

Policymaking Under Uncertainty: The Case of Climate Coalitions

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Prepared for the Climate Pipeline Project Meeting, Harvard University, June 16th 2022

A rising tide of research on distributional conflict has shown that strong climate policy becomes more feasible when it creates economic winners, not just losers. For instance, labor unions are more likely to support energy transitions when they expect to gain jobs for their members. However, merely offering the prospect of benefits may not be enough to persuade interest groups to join the coalitions needed for policy enactment. If winners do not trust that they will receive their intended benefits from a policy, they are unlikely to make substantial contributions to collective efforts to secure the policy's adoption. Yet there is relatively little work on how policies can be designed to increase winners' certainty that they will benefit. In this paper, we examine six policymaking episodes across three states, focusing on whether organized labor was effectively incorporated into climate policymaking. We trace the path of carbon pricing from early failure to recent success in Washington and how coal miners in West Virginia came to support a version of the Clean Air Act amendments in 1990 and Build Back Better three decades later. We show how failure to provide certainty can frustrate efforts to build coalitions around stringent policy proposals even in favorable political environments such as low-carbon economies, and how successfully providing certainty can secure allies even under unfavorable conditions. The findings offer important lessons for scholars, policymakers, and campaigners: creating winners without creating certainty is politically inefficient.

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Introduction

A core principle in political economy is that policy success depends on how costs and benefits are distributed across groups. In the classic Olsonian model (1965), the size and concentration of relevant groups determines whether winners (or losers) can mobilize to seize gains (or avoid losses). But what happens when the size of those gains and losses are themselves deeply uncertain?

The degree to which different groups will *actually* win or lose is not always clear, even to those groups themselves. A policy whose intended beneficiaries do not *expect* to benefit is less likely to win support. Policies designed to have similar distributional impacts can end up distributing *certainty itself* in different ways. In some cases, the distribution of certainty may be just as important for explaining coalitions as the distribution of benefits.

We explore this issue through the integration of labor into coalitions for climate mitigation and fossil fuel regulation. Mitigation policies are generally characterized by a high degree of uncertainty: they tend to create clear, visible losers in existing industries, while a large share of their benefits will only come in the future. We focus on the interests of organized labor, as a group that can plausibly end up on both sides of climate battles (Mildenberger 2020).

Focusing on certainty can help us re-evaluate longstanding debates about policy instruments, particularly the battle between market-based pricing approaches and state-led investment approaches. Carbon pricing has been praised for its economic efficiency but criticized for what we might call its “political inefficiency”: the difficulty of actually assembling coalitions to back it. Green industrial policy may not get the prices right, but it “gets the politics right” by creating winners who go on to back future policy (Meckling 2015, Stokes and Mildenberger 2020). These stylized accounts may be broadly correct. But when we look at actual battles to pass either pricing or investment policies, we find that the presence or absence of certainty can result in surprising coalitions.

To trace the role of certainty, we undertake case studies of coalition-building in two different American states: Washington and West Virginia.¹ In liberal, low-carbon Washington, carbon pricing initially failed at getting buy-in from labor when it was first proposed in 2016. But it later succeeded in 2018 and 2021, after specific provisions brought the pivotal building trades

¹ In future versions of the paper we plan to add more case studies. Suggestions for other good cases are very welcome.

unions on board. In conservative, carbon-intense West Virginia, the United Mine Workers of America strongly opposed the Clean Power Plan under Obama and the Green New Deal in the late 2010s. But they actually supported a version of the Clean Air Act Amendments in 1990 and Build Back Better in 2021, in part because those plans offered much clearer benefits targeted at coal communities.

These cases challenge our expectations about instruments and coalition partners. Electrical workers in a blue state should be an “easy” partner, but they can just as easily be lost. Mine workers in a coal state should be a “hard” partner, yet even they can be won. Carbon pricing can attract labor when certainty is provided, and green industrial policy can leave labor cold when certainty is absent. Instead of focusing only on the distinctions between ideal-type versions of policies, scholars should spend more time looking at the implementation details that shape coalitional outcomes on the ground.

We begin with an overview of work on the intersection between interest groups, climate policy, and instrument choice. We then argue that the role of certainty has been understudied, and offer some theory of how it shapes coalition-building. We select two diverse cases, and show how multiple episodes in Washington and West Virginia demonstrate the key role of certainty. We conclude by assessing the generalizability of our results to other areas beyond climate politics.

Literature Review

Over the past decade, social science research on climate change has shifted from its prior focus on collective action problems toward an emphasis on conflict between interest groups (Aklin and Mildenberger 2020). Such conflict arises when policies impose costs on one concentrated group (in this case, carbon-intensive industry) while benefiting another (the clean energy industry) (Wilson 1980). Recent studies provide mounting evidence that strong climate policy becomes more feasible when it creates economic winners, not just losers (Aklin and Urpelainen 2013; Meckling et al. 2015; Bayer and Urpelainen 2016; Stokes 2020). Labor unions in industrialized democracies constitute a classic example. Seeking greater employment and remuneration for their members, organized labor is more likely to support climate legislation when they have access to policy negotiations and derive economic benefits from the resulting agreements (Mildenberger 2020).

This line of research draws inspiration from the literature on policy feedback. Schattschneider’s (1935) aphorism that “new policies create a new politics” provides the basis for a series of

studies showing that policies can shape constituents' resources, preferences, motivations, and identities (Soss 1999; Campbell 2003; Mettler 2005). When constituents gain (or lose) substantially from a new policy, their capacity for influencing future rounds of policymaking increases (or declines). For instance, Patashnik (2008) demonstrates how airline deregulation weakened incumbent firms such as Pan Am, while strengthening emerging firms which subsequently sought to maintain the new policy.

If "new policies create a new politics" after implementation (Schattschneider 1935), why should this principle not apply to the enactment stage as well? The answer is that a policy's distributional outcomes are often uncertain before the policy has been implemented. Empirical political science uncovers abundant instances where well-resourced and strategic political actors lack information that would help them maximize their utility. Congressional leaders, for instance, sometimes lack information about the president's preference, increasing the president's bargaining power (Cameron 2000). State and federal legislators systematically misestimate public opinion, even on highly salient issues (Broockman and Skovron 2018; Hertel-Fernandez, Mildemberger, and Stokes 2019), as they rely on interest groups and political activists to signal the issues most likely to affect constituents' electoral behavior (Arnold 1990; Hansen 1991; Grossmann 2012). Likewise, interest groups lack information regarding how policy proposals will affect their members' interests or their bottom line (Henderson et al. 2021). Faced with novel policy proposals, groups' perceptions may be clouded by the "fog of enactment"--the uncertainty regarding the policy's distributional effects prior to its passage. For instance, electric utilities failed to recognize the threat that renewable portfolio standards (RPS) posed to their business models until after these laws took effect around the turn of the twenty-first century (Stokes 2020).

Policies can be designed in ways that increase or reduce their economic effects' visibility or traceability (Arnold 1990; Mettler 2011). Legislation which sets in motion a process whose effects only become apparent long after their implementation poses greater uncertainty for economic stakeholders (Arnold 1990). Policies also vary in how clearly they distribute effects across space (Patashnik 2008), and representatives seek assurances that legislation or regulations will benefit (or at least not harm) their constituencies (Davidson et al. 2019; Henderson et al. 2021).

Whether intentional or not, policy design choices have strategic implications for their enactment. Groups tend to advocate for policies offering them probable economic benefits and to resist policies they perceive to entail excessive risk or whose benefits are highly uncertain (Esterling 2004). When interest groups do not expect a policy to affect them, they are unlikely to mobilize in favor or opposition.

For an interest group to appreciate its prospective costs or benefits from a policy proposal, its pivotal decision-makers (which could include leaders and members) must believe that these costs or benefits will actually materialize. Synthesizing foundational economic theory (Friedman and Savage 1948; Arrow 1971), Kahneman and Tversky (1979) start with the premise that economic actors estimate their utility according to the expected values associated with a given scenario. Decision-makers weigh the distribution of costs and benefits from a policy scenario by the probability that scenario will occur. Probability estimates often fall prey to a common cognitive bias known as imaginability. People tend to assign higher probabilities to outcomes that the mind can conjure more easily, such as disasters, than their observed frequency would suggest (Tversky and Kahneman 1974).²

Capitalizing on this bias, policymakers have long sought to gain political advantage by hiding policy proposals' costs from constituents with a material stake in their enactment (Arnold 1990). By the time utilities realized how renewable portfolio standards would affect them, a broad cross-section of American states had already passed such laws, setting in motion an energy transition that utilities and their conservative allies scrambled to roll back (Stokes 2020). Just as policymakers hide costs to mitigate opposition, they often emphasize policies' benefits to stimulate support. Clean energy proponents frequently invoke tangible benefits to constituents such as cleaner air, job creation, and cheaper electricity (Ansolabehere and Konisky 2014; Stokes and Warshaw 2017).

These insights have lent a new perspective to policy debates, which have moved beyond a focus on economic efficiency toward concerns regarding political coalition-building. Carbon pricing has faced staunch opposition from carbon-intensive industries seeking to preserve their profits, yet has failed to inspire mobilization from the grassroots environmentalists whose support is necessary to overcome these vested interests (Pooley 2010; Skocpol 2013; Marshall and Wolpe 2018; Mildemberger 2020). Meckling et al. (2015) explain that carbon pricing faces a collective action problem as it concentrates costs on a few industries while providing a diffuse public good. This style of politics tends to frustrate efforts at regulation, because concentrated losers are more likely to mobilize than diffuse winners (Wilson 1980).

² The words "nuclear power," for instance, often bring to mind the catastrophic meltdowns at Three Mile Island, Chernobyl and Fukushima despite such events' rarity (Baumgartner and Jones 1993; Wittneben 2012).

Instead of carbon pricing, Meckling et al. (2015) call for green industrial policies offering concentrated benefits to specific economic sectors, technologies, or regions. This specificity would make policies easier to understand, increasing winners' certainty that they would benefit. Stokes and Mildenerger (2020) similarly point out that even carbon pricing policies providing dividends to the public tend to deliver those benefits through obscure channels such as tax forms. They argue that if advocates bring benefits to the fore, "support for action will follow."

Because humans value losses more than gains (Tversky and Kahneman 1981), political actors tend to accept greater risk to avoid costs than to acquire benefits (Kahneman and Tversky 1979). This theory implies that prospective economic winners will be less likely than losers to mobilize for policy debates. If winners lack confidence that they will receive their intended benefits from a policy, they will be unlikely to make substantial contributions to collective efforts to secure the policy's adoption. To explain interest groups' decisions to support or oppose policies prior to enactment—which can often prove decisive—we must understand not only who would win and who would lose, but how certain each side is about these effects.

Yet there is relatively little work on how policies can be designed to increase winners' certainty that they will benefit. This paper proposes a theory which contends that interest groups require highly certain benefits in exchange for actively supporting a policy proposal. We test this theory through studies of six fossil fuel-related policymaking episodes.

Theory

Consider a policy that has a 50% chance of creating 1000 new union jobs. For classical economics, calculating the benefit is a simple matter of summing the possible outcomes and multiplying them by their probability: the union's expected gain under the policy is 500 jobs. With full information about the distribution of possible outcomes, impact and certainty are simply two sides of the same coin. But the assumption that the union knows the distribution of potential outcomes in the first place is doing a great deal of work here. In the real world, estimates like this are not trivial to obtain. When we relax the assumption of full information, we have to ask how groups form their expectations about policy impacts.

Here we discuss five sources of certainty. These are interrelated and overlapping: in some cases the same characteristic about a policy might fall into multiple categories, and the presence of one may reduce the importance of another. The goal here is not to emphasize distinct categories, but to show the diverse routes by which certainty can be (or can fail to be) generated. As we discuss them, we will talk about a hypothetical "good" policy: one that has a 100%

chance of providing a tangible, worthwhile benefit to a particular interest group. We will show some reasons why even the beneficiary of a good policy might not end up supporting it.

First, a group's ability to assess impacts will depend on its own internal *capacity*. Some groups will have more information and resources at their disposal than others. A large business firm is likely to have strategic and analytic capacity as a byproduct of regular management operations. Groups' expertise will also shape what kinds of subjects they are best able to evaluate. The more a policy deviates from the status quo or requires groups to consider new ways of operating, the less groups can look to past experience to guide them. Estimates produced by economic models, which require a great deal of specialized knowledge to evaluate, may be harder to trust than a simple and easily understood promise. A good policy could still fail to win over supporters if calculating that benefit is too costly.

Second, once estimates are generated within or outside a group, the weight placed on those estimates will depend on the *credibility* of the source. Independent academics may have the benefit of neutrality, but their projections may be perceived as less credible than those of businesses, which have both privileged access to information and money to back up their plans. Mirroring the point about capacity, 250 jobs promised by a company may carry more weight than 1000 jobs promised by an economic model. Promises by activists, with neither money nor academic prestige behind them, may be even less trusted. A good policy could fail if the people explaining it lack credibility.

Third, the *clarity* of how the policy operates could matter a great deal. Policies which produce immediate, tangible, and easily comprehended gains require less capacity to evaluate and rely less on the credibility of the source. Many policies produce both immediate first-order impacts as well as more diffuse second- or third-order impacts. But if the costs are first-order and the benefits are second- and third-order, this means the policy will face an uphill battle. The longer the causal chains, the more risk of losing support. A good policy could fail because it is too complicated.

Fourth, the degree of *inclusion* in a policy's design could also provide certainty. That is, giving groups a formal role in determining distributive outcomes gives them a clear opportunity to gain confidence in those outcomes. This can happen at the policymaking stage, when groups are brought in early to help shape the policy from the beginning. This can also be an ongoing part of the design, if groups are given a formal role in managing or overseeing the policy. There may be tradeoffs here: including one group in formal oversight gives them certainty, but including many groups may start to undermine the certainty felt by any individual group. A good policy could fail by not actively including affected groups in its design and management.

Fifth, the *specificity* of gains could shape groups' confidence. An aggregate benefit that could plausibly help many groups may not provide much security for individual groups. This is a risk for any policy where distributive outcomes are largely determined after enactment. A good policy might fail because even though many groups might benefit, none of them can be sure. Taken together, these routes to certainty affect the "political efficiency" of a policy. That is, for a given distribution of benefits and costs, a policy is more politically efficient if the benefits are clear to the winners and the costs are unclear to the losers.

An important note here is that certainty is group-specific. A policy that seems highly certain to one group, with its own resources, experiences, relationships, and level of involvement, may appear highly uncertain to another. It is probably easier for groups to define what particular features would give them certainty than it is for others to do the same in advance.

All of these routes to certainty may seem like inherent characteristics of policy instruments. This is particularly true of specificity. Classically, carbon pricing lacks specificity by design because who ends up cutting emissions is not established before enactment. A green industrial policy, on the other hand, offers wide scope for specific benefits created by targeted investments. A quota-based policy like a renewable portfolio standard restricts the scope of potential economic winners such that firms and unions in a given economic sector have greater certainty regarding the degree to which they will win or lose. In this sense it seems obvious that a green industrial policy or a quota program will be more specific than a carbon price.

We do not disagree with these stylized characterizations. Green industrial policy does indeed offer natural opportunities to provide specificity, and thereby create certainty for winners. But our point is that neither green industrial policy, nor quotas, nor any particular policy is guaranteed to create certainty among potential winners. If the components of certainty are not present—if potential winners lack capacity to evaluate the policy's outcomes, if its proponents lack credibility, if the policy's operations are unclear, if stakeholders were not included in its design, or if the benefits are too general—even a good policy can fail to assemble a coalition behind it.

Instrument choice can make certainty easier or harder, but it does not sidestep or resolve the problem of certainty itself. As we will show in the following cases, even policies that do not

naturally provide certainty may still be augmented in coalition-enhancing ways, while policies that seem naturally certain in theory may fail to provide certainty in practice.³

Methods

Following Breetz, Stokes, and Mildenerger (2018), we rely on the diverse case method for case selection (Seawright and Gerring 2008) and conduct our analyses using process tracing (Bennett and Checkel 2014). Specifically, we select cases which vary along two theoretically important dimensions. First, to test our theory, we need variation in our hypothesized causal variable—whether climate advocates’ proposals offered high or low certainty for prospective economic winners. Second, we need variation in the distribution of winners and losers in a state’s economy, coded dichotomously such that states fall into the high-carbon or low-carbon category. Prior research suggests that this variable powerfully moderates climate policy outcomes across a variety of contexts (Meckling et al. 2015; Breetz, Stokes, and Mildenerger 2018; Mildenerger 2020). Table 1 arranges our cases along these two dimensions.

Table 1. Criteria for Selecting Diverse Cases

	High certainty for winners	Low certainty for winners
High-carbon	West Virginia: 1990 Clean Air Act Amendments, 2021 Build Back Better bill	West Virginia: American Clean Energy and Security Act of 2009, 2014 Clean Power Plan
Low-carbon	Washington: 2019 Clean Energy Transformation Act, 2018 Initiative 1631	Washington: 2016 Initiative 732

To maximize variation, we select two cases from three of the four quadrants. Washington state’s and Massachusetts’ trajectories are the inverse of one another, with Massachusetts moving from high to low certainty and Washington moving in the opposite direction. West Virginia’s two visible climate policymaking episodes arose within Congressional debates over amending the

³ On this point, in future drafts we will be adding a discussion of initial reactions to the Green New Deal.

Clean Air Act in 1990 and enacting President Biden’s favored budget reconciliation bill—known as Build Back Better—in 2021. In contrast, the 2009 American Clean Energy and Security Act and the 2014 Clean Power Plan’s failures to provide clear economic benefits for mine workers precluded its support among West Virginia lawmakers. While our sampling method does not guarantee representativeness along every important dimension, it ensures variation along the dimensions implicated in our theory.

In each case, we develop policy histories from elite interviews alongside primary and secondary sources. The Washington case study draws on 30 elite interviews as well as primary and secondary source material, such as labor federation press releases and journalistic reporting from national and local publications.⁴ Although we have begun conducting interviews in West Virginia, this working paper relies primarily on primary and secondary sources to conduct these case studies.

Case Study: Washington

Washington state provides a longitudinal comparison between efforts to pass policies with uncertain outcomes and policies with greater certainty, all within a state that represents a most likely case for climate policy. In this section, we explain that environmental groups in Washington state initially chose the more economically efficient but less politically efficient strategy, seeking to enact a carbon price whose design intentionally left benefit allocation up to the market. This choice proved consequential for efforts to secure labor’s support for climate policy, as the prospect of certain costs and uncertain benefits drove a wedge between the state’s unions and contributed to the proposal’s failure. However, legislative gridlock provided an exogenous shock which brought labor unions to the table at an early stage of policy design, permitting their concerns about job creation to be considered as the coalition developed its policy framework. The resulting policy design choices, which substantially increased unions’ certainty regarding the policy’s economic benefits, persuaded the labor federation to support the ultimately successful legislation.

⁴ We use a combination of positional and snowball sampling to select interviewees (Knoke and Yang 2011). First, to obtain labor’s perspective, we contacted each member of the Washington State Labor Council’s Executive Board. Second, to sample environmental groups and their allies, we contacted an executive or senior staffer for each organization with official membership within the climate advocacy coalition known as the Climate Alliance for Jobs and Clean Energy. Third, we used referrals from prior interviews to sample additional interviewees.

As in virtually all industrialized democracies in the 2000s, carbon pricing was the climate policy du jour in Washington state when the issue first arose on the legislative agenda. A longstanding Democratic trifecta government led by climate champion Christine Gregoire suggested that Washington state was ripe for subnational climate leadership. After passing a renewable portfolio standard via ballot initiative in 2006, mainstream environmental groups sought to enact cap-and-trade during the 2009 legislative session (Valdez 2009).

Despite what seemed like a favorable political environment, the bill did not manage to pass. After the legislation garnered a majority in the state Senate, it ran into an unexpected hurdle in the House. At the same time that climate advocates sought to enact cap-and-trade, their Democratic colleagues were attempting to amend the 2006 Energy Independence Act, setting off a legislative turf battle. The House ultimately passed a version of the bill that had been shorn of its core provisions, and time ran out to bridge the divide between the stronger Senate and weaker House versions of the bill as the legislative session ended.⁵ As the nationwide economic recession dragged on through 2012, elected officials lost their appetite for carbon pricing, which would have exacerbated an increasingly uncertain investment environment in the state's energy sector. Cap-and-trade did not reach the House or Senate floor during these years, as efforts to stimulate the economy took center stage.⁶

The Democrats unexpectedly lost their Senate majority following the 2012 election, precluding climate legislation and leaving environmental groups to pursue a ballot initiative. Two very different carbon pricing coalitions took bites at the apple in 2016 and 2018, respectively, with each effort failing to win the state labor federation's support and ending in defeat at the ballot box. Even after the second proposal incorporated provisions stipulating how the state government would spend the carbon fee's revenues, the remaining uncertainty regarding distributional outcomes contributed to opposition from the Building Trades and Machinists, which was sufficient to veto the labor federation's endorsement.

Initiative 732, November 2016

Advocates for the 2016 carbon tax proposal, Initiative 732, provoked controversy by excluding a broad coalition of environmental, labor, and community groups from shaping the policy. Carbon Washington, led by University of Washington economist Yoram Bauman, had conceived the idea as an olive branch to Republican voters. To comply with the conservative

⁵ Interview X, staffer for elected official

⁶ Interview X, environmental organization leader

orthodoxy that forbade tax increases, the initiative proposed a revenue-neutral carbon tax, with proceeds from the tax on emissions dedicated to slashing taxes on sales and manufacturing and funding a rebate for low-income households. The policy's design provided certainty that manufacturers and low-income households would receive compensation for their higher energy costs. However, large manufacturers still faced the prospect of tax increases, while low-income households—a diffuse constituency—were not represented by an interest group with the political resources to advance the proposal. Thus, the constituencies that would receive certain benefits also faced either certain costs or were not sufficiently organized to advocate for the initiative.

Indeed, many groups which represented low-income communities in urban areas bristled at the proposal given that it lacked specific benefits for historically marginalized groups. A coalition of community and environmental justice groups, organized as Front and Centered, had already begun to push mainstream environmentalists and labor unions toward supporting a carbon pricing policy that generated revenues. They sought to invest a substantial share of these revenues in communities of color and low-income neighborhoods, which had suffered the most from pollution and would have faced the greatest relative impact from a carbon price. The coalition's founding principles espoused a climate policy that “benefits all but is crafted to lift up communities facing the greatest barriers,” adding that such a policy should produce “community-specific results.” They called for these targeted benefits, funded by revenue from a carbon price, to “first offset any additional economic burden placed on people with lower incomes and fewer resources, and then should support strategies that reduce pollution” in communities of color.

Organized labor also lent its voice to the opposition due to the policy's certain costs and uncertain rewards for workers. While Washington State Labor Council President Jeff Johnson believed adamantly in addressing climate change, he too favored an approach that would incorporate a broader coalition and generate revenues. Johnson sought investments in clean energy to promote job creation and a fund to keep workers economically whole during the energy transition.⁷ Along with Rich Stolz of immigrant rights group OneAmerica, Johnson squared off against Bauman in carbon tax debates held around the state.⁸

Progressive groups' resistance forced mainstream environmental groups to prove their commitment to their coalition partners. Following the loss of a pro-environmental majority in

⁷ Interview 22, labor federation staffer; Interview 31, coalition member

⁸ Interview 9, labor federation official

the Senate, leaders of mainstream environmental groups recognized that “[they] were losing” and “needed a bigger team” to overcome the fossil fuel industry. The previous year they had formed the Alliance for Jobs and Clean Energy with community organizations and the labor federation to pursue a carbon pricing ballot initiative. Environmental groups had promised their coalition partners that they would advocate for a carbon pricing proposal that reflected meaningful input from unions and communities of color. After crisis talks between the coalition and Carbon Washington broke down, the latter’s carbon tax initiative moved forward without such input.

In an unprecedented move, the state’s major environmental groups collectively withdrew their support from the carbon tax, with some of them even declaring their opposition. Meanwhile, the policy’s clear costs on carbon-intensive businesses had stymied the expected groundswell of conservative support. Bereft of allies and outflanked from the right and the left, Carbon Washington’s initiative lost with only 41 percent of the vote.

Initiative 1631, November 2018

The Alliance had to wait two years for their next opportunity to put carbon pricing on the ballot. This time, the policy would use revenues not to cut other taxes, but to invest in communities of color and fossil fuel industry workers.⁹ This design was no accident; coalition members negotiated provisions within the initiative to ensure that the constituencies they represented would receive certain benefits. Specifically, the policy would have dedicated 70 percent of its revenues to a “clean air and clean energy account” managed by a committee with majority representation of labor and frontline communities.¹⁰ The initiative tasked the panel with investing these revenues in assistance for low-income people to shift away from fossil fuels and to reduce emissions in the transportation and buildings sectors. In addition, 1631 would have given preference to investments in projects that followed labor standards and invested \$50 million annually in a fund providing wages and benefits to fossil fuel workers who would lose their jobs due to the energy transition (Abramsky 2018).

While a broad cross-section of the state’s labor unions participated in developing this proposal, concerns about the carbon fee’s economic effects kept pivotal unions from supporting it. Beyond the initiative’s impacts on employment, the Washington Building Trades and Machinists 751—a large union representing workers at Boeing—voiced misgivings about how

⁹ Interview 6, coalition member; Interview 9, labor federation official

¹⁰ Interview 9, labor federation official

the revenues from the carbon fee would be allocated.¹¹ By granting discretion to committees, 1631 left uncertain how the revenues would be invested, clouding unions' projections regarding job creation for their members.

One union leader who opposed the policy explained that its complexity made its outcomes difficult to discern. He described the administration of 1631 as "a lot of moving parts," referring to an array of councils and committees that was "too much for us to manage." In addition to diffusing authority over investments, the initiative would have created jobs through second- or third-order effects. Drawing on an analogy familiar to those who work with complex machinery, he described the policy as "gears turning gears turning gears." From his union's perspective, "if one of those gears got stuck," the policy's mechanisms for providing economic benefits for their sector "would stop working."¹²

Facing the prospect of certain costs and uncertain benefits, the Building Trades and Machinists voted against the motion at the labor federation's political convention to endorse the policy. Meanwhile, the looming Supreme Court decision in *Janus v. AFSCME* had distracted the public sector unions, who were unable to vote in proportion to their membership because representatives from some of their locals were in Washington, D.C. for training (NW Labor Press). Capitalizing on these absences, the initiative's opponents managed to prevent the labor federation from reaching the two-thirds majority necessary to grant its endorsement, hampering President Jeff Johnson's effort to demonstrate labor's support as a counterweight to the fossil fuel industry's \$30 million advertising blitz. Without a unified labor movement behind it, the carbon fee initiative garnered only 44 percent of the vote in November 2018, a meager improvement over its counterpart two years earlier.

The Clean Energy Transformation Act of 2019

Environmental leaders learned from this unexpected setback that they could win the labor federation's support by offering clear evidence that their policy proposals would benefit the unions with the greatest stake in the energy sector. An advocacy group known as Climate Solutions, which was involved in the coalition backing 1631, noticed that the International Brotherhood of Electrical Workers (IBEW) did not support a carbon fee but were open to different ways to promote clean electricity (NW Labor Press 2018). Perhaps a sector-specific approach would give the IBEW greater confidence that new power plants would be built,

¹¹ Interview 24, labor federation official

¹² Interview X, labor federation official

ensuring jobs for their members. As one labor leader put it, a sector-specific approach enabled unions to “put [the policy] under the microscope and examine what would happen.”¹³

A legal requirement for electric utilities to project the necessary generation capacity for meeting demand in future decades presented an opportunity for environmental groups to demonstrate that a policy targeting 100 percent clean electricity would create union jobs. Puget Sound Energy’s recently published integrated resource plan had indicated that without new gas-fired power plants, the utility would rely on additional battery storage and pumped hydropower facilities to reduce renewable energy curtailment.¹⁴ As they came from a private firm which employed electrical and construction workers, Puget Sound Energy’s projections were considered highly credible among union leaders.

Climate Solutions presented this finding to the IBEW as proof that the utility could continue to meet demand without new fossil fuel power plants, while creating jobs to build and operate the new energy storage facilities.¹⁵ This evidence unlocked an alliance between the two groups and Audubon Washington, who lobbied together for legislation to require the state to generate its electricity entirely from zero-emissions sources by 2045. The bill, introduced in the state Senate after the Democrats narrowly regained control following a 2017 special election, initially faced stiff opposition from other Building Trades Unions. The most vocal dissidents were the Plumbers and Pipefitters, given their vested interest in pipeline construction. Facing a divided membership, the labor federation at first remained neutral on the legislation, which stalled during the 2018 legislative session.¹⁶ Yet the participation of the IBEW, arguably the most progressive of the Building Trades, offered a path to winning over their recalcitrant allies.

Having received a mandate from voters in that fall’s election, Governor Inslee moved to broker a deal between the economic interest groups with economic interests in the energy transition. The policy’s focus on the electricity sector facilitated the coalition’s efforts to include major stakeholders. These groups included not only Climate Solutions and the IBEW but also the Washington Building Trades and several of their members—the Laborers International Union of North America and the Operating Engineers.¹⁷ The resulting legislation, known as the Clean

¹³ Interview X, labor federation official

¹⁴ Interview 7, labor federation staffer

¹⁵ Interview 7, labor federation staffer

¹⁶ Interview 9, labor federation official

¹⁷ The advocacy organization Renewable Northwest also participated in these negotiations.

Energy Transformation Act (CETA), banned coal-fired power after 2025, mandated that utilities become carbon neutral by 2030, and required all electricity to come from clean sources by 2045.

Crucially, the groups agreed to incentivize renewable energy developers to follow labor standards promoting highly remunerated union jobs. In a 2019 *Vox* article, David Roberts summarized the three-tiered structure for estimating the tax benefits renewable energy developers would receive under the legislation:

50 percent tax exemption for projects that make a good-faith effort at “procurement from and contracts with women, minority, or veteran-owned businesses; procurement from and contracts with entities that have a history of complying with federal and state wage and hour laws and regulations; apprenticeship utilization; and preferred entry for workers living in the area where the project is being constructed.”

75 percent tax exemption for projects that meet the above criteria and also “compensate workers at prevailing wage rates determined by local collective bargaining.”

100 percent tax exemption for projects “developed under a community workforce agreement or project labor agreement,” as certified by the Department of Labor and industries.

The substantial tax breaks for developers following labor standards gave the Building Trades confidence that new electricity generation and storage capacity would supply their members with well-paid jobs. With the Building Trades on board, the state labor federation finally offered its endorsement, emphasizing “family-wage union jobs” as their highest priority (The Stand 2019). With a Democratic trifecta and full-throated support from labor, the bill passed during the 2019 session on a party-line vote (Bernton and Brunner 2019).

The Climate Commitment Act of 2021

Along with expanded Democratic majorities in the legislature, the CETA’s success laid the groundwork for a more comprehensive climate policy. Climate Solutions and the IBEW built on their preexisting partnership, incorporating The Nature Conservancy in a coalition seeking once again to enact carbon pricing. In 2021 these groups lobbied for a bill, known as the Climate

Commitment Act (CCA), creating a cap-and-trade system as a means of reducing greenhouse gas emissions by 95 percent from 1990 levels by 2050.¹⁸

Negotiating on the Building Trades' behalf, the IBEW shaped the policy such that it would foster a favorable investment environment for both vertical and horizontal construction. Unlike the 2018 carbon fee initiative, the CCA promoted electric vehicle charging stations, pumped hydropower, and other forms of vertical construction. By incentivizing these investments, the bill's design assured the Building Trades that the policy would create jobs for their members.¹⁹ Despite strident opposition from environmental justice groups and some of their labor allies, who objected to cap-and-trade given its failure in California to reduce emissions in communities of color, the CCA's supporters shepherded the bill through the legislature and secured Inslee's signature (Demkovich 2021). Yet again, a bill explicitly designed to create jobs for unions in the energy sector outperformed its counterparts which lacked such provisions.

Case Study: West Virginia

In the climate policy realm, West Virginia and Washington state could hardly be more different. Whereas Washington state enjoys abundant clean energy due to its hydropower resources, West Virginia's economy has fluctuated according to the fortunes of its own abundant resource—coal. Given coal's dominant position as an employer within Appalachia—indeed, coal companies shut out other industries from the region in the nineteenth and twentieth centuries (Gaventa 1982)—federal representatives from West Virginia have long assumed that their re-election prospects were synonymous with their support for the coal industry. As a result, West Virginia's delegation to the U.S. Senate has repeatedly opposed federal climate laws and regulations. Even in West Virginia, however, we show that coal miners at times have supported climate policy due to their certainty that they would receive economic benefits relative to the available alternatives.

The Clean Air Act Amendments of 1990

The ultimately successful effort to amend the Clean Air Act during the George H. W. Bush administration is not an example of climate policy per se, and coal miners arguably would never have supported it if they had held sway over the pivotal legislators. Nonetheless, just as

¹⁸ Interview 31, coalition member

¹⁹ Interview X, labor federation official

the 1990 Clean Air Act's cap-and-trade system for sulfur dioxide emissions provided a template for later efforts to rein in greenhouse gases, the negotiations preceding its enactment offer useful lessons regarding the policy design characteristics that could bring coal miners on board for climate policy today. Senator George Mitchell's (D-ME) overtures to Senator Robert Byrd (D-WV) and the United Mine Workers of America (UMWA) culminated in an amendment (named after Byrd) which would have compensated Eastern miners for the phase-out of the high-sulfur coal they had mined prior to regulations designed to curb acid rain (Patashnik 2008).

As in the other cases examined in this study, Byrd and the UMWA were centrally concerned with keeping union members financially whole. If they could not achieve that aim by creating (or even maintaining) coal industry jobs, they would do so through a compensation system granting miners between 50% and 100% of their average salary and benefits over six years. This provision amounted to an admission that the Eastern coal mining industry faced a terminal decline, given the trajectory of environmental regulation and railroad deregulation, which facilitated low-sulfur coal's access to Midwestern power plants (Patashnik 2008; Schmalensee and Stavins 2013).

Despite committing the industry to decline, the the \$1.4 billion in guaranteed spending for coal miners represented an improvement over unmanaged decline. After lawmakers whittled down the proposed fund to \$500 million, a presidential veto threat contributed to the amendment's narrow (49-50) defeat in the Senate. Although Congress granted coal-fired power plants extra allowances under the first phase of the cap-and-trade program if they achieved their emissions reductions by installing scrubbers—rather than substituting their high-sulfur coal inputs—this small offering was insufficient to assuage coal country's concerns. Though the Clean Air Act amendments ultimately passed with an overwhelming bipartisan majority (89-10), West Virginia's two Democratic senators both voted against them. While the amendment—and the effort to win over coal miners and their representatives—ultimately failed, it suggested that even the coal industry could accept managed decline when structured appropriately.

American Clean Energy and Security Act of 2009 and the 2014 Clean Power Plan

The strong bipartisan support for the Clean Air Act amendments has not been repeated on comprehensive environmental legislation in the three decades since. Under higher partisan polarization on the issue, climate policy has—with the exception of an omnibus spending bill extending renewable energy tax credits in 2015—required unity among the Democratic Party

(Skocpol 2013; Ellis 2015; Lacey 2015). Under these conditions, moderate Democrats such as West Virginia’s Joe Manchin hold the pivotal votes in the Senate, which typically constitutes the greatest obstacle to passage under a unified Democratic government (Krehbiel 1998). However, when the Waxman-Markey bill to create a cap-and-trade system for greenhouse gas emissions came before the chamber in 2010, the bill’s clear costs and murky benefits for the coal industry rendered it dead on arrival in Manchin’s constituency. Indeed, in a 2010 campaign ad, Manchin promised to “take dead aim at the cap-and-trade bill... ‘cause it’s bad for West Virginia.”²⁰

Having failed to pass comprehensive climate policy through Congress, President Obama turned to a regulatory approach. When he announced the EPA’s proposed rule known as the Clean Power Plan, which would reduce greenhouse gas emissions from the electricity sector, “several thousand” members of carbon-intensive unions marched through the streets of Pittsburgh in protest. The UMWA led the charge, with several other unions representing workers in energy-intensive industries—including the Boilermakers, the IBEW, and the Utility Workers Union of America—walking behind them in solidarity. To accentuate the mine workers’ resistance to a policy they viewed as an existential threat, UMWA President Cecil Roberts led a contingent of union members in an act of civil disobedience, refusing to leave the steps of a federal office building until they were arrested (Mildenberger 2020). While regulation relying on existing statutory authority was not subject to Congressional gridlock, it also precluded the kinds of concessions that would have offered the coal miners certain economic benefits from the policy.

The Build Back Better Act (2021-2)

The United Mine Workers of America’s (UMWA) stance in the federal-level debate in 2021 over the omnibus budget reconciliation bill known as Build Back Better (BBB) suggests that policies clearly designed to promote job creation for particular unions could overcome entrenched resistance. After decades of staunch opposition to climate policy—including a high-profile protest against the Obama administration’s Clean Power Plan (Mildenberger 2020)—the UMWA advocated for BBB and even publicly declared support for the legislation when West Virginia Senator Joe Manchin announced that he would not support it. After appearing to consider a program incentivizing utilities to switch from coal to natural gas, Manchin performed an about-face, suddenly declaring that he could not vote for the bill if it included such a program (Davenport 2021). Even once he had cut this clean energy performance program, Manchin justified his opposition to the bill on the grounds that it was not transparent enough about its true costs (Phillips 2021).

²⁰ The ad ends with Sen. Manchin shooting the cap and trade bill with a hunting rifle.

Following Manchin's demurrals, the UMWA issued an historic press release urging him to change his mind given the clear benefits the bill offered to coal miners. The bill's sponsors had incorporated provisions from the UMWA's Principles for Energy Transition, such as extending coal companies' requirement to pay a fee to provide their workers with black lung benefits. The UMWA had also called on policymakers to prioritize coal miners for new jobs in the clean energy industry. In response, the bill had incorporated tax incentives for renewable energy development "in the coalfields" that the union believed "would employ thousands of coal miners who have lost their jobs." The press release's author, Cecil Roberts—the same Cecil Roberts who had been arrested for civil disobedience over the Clean Power Plan—expressed that his organization felt "disappointed that the bill will not pass" and called on his longtime friend Manchin to "revisit his opposition to this legislation" (UMWA 2021).

Perhaps because one of Manchin's core constituencies strongly supports the bill, Manchin has remained open to compromise on the bill's climate spending. As the omnibus reconciliation bill is broken up for parts, Manchin has acknowledged that "the climate thing is one that we can probably come to agreement much easier than anything else" (Frazin 2022). By offering the likely prospect of jobs and health benefits for laid-off coal miners, BBB's architects had achieved something unprecedented—the union representing coal miners was actively pressuring a West Virginia senator to vote for climate policy.

Conclusion

Our cases suggest that the relationship between instrument type and certainty is not always straightforward. Very similar policies can elicit quite different reactions from labor, depending on whether certainty has been incorporated into their design. And even the most carbon-intense labor interests can be brought on board with policy to reduce fossil fuel use, if provided with sufficient certainty about their own interests.

We consider our theory most relevant for policymakers seeking to address wicked problems. Economic theory considers "tame" problems to be those which one can typically address through a standard operating procedure (Grint 2010). These problems, such as constructing a building according to code, tend to "have relatively well-defined and achievable end-states," suggesting clear outcomes following an intervention to address the problem (Hulme 2009). In contrast, wicked problems lack "a clear relationship between cause and effect" (Grint 2010). For instance, Hulme (2009) notes that climate change involves uncertainty regarding the future and an "unclear understanding of the means, consequences, and cumulative impacts of collective

actions.” It is therefore no coincidence that our theory emerges from a climate policy context, as climate change represents perhaps the wicked problem par excellence (Levin et al. 2012). We posit that our theory should apply to other wicked problems as well, such as health insurance policies (Grint 2010) and illicit financial flows (Lepissier 2022).

As the service model has won out over the organizing model within the AFL-CIO, most unions in the energy sector primarily seek to acquire jobs for their members and ensure that those jobs are well remunerated. Across the cases we examine here, well-paid jobs were the top priority for labor participants in climate policy debates. We argue, therefore, that climate advocates should design policies that are highly likely to create union jobs with wages and benefits at or above the market rate.

As our review of the literature shows, we are from the first authors to emphasize the importance of climate policy that creates clear winners. But while a great deal of focus has been placed on which policy instruments create winners, we argue that more focus needs to be placed on whether the winners thus created *actually see themselves as winners*.

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