ Dominique Wright, *Origins of the Tea Party*, NONVIOLENCE NY NETWORK (Apr. 21, 2021), <https://www.nonviolenceny.org/post/origins-of-the-tea-party.>

Markey Bill, was very vocal and applied substantial pressure on politicians of both parties in order to achieve its ends.¹⁰⁸ With a number of Democratic senators coming from states that voted for Senator John McCain in 2008 and Governor/President George Bush before that, the Tea Party had leverage on the key Senate votes President Obama would need to achieve the bill's passage.¹⁰⁹ For instance, Sen. Max Baucus, a Democrat from Montana, was already facing negative "issue-only" ads in his home state by the fall of 2009, only a couple of months after the bill's House passage.¹¹⁰ A new Political Action Committee called "CO2 is Green" began running television ads urging Sen. Baucus to oppose the Waxman-Markey Bill.¹¹¹ The ad stated, "there is no scientific evidence that CO2 is a pollutant. In fact, higher CO2 levels than we have today would help the Earth's ecosystems," and that the bill would "cost us jobs."¹¹² The financial sponsor of this ad, and many just like it running in other states with vulnerable Democratic senators, "was Corbin Robertson, owner of the country's largest cache of coal."¹¹³

A separate factor contributing to the opposition's organization was the totality of the stakes. The Inflation Reduction Act, as highlighted below, incentivizes renewable development through tax subsidies rather than through a direct tax.¹¹⁴ It is easier to understand how a cap-and-trade or carbon tax system would add costs to market participants. The Inflation Reduction Act did not add costs directly; rather, it made renewable energy development cheaper.¹¹⁵ It will spur the energy transition through carrots, not sticks.¹¹⁶ To put it simply, there was not a similar effort taking place amongst conservative political operatives and donors during the deliberations of the Build Back Better package and subsequent IRA version.¹¹⁷ The second major factor was time. The long lead-up of deliberations following the House passage allowed the organized Tea Party opposition to be more successful than it would have been under IRA-like circumstances. The Democrats were very open about their goals for a "cap-and-trade" style bill, and this gave its opposition a chance to fully digest the policy and craft a narrative to support its failure.¹¹⁸ A group of Democratic senators had pitched cap-and-trade or a carbon tax during Build Back Better, but this was never seriously considered—likely due to the assumed opposition of West Virginia Senator Joe Manchin.¹¹⁹

¹⁰⁸ Walden & Powell, *supra* note 104; OBAMA, *supra* note 11, at 499–503.

¹⁰⁹ *Id.*

¹¹⁰ Mayer, *supra* note 90, at 268.

¹¹¹ *Id.*

¹¹² *Id.*

¹¹³ *Id.*

¹¹⁴ See Esposito, *supra* note 84.

¹¹⁵ *Id.*

¹¹⁶ Maxine Joselow, *Why the Inflation Reduction Act passed the Senate but cap-and-trade didn't*, THE WASH. POST (Aug. 10, 2022), <https://www.washingtonpost.com/politics/2022/08/10/why-inflation-reduction-act-passed-senate-cap-and-trade-didnt/>.

¹¹⁷ Benjy Sarlin, *Analysis: Three reasons why the Build Back Better saga wasn't like other big bills.*, NBC NEWS (Aug. 24, 2022), <https://www.nbcnews.com/meet-the-press/meetthepr essblog/analysis-three-reasons-build-back-better-saga-wasnt-big-bills-rcna43511>.

¹¹⁸ Mayer, *supra* note 90, at 275–77.

¹¹⁹ Kennedy & Patnaik, *supra* note 103.

The IRA, on the other hand, seemingly came out of nowhere after Sen. Joe Manchin (D-WV) finally approved of its contents.¹²⁰ The Biden Administration had been pursuing climate legislation, and this was well-known, but Senator Manchin's role of constant rhetorical flip-flops made the exact policy content uncertain. The climate provisions of the IRA were negotiated behind closed doors in a sausage-making-like process, but this neutered the ability of conservative Republicans to organize against it.¹²¹ Additionally, the conservative think tanks and Republican media apparatus were not as focused this time around. The political shocks our system sustained from 2015–2021 disrupted the GOP's ability to operate in opposition.¹²² The opposition to climate legislation in 2009 was akin to a well-oiled machine, while the opposition in 2022 was more of a collection of separate parts with no common goal.¹²³ The Biden Administration benefited immensely from this lack of coordination amongst its opposition, and this is partly why the IRA was able to pass even with much slimmer Democratic majorities in both chambers.¹²⁴ Second, and most importantly, the IRA was the Biden Administration's main legislative priority in the summer of 2022 heading into the midterms.¹²⁵ President Obama and his congressional majority were focused on passing the Affordable Healthcare Act, and they sacrificed the Waxman-Markey Bill when they chose to use budget reconciliation for the ACA instead.¹²⁶ It is also clear that Democratic leadership had a more willing negotiating partner this time around. Senator Manchin leveraged his position to gain White House support for the Mountain Valley Pipeline that would transport natural gas from his home state of West Virginia to energy markets along the East Coast.¹²⁷ It is ironic that the landmark climate legislation was made possible by a deal to complete a natural gas pipeline,

¹²⁰ Nives Dolsak & Aseem Prakash, *Three Reasons Why Manchin Did A U-Turn On Climate Policy*, FORBES (Aug. 3, 2022), <https://www.forbes.com/sites/prakashdolsak/2022/08/03/three-reasons-why-manchin-did-a-u-turn-on-climate-policy/?sh=363afa816d46>.

¹²¹ Sarlin, *supra* note 117.

¹²² See Jelani Cobb, *What Is Happening To The Republicans?*, THE NEW YORKER (Mar. 8, 2021), <https://www.newyorker.com/magazine/2021/03/15/what-is-happening-to-the-republicans>.

¹²³ See Mayer, *supra* note 90; See Walden & Powell, *supra* note 104; See Sarlin, *supra* note 117.

¹²⁴ See generally Gannet, *supra* note 94.

¹²⁵ See generally *id.*

¹²⁶ Mayer, *supra* note 90, at 243–77.

¹²⁷ See Dolsak & Prakash, *supra* note 120; See Lindsey McPherson, *Manchin upends effort for a downsized 'Build Back Better'*, ROLL CALL (July 14, 2022), <https://rollcall.com/2022/07/14/manchin-upends-effort-for-a-downsized-build-back-better/>; Li Zhou, *How Democrats plan to overhaul taxes, climate spending, and health care before the midterms*, VOX (July 28, 2022), <https://www.vox.com/23281547/build-back-better-joe-manchin-inflation-reductions-act>; *Manchin Secures Mountain Valley Pipeline Completion, Votes For Bipartisan Debt Ceiling Agreement*, JOE MANCHIN (June 1, 2023), <https://www.manchin.senate.gov/newsroom/press-releases/manchin-secures-mountain-valley-pipeline-completion-votes-for-bipartisan-debt-ceiling-agreement> (Sen. Manchin's press release following the passage of an agreement, with White House support, to block judicial review on the Mountain Valley

but the United States finally had a climate bill it could put into action.

B. The Inflation Reduction Act

Senator Manchin's statement announcing his support for the IRA stated:

The Inflation Reduction Act of 2022 addresses our nation's energy and climate crisis by adopting commonsense solutions through strategic and historic investments that allow us to decarbonize while ensuring American energy is affordable, reliable, clean and secure...This legislation *ensures that the market will take the lead*, rather than aspirational political agendas or unrealistic goals, in the energy transition that has been ongoing in our country.¹²⁸

The Inflation Reduction Act is going to dramatically change the energy-generation landscape in the United States. An interesting hypothetical question is whether President Obama could have passed an IRA-style climate bill, meaning one centered around tax credits rather than a substantial cap-and-trade regulatory framework. What exactly did Congress pass in the IRA that has allowed people to state that it is "the biggest climate spending bill ever?"¹²⁹ There are two significant levers the IRA utilizes in order to achieve its ends.¹³⁰ First, it enlarges and extends the duration of current renewable energy tax credits, as well as adds new tax credit adders that incentivize developers utilizing union labor and domestically-produced materials.¹³¹ Prior to the IRA, Congress would authorize extensions to the tax

Pipeline construction); Zack Budryk, *Biden administration joins Manchin, GOP whip in backing pipeline at Supreme Court*, THE HILL (July 21, 2023), <https://thehill.com/policy/energy-environment/4110247-biden-administration-joins-manchin-gop-whip-in-backing-pipeline-at-supreme-court/>.

¹²⁸ Jake Sherman (@JackSherman), TWITTER (July 27, 2022, 1:46PM), <https://twitter.com/jakesherman/status/1552395048867749889> (Jake Sherman posted a screenshot of Manchin's statement which was emailed to reporters) (emphasis added); Emily Cochrane et al., *Manchin, in Reversal, Agrees to Quick Action on Climate and Tax Plan*, N.Y. TIMES (July 31, 2022), <https://www.nytimes.com/2022/07/27/us/politics/manchin-climate-tax-bill.html>.

¹²⁹ Molly Hanson, *Two Years Ago, We Passed the Biggest Climate Spending Bill Ever. Here's What It Has Achieved*, EARTHJUSTICE (Aug. 20, 2024), <https://earthjustice.org/article/the-biggest-climate-spending-bill-ever-just-turned-one-heres-what-it-has-achieved>.

¹³⁰ *Building a Clean Energy Economy: A Guidebook to the Inflation Reduction Act's Investments in Clean Energy and Climate Action*, THE WHITE HOUSE (Jan. 2023), <https://www.whitehouse.gov/wp-content/uploads/2022/12/inflation-reduction-act-guidebook.pdf>.

¹³¹ Josh Bivens, *The Inflation Reduction Act finally gave the U.S. a real climate change policy*, ECON. POL'Y INSTITUTE (Aug. 14, 2023, 3:16PM), <https://www.epi.org/blog/the-inflation-reduction-act-finally-gave-the-u-s-a-real-climate-change-policy/>; *see also* David Burton, *Tax Equity News: Overview of Energy Tax Credits After the IRA*, NORTON ROSE FULBRIGHT (Apr. 10, 2023), <https://www.projectfinance.law/tax-equity-news/2023/april/overview-of-en>

credits for short periods of time, such as when they were extended by only two years in 2020's lame-duck session.¹³² The IRA extended the Investment Tax Credit (“ITC”) and the Production Tax Credit (“PTC”) through 2032.¹³³ The long-term extensions provided significant forecasting stability for financing parties like banks and made them more likely to lend for these projects.¹³⁴ The PTC, which did not apply to solar projects until the IRA, “provides a tax credit to project owners based on the electricity production from qualified renewable energy facilities.”¹³⁵ Unlike the PTC, which provides value for electricity generation, the ITC uses tax credits to promote capital investment in qualifying projects.¹³⁶ Additionally, projects can receive tax credit adders for being located in an area either with high unemployment (Environmental Justice Credit) and/or an area that historically relied heavily on fossil fuel industries for local employment (Energy Communities).¹³⁷ These tax credits and their additional adders will make the financing of renewable energy projects cheaper and more competitive for the holders of large capital like banks or hedge funds, but the new transferability policy (Sections 45X and 48X) of these tax credits could dwarf the effect of these new individual tax credits.¹³⁸ Simply put, the new transferability will allow small utility-scale renewable developers to compete with the bigger developers in the market because of the potential for essentially free capital infusions they would not otherwise have had access to.¹³⁹ For example, if Company A is developing a solar project in a community with a retiring coal plant, Company A will receive these new “energy communities” tax credit adders, alongside any of the other credits they could qualify for.¹⁴⁰ However, if Company A is small and does not generate much profit in a given year, it may not be able to utilize each of the 10% tax credits given to it for that project because Company A does not pay enough in taxes to utilize all of its credits. Post-IRA, Company A is now allowed to market its transferable tax credit to corporations or other entities

ergy-tax-credits-after-the-ira/ (To receive the domestic content adder, projects must contract to utilize 100% domestic iron and steel and 40% domestically manufactured products).

¹³² *Congress Extends Renewable Energy Tax Credits in 2021 Omnibus Spending Bill*, JD SUPRA: SHEPPARD MULLIN ENERGY L. BLOG (Dec. 23, 2020), <https://www.jdsupra.com/legal-news/congress-extends-renewable-energy-tax-98223/>.

¹³³ *See generally Energizing the Future: A Comparative Analysis of PTC and ITC for Accelerating Renewable Energy Investment under the Inflation Reduction Act*, FOSS & CO., <https://fossandco.com/tax-credits/energizing-the-future-a-comparative-analysis-of-ptc-and-its-for-accelerating-renewable-energy-investment-under-the-inflation-reduction-act/#:~:text=investment%20tax%20credit,-the%20itc%20is&text=unlike%20the%20ptc%2c%20which%20focuses,combined%20heat%20and%20power%20systems> (last accessed Nov. 16, 2023) [hereinafter *Energizing the Future*].

¹³⁴ Esposito, *supra* note 84.

¹³⁵ *Energizing the Future*, *supra* note 133.

¹³⁶ *Id.*

¹³⁷ Bivens, *supra* note 131; *see also* Burton, *supra* note 131 (The Environmental Justice Credit only applies to projects under 5 MW utilizing the ITC, but the Energy Communities credit is eligible on both the ITC and PTC).

¹³⁸ Bivens, *supra* note 131.

¹³⁹ *Id.*

¹⁴⁰ *Id.*

that pay large amounts of taxes.¹⁴¹ If Company A has an unused tax credit worth \$5 million, it could sell that tax credit to a large company like Amazon or a bank for \$3 million or another marketable price. In such a swap, Company A receives \$3 million cash (or whatever the marketable price is) that it can now repurpose on further development (i.e., more solar or wind projects), and the purchaser of the credit will receive a \$5 million discount on its tax bill. This policy is a way of creating a structural incentive for private capital to invest in renewable energy projects without providing direct subsidies.

The first Section 45X tax credit transfer deal was recently completed in early January, involving Arizona-based solar company First Solar and the financial tech company Fiserv.¹⁴² Because First Solar manufactures solar panels and other necessary equipment for solar deployment at its Arizona plant, the company will receive a significant PTC tax credit with the domestic content adder.¹⁴³ They have agreed to sell up to \$700 million of these tax credits to Fiserv at a rate of \$.96 for each \$1 of tax credit purchased.¹⁴⁴ This will give First Solar cash in the short-term that they can utilize to purchase more raw materials to complete new purchase orders while giving Fiserv a four-cent-per-dollar discount on its eventual tax bill for the amount of PTC claimed.¹⁴⁵ The transferability market is only expected to grow as time progresses and more ITC- and PTC-eligible projects begin construction.¹⁴⁶

As a result of these policy adjustments, it is estimated the bill will drive over \$369 million of investment in renewable energy development or other climate change priorities.¹⁴⁷ This investment is projected to reduce greenhouse gas emissions in the United States by 40% of 2005 levels.¹⁴⁸ Due to a lack of government investment or a significant legislative package from the federal government, the private sector has been driving much of the energy transition and will continue to do so. While the government participated early in the R&D of renewable technologies like solar and wind,¹⁴⁹ much of the innovation and financing

¹⁴¹ *Id.*

¹⁴² See generally Jonathan Touriño Jacobo, *First Solar inks up to US\$700 million tax credit transfer agreement on Section 45X*, PV TECH (Jan. 2, 2024), <https://www.pv-tech.org/first-solar-inks-up-to-us700-million-tax-credit-transfer-agreement-on-section-45x/>; see generally Emma Penrod, *First Solar \$700M sale of advanced manufacturing tax credits likely first of many such deals: CPA*, UTIL. DIVE (Jan. 4, 2024), <https://www.utilitydive.com/news/first-solar-45x-advanced-manufacturing-tax-credit-inflation-reduction-act-ira/703664/#:~:text=first%20solar%20has%20agreed%20to%20sell%20up%20to,%20of%20tax%20credits%20transferred%20from%20first%20solar> [hereinafter Penrod].

¹⁴³ Jacobo, *supra* note 142.

¹⁴⁴ Jacobo, *supra* note 142; Penrod, *supra* note 142.

¹⁴⁵ *How Biden's climate credits can be worth more as ready cash*, FIN. TIMES (Jan. 2, 2024), <https://www.ft.com/content/34e121ab-c27f-4ce9-bdbb-d4d242a50715>.

¹⁴⁶ Penrod, *supra* note 142.

¹⁴⁷ Environmental Justice Priorities, *supra* note 85.

¹⁴⁸ *Id.*

¹⁴⁹ *Fact Sheet: The Recovery Act Made The Largest Single Investment In Clean Energy In History, Driving The Deployment Of Clean Energy, Promoting Energy Efficiency, And Supporting Manufacturing*, THE WHITE HOUSE: PRESIDENT BARACK OBAMA (Feb. 25, 2016), <https://obamawhitehouse.archives.gov/the-press-office/2016/02/25/fact-sheet-recovery-act-made-largest-single-investment-clean-energy>.

of projects has occurred because of private capital's profit motive. In 2022, American private investment was its highest ever, with just over \$271 billion invested in renewable energy projects.¹⁵⁰ Because of the private sector's modest success, the IRA's climate provisions have raised the optimism level regarding whether the United States can reach the goals set out in the Paris Accords.

C. What's Next?

The climate provisions of the IRA make it a piece of legislation to be proud of, but how will the United States continue its journey to a carbon-free future? Implementing an American-style ETS or carbon tax would be an incredibly complex political endeavor and may ultimately require filibuster reform in order to pass the Senate.¹⁵¹ The success of a potential cap-and-trade bill this decade is unlikely, given the deepening polarization dynamics surrounding climate and energy issues.¹⁵² Democrats have other legislative priorities that go beyond the scope of this Note, but Democratic voters and interest groups will also want action with regard to abortion access, immigration, guns, and healthcare affordability.¹⁵³ As a result, a cap-and-trade bill is unlikely to be prioritized through budget reconciliation during the next Democratic trifecta, nor is it likely to gain bipartisan support in order to clear a conservative filibuster. This is undoubtedly disappointing, but the IRA's tax credits and the technological advancement of solar, wind, and utility-scale batteries have already made renewable energy cheaper than fossil fuel energy generation.¹⁵⁴ As a result, rather than focus efforts on the daunting task of devising, passing, and implementing an American ETS or carbon tax regime, advocates should pursue these three legislative priorities at the national level: (1) bring about an end to fossil fuel subsidies, (2) pass nationwide permitting reform, and (3) protect and re-extend the IRA's renewable energy tax credits.

Ending fossil fuel subsidies would have a similar economic effect to implementing a carbon tax because it would raise the overall costs for the industry participants. As an inverse to how the IRA uplifts renewable energy competitiveness, the termination of fossil fuel subsidies would decrease the eventual profitability of operating fossil fuel assets (and decrease the desire to

¹⁵⁰ *New Report: Private Sector Investments in U.S. Clean Energy Sector Exceeded \$270 Billion in Last Year*, AM. CLEAN POWER (Aug. 7, 2023), <https://cleanpower.org/news/investing-in-america/>.

¹⁵¹ Joselow, *supra* note 116.

¹⁵² Renée Cho, *How Do We Deal With the Polarization Around Climate Change?*, COLUMBIA CLIMATE SCH.: STATE OF THE PLANET (Sept. 23, 2022), <https://news.climate.columbia.edu/2022/09/23/how-do-we-deal-with-the-polarization-around-climate-change/>.

¹⁵³ Nicole Naria, *Michigan Democrats' agenda: abortion, unions, LGBTQ rights, and more*, VOX (Feb. 9, 2023), <https://www.vox.com/policy-and-politics/2023/2/9/23591330/michigan-democrats-whitmer-legislature-midterms>.

¹⁵⁴ Allison F. Takemura, *Chart: Renewables are on track to keep getting cheaper and cheaper*, CANARY MEDIA (Sept. 1, 2023), <https://www.canarymedia.com/articles/clean-energy/charts-renewables-are-on-track-to-keep-getting-cheaper-and-cheaper> [hereinafter Takemura].

further develop new extraction sites).¹⁵⁵ Currently, the American fossil fuel industry receives almost \$20 billion a year from taxpayers.¹⁵⁶ Similar to the IRA's structure, these subsidies come mostly in the form of tax breaks for companies developing, operating, or improving their assets.¹⁵⁷ Removing these items from the tax code would be easier than a simple forced phase-out, but not without political costs. President Biden's approval ratings began to sink during his first summer in office, partly due to the rise in gas prices.¹⁵⁸ Additionally, countries as different as Mexico and Morocco have experienced political unrest as a result of higher gas and energy prices.¹⁵⁹ There will be a political cost to whoever brings an end to fossil fuel subsidies, but the technological advancements in solar energy, battery storage, and electric vehicles will dampen the ultimate economic cost of the switch.¹⁶⁰ This could be done in a slow phase-out over the next decade as solar and wind expand their overall market shares, but given the political dynamics of the Senate, a trade-off or compromise on another issue may be necessary for success. With U.S. government debt ballooning,¹⁶¹ a fiscal responsibility argument should be pushed by advocates. Ending fossil fuel subsidies is ultimately about stemming climate change, but if voters or interest groups can be persuaded through other justifications, advocates should try those arguments.

Nationwide permitting reform is needed in order to unlock the IRA's full potential.¹⁶² Similar to Europe, the United States permitting regime is complicated

¹⁵⁵ U.S. Senate Budget Committee Hearing: Who Pays the Price: The Real Cost of Fossil Fuels, Sen. Whitehouse's Opening Statement, 118th Cong. (May 3, 2023), <https://www.budget.senate.gov/committee/newsroom/press/sen-whitehouse-on-fossil-fuel-subsidies-we-are-subsidizing-the-danger->

¹⁵⁶ *Id.*

¹⁵⁷ Karin Rives, *Efforts to remove billions in US fossil fuel subsidies face uphill battle*, S&P GLOB. (May 17, 2023), <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/efforts-to-remove-billions-in-us-fossil-fuel-subsidies-face-uphill-battle-75649055>.

¹⁵⁸ Emily Badger & Eve Washington, *Why the Price of Gas Has Such Power Over Us*, N.Y. TIMES (Jun. 20, 2023), <https://www.nytimes.com/2022/10/25/upshot/gas-prices-biden-midterms.html>.

¹⁵⁹ Meghan L. O'Sullivan, *Mexico's energy reforms: A blow to realizing the most competitive and dynamic region on the world*, BROOKINGS INST. (Feb. 28, 2022), <https://www.brookings.edu/articles/mexicos-energy-reforms-a-blow-to-realizing-the-most-competitive-and-dynamic-region-in-the-world/>; Tarik El-Barakah, *Inflation pinch: Moroccans protest soaring fuel, other costs*, ASSOCIATED PRESS, <https://apnews.com/article/business-prices-africa-inflation-morocco-caaceb35d73d7e3fa96d576933fc68ec> (last visited Apr. 7, 2024).

¹⁶⁰ Takemura, *supra* note 154.

¹⁶¹ *What Is The National Debt Today?*, PETER G. PETERSON FOUNDATION, <https://www.pgpf.org/national-debt-clock> (last visited Jul. 21, 2024).

¹⁶² *IRA Implementation: Clean Energy and Permitting Reform*, AM. CLEAN POWER, <https://cleanpower.org/resources/ira-implementation-clean-energy-and-permitting-reform/> (last visited Apr. 7, 2024).

and ranges from simple to nauseatingly ridiculous.¹⁶³ Wind projects are exceptionally difficult to permit, and while solar can be easier, the projects are still at the mercy of excessively long judicial review timelines once lawsuits are filed.¹⁶⁴ However, permitting delays are not held up by Republicans or oil and gas advocates. Instead, these delays are usually caused by environmental groups such as local Sierra Clubs or NIMBYs (“Not-In-My-Back-Yard” advocates).¹⁶⁵ Utility-scale solar and wind generation facilities (along with the transmission lines connecting the green energy to the grid) often require large tracts of land, and advocates decry the removal of natural habitats for various plant and animal species.¹⁶⁶ While their perspective is understandable, every blocked solar and wind farm just ensures the in-use coal or gas plants will need to stay operating to service the electricity needs of the population—resulting in more greenhouse gas emissions. Any nationwide permitting reform should incorporate the EU’s ideas on how to accelerate the permitting process. Codifying a holistic approach, which would allow policymakers the opportunity to weigh local and global effects when determining whether permits should be granted, would be an excellent start. Additionally, creating “Accelerated Development Zones” in areas with great renewable potential or near grid interconnection facilities would substantially lower the cost of development and result in more green electrons reaching the grid. Michigan recently enacted legislation to streamline the permitting process, which has renewables advocates rejoicing.¹⁶⁷ The legislation prevents local municipalities from implementing stricter permitting requirements than the state and mandates faster review of permit applications.¹⁶⁸ Michigan’s bill is already serving as a model for other state governments, and the federal government would be wise to either adopt similar processes for its federal agencies or incentivize states to adopt these policies through money grants.¹⁶⁹ Lastly, it should be noted there are other cultural issues specific to southwestern states like New Mexico and Arizona, such as Indigenous groups’ desire to leave traditionally sensitive sites preserved.¹⁷⁰ These concerns are valid, and any nationwide or state-level reforms must address these problems.

¹⁶³ Andrew Dessler, *Clean energy is the future. Permitting reform is how to get there*, BULL. OF THE ATOMIC SCIENTISTS (Feb. 1, 2023), <https://thebulletin.org/2023/02/clean-energy-is-the-future-permitting-reform-is-how-to-get-there/>.

¹⁶⁴ Xan Fishman et al., *Reforming Judicial Review for Clean Infrastructure: A Bipartisan Approach*, BIPARTISAN POL’Y CTR. (Sept. 18, 2023), <https://bipartisanpolicy.org/explainer/reforming-judicial-review-for-clean-infrastructure-a-bipartisan-approach/>.

¹⁶⁵ Washington Post Editorial Board, *Opinion: Environmentalism could stop the clean-energy transition*, WASH. POST (Apr. 6, 2024), <https://www.washingtonpost.com/opinions/2024/04/06/environmentalists-climate-clean-energy-regulation/>.

¹⁶⁶ *Id.*

¹⁶⁷ David Roberts, *Michigan targets clean electricity and faster permitting*, VOLTS (Jan. 19, 2024), <https://www.volts.wtf/p/michigan-targets-clean-electricity>.

¹⁶⁸ *Id.*

¹⁶⁹ *Id.*

¹⁷⁰ Niina H. Farah, *Tribal lawsuit threaten Biden’s clean energy push*, E&E NEWS BY POLITICO (Feb. 8, 2024, 6:36 AM), <https://www.eenews.net/articles/tribal-lawsuits-threaten-bidens-clean-energy-push/>.

Finally, because the IRA provides federal dollars for energy and manufacturing projects, it will have significant staying power. Lenders and operators have planned to take advantage of the new tax credits, and they are unlikely to be amenable to their repeal. While Republicans have floated repealing the IRA should they achieve a new trifecta, the investment being pumped into red states would make the politics of a potential repeal process dangerous for members of Congress within those states. Many red states like Texas and Tennessee have relaxed permitting and zoning regimes, making setting up new production facilities and supply chain links cheap.¹⁷¹ For instance, the South Korean firm LG Chem has announced a new battery factory in Tennessee that will sell EV batteries to GM starting in 2026 through 2035.¹⁷² The on-shoring of manufacturing jobs, incentivized in part by the IRA's domestic production tax credit, will deepen the political staying power of these policies. This will need to be utilized in any future defense of the IRA, as Republicans have already begun to lay out aspirations for repeal.¹⁷³

III. POLICIES FOR ARIZONA

Arizona spends more time bathing in sunlight than any other U.S. state, with our capital city of Phoenix averaging about 300 days of sunshine per year, yet only 10% of our energy is generated with this abundant resource.¹⁷⁴ According to the U.S. Energy Information Administration:

Arizona ranks second in the nation in solar energy potential after Nevada, and in 2022, it was fifth in solar-powered net generation from the state's utility- and small-scale photovoltaic and solar thermal power plants together.¹⁷⁵ Solar energy provided the state with more power than all of Arizona's other renewable energy sources combined.¹⁷⁶

¹⁷¹ *Clean Energy Boom Report*, CLIMATE POWER (Nov. 2, 2023), <https://climatepower.us/research-polling/clean-energy-boom-report/>.

¹⁷² Adam Sichko, *GM signs EV battery materials deal with LG Chem tied to Clarksville TN Factory*, NASHVILLE BUS. J. (Feb. 15, 2024), <https://www.bizjournals.com/nashville/news/2024/02/15/lg-chem-ev-battery-cathode-clarksville-tn.html>.

¹⁷³ James Temple, *Trump wants to unravel Biden's landmark climate law, Here is what is most at risk*, MIT TECH. REV. (Feb. 26, 2024), <https://www.technologyreview.com/2024/02/26/1088921/trump-wants-to-unravel-bidens-landmark-climate-law-here-is-whats-most-at-risk/>.

¹⁷⁴ *Arizona State Energy Profile*, U.S. ENERGY INFO. ADMIN. (May 18, 2023), <https://www.eia.gov/state/print.php?sid=az#:~:text=in%202022%2c%2099%25%20of%20arizona%27s,%25;AverageAnnualSunshinebyState,CURRENTRESULTS,https://www.currentresults.com/weather/us/average-annual-state-sunshine.php> (last visited Oct. 22, 2023).

¹⁷⁵ *Id.*

¹⁷⁶ *Id.*

There is a huge opportunity for Arizona to power its future with solar energy, and through state government policy, a regulatory environment can be created that invites that type of development. The logic of successful solar energy generation in the desert is not hard to comprehend, but the challenge is to make it profitable for developers and independent power providers to build here. Additionally, Arizona's constitutional structure allows for two statewide governmental bodies to assist (or block) this effort.¹⁷⁷ The Corporation Commission's role in energy policy is paramount,¹⁷⁸ but the legislature also wields the ability to incentivize development through other mechanisms.¹⁷⁹ In this section, I will highlight how both bodies present political opportunities and challenges in our demographically changing state.

The Arizona Constitution's delegation of regulatory authority of power utilities was born in the early twentieth-century "progressive era."¹⁸⁰ Progress must be made with respect to the personnel of the Corporation Commission, as the four Republican members have shown no interest in furthering the energy transition.¹⁸¹ This will take winning statewide elections, but there are three policies the Arizona legislature or local county governments could implement that would spur investment through the private sector and forgo the Corporation Commission's assent.

First and foremost, some form of permitting reform must be implemented. This could range from the state legislature adopting Michigan's permitting reform bill to municipal governments acting on their own within their own jurisdictions. Codifying the holistic approach to permitting and creating Accelerated Development Zones would both be great starting points at either the state or local level. The decrease in development costs for private sector market participants would make solar and wind more attractive to our utilities (Tucson Electric Power, Salt River Project, and Arizona Power Services). Rather than obtaining green electrons out of concerns for climate, the utilities must be incentivized financially to buy from and operate more renewable energy assets.

Second, Arizona has a substantial amount of farmland that uses an equally substantial amount of our freshwater—whether that be pumped groundwater or Colorado River water.¹⁸² This farmland is ripe for solar and wind development, but farmers cannot afford to convert their land from crops to renewable energy generation without losing access to their water rights.¹⁸³ With these water rights

¹⁷⁷ ARIZ. CONST. arts. XV, III-IV.

¹⁷⁸ ARIZ. CONST. art. XV.

¹⁷⁹ ARIZ. CONST. arts. III-IV.

¹⁸⁰ LEAH CARDAMORE STOKES, *SHORT CIRCUITING POLICY* 164 (Oxford Univ. Press, 1st ed. 2020).

¹⁸¹ Robert Walton, *Arizona's chief utility regulator bashes ESG, says it's not a factor when weighing utility plans*, UTIL. DIVE (Dec. 12, 2023), <https://www.utilitydive.com/news/arizona-corporation-commission-esg-coal-gas-oconnor/702226/>.

¹⁸² *Guide to AZ Agriculture*, ARIZ. DEP'T OF EDUC. (Dec. 2018), https://agriculture.az.gov/sites/default/files/azda_guidetoazag_2018.pdf.

¹⁸³ John D. Burnside et al., *Arizona's In-State Surface Water Resources: Appropriate Water Fosters Economic Development*, SNELL & WILMER (May 16, 2023), <https://www.swla>

holdings often stretching back generations,¹⁸⁴ most farmers are unwilling to consider the switch unless they no longer wish to farm crops ever again. However, these tracts of land are needed if we are to generate enough renewable energy to both meet our growing energy needs and contribute to combating climate change. As a result, the state legislature should establish a State Water-for-Energy Trust, in which the state government would lease the water rights of farmers, thus allowing them to utilize their land for the new purpose of energy generation without permanently relinquishing their ability to grow crops in the future. The state would need to make effective use of the water it purchased leases on. The state could either codify water conservation as an effective use, or the state could divert the water into aquifers or other large reservoirs to hold the water for future use during droughts. This policy would have the tandem benefits of opening more land to renewable development and adding to our state's water security.

Lastly, Phoenix alone has over 180 miles of canals.¹⁸⁵ The amount of water lost due to evaporation every sunny day is immense, but we can solve this issue by covering the canals. If we were to cover portions of canals with solar panels, similar to the panels that cover parking lots and subsequently provide cheap power to the surrounding buildings, we could generate a tremendous amount of cheap green power. The Salt River Project and the Gila River Indian Community have already begun work on a pilot project to do this over the Casa Grande Canal.¹⁸⁶ The logistics of this idea are more complicated than the previous two policy suggestions but would have drastic ramifications for our water and energy consumption.

Arizona has the opportunity to lead with respect to solar. Our climate provides us with remarkable potential, but we must have political will and legislative know-how in order to realize it.

IV. CONCLUSION

The EU and the United States have begun their respective energy transitions utilizing different mechanisms. As noted above, the EU has been proactive for longer and its policy is more complex than the United States' batch of tax credits. However, the American private markets have done a tremendous job with the little they've been given. U.S. politics make a potential American-style ETS and adjoining CBAM seem unlikely for now as climate advocates focus on permitting reform and resolving the interconnection issues. Beyond that, if and

w.com/publications/legal-alerts/arizonas-in-state-surface-water-resources-appropriable-water-fosters-economic-development.

¹⁸⁴ Maanvi Singh, *'Water is more valuable than oil': the corporation cashing in on America's drought*, THE GUARDIAN (Apr. 16, 2024), <https://www.theguardian.com/environment/2024/apr/16/arizona-colorado-river-water-rights-drought>.

¹⁸⁵ Dustin Gardner, *Lifeblood of Phoenix*, THE ARIZ. REPUBLIC (Jan. 20, 2017), <https://www.azcentral.com/story/news/local/phoenix/2017/01/20/phoenix-canals-history-7-things-to-know/96695158/>.

¹⁸⁶ Peter O'Dowd, *Arizona tribe first to span canals with solar panels*, WBUR (Feb. 19, 2024), <https://www.wbur.org/hereandnow/2024/02/19/solar-panels-canals>.

when advocates have an opportunity to pass such measures, a well-organized opposition effort, such as one similar to the opposition to the Waxman-Markey bill, could arise again and torment cap-and-trade enthusiasts. But if the permitting and interconnection issues can be solved, the potential for American state-level progress is great. In Arizona for instance, with only 10% of the state's general fund coming from corporate taxes,¹⁸⁷ there is not much potential for a dynamic tax credit incentive structure—i.e., the strategy taken by the IRA. However, a revamped permitting structure could produce an accelerated pace of renewable development. The creation of “Accelerated Permitting Zones,” similar to the EU's newly implemented accelerated deployment areas contained in its revisions to the Renewable Energy Directive,¹⁸⁸ over areas with ideal conditions for renewable development, such as favorable locations for generating electricity—i.e., areas that receive significant sunlight and/or strong wind patterns—or areas with quick access to connect the generated electricity to the grid, would decrease the risks associated with developing a project in the designated areas. If developers could be guaranteed a quick review of their environment and interconnection, one of the biggest obstacles holding back development in the state could be taken out of the equation.

Arizona can do this via the state legislature and the governor. Arizona counties' authority to regulate solar permitting is granted to it via the state and could be altered by the legislature.¹⁸⁹ The question then is whether the political will exists to pursue such a policy.

The prospects of renewable energy development received a big boost from the IRA, but there is still plenty that could be done. Similarly, the EU has made continued strides, but it will need to accelerate its development if it is going to hit the goals it has set for itself.¹⁹⁰ While here in Arizona, the resource (sunlight) is all around us, it is just a question of whether our state and local governments can foster that investment. As the political landscape shifts, our energy transition may accelerate sooner than we think.

¹⁸⁷ *State Budget 101*, THE ARIZ. CTR. FOR ECON. PROGRESS (citing Arizona Joint Legislative Budget Committee staff, Fiscal Year 2024 Appropriations Report), <https://azeconcenter.org/state-budget-101/> (last visited Nov. 16, 2023).

¹⁸⁸ *Briefing: Fairer and faster permitting for a successful European renewable energy transition*, CLIMATE ACTION NETWORK EUR. (Oct. 19, 2023), <https://caneurope.org/renewable-permitting-europe/>.

¹⁸⁹ ARIZ. REV. STAT. ANN. § 11-323.

¹⁹⁰ Ewa Krukowska, *Europe Needs to Double Renewable Power to Hit Climate Goal*, BLOOMBERG (Jan. 17, 2021), <https://www.bloomberg.com/news/articles/2021-01-18/europe-needs-to-double-renewable-power-by-2030-for-climate-goal#xj4y7vzkg>.