Using the Transmission Grid to Make "Second Best" Decarbonization Better

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ABSTRACT: Instead of a "first best" decarbonization approach such as a national carbon tax, U.S. efforts to decarbonize the electric power sector draw heavily on the decentralized, often fragmented tools of state utility regulation. These "second best" decarbonization approaches can create many benefits, but they also present several challenges for energy markets. In this Essay, I focus attention on how interstate transmission planning and cost allocation can help to mediate and improve the efficacy of second best decarbonization policies. Despite much-needed recent improvements to federal transmission policies, opportunities remain to continue to reform transmission grid regulation to improve second best decarbonization in the future.

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Introduction

When it comes to energy decarbonization, U.S. political institutions have failed to implement what economists consider perfect (or "first best") regulatory solutions, such as a national carbon tax. Instead, U.S. climate policy has become a hodgepodge of what economists might consider "second best" solutions. In life, we routinely advise others (and, of course, ourselves) that the quest for perfection should not be the enemy of the good. When it comes to the regulatory tools for energy decarbonization, however, an ad hoc hodgepodge of second best solutions may produce inefficient or wasteful energy investments, policy conflicts, and free rider problems, among other challenges.

For example, consider the Inflation Reduction Act, which sets ambitious decarbonization goals. Rather than rely on the traditional stick of regulatory enforcement—such as Pigouvian taxes that would use regulation to internalize the costs of undesirable activities—the Inflation Reduction Act embraces what has been described as an "all carrot, no stick" approach of various tax subsidies and other incentives. Although subsidies to encourage a decarbonized grid can be beneficial, they are not perfect. Inevitably some wasteful activities will be encouraged. And some valuable activities will not be rewarded at all.

Even more varied in approach is state utility regulation. It is impossible to generalize about state regulation, given the varied approach to energy markets in the United States. But one thing is certain: State utility regulators sit at the center of most policy decisions regarding energy resources and their carbon content, as well as how retail customers will pay for decarbonization of the electric power system. There is no single national approach to valuing carbon in electricity markets, but many states have experimented with policies to advance decarbonization goals through utility regulation.[1] Many of these policies have delivered significant decarbonization benefits for the energy

1. *See, e.g.*, William Boyd & Ann E. Carlson, *Accidents of Federalism: Ratemaking and Policy Innovation in Public Utility Law*, 63 UCLA L. Rev. 810, 885–93 (2016) (concluding that, through various subsidies and policies related to energy, the federal government has "allowed for different experiments across different kinds of states and across different aspects of the machine than we would expect to see under a more uniform approach").

grid, despite any grand design, though there is also a lot of fragmentation in approach among the states and, of course, inconsistency in approach.

Is this hodgepodge of second best solutions to decarbonization a regulatory failure? Should we consider it a shortcoming or disappointment? How should we evaluate the successes of these kinds of second best decarbonization policies? Are there things that can and should be done to improve it?

It should come as no surprise that the answers to these questions are complex, particularly against the backdrop of notoriously complicated and imperfect interstate energy markets. This Essay argues that these second best solutions to energy decarbonization are not just good enough, or something that we should settle for. They are the best we have, and will have, into the foreseeable future. As others have argued, these second best solutions are especially valuable in a context such as climate policy, where learning and policy experimentation are necessary.[2] At the same time, coordinating second best policies and ensuring that they continue to evolve and flourish, rather than stagnate, requires that policymakers be attentive to the barriers to coordination and policy change, to ensure that there are some mediating institutions to address conflicts and the need to improve policies in the future.

In Part I, I sketch the idealized, typical "first best" regulatory approach to energy decarbonization, as is commonly proposed in the form of a carbon tax. I also identify several institutional barriers to the adoption and implementation of a carbon tax that make "second best" policies particularly well-suited tools for energy decarbonization.

As I discuss in Part II, even though second best solutions are often given a backseat in policy discussions, they can be extremely valuable mechanisms for advancing decarbonization goals. Second best solutions are more likely to produce experimentation and learning, and to provide regional diversity. They can also help to enhance the kind of energy system resilience that is especially valuable in light of climate change. Second best solutions can present some challenges of their own too, and I highlight how policy conflicts and complacency often get in the way of second best decarbonization policies delivering their full potential benefits.

I conclude by making a case for interstate transmission planning and cost allocation as a mediating institution to help ensure that second best energy decarbonization solutions represent improvements to social welfare. The value of physical transmission infrastructure for both reliability and competitive energy markets is well established. This Essay focuses its attention on how interstate transmission planning and cost allocation help to mediate and improve the efficacy of incremental policy solutions in power markets. This requires transmission planning and cost allocation to emphasize more dynamic mechanisms to help coordinate conflicts, address potential free rider

2. *See, e.g.*, *id.* at 882.

problems, and avoid complacency and path dependency created by second best decarbonization policies.

Approaching transmission as a mediating institution for second best decarbonization solutions helps us to see that the grid is not just about regulators planning and paying for the physical connections between energy suppliers and customers, or promoting reliability for today's ensemble of low carbon energy sources. It is also the infrastructure that will facilitate the future changes in second best decarbonization policies that will be critical to addressing our energy system in the future.

I. PRICING EXTERNALITIES AS A FIRST BEST POLICY FOR DECARBONIZATION

For economists, the conventional approach to maximizing social welfare is to allocate resources in a manner that reflects the marginal costs of production.[3] The standard preferred approach is to rely on market transactions that will equate price with marginal costs.[4] Where the costs of an activity are not fully reflected in marginal costs, however, there is a gap between private and public welfare.[5] Such externalities can be addressed through the imposition of a Pigouvian tax.[6]

A social cost of carbon is widely preferred as a way to internalize the hidden costs that various energy activities, such as generating electricity through the combustion of fossil fuels, impose on society.[7] In discussions about climate change, a national tax on carbon-producing activities is often favored over other carbon-reduction approaches because it is seen as efficient, fair, and straightforward.[8] A national carbon tax provides a simple, straightforward solution to the challenges presented by climate change. A carbon tax internalizes externalities associated with the production or consumption of energy that markets currently do not price. Pricing carbon in such a tax would better incentivize investments in energy transportation infrastructure such as transmission, promote more reasonable access and pricing for nonincumbent energy resources, and enhance reliability as a more diverse range of low-carbon resources are integrated into the grid.

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3. *See* Joseph E. Stiglitz, *Addressing Climate Change Through Price and Non-Price Interventions*, 119 EUR. ECON. REV. 594, 596 (2019).

4. *Id.*

5. *See id.* at 594.

6. *See id.* at 595.

7. *See, e.g.*, *id.* at 595.

8. For classic articles advocating for a carbon tax over alternative emissions regulation approaches such as cap and trade, see generally Michael Hoel & Larry Karp, *Taxes Versus Quotas for a Stock Pollutant*, 24 RES. & ENERGY ECON. 367 (2002); Larry Karp & Jiangfeng Zhang, *Regulation of Stock Externalities with Correlated Abatement Costs*, 32 ENV'T & RES. ECON. 273 (2005); William D. Nordhaus, *To Tax or Not to Tax: Alternative Approaches to Slowing Global Warming*, 1 REV. ENV'T ECON. & POL'Y 26 (2007); Marc J. Roberts & Michael Spence, *Effluent Charges and Licenses Under Uncertainty*, 5 J. PUB. ECON. 193 (1976); Martin L. Weitzman, *Prices vs. Quantities*, 41 REV. ECON. STUD. 477 (1974).

On both the left and the right, politicians have touted a carbon tax as a "Hail Mary"-type solution to the climate change problem.[9] MIT and University of Chicago economists maintain that adoption of a national carbon tax could be necessary to reduce societal reliance on fossil fuels and meet greenhouse gas reduction targets,[10] such as the United States' goal of a fifty percent greenhouse gas "reduction from 2005 levels" by 2030.[11] As one report puts it, "[a] well-designed carbon price is an indispensable part of a strategy for reducing emissions in an efficient way."[12] Elon Musk has even taken the position that a carbon tax is as necessary to successful carbon reduction as garbage collection fees are to trash disposal.[13]

There is a lot to debate about the design of a carbon tax,[14] but it stands out for its simplicity and elegance.[15] At the same time, in the United States a

9. For advocates on the left, see generally ALISON CASSADY, GREG DOTSON, MICHAEL MADOWITZ & ALEXANDRA THORNTON, CTR. FOR AM. PROGRESS, BUILDING A 21ST CENTURY ECONOMY: THE CASE FOR A PROGRESSIVE CARBON TAX (2016), https://www.americanprogress.org/wp-content/uploads/sites/2/2016/12/CarbonTax-report.pdf [https://perma.cc/3YPP-5C9X]; David Roberts, *A Chat with Al Gore on Carbon Taxes, Natural Gas, and the 'Morally Wrong' Keystone Pipeline*, GRIST (Nov. 20, 2012), http://grist.org/climate-energy/a-chat-with-al-gore-on-carbon-taxes-natural-gas-and-the-morally-wrong-keystone-pipeline [https://perma.cc/37CC-Z2DX]. For advocates on the right, see generally JAMES A. BAKER, III ET AL., CLIMATE LEADERSHIP COUNCIL, THE CONSERVATIVE CASE FOR CARBON DIVIDENDS (2017), http://www.clcouncil.org/media/TheConservativeCaseforCarbonDividends.pdf [https://perma.cc/H7PA-58EB]; Martin S. Feldstein, Ted Halstead & N. Gregory Mankiw, *A Conservative Case for Climate Action*, N.Y. TIMES (Feb. 8, 2017), http://www.nytimes.com/2017/02/08/opinion/a-conservative-case-for-climate-action.html (on file with the *Iowa Law Review*); Bob Inglis & Arthur B. Laffer, *An Emissions Plan Conservatives Could Warm To*, N.Y. TIMES (Dec. 27, 2008), http://www.nytimes.com/2008/12/28/opinion/28inglis.html (on file with the *Iowa Law Review*). A number of private corporations, including some in the fossil fuel sector, have also voiced support for a national carbon tax. *See* Editorial Board, *Even Big Oil Wants a Carbon Tax*, BLOOMBERG (June 1, 2015, 3:22 PM), https://www.bloomberg.com/view/articles/2015-06-01/even-big-oil-wants-a-carbon-tax (on file with the *Iowa Law Review*) (noting that six of the world's largest oil companies have come out in support of a carbon tax).

10. *See* Thomas Covert, Michael Greenstone & Christopher R. Knittel, *Will We Ever Stop Using Fossil Fuels?*, 30 J. ECON. PERSPS. 117, 120 (2016) (arguing that certain policy choices are necessary to reduce fossil fuel consumption and greenhouse gas emissions).

11. *See* Press Release, White House, Fact Sheet: President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-Paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies (Apr. 22, 2021), https://www.energy.gov/sites/default/files/2023-12/EX20FA~1.PDF [https://perma.cc/6596-68DX].

12. CARBON PRICING LEADERSHIP COAL., REPORT OF THE HIGH-LEVEL COMMISSION ON CARBON PRICES 1 (2017), https://www.uncclearn.org/wp-content/uploads/library/carbonpricing_fullreport.pdf [https://perma.cc/TKX9-4RE5].

13. Alan Boyle, *Elon Musk Explains Why a Carbon Tax Is as Necessary as Garbage Collection Fees*, GEEKWIRE (Dec. 15, 2015, 1:43 PM), https://www.geekwire.com/2015/elon-musk-explains-carbon-tax-necessary-garbage-collection-fees [https://perma.cc/X8M9-D93P].

14. For an excellent discussion of some of the core components of an optimal carbon tax design, see Gilbert E. Metcalf & David Weisbach, *The Design of a Carbon Tax*, 33 HARV. ENV'T. L. REV. 499, 511–13, 545–56 (2009) (addressing the tax rate, distributional issues, and a need to address jurisdictional spillover effects through border adjustments).

15. *See* Editorial Board, Opinion, *Carbon Tax Is Best Option Congress Has*, WASH. POST (May 7, 2013), https://www.washingtonpost.com/opinions/carbon-tax-is-best-option-congress-has/2

carbon tax has also proved politically elusive. Legislative adoption of a national carbon tax is widely considered infeasible and is stalled, at least for the foreseeable future.[16] A few scattered efforts to tax energy based on its carbon attributes have been adopted at subnational levels of government,[17] but we are nowhere near the point where it could be said to be a widespread or effective approach for decarbonizing the energy grid. Most carbon tax proposals are premised on similar core principles that are relatively uncontroversial: resource neutrality in accounting for externalities, efficient cost spreading through broad-based application, ensuring fairness and equity in application, and avoiding domestic jurisdictional problems with a single national approach that would be priced into interstate energy transactions.[18] But it ends up that the political economy of implementing a carbon tax makes it unlikely that it will do these things effectively.[19] Even if a carbon tax could overcome the real-world obstacles to adoption, it is likely to encounter substantial real-world obstacles when it comes to actual design and implementation.[20]

As the carbon tax example illustrates, in many real-world contexts it is simply not possible to fully price all externalities in an effective manner that translates into the intended carbon reduction behaviors. Practical barriers, including those presented by political and legal institutions, thus often make economists' first best solutions to problems elusive. This is where the theory of second best can provide a helpful door for policy innovation. According to the theory of second best, when the optimal conditions in an economic model cannot be satisfied in the real world, the next best solution involves changing

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013/05/07/883f2184-aeaa-11e2-98ef-d1072ed3cc27_story.html (on file with the *Iowa Law Review*) (describing a carbon tax as "an elegant policy Congress could immediately take off the shelf" and "one of the best ideas in Washington almost no one in Congress will talk about"); *see also* SHI-LING HSU, THE CASE FOR A CARBON TAX 10–11 (2011).

16. One significant reason for this is the geographic obstacles presented by the Senate, which also have hobbled efforts to move forward with other carbon regulation initiatives. *Cf.* Metcalf & Weisbach, *supra* note 14, at 503, 553–55 (explaining how production tax credits for renewable power have temporarily expired due to congressional delays). Another reason relates to a lack of widespread voter support, due to a lack of psychological appeal. *See* Gary M. Lucas, Jr., *Voter Psychology and the Carbon Tax*, 90 TEMP. L. REV. 1, 4 (2017).

17. The idea of a carbon tax has not had significant political traction in states either. For discussion of state carbon tax initiatives, see ADELE C. MORRIS, YORAM BAUMAN & DAVID BOOKBINDER, BROOKINGS INST., STATE-LEVEL CARBON TAXES: OPTIONS AND OPPORTUNITIES FOR POLICYMAKERS 2 (2016).

18. *See* Jim Rossi, *Carbon Taxation by Regulation*, 102 MINN. L. REV. 277, 296–98 (2017).

19. *See, e.g.*, Gary M. Lucas, Jr., *Behavioral Public Choice and the Carbon Tax*, 2017 UTAH L. REV. 115, 144–47 (arguing that the political economy of the public decision-making process makes the efficiency of any real-world carbon tax less than economists would consider ideal); Metcalf & Weisbach, *supra* note 14, at 527–29 (describing neutrality and jurisdictional issues with the implementation of a carbon tax on power and transportation fuels).

20. *Id.*

a variable in a manner that, under optimal conditions, would not produce the most efficient or intended outcome.[21]

For example, a carbon tax may put a price on various activities producing carbon emissions, but it might also induce fossil fuel suppliers to accelerate present production in anticipation of a future phaseout of a finite resource; some argue that this this can produce a "green paradox" of sorts that, at least in the short run, could even increase rather than decrease carbon emissions.[22] Also, some economists have observed that even where a carbon tax produces emissions reduction benefits, it does not provide sufficient incentives to stimulate the kind of research and development activities, and the adoption of new technologies, necessary to meet longer-term decarbonization goals.[23] Missing or suboptimal carbon prices with a carbon tax may also make additional policies necessary to achieve decarbonization goals.[24]

There are many reasons to question whether the ideal form of a carbon tax is politically and institutionally feasible. But concerns about feasibility do not need to translate into cynicism about all regulatory interventions in markets to address efficiency and social welfare concerns.[25] Rather, what a second best approach to decarbonization advises is a practical, incrementalist approach to any regulatory interventions in markets. By necessity, this involves regulators recognizing that there is no one-size-fits-all solution to difficult social problems.

A second best approach to decarbonization also requires approaching each regulatory intervention with humility. In addressing the second best nature of utility regulation before decarbonization was even a major issue, Andrew Morriss observed:

> Second-best theory suggests an important limitation on regulatory policy: because the ultimate impacts of regulatory actions are difficult and expensive to discover, we must be cautious in acting to "fix" what we perceive to be "inefficiencies." We should be modest about our

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21. The classic article is R.G. Lipsey & Kelvin Lancaster, *The General Theory of Second Best*, 24 REV. ECON. STUD. 11 (1956). For an overview of the implications of second best analysis for law and regulation, see Richard S. Markovits, *Second-Best Theory and Law & Economics: An Introduction*, 73 CHI.-KENT L. REV. 3 (1998).

22. *See* Svenn Jensen, Kristina Mohlin, Karen Pittel & Thomas Sterner, *An Introduction to the Green Paradox: The Unintended Consequences of Climate Policies*, 9 REV. ENV'T. ECON. & POL'Y 246, 248 (2015).

23. *See* André Grimaud, Gilles Lafforgue & Bertrand Magné, *Climate Change Mitigation Options and Directed Technical Change: A Decentralized Equilibrium Analysis*, 33 RES. & ENERGY ECON. 938, 940 (2011).

24. *See* Matthias Kalkuhl, Ottmar Edenhofer & Kai Lessmann, *Renewable Energy Subsidies: Second Best Policy or Fatal Aberration for Mitigation?*, 35 RES. & ENERGY ECON. 217, 225–26 (2013).

25. *Cf.* Geoffrey Brennan & Philip Pettit, *The Feasibility Issue*, *in* THE OXFORD HANDBOOK OF CONTEMPORARY PHILOSOPHY 258, 259–62 (Frank Jackson & Michael Smith eds., 2005) (arguing that while the theory of second best may reject ideal theory, it does not require agnosticism about political theory or social welfare but instead advises attention to feasibility).

> ability to understand the world, our ability to design legal institutions which can implement solutions, and our political institutions' capability to produce laws. In particular, we should be suspicious of claims that regulatory actions will enhance economic efficiency.[26]

Some libertarian economists have invoked the theory of second best to critique *any* use of public policy or welfare analysis to governmental interventions in markets.[27] But the theory of second best does not require that cynical conclusion. To take the theory of second best as an apology for the commodification of energy to be traded in unencumbered markets gives it short shrift. As Morriss suggests, the theory of second best advises humility not in regulation per se, but in our understanding and knowledge of its efficacy in achieving its purposes. That does not reject regulation. Instead, it advises that regulation be used in an incremental manner that is subject to critical evaluation and learning over time. Such an approach seems especially well-suited to American federalism, where laboratories of democracy can produce multiple innovations and experiment with their effectiveness.[28]

Such an approach is especially valuable in the energy sector, where the institutional framework envisions incomplete federal authority over energy markets and the preservation of significant space for state regulators to make decisions about the optimal mix of energy resources to deliver reliable, clean energy to customers.[29] The primary challenge for regulators in formulating policies to enhance grid decarbonization in such an environment is how to take a humble, incremental, and dynamic approach to regulation while also providing the kind of certainty necessary to channel investments in new forms of energy production and more efficient uses of energy.

II. IDENTIFYING THE GOOD IN AND LIMITS OF SECOND BEST DECARBONIZATION

To what extent have second best grid decarbonization policies been effective? Second best approaches to decarbonization are commonplace and have now been used for decades to promote a clean energy grid.[30] The various regulatory tools for grid decarbonization are far too numerous and varied to

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26. Andrew P. Morriss, *Implications of Second-Best Theory for Administrative and Regulatory Law: A Case Study of Public Utility Regulation*, 73 CHI.-KENT L. REV. 135, 137–38 (1998).

27. *See* Richard E. Wagner, *Welfare Economics and Second-Best Theory: Filling Imaginary Economic Boxes*, 35 CATO J. 133, 140–44 (2015) (arguing that the theory of second best cannot justify a principled approach to welfare in policy analysis that is superior to the market process); Mario J. Rizzo, *The Mirage of Efficiency*, 8 HOFSTRA L. REV. 641, 653 (1980) (concluding that "[u]nless we have a great deal of information, the availability of which is doubtful, it is not possible to say whether pursuit of partial efficiency leads us closer to or farther from overall efficiency").

28. *See, e.g.*, Roger D. Congleton, *Constitutional Federalism and Decentralization: A Second Best Solution*, 12 J. PUB. FIN. & PUB. CHOICE 15, 19–20 (1994).

29. *See* Jim Rossi, *The Brave New Path of Energy Federalism*, 95 TEX. L. REV. 399, 436–37 (2016).

30. *See* Kalkuhl et al., *supra* note 24, at 218.

document in this short Essay.[31] But I will make a start at highlighting two of the highest-profile second best approaches: (1) tax incentives and subsidies; and (2) state renewable and clean energy requirements.

Examined in isolation, neither of these regulatory tools would meet the efficiency or welfare goals of economists. Still, when coupled with the pricing benefits of energy markets and with complementary tools, such as traditional regulation, they have both proved highly effective and beneficial second best tools for promoting energy decarbonization.[32] A primary value of these policies has related to providing great near-term certainty for investors in new power generation technologies, allowing the adoption of these technologies to scale up in adoption.

Just as important, second best policies have not been fixed and have been highly context dependent.[33] Over time, they have evolved and improved as technologies have scaled up and political institutions have learned more about their efficacy in implementation. Still, I argue, within the institutional structure of modern energy regulation and markets, these second best policies face considerable challenges and limits that need to be acknowledged.

A. *The Good in Second Best Decarbonization Tools*

As a matter of U.S. policy, the most prominent second best approaches to energy decarbonization are the use of tax credits and other incentives, most prominently in the 2022 Inflation Reduction Act ("IRA").[34] The approach of this statute is not to rely on regulation or traditional approaches to internalizing costs of penalizing undesirable conduct. Rather, the IRA boldly embraces a series of tax incentives, initially valued at $370 billion.[35] These incentives are targeted in particular at clean energy resources including wind and solar; they also target new investments in nuclear power, new approaches to power production (including hydrogen and small modular reactors), and transmission grid modernization.[36]

Many economists have criticized this kind of subsidy approach as producing waste and picking winners and losers—a regulatory strategy that is enormously expensive and has not always mapped onto efficient decarbonization or

31. A number of articles summarize some of these policies and their benefits. *See generally* Felix Mormann, *Clean Energy Federalism*, 67 FLA. L. REV. 1621 (2015); Daniel A. Lyons, *Federalism and the Rise of Renewable Energy: Preserving State and Local Voices in the Green Energy Revolution*, 64 CASE W. RSRV. L. REV. 1619 (2014).

32. *See* Annikka Stechemesser et al., *Climate Policies that Achieved Major Emission Reductions: Global Evidence from Two Decades*, 385 SCIENCE 884, 889 (2024).

33. *See id.* at 886.

34. *See* Act of Aug. 16, 2022, Pub. L. 117-169, 136 Stat. 1818.

35. WHITE HOUSE, BUILDING A CLEAN ENERGY ECONOMY: A GUIDEBOOK TO THE INFLATION REDUCTION ACT'S INVESTMENTS IN CLEAN ENERGY AND CLIMATE ACTION 5 (2023), https://bidenwhitehouse.archives.gov/wp-content/uploads/2022/12/Inflation-Reduction-Act-Guidebook.pdf [https://perma.cc/U4AQ-USJS].

36. *See id.* at 9–11 (summarizing various tax incentives and subsidies in the IRA).

deployment of new technologies in the electric power sector.[37] However, there are some real advantages to such an approach, especially in an environment where there is no carbon price or where carbon prices are set too low to induce the necessary mitigation to meet climate goals.

Climate policy analysts have long recognized the significance of the timing of adoption for decarbonization policies.[38] Specifically, there is a trade-off between waiting for the elusive first best mitigation solution, on the one hand, and making immediate investments in the present. Immediate short-term investments in clean energy can produce present benefits, allow technologies to better scale up, and allow for learning by doing.[39] As important, none of these subsidies last forever, so the policy tool of subsidies provides a built-in apparatus for Congress and regulators to assess what investments have made the most difference over time as well as whether there is a continued need for subsidies. In this sense, subsidies can allow for learning and the evolution of decarbonization policies in the future.[40] This is not to suggest that subsidies are perfect—they can definitely present problems and challenges—but as an immediate second best option they can produce many benefits today, help scale up new clean energy technologies, and allow for regulatory experimentation as we learn about their effectiveness.

Federal clean energy goals or targets have been proposed in legislation, but to date the federal government has failed to adopt any national renewable or clean energy requirement.[41] However, as a matter of state policy, a common second best approach to reduce the carbon content of electric power generation is the Renewable Portfolio Standard ("RPS") and, more recently, Clean Energy Standard ("CES").[42] An RPS is a regulatory mandate to increase production of energy from renewable sources, such as wind, solar, biomass and other alternatives, to fossil fuel and nuclear generation, while a CES typically includes other low-carbon sources such as nuclear energy.[43]

37. *See, e.g.*, Howard Gleckman, *The IRA's Green Energy Tax Credits Lose Their Punch Because They Try To Do Too Much*, TAX POL'Y CTR. (Aug. 17, 2022), https://www.taxpolicycenter.org/taxvox/iras-green-energy-tax-credits-lose-their-punch-because-they-try-do-too-much (on file with the *Iowa Law Review*).

38. *See* Reyer Gerlagh, Snorre Kverndokk & Knut Einar Rosendahl, *Optimal Timing of Climate Change Policy: Interaction Between Carbon Taxes and Innovation Externalities*, 43 ENV'T. & RES. ECON. 369, 370 (2009).

39. *See id.*

40. *See* Rossi, *supra* note 18, at 282 (explaining how evaluation of the efficacy of internal subsidies is important for continued grid decarbonization).

41. *Renewable Energy Explained: Portfolio Standards*, U.S. ENERGY INFO. ADMIN. (July 30, 2024), https://www.eia.gov/energyexplained/renewable-sources/portfolio-standards.php [https://perma.cc/6NCU-VAVP].

42. *See* GALEN BARBOSE, U.S. STATE RENEWABLES PORTFOLIO & CLEAN ELECTRICITY STANDARDS: 2024 STATUS UPDATE 7 (2024), https://eta-publications.lbl.gov/sites/default/files/lbnl_rps_ces_status_report_2024_edition.pdf [https://perma.cc/8ZJG-CP3Q].

43. *See id.*

More than half of the U.S. states have adopted mandatory RPS or CES requirements.[44] More than half of state RPS standards set goals that exceed fifty percent of retail sales, with many ramping up their targets annually.[45] Sixteen state CES standards set one-hundred-percent goals, typically to be met by 2030 to 2050.[46] Importantly, however, most of the more ambitious state clean energy goals were not established with the first generation of RPS and CES requirements; rather, states adopting these ambitious requirements have tended to have these requirements for more than a decade and have stepped up their targets over time after learning based on the implementation of more modest requirements.[47]

RPS and CES have proven to be effective mandates for encouraging development of renewable energy—in large part because they allow utilities flexibility in how they choose to comply with targets, including through the purchase of credits.[48] The targets in RPS standards provide stability for renewable project investors and typically ramp up steadily over time to encourage greater investment in renewable projects. Many states with requirements are on track in meeting (or have easily met) their present renewable energy targets (often in the fifteen to thirty percent range), encouraging a significant amount of renewable energy investment across different state regulatory environments, including both states with traditional utility regulation as well as states that have moved toward competitive retail energy markets.[49] It is estimated that these state requirements account for more than half of all growth in U.S. renewable electricity generation since 2000.[50] These policies have potential to continue to drive deployment of clean energy investments into the future too.[51]

Without doubt, state RPS and CES requirements produce significant benefits. They have produced significant carbon reduction as well as environmental and health benefits.[52] In addition, in many states, RPS standards have reduced the costs of production for new renewable and clean power projects.[53] State RPS standards are sometimes criticized as imposing a cost for

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44. *Id.* at 8.
45. *Id.*
46. *Id.* at 9, 21.
47. *Id.* at 10.
48. *Id.* at 28.
49. *Id.* at 29.
50. *Id.* at 17.
51. *Id.* at 39.
52. A leading analysis of this is RYAN WISER ET AL., A RETROSPECTIVE ANALYSIS OF THE BENEFITS AND IMPACTS OF U.S. RENEWABLE PORTFOLIO STANDARDS 5, 19 (2016), https://www.nrel.gov/docs/fy16osti/65005.pdf [https://perma.cc/G82K-L62F] (finding that RPS standards are responsible for 2.4% of 2013's power generation, producing health and environmental benefits valued at $.053 per kWh for new renewable power generation).
53. *See, e.g.*, Lincoln L. Davies, *Power Forward: The Argument for a National RPS*, 42 CONN. L. REV. 1339, 1359–60 (2010); Joshua P. Fershee, *Moving* Power Forward: *Creating a Forward-Looking Energy Policy Based on a National RPS*, 42 CONN. L. REV. 1405, 1413–14 (2010).

electricity customers.[54] Cost typically declines over time with implementation, and in terms of average energy prices, RPS requirements have only a minimal impact on customer rates—perhaps because utilities typically spread the costs of compliance among all the customers within the requirement's jurisdiction.[55]

One underappreciated feature of these state clean energy requirements is how they are constantly evolving. The evolution of these policies allows individual states to adjust and ramp up their own policy goals over time—though evolution might also lead to counterproductive changes to policies.[56] To the extent that RPS and CES standards are understood as dynamic policies, they can help to foster policy experimentation,[57] as the learning from policy efficacy has diffused both horizontally (among states) and vertically (to the federal government).[58] Over time, the experimentation can also occur within an individual state as a state learns about what worked and what did not work with its previous policies. State clean energy policies have also contributed to the expansion in the presence and strength of interest groups, particularly states in support of the wind, solar, and storage industries.[59] There is some evidence suggesting that as these interest groups have succeeded in some jurisdictions, they have expanded their activities to other jurisdictions too—a story that seems to describe how solar installers have broadened their lobbying for adoption of clean energy standards to new states as they succeeded in some of the jurisdictions that first adopted clean energy requirements.[60]

B. The Limits of Second Best Decarbonization Policies in Modern Energy Markets

Although second best decarbonization policies offer many benefits, they also face some serious challenges in modern energy markets, which value competition between energy resources and aim to allocate resources (and investment) based on supply and demand. Second best decarbonization

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54. *See, e.g.*, Davies, *supra* note 53, at 1384 (describing the trend of state RPSs causing small price increases in some states).

55. Compliance costs are estimated to constitute less than four percent of average retail rates in most states with mandates. *See* Barbose, *supra* note 42, at 36.

56. For example, in 2021 Montana repealed its RPS standard, and in 2019 Ohio reduced its renewable targets and eliminated a solar carve-out. *See State Renewable Portfolio Standards and Goals*, NAT'L CONF. STATE LEGISLATURES (Aug. 13, 2021), https://www.ncsl.org/energy/state-renewable-portfolio-standards-and-goals [https://perma.cc/UXV4-YDM5].

57. *See* CHARLES F. SABEL & DAVID G. VICTOR, FIXING THE CLIMATE: STRATEGIES FOR AN UNCERTAIN WORLD 2–3 (2022) (arguing that a bottom-up, experimentalist approach to problem solving, beginning locally, is necessary to solve the climate crisis).

58. *See* LEAH CARDAMORE STOKES, SHORT CIRCUITING POLICY: INTEREST GROUPS AND THE BATTLE OVER CLEAN ENERGY AND CLIMATE POLICY IN THE AMERICAN STATES 57–60 (2020).

59. *See id.* at 6.

60. *See e.g.*, Samuel Trachtman, *Policy Feedback and Interdependence in American Federalism: Evidence from Rooftop Solar Politics*, 21 PERSPS. ON POL. 462, 469 (2023).

policies generate numerous issues related to fragmentation, conflicts, and complacency. Although these concerns can easily be overstated, each can produce a serious set of challenges that needs to be addressed in order for second best decarbonization to reach its potential in modern energy markets.

First, consider how second best policies are *fragmented*. In approaching renewable energy policies, for example, some states may decide to promote wind, while others promote solar.[61] Still other states may decide to focus on nuclear or resources such as natural gas with carbon capture. Of course, this means that there is no single policy preference across all states, or sometimes even within particular regions of the country. This can sometimes manifest itself in different regulatory approaches to counting resources (as may occur when a state RPS standard has a multiplier for rooftop solar) or measuring the compliance with RPS or CES requirements.

A challenge presented by policy fragmentation is that it increases the costs of regulatory compliance for utilities and firms operating across multiple jurisdictions. Inconsistency in standards and enforcement can create an unpredictable situation for investors in new power resources, especially if they are expected to trade energy in interstate commerce, and different enforcement regimes can also result in unintended forms of carbon leakage.[62] Another challenge with fragmentation is that a hodgepodge of state policies might effectively promote investment in solar or other renewable resources, but this can often occur in a manner that does not maximize the decarbonization benefits associated with new energy resources. For example, most existing state RPS standards were not adopted based on the carbon content of various resources, and substantial reductions in carbon emissions could be achieved if states were to recalibrate these standards based on the carbon attributes of different energy resources.[63]

These kinds of challenges can be addressed, but they do suggest that there is a need for greater regulatory coordination across jurisdictions for second best policies to succeed with abundant interstate energy markets. Lowering barriers to entry to interstate energy markets can help. Importantly too, interstate markets can help in pricing the carbon attributes of energy resources—providing helpful information for investors as well as for state

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61. *See, e.g.*, BARBOSE, *supra* note 42, at 15, 19, 26.

62. *See, e.g.*, Davies, *supra* note 53, at 1368–70 (arguing in favor of a federal RPS as a solution to carbon leakage); Fershee, *supra* note 53, at 1414 (arguing that a federal RPS would prevent confusion by "implanting consistent rules").

63. *See* DEVAN SAMANT, ABRAHAM SILVERMAN & ZACHARY WENDLING, CTR. ON GLOB. ENERGY POL'Y, USING NEW MARGINAL EMISSIONS DATA TO IMPROVE STATE RENEWABLE PORTFOLIO STANDARDS 7 (2024), https://www.energypolicy.columbia.edu/wp-content/uploads/2024/05/LME-CGEP_Report_052324.pdf [https://perma.cc/35QH-YVPG] (recommending that "[s]tates . . . use [emissions] data to improve the climate impact of RPS programs by 'carbon indexing' or 'emissions adjusting' their clean energy purchases to account for avoided GHG emissions on a . . . location and time-sensitive basis").

policymakers.[64] More accurate pricing of interstate energy markets based on the carbon attributes of Renewable Energy Certificates ("RECs") could shift energy production to the lowest-carbon resources, helping to accelerate decarbonization, and would give state regulators the kind of information they need to better coordinate and improve RPS and CES standards in the future.[65]

Second, and arguably more challenging, second best decarbonization policies can generate new or magnify existing *conflicts* between energy resources. Some conflict is, of course, exactly part of what we would expect to see with a competitive energy market, and second best policies should thrive in an environment where states are competing to attract investors and in new technologies and new approaches to clean energy production. These kinds of conflicts are desirable—and exactly what a second best decarbonization approach should want to encourage—but other forms of conflict can produce serious challenges to meeting decarbonization's goals.

One concern is how one state might use the interstate market as a way of shifting costs outside of that jurisdiction for programs that produce limited benefits primarily to only residents in that state. For example, a clean energy standard that heavily values rooftop solar might be designed to benefit a strong economic presence from rooftop solar installers in that state. But as that state's resources participate in interstate markets, should those resources (with zero marginal costs) be allowed to bid on a least-cost basis into interstate capacity markets, or should there be some limitation on whether and how they can bid into the market? These kinds of disputes are being addressed in organized markets.[66] To date, there does not appear to be a clear way of resolving all of them. At a minimum, though, there does appear to be some consensus of a need for a transparent, fair, and open forum for addressing these conflicts between state policies.[67]

Another concern is an increased opportunity for free rider problems. In addressing the need for transmission expansion, for example, how should the burden be shared among customers? Should the focus be entirely on allocating the costs of new transmission to new energy supply sources? What preferences and priorities (if any) should be given to incumbent as opposed to new energy resources? And should the costs associated with providing transmission for new, low-carbon energy resources be concentrated on new entrants or spread broadly among out-of-state customers who can benefit from their carbon reduction and resilience? In organized regional markets, customers across multiple states can benefit from shared transmission lines, so focusing too

64. Beginning in 2021, for example, major grid operator "PJM began providing public access to data on marginal emissions at each of its pricing nodes." *Id.* at 10.

65. *See id.* at 7.

66. *See, e.g.*, Ari Peskoe, *Easing Jurisdictional Tensions by Integrating Public Policy in Wholesale Electricity Markets*, 38 ENERGY L.J. 1, 15–16 (2017).

67. For an excellent description of some of these concerns and evaluation of some possible solutions, see generally *id.*

narrowly on cost allocation can produce decarbonization free rider problems.[68] On the other hand, some states might have policies that are not as ambitious in promoting certain energy resources as others, so trying to spread costs broadly among everyone might force free riding not for the purpose of decarbonization but for purposes of promoting an incumbent, uneconomic energy resource, as may occur if one state is forced to pay for another state's policy preferences independent of their carbon reduction benefits.

Third, an emphasis on second best decarbonization policies can, in certain environments, produce an environment of *complacency*. To the extent second best policies favor a decentralized approach, decision makers within a state might favor inaction on decarbonization or, even worse, promoting carbon-emitting power generation to favor local interest groups. To the extent an incumbent utility in a jurisdiction has invested heavily in fossil fuel generation, it may favor no decarbonization policies at all. In the United States, a number of states have made little or no policy commitment to growing investments in clean energy.[69] At worst, this kind of complacency may serve to entrench incumbents who are engaged in undesirable rent-seeking behavior, while at the same time encouraging higher carbon emissions from energy resources in that state.

Even if this kind of abject rent seeking is not the source of complacency in a state policy approach to decarbonization, a state may be complacent simply because it does not want to take the risks to being first mover. Political decision-makers in a state may favor a cautious approach, where they can learn from others before committing to a decarbonization policy approach instead of incurring the costs of policy experimentation. This kind of complacency based on a conversative risk profile for second best decarbonization policies can also produce challenges. It materializes into a political culture of inaction on decarbonization policy within a state, making policy innovation in the state even more challenging in the future. Moreover, such complacency promotes policy experimentation free riding, where only a few states are innovators who take policy risks and others are just followers who cherry-pick only the most attractive decarbonization policies without taking any of the risks of policy experimentation.

Another kind of complacency relates to the effectiveness of second best decarbonization. Although RPS standards appear to be highly effective in the first several years following their adoption, there is some evidence that over time these policies face declines in their effectiveness due to path dependency as well as states meeting regulatory targets and penalties becoming less

68. *See generally* Ethan Howland, *FERC Transmission Rule Likely Boon to Consumers, but Christie Dissent Is a Blueprint for Litigation, Analysts Say*, UTIL. DIVE (May 16, 2024), https://www.utilitydive.com/news/ferc-transmission-rule-cost-allocation-state-roles-consumers/716289 (on file with the *Iowa Law Review*).

69. *See* Barbose, *supra* note 42, at 8–9.

meaningful.[70] This would suggest a need for revisiting these policies and broadening their goals—perhaps in the direction of one hundred percent clean energy. In addition, there is a need for states to constantly evaluate the promises of new technologies in advancing grid decarbonization—including storage, hydrogen, and small modular reactors—and to broaden the scope of the energy resources that they are promoting to advance decarbonization goals. In this sense, state CES plans may represent the next wave of second best decarbonization policy innovations. Importantly too, because of the inherent intermittency of renewable energy and the inability of a jurisdiction to match the supply and demand for energy within its jurisdiction, carbon leakage along with complacency with existing RPS goals often keeps second best decarbonization policies from providing the kind of 24/7 clean energy they strive to.[71] The need for new experimentation in second best decarbonization will be critical to promoting a clean energy economy.

III. Interstate Transmission Planning's Critical Role in Making Second Best Decarbonization Better

In order for second best decarbonization policies to succeed, it will be important to address the challenges of fragmentation, conflict, and complacency. These policies, including RPS and CES policies, will need to evolve and improve over time. Although most second best decarbonization policies are connected to energy supply and resource decisions, transmission is also critical to enabling the evolution and innovations in second best decarbonization.

At the most basic level, without regional investments in transmission—including access to transmission capacity, interconnection, and fair pricing—states are forced to rely almost entirely on their own power generation investments. Through transmission, competition between energy resources can occur in the interstate market, allowing the import and export of energy resources and, equally as important, allowing competition to place a value on their attributes, including carbon reduction. In this sense, second best decarbonization policies work alongside energy markets and pricing strategies. Although at times these markets can produce conflicts with decarbonization

70. *See, e.g.*, Zhao Xin-gang, Zuo Yi, Wang Hui & Wang Zhen, *How Can the Cost and Effectiveness of Renewable Portfolio Standards Be Coordinated? Incentive Mechanism Design from the Coevolution Perspective*, RENEWABLE & SUSTAINABLE ENERGY REVS. 11 (Apr. 2022), https://www.sciencedirect-com.proxy.lib.uiowa.edu/science/article/pii/S1364032122000260 (on file with the *Iowa Law Review*).

71. *See* Nate Hausman & Lori Bird, *The State of 24/7 Carbon-Free Energy: Recent Progress and What to Watch*, WORLD RES. INST. (May 5, 2023), https://www.wri.org/insights/247-carbon-free-energy-progress [https://perma.cc/V877-4ZHZ]. As a response to this problem with setting renewable and clean energy goals in energy markets, Google is proposing its own mechanisms to address 24/7 clean energy. *See* Peter Judge, *Google to Expand 24/7 Clean Energy Matching for Its Data Centers with Flexidao*, DCD (Jan. 31, 2024), https://www.datacenterdynamics.com/en/news/google-to-expand-247-clean-energy-matching-with-flexidao [https://perma.cc/6QND-QFX8].

policies, transmission can also provide a mediating institution for addressing some of these conflicts.[72]

Unfortunately, transmission is highly constrained. In many parts of the country there is limited transmission capacity, or that capacity is controlled entirely by public utilities who, as monopolists, have incentives to limit access, as well as physical interconnection, to the grid.[73] How to allocate the costs of transmission is also a serious challenge for decarbonization policies promoting new technologies. Without transmission access and fair cost allocation, there is little incentive for political institutions to consider adopting new innovations in second best decarbonization policies.

In regulating the transmission grid, however, we are still approaching the power grid as if we live in a first best world where market pricing of energy resources drives policy—not a world where second best energy policies and their evolution play a central role in meeting decarbonization goals. As I argue in this Part, second best decarbonization requires us to shift how we think about electric power transmission—from an approach that fixates on energy resource market competition and pricing to an approach that aims to remove barriers to entry for new resources while also reducing the risks of policy experimentation. To the extent that regulation approaches transmission as a fixed asset that connects an identified ensemble of energy resources to customers, some well-intended transmission policies that aim to promote market pricing for an identified ensemble of energy resources can also increase the risks of future second best policy experimentation. Regulators designing the energy grid need to be mindful of potential conflicts between existing energy resources. Equally important, regulators need to ensure that they set the stage for a future that will change in ways we can't always anticipate today, and doing so will require attention to coordination and transparency regarding the decarbonization benefits of energy resources, minimizing the potential for free rider conflicts between jurisdictions and overcoming the complacency among jurisdictions that continue to hold out from adopting new and improved approaches to second best decarbonization.

A. *Beyond Conventional Transmission Policy and Cost Allocation*

Discussion of transmission policy and cost allocation typically begins by highlighting the need to build a grid as physical infrastructure that will allow the market to provide clean and reliable energy at low cost. For example, Alexandra Klass, Shelley Welton, Joshua Macey, and Hannah Wiseman argue that a transmission grid that is more accommodating to clean energy

72. *See, e.g.*, Peskoe, *supra* note 66, at 8, 15–16.

73. A recent U.S. Department of Energy study estimates that meeting the goals of decarbonization would require the U.S. transmission system to expand "to 2.4 to 3.5 times the size of the 2020 system by 2050." U.S. DEP'T OF ENERGY, NATIONAL TRANSMISSION PLANNING STUDY: EXECUTIVE SUMMARY 2 (2024), https://www.energy.gov/sites/default/files/2024-10/NationalTransmissionPlanningStudy-ExecutiveSummary.pdf [https://perma.cc/8LY2-NKEN].

is also more likely to promote grid reliability.[74] Macey, Welton, and Wiseman have also addressed shortcomings with the North American Electric Reliability Council's private governance approach to managing the reliability of the grid.[75]

No one disagrees that the transmission grid is physically necessary for clean, reliable, and low-cost energy. A lack of abundant, readily available interstate transmission, including interconnection and open access, hobbles the ability of new resources to compete in interstate markets. Planning transmission for an identified ensemble of resources is a well-intentioned goal, but achieving this goal can also increase the risks of the kinds of second best decarbonization innovations and policy experiments that will be necessary to achieve decarbonization's long-term goals. After making a case for approaching the transmission planning process as a forum for enabling better second best decarbonization, I discuss how the regulation of transmission planning needs to be improved with attention to decreasing (rather than increasing) the risks of second best decarbonization in the future.

1. The Evolution of Regional Transmission Planning

Traditionally, transmission investments were made and transmission assets managed in a decentralized, utility-centric manner, primarily to serve native load retail customers. Beginning with the Federal Energy Regulatory Commission's ("FERC") open access policies in the mid-1990s,[76] regulation of the grid has undergone a fundamental transformation. The first big transformation was from a transmission grid designed to serve retail load customers to a transmission grid that aims, at least in theory, to serve a robust interstate power supply market.

Today, two-thirds of U.S. customers purchase their power from utilities who participate in organized wholesale markets, and another third of the population are served by retail utilities who operate under traditional public utility regulation.[77] As Ari Peskoe has pointed out, however, even in organized power markets, transmission-owning utilities still can exercise considerable monopoly power. Organized markets allow transmission-owning utilities to operate as a cartel of sorts, using their control of transmission assets to thwart

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74. *See* Alexandra Klass, Joshua Macey, Shelley Welton & Hannah Wiseman, *Grid Reliability Through Clean Energy*, 74 STAN. L. REV. 969, 1043–53 (2022); *see also* Alexandra B. Klass, *Expanding the U.S. Electric Transmission and Distribution Grid to Meet Deep Decarbonization Goals*, 47 ENV'T L. REP. 10749, 10758 (2017).

75. *See generally* Joshua C. Macey, Shelley Welton & Hannah Wiseman, *Grid Reliability in the Electric Era*, 41 YALE J. ON REGUL. 164 (2024).

76. Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities, 61 Fed. Reg. 21540, 21541–43 (May 10, 1996) (codified at 18 C.F.R. pts. 35, 385) [hereinafter FERC Order No. 888] (summarizing final rules designed to require open access nondiscriminatory transmission service in order to promote competitive wholesale power markets).

77. *See Power Market Structure*, ENV'T PROT. AGENCY (Dec. 26, 2024), https://www.epa.gov/green-power-markets/power-market-structure [https://perma.cc/HVB5-GAEJ].

new entrants and discourage new forms of power supply, as well as new services such as storage and demand response.[78] Limitations on physical or economic access to transmission can hobble the effectiveness of second best decarbonization in both organized and traditionally regulated markets. A lack of available transmission and interconnection can mean that new clean energy projects are never constructed at all. Even where utility-scale solar and wind projects have been constructed, as in the states of California and Texas, these resources can still face operational limits in realizing their potential because of transmission constraints.[79]

In part, this is a governance issue in organized power markets. To help overcome the utility transmission cartel, Shelley Welton has made a compelling case that reforms to grid governance—how we collectively manage transmission through organized markets—are needed. Such reforms could simultaneously open up interstate energy markets to more competition (and less monopoly consolidation) while accommodating new regulatory priorities that respond to climate change.[80] Although these kinds of governance reforms might help to address some of the concern in organized markets, in traditionally regulated states, transmission expansion and operation remains almost entirely in the hands of a vertically integrated utility, providing little or no interstate mechanism to help promote second best clean energy policies and their improvement.[81]

Federal regulators have been attentive to these issues for more than three decades. Beginning in the 1990s, FERC's open access policies approached the grid as the backbone for the operation of wholesale, competitive power supply markets.[82] By the early 2000s, FERC's regulatory approach evolved to promotion of organized markets for the planning and operation of the transmission grid.[83] And in 2010, FERC recognized that more attention to regional planning for transmission was necessary and adopted some basic principles to help guide regional transmission planning, including a requirement that transmission planning and cost allocation be attentive to state public policy

78. Ari Peskoe, *Is the Utility Transmission Syndicate Forever?*, 42 ENERGY L.J. 1, 11–13 (2021).

79. *See* Stephen Council, *California Can't Use All of Its Solar Power. That's a Huge Problem*, SFGATE (Dec. 2, 2024), https://www.sfgate.com/tech/article/california-solar-power-oversupply-problem-19953942.php [https://perma.cc/9BEF-2FC8].

80. *See* Shelley Welton, *Rethinking Grid Governance for the Climate Change Era*, 52 ENV'T L. REP. 10644, 10646–48 (2022).

81. *See* Peskoe, *supra* note 66, at 35–36 (noting how vertically integrated utilities face strong incentives to limit interstate transmission lines and favor local projects which they control); William Boyd, *Public Utility and the Low-Carbon Future*, 61 UCLA L. REV. 1614, 1703 (2014) (observing that "however the grid comes to be organized, there will be a set of institutions layered on top of it that have responsibility for regulating and coordinating various transactions, managing and operating the transmission and distribution systems, and maintaining system reliability").

82. *See* FERC Order No. 888, *supra* note 76, at 21541–43.

83. *See* Regional Transmission Organizations, 65 Fed. Reg. 810, 876–911 (Jan. 6, 2000) (codified at 18 C.F.R. pt. 35) (discussing the function of RTOs in designing and administering open access transmission tariff and identifying key characteristics and functions of RTOs).

requirements.[84] The shift in focus from open access, to organized markets, to regional planning that is attentive to state policies has certainly allowed transmission regulation to evolve for the better. At the same time, none of these regulatory initiatives have provided the stability necessary to encourage the level of transmission investments that are necessary for the grid to meet the anticipated needs to the existing ensemble of energy resources. Enabling a future energy portfolio to achieve longer-term decarbonization goals thus requires transmission regulation to evolve even more.

2. Order 1920's Long-Term Approach to Transmission Planning and Cost Allocation

A recent 2024 FERC initiative—known as Order 1920[85]—sets a bold new vision for transmission planning, providing a much-needed shift in how stakeholders approach transmission. Although FERC's 2010 transmission regulations facilitate the use and planning of transmission primarily to serve organized markets,[86] Order 1920 takes a more long-term and significantly broader approach.

In Order 1920, FERC found "that the absence of sufficiently long-term, forward-looking, and comprehensive transmission planning requirements is causing transmission providers to fail to adequately anticipate and plan for future system conditions."[87] One major concern was that:

> [I]ncremental and piecemeal expansion of the transmission system outside of regional transmission planning process misses the potential for transmission providers to identify, evaluate, and select more efficient or cost-effective transmission solutions to solve Long-Term Transmission Needs, as well as to afford system-wide benefits that may not be achieved through one-off transmission system upgrades.[88]

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84. *See* Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, 76 Fed. Reg. 49842, 49876 (Aug. 11, 2011) (codified at 18 C.F.R. pt. 35) [hereinafter FERC Order No. 1000] (calling for regional transmission planning processes that take account of transmission needs driven by public policy requirements).

85. *See generally* Bldg. for the Future Through Elec. Reg'l Transmission Plan. & Cost Allocation, Order No. 1920, 187 FERC ¶ 61,068 (2024) [hereinafter FERC Order No. 1920], *clarified on reh'g*, Order No. 1920-A, 189 FERC ¶ 61,126 (2024), *clarified on reh'g*, Order No. 1920-B, 191 FERC ¶ 61.026 (2025).

86. In Order 1000, adopted in 2011, FERC required regional transmission planning and cost allocation, created the concept of a public policy driven transmission need, and developed principles for cost allocation. *See* FERC Order No. 1000, *supra* note 84. FERC Order 890 (adopted in 2007) also set forth basic transmission planning criteria for open access transmission in interstate power markets. *See* Preventing Undue Discrimination & Preference in Transmission Serv., Order No. 890-A, 121 FERC ¶ 61,297, ¶ 62,060 (2007), *clarified on reh'g*, Order No. 890-B, 123 FERC ¶ 61,299 (2008), *clarified on reh'g*, Order No. 890-C, 126 FERC ¶ 61,228 (2009), *clarified on reh'g*, Order No. 890-D, 129 FERC ¶ 61,126 (2009).

87. FERC Order No. 1920, *supra* note 85, ¶ 61,135.

88. *Id.* ¶ 61,195.

As a remedy, Order 1920 sets standard expectations for each transmission planning region to engage in long-term regional planning—a major change from the status quo. Transmission providers are required to participate in a regional transmission planning process based on a twenty-year minimum horizon.[89] Every five years, planning scenarios are to be reassessed—providing an iterative approach to the evaluation of transmission.[90] Transmission providers must separately calculate the benefits and allocate the costs of long-term regional transmission facilities over, at a minimum, twenty years, starting from the estimated in-service date of the transmission facilities.[91]

Although Order 1920 requires planning and standardizes study requirements, it does not require planning regions to select projects resulting from the long-term studies—it only requires that the studies take place.[92] Still, it sets in place an important longer-term, system-wide perspective for planning transmission that has been missing from many discussions about transmission.

Another notable change is that FERC's recent rules clearly require interstate transmission planning everywhere within its U.S. jurisdictional reach, even among vertically integrated utilities.[93] FERC's 2010 transmission planning regulations provided enormous flexibility and encouraged investment in local transmission projects, which had only a minimal impact on transmission planning for traditionally regulated markets and was by and large limited to organized markets.[94] In Order 1920, FERC refused requests from regulated states to exempt vertically integrated utilities outside of organized markets from its transmission planning requirements, and also provided clearer definitions of local projects in a manner that will provide less flexibility for local projects to avert regional planning requirements.[95] At the same time, it

89. *Id.* ¶ 61,070.

90. *Id.* ¶ 61,444.

91. *Id.*

92. *Id.* ¶ 61,992 ("We reject requests that, instead of providing transmission providers with flexibility, we set forth standard evaluation processes and selection criteria in this final rule that transmission providers would be required to adopt. While we recognize that there may be some benefits to doing so, we also find that transmission planning regions have different transmission needs and market structures that make designing a standard evaluation process and selection criteria difficult.").

93. Texas, of course, is exempt because of the Electric Reliability Council of Texas ("ERCOT"). *See, e.g.*, *ERCOT*, FED. ENERGY REGUL. COMM'N (Jan. 27, 2025), https://www.ferc.gov/industries-data/electric/electric-power-markets/ercot (on file with the *Iowa Law Review*).

94. *See* TONY CLARK, ORDER NO. 1000 AT THE CROSSROADS: REFLECTIONS ON THE RULE AND ITS FUTURE 8 (2018), https://www.wbklaw.com/uploads/file/Articles-%20News/2018%20articles%20publications/WBK-%20TC-Order%201000%20whitepaper%20Final.pdf [https://perma.cc/L835-S79J] ("[T]he impact of Order No. 1000 on actual transmission planning and construction has proved most ineffectual in those regions of the country where states have maintained the greatest degree of regulatory authority.").

95. *See generally* Bldg. for the Future Through Elec. Reg'l Transmission Plan. & Cost Allocation, Order No. 1920-A, 189 FERC ¶ 61,126 (2024) [hereinafter FERC Order No. 1920-A].

remains unclear how FERC will enforce these planning requirements outside of organized markets.

Order 1920 also requires transmission providers to engage in a more serious and structured assessment of the benefits of new transmission as they identify and select solutions. Order 1920 requires transmission providers to measure a set of seven required benefits for potential long-term regional transmission facilities:

> (1) avoided or deferred reliability transmission facilities and aging infrastructure replacement; (2) . . . reduced loss of load probability or reduced planning reserve margin; (3) production cost savings; (4) reduced transmission energy losses; (5) reduced congestion due to transmission outages; (6) mitigation of extreme weather events and unexpected system conditions; and (7) capacity cost benefits from reduced peak energy losses.[96]

Assessment of these benefits is aimed at encouraging investment in the most efficient and cost-effective regional transmission solutions.[97]

Importantly, the selection of solutions is not limited to building interstate transmission lines. Order 1920 also requires transmission providers to consider alternatives to new interstate transmission lines.[98] Transmission providers can meet long-term transmission needs by "right-sizing" existing transmission facilities to increase capacity.[99] Order 1920 refused to reverse Order 1000's rejection of a right of first refusal for incumbent transmission proposals,[100] though it also recognized an incumbent's potential preference for right-sized replacement lines.[101] Transmission providers must also consider grid-enhancing technologies, such as dynamic line ratings and advanced power control devices, as solutions to meet their long-term transmission needs.[102]

Last, but certainly not least, Order 1920 addresses transmission cost allocation. Transmission providers are required to file one or more *ex ante* cost allocation methods to allocate the costs of facilities (or a portfolio of facilities) selected as solutions to long-term transmission needs.[103] Echoing standards

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96. FERC Order No. 1920, *supra* note 85, ¶¶ 61,787, 61,255.

97. *See id.* ¶ 61,788.

98. *Id.* ¶¶ 62,036, 61,323 ("[W]e clarify that both estimated benefits and costs must be disclosed when evaluating a Long-Term Regional Transmission Facility for selection and that transmission providers must adopt selection criteria that seek to maximize benefits accounting for costs over time without over-building transmission facilities.").

99. *Id.* ¶ 62,744 (adopting a right-sizing threshold of 200 kV for in-kind replacement of existing transmission facilities).

100. *Id.* ¶ 62.630.

101. *Id.* ¶ 62,744.

102. *Id.* ¶ 61,075.

103. *Id.* ¶ 61,072.

previously set by both courts and FERC,[104] under Order 1920 the allocation of costs under such method must be roughly commensurate with the benefits of the facilities.[105]

Although Order 1920 was controversial, in part because of a perception that it could force states to accept cost allocation for new lines with little or no input,[106] FERC's order on rehearing (1920-A) requires transmission providers to incorporate state input about how future scenarios used in long-term transmission planning will be developed, given that the scenarios will necessarily reflect how the states plan to meet their laws, policies, and regulations.[107] FERC's order on rehearing permits (but does not require) transmission providers to adopt a process for state entities to agree upon a cost allocation method within six months of project selection.[108] The order on rehearing also allows states to agree that the difference in costs between the baseline scenario and the larger, multidriver scenarios that include projects derived from state policies or other policy goals will be allocated to the states whose policies are the source of the added costs and will not be regionally cost allocated.[109] Unlike Order 1920, which generated a vigorous dissent,[110] FERC's final rule garnered unanimous support from the commissioners.[111]

3. How FERC's Transmission Planning Shift Benefits Second Best Decarbonization

When all of these components are put together, Order 1920 goes a long way toward rejecting reactive, piecemeal transmission planning. In place of a utility-centric approach, Order 1920 encourages the benefits of new transmission and evaluation of alternatives, as well as a more proactive, comprehensive planning approach that is more attuned to basic economic

104. *See* Ill. Com. Comm'n v. FERC, 756 F.3d 556, 562 (7th Cir. 2014); Ill. Com. Comm'n v. FERC I, 576 F.3d 470, 477 (7th Cir. 2009); Sw. Power Pool, Inc., 182 FERC ¶ 61,141, ¶ 12 (2023); *see also* Joshua Macey & Jacob Mays, *The Law and Economics of Transmission Planning and Cost Allocation*, 45 ENERGY L.J. 209, 210–13 (2025) (arguing that the "beneficiary pays" principle is consistent with energy law and can be implemented for interstate transmission projects even if different states or customer classes adopt different energy policies).

105. FERC Order No. 1920, *supra* note 85, ¶ 61,337.

106. *See id.* (Christie, Comm'r, dissenting).

107. For a summary of clarification and changes adopted in the primary rehearing order, see FERC Order No. 1920-A, *supra* note 95, at i.

108. *Id.* ¶ 662.

109. *Id.* ¶¶ 10–12.

110. *See* FERC Order No. 1920, *supra* note 85, ¶¶ 62,896–63,020 (Christie, Comm'r, dissenting).

111. *See* FERC Order No. 1920-A, *supra* note 95, ¶¶ 62,082–94 (Christie, Comm'r, concurring in part). *See generally* Bldg. for the Future Through Elec. Reg'l Transmission Plan. & Cost Allocation, Order No. 1920-B, 191 FERC ¶ 61,026 (2025) [hereinafter FERC Order No. 1920-B].

tradeoffs that need to be made for competitive energy markets to effectively implement second best decarbonization policies.[112]

Without robust access to transmission, the energy supply resources that second best decarbonization policies promote face challenges in the interstate power markets.[113] Significant expansions in transmission will be necessary for the most ambitious second best policies—including those embracing one-hundred-percent clean energy or more ambitious 24/7 clean energy goals.

By placing emphasis on the system benefits of new transmission lines and requiring participation in an iterative, long-term planning process, FERC's Order 1920 shifts transmission planning in a manner that can begin to help address these challenges for second best decarbonization. But, as former FERC Commissioner Allison Clements observed, this is just a first step.[114] Some important central policies for planning transmission lines remain to be fully developed.

First is the continued reduction of economic and regulatory barriers to entry and promoting more competition in wholesale power markets. FERC has already made consistent efforts to remove barriers to entry for demand response, energy storage, clean energy aggregators, competitive transmission projects, and the like, though a general policy that is not specific to technologies or existing firms could go a long way to opening transmission access for future technologies, encouraging more dynamic policy and second best decarbonization policy innovation.

Second is addressing cost allocation in a manner that recognizes the system benefits of second best decarbonization policies, including carbon reduction benefits.[115] To encourage more state innovation in second best decarbonization it is also important to acknowledge the spillover benefits of future policy innovations—perhaps giving favorable cost allocation to first movers that phase out after a period of years.

Third, every area of the country—including both organized and traditionally regulated markets—faces physical limitations on grid interconnection, hobbling the ability of many existing resources to use transmission lines.[116] In Order 2023, FERC directly addresses interconnection issues, increasing the transparency, requiring a "first-ready, first-served approach," clustering and prioritizing projects, and providing for penalties for delayed interconnection—

112. For one former FERC Commissioner's view of these benefits and Order No. 1920, see Allison Clements, *FERC Order 1920 Is a Big Step Forward on Transmission Planning, but It Is Not the End Game*, UTIL. DIVE (May 15, 2024), https://www.utilitydive.com/news/ferc-order-1920-transmission-planning-clements/716247 (on file with the *Iowa Law Review*).

113. *See id.*

114. *See id.*

115. *See, e.g.*, Macey & Mays, *supra* note 104, at 225–31.

116. *Advanced Energy United Generator Interconnection Scorecard*, ADVANCED ENERGY UNITED (Mar. 6, 2024, 4:56 PM), https://blog.advancedenergyunited.org/reports/generator-interconnection-customer-survey-and-performance-scorecard [https://perma.cc/M3W7-SQBS].

though much was left to the discretion of utilities in their compliance filings.[117] Policies should reduce the interconnect queue and, as important, find ways to approach interconnection in a manner that does not reproduce a static right for incumbent resources but instead provides an ongoing opportunity for new policy innovation to produce energy and get it to market.[118]

B. Beyond Order 1920—How Can FERC Transmission Regulation Make Second Best Decarbonization Even Better?

To date, the most aggressive criticism of Order 1920 has come from states that are concerned that FERC has encroached upon their jurisdictional turf.[119] These states maintain that FERC has expended its jurisdictional reach by requiring participation in a regional transmission planning process, which at its worst might be characterized (as FERC Chairman Mark Christie and other critics call it) as a form of "centralized planning" that allows FERC to choose winners and losers, and to favor some generation technologies over others.[120]

These legal challenges may be emboldened by the Supreme Court's rejection of *Chevron*[121] and its continued appetite for the major questions doctrine.[122] However, they also seem to ignore how the D.C. Circuit upheld FERC's 2010 rule requiring transmission planning, which was issued under the same statutory authority as Order 1920.[123] Chairman Christie, who dissented from the initial Order 1920 in part because of jurisdictional concerns,[124] appears to have softened his position and supported FERC's orders on rehearing (Order 1920-A).[125]

Legal challenges may or may not prove to be an obstacle to FERC's transmission planning requirements in Order 1920. Even if these challenges are unsuccessful, to the extent that the transmission planning approach in Order 1920 is focused on the transmission needs for existing state policies—

117. Improvements to Generator Interconnection Procs. & Agreements, Order No. 2023, 184 FERC ¶ 61,054, ¶¶ 61,057–58, *set aside in part by* Nos. RM22-14-000, RM22-14-00, 185 FERC ¶ 61,063 (2023).

118. *See* ROB GRAMLICH ET AL., UNLOCKING AMERICA'S ENERGY: HOW TO EFFICIENTLY CONNECT NEW GENERATION TO THE GRID 5–6 (2024), https://blog.advancedenergyunited.org/reports/unlocking-americas-energy [https://perma.cc/3XA3-X2YJ].

119. *See* Docketing Statement—Civ./Agency Cases at 2–3, Appalachian Voices v. FERC, No. 24-1650 (4th Cir. July 26, 2024) (consolidated appeals pending).

120. *See* FERC Order No. 1920, *supra* note 85, ¶ 61,251; *see also* FERC Order No. 1920, *supra* note 85, ¶¶ 62,896–63,020 (Christie, Comm'r, dissenting) (discussing other criticisms of FERC).

121. *See* Loper Bright Enters. v. Raimondo, 144 S. Ct. 2244, 2273 (2024).

122. *See generally* West Virginia v. Env't. Prot. Agency, 142 S. Ct. 2587 (2022) (using the major questions doctrine to invalidate agency action that would otherwise have been accorded deference).

123. *See* S.C. Pub. Serv. Auth. v. FERC, 762 F.3d 41, 63–64 (D.C. Cir. 2014) (holding that FERC has authority under section 206 of the Federal Power Act ("FPA") to require utility transmission providers to participate in a regional planning process).

124. FERC Order No. 1920, *supra* note 85, ¶¶ 62,896–63,020 (Christie, Comm'r, dissenting).

125. *See* FERC Order No. 1920-A, *supra* note 95, ¶¶ 62,081–83 (Christie, Comm'r, concurring in part).

rather than enabling policy evolution in the future—it risks reproducing some of the same mistakes that have been made in planning transmission in the past.

Additional aspects of transmission need to be addressed to encourage energy markets to experiment with second best decarbonization in the future. So even if upheld by courts, FERC's approach, while well-intended, may fall short. FERC's Order 1920 requires utilities to engage in regional planning. FERC's order on rehearing requires more engagement from states, but FERC has not consistently required transmission providers to engage with state regulators in planning for and addressing cost allocation for new projects. State viewpoints are allowed to be considered in the planning process—and state views will be forwarded to FERC if a regional plan rejects them—but FERC also does not provide a direct right for states to make filings to or appeal to FERC on their own behalf.[126] Moreover, to the extent federal approaches to interconnection continue to treat new interconnections as a form of property right, this risks reproducing of some of the same transmission barriers for new resources that plague the grid today.

1. Expanding State Participation Through an Affirmative Opt-Out

FERC's order on rehearing (Order 1920-A) requires transmission providers to work with state regulators and to make relevant information about state laws, regulations, and policies related to transmission planning and cost allocation a part of the record.[127] However, FERC appears to have left some important tools on the table that could simultaneously protect consumers and encourage states to participate more actively in the transmission planning process.

One shortcoming is that FERC's approach in Order 1920 still appears to encourage some anticompetitive state policies. In Order 1920, FERC established a "right size" approach. FERC created the right sizing option as a preference of sorts for incumbent utilities.[128] On its face this may seem to favor state prerogatives. Without doubt, state policies favoring the provision of clean energy on the distribution grid are important and encourage experimentation with substitutes for expensive new interstate transmission lines.[129] However, by favoring local investments through vertically integrated utilities over an open and competitive interstate transmission planning approach, FERC may have encouraged even more isolation from interstate transmission.

126. *See id.* ¶¶ 61,469–70.

127. *See id.* ¶¶ 61,127, 61,131, 61,141, 61,424 (majority opinion).

128. FERC Order No. 1920, *supra* note 85, ¶¶ 61,183–84 (describing the "right size" approach of replacing and expanding older transmission facilities in order to meet "Long Term Transmission Needs").

129. Shelley Welton, *Non-Transmission Alternatives*, 39 HARV. ENV'T L. REV. 457, 458–59, 467–68 (2015).

FERC may not be able to require states to participate in transmission planning. However, it should steer away from creating broad safe harbors for anticompetitive state policies in the transmission planning process. Instead of adopting safe harbors to favor incumbent utilities, FERC should find ways to encourage states to produce information in the transmission planning process to help explain and justify existing regulatory approaches and to address future policy goals. In other contexts, such as demand response, FERC has required states to opt out of wholesale market features that promote clean energy resources.[130] Since FERC's regulation promoting energy storage resources bidding into wholesale markets,[131] FERC seems to have stepped back from taking a more expansive approach to state engagement. In contrast to Order 1920's approach of giving a right sizing safe harbor for incumbent utilities—something that invites costly local transmission projects at the expense of regional transmission projects[132]—an opt-out in support of right sizing rights of first refusal would promote greater transparency and more direct state engagement in the transmission planning process.

Another advantage of the opt-out is that it would force better sharing of information in the transmission planning process, including information about the performance and goals related to second best state decarbonization plans. As Order 1920 envisions it, the transmission planning process centers almost exclusively around transmission-owning utilities and their customers, including both distribution utilities and energy suppliers.[133] This misses an important long-term perspective—namely what, as a matter of policy, political institutions envision the balance of energy resources looking like for the future.

To the extent the interstate transmission planning process can be used as a form to promote direct state engagement and the sharing of different policy approaches—perhaps even giving states direct rights to file and protest

130. *See* Demand Response Comp. in Organized Wholesale Energy Mkts., Order No. 745, 134 FERC ¶ 61,187, ¶¶ 61,188–89 (2011), *vacated*, Elec. Power Supply Ass'n v. FERC, 753 F.3d 216 (D.C. Cir. 2016), *rev'd and remanded*, 136 S. Ct. 760 (2016) (incorporating an opt-out for states that do not allow demand response resources to participate in wholesale power supply markets).

131. *See* Elec. Storage Participation in Mkts. Operated by Reg'l Transmission Orgs. & Indep. Sys. Operators, Order No. 841, 162 FERC ¶ 61,127, ¶ 61,279 (2018), *clarified on reh'g*, Order No. 841-A, 167 FERC ¶ 61,154 (2019).

132. Overinvestment in unnecessary local transmission projects is already a serious problem that FERC has recently begun to pay attention to in egregious instances of misrepresenting need for these local transmission projects. *See* Ethan Howland, *Local Transmission Spending Soars Nationwide Amid 'Serious Absence of Cost Containment*,*'* UTIL. DIVE (Nov. 20, 2024), https://www.utilitydive.com/news/local-transmission-asset-condition-spending-regulatory-gap-rmi/733430 [https://perma.cc/6YMX-ACK2]; Ethan Howland, *PSE&G to Pay $6.6M for Inaccurately Reporting Need for Local PJM Transmission Project*, UTIL. DIVE (Dec. 6, 2024), https://www.utilitydive.com/news/pseg-ferc-enforcement-pjm-local-supplemental-transmission/734819 [https://perma.cc/F6WE-2VZN].

133. *See* FERC Order No. 1920, *supra* note 85, ¶¶ 61,207–21 (discussing the proposal for and purposes of long-term transmission planning).

before FERC—it is more likely that planning will be forced to go beyond just building a physical transmission grid to serve existing and under-construction energy supply resources. Such an approach will require states to play the long game with decarbonization policies and to look critically at where their policies have succeeded and failed, as well as where they anticipate that they will go into the future—not just plan a grid to serve existing market participants. Direct state involvement in transmission planning and project selection can promote more information sharing and better innovation in decarbonization policies. Such an approach to state engagement would provide a forum for greater flexibility in future state policy innovations while also helping to ensure continued protection of consumers.

2. Dynamic Interconnection

Finally, interconnection remains one of the most serious obstacles to effective long-term transmission planning. In both organized and traditionally regulated markets, the transmission operator typically controls the interconnection queue.[134] From 2000 to 2010, the United States averaged between five hundred and one thousand new transmission interconnections per year.[135] Over the last decade, new transmission interconnection requests increased three hundred to five hundred percent, to two thousand five hundred to three thousand annually.[136] A significant interconnection request backlog delays new clean energy projects and increases their costs.

Even once interconnections are obtained, interconnection facilities for new resources must be paid for by new resources or, in some limited instances, socialized in transmission costs across a region. In either event, once established, a transmission interconnection becomes a property right of sorts for the generator into the foreseeable future, typically until the resource is decommissioned. First-come, first-served allocation of these transmission rights favors legacy power supply—serving as a potential obstacle to the development of new clean energy resources promoted by second best energy decarbonization policies.

Federal policies should find ways to encourage transmission providers to facilitate cost sharing for interconnections to new energy resources, including those that have not yet been identified. For example, interconnection approaches in Texas and portions of the Southwest are prioritizing new

134. *See Explainer on the Interconnection Notice of Proposed Rulemaking*, FED. ENERGY REGUL. COMM'N (Dec. 12, 2024), https://www.ferc.gov/explainer-interconnection-notice-proposed-rulemaking [https://perma.cc/684R-4B8V].

135. U.S. DEP'T OF ENERGY, TRANSMISSION INTERCONNECTION ROADMAP: TRANSFORMING BULK TRANSMISSION INTERCONNECTION BY 2035, at 1 (2024), https://www.energy.gov/sites/default/files/2024-04/i2X%20Transmission%20Interconnection%20Roadmap_1.pdf [https://perma.cc/YAX7-QCVY].

136. *See id.*

resources based on their value to the transmission system.[137] California is also rehauling its interconnection rules to prioritize resources that are willing and able to pay for interconnection.[138] Such approaches are not perfect—and if regulation treats an interconnection as a property right, that will thwart future innovations and hobble new forms for second best decarbonization—but they are a step toward allowing second best policies to succeed at achieving decarbonization goals.

Once constructed, to the extent that transmission interconnections become a property right for a specific generation facility, this can work to prolong a generator's operations beyond its ordinary economic life, foreclosing new energy supply resources from using the interconnection in the future. This serves to increase the risks of policy innovations that would favor resources that lack interconnection. Federal policies should also encourage transmission providers to treat interconnection rights for energy supply resources under open-access principles. Instead of treating interconnection as a property right, regulators should encourage transmission providers to treat it as a permit that expires after a period of a decade or two, or subject interconnection rights to some kind of competitive auction on a routine basis.

CONCLUSION

In sum, second best decarbonization tools are not just good enough. They are the best we will have into the foreseeable future. Even with some kind of a carbon tax, second best policy tools will likely remain essential to meeting decarbonization goals. Given this, it is critically important that regulators find ways to better coordinate, mitigate conflicts with, and challenge second best decarbonization policies to become better in the future.

Policies surrounding the transmission grid will be essential to ensuring that we not only have good enough state policies, but that these policies must not be taken as a given and need to be challenged to become better in the future. It is encouraging that federal regulators have recently been attentive to policies surrounding transmission planning and cost allocation. However, it is also important that transmission policies reduce (rather than increase) the risks of second best decarbonization policy evolution. This will require future federal transmission policy to find more direct ways to engage state regulators—rather than treating them as bystanders in transmission planning and cost allocation—and to also move toward a more dynamic approach to transmission interconnection.

137. Herman K. Trabish, *Innovative Solutions Emerge to Reduce 2.5-TW US Clean Energy Interconnection Backlog*, UTIL. DIVE (July 22, 2024), https://www.utilitydive.com/news/clean-energy-renewables-storage-interconnection-backlog-caiso-spp-ercot/719665 (on file with the *Iowa Law Review*).

138. *Id.*