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Abstract

Phasing out fossil fuels will generate serious costs for fossil-dependent workers and communities. A "just transition" seeks to address these impacts by ensuring an equitable distribution of costs and benefits of decarbonization. Given coal's declining competitiveness, ending coal use will be the first test of implementing just transition principles into policy. This paper examines recent U.S. state policies on coal just transition through Kingdon's Multiple Streams Framework (MSF) to answer the question: how does the process of developing transition policy affect U.S. states' ability to pass legislation on a just transition from coal? Based on interviews with 48 stakeholders, this paper provides in-depth case studies of two U.S. states and a survey of six other states that have advanced transition policy in 2019-2020. The paper critically evaluates the application of the MSF to just transition policy and uses the MSF to generate hypotheses about states' ability to pass transition policy.

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1. Introduction

Limiting global warming to 1.5C and avoiding catastrophic climate change require the virtual elimination of fossil fuel use by 2050 (Intergovernmental Panel on Climate Change [IPCC], 2018). Reaching net-zero emissions will entail an unprecedented transformation of the global economy, which will come with serious costs for workers and communities whose livelihoods depend on fossil fuel use (Newell and Mulvaney, 2013). If unaddressed, the unequal distribution of costs from decarbonization may generate long-term economic stagnation among fossil-dependent communities, or may generate political opposition to climate policy (Green and Gambhir, 2019). Climate policies must mitigate these social costs if they are to succeed in creating a truly sustainable future where the needs of current generations are met without sacrificing those of future generations (Brundtland, 1987).

The concept of a just transition seeks to meld the environmental and social dimensions of climate action, to ensure an equitable distribution of costs and benefits of decarbonization. Ending coal use will be the first test of implementing just transition principles into policy. As the most carbon-intensive fossil fuel and the fuel with the most viable zero-carbon alternatives, coal will likely be the first fossil fuel to be phased out (IPCC, 2018). Early efforts to manage the coal transition can inform later phase-outs of other carbon-intensive industries.

The importance of addressing just transitions in climate policy, particularly relating to coal, is evident in the recent politics of the United States. As the world's largest historical carbon emitter and largest economy, the U.S. has outsized influence on global climate action. In the 2016 election, President Donald Trump prominently targeted partisan anxieties about job losses from decarbonization by promising to roll back environmental regulations and end the "war on coal" (Mehling, 2017). Despite this rhetoric, the U.S. coal industry has only continued its decline (Kok, 2017).

Until recently, there has been limited policy action within the U.S. to address the social impacts of the decline of coal. Prior to 2018, coal assistance policies were limited to a single Obama-era federal program and two state policies providing funds to coal plant communities in the early 2010s. However, the past two years have seen a surge in state action to create coal transition policies, with eight states advancing or implementing just transition policies for coal in 2019 and 2020: Colorado, Minnesota, New Mexico, and New York, which passed legislation, and Illinois, Maryland, Montana, and West Virginia, which introduced and debated legislation. Since federal gridlock has made state action increasingly important in driving policy change, this recent trend can provide useful lessons for just transition policy.

Given the recency of this surge in state action on coal transition, very little gray literature and no academic literature has yet addressed the role of state governments in a just transition from coal or the factors that lead states to address transition issues. Just transition literature more generally lacks

empirical coverage of enacted transition policies (Green and Gambhir, 2019). This paper addresses these gaps by examining U.S. state transition policy efforts in the past two years to answer the question: how does the process of developing transition policy affect U.S. states' ability to pass legislation on a just transition from coal? The policy development process includes the formation of policy proposals, stakeholder engagement, and political negotiations over legislation. This analysis will help inform future transition policy efforts by identifying the factors that facilitate or hinder attempts at passing coal just transition policies.

My analysis is based on interviews with 48 stakeholders involved in the transition policy process across these eight states. I employ a case study approach to study two states, Colorado and New Mexico, which have succeeded in passing legislation and have taken a more comprehensive approach in linking transition policies with climate action. This analysis will help answer the sub-question: how can Colorado and New Mexico's approach to transition policy contribute to our understanding of coal just transition policies?

I employ Kingdon's (2011) Multiple Streams Framework (MSF) to analyze the policy process to answer the sub-question: how can the MSF contribute to our understanding of the formation and enactment of coal just transition policies? I have chosen the MSF because of its applicability to U.S. policymaking structures and its flexibility, which allows for straightforward comparison of approaches across states. However, I take a critical view of the framework's ability to capture all relevant stakeholders. I also advance hypotheses for states' ability to pass coal transition policies based on the MSF.

I find that states' ability to pass transition policies depends on states' degree of coal dependence and urgency of coal closure, the strength of interest groups involved in policy development, and policymakers' views on the need for climate policy. Specific policy provisions, including funding sources and links to other climate policies, can also impact chances of passage depending on the budgetary and political circumstances of the state. Colorado and New Mexico provide two distinct approaches, with the former planning for future policy-induced coal closure and the latter responding to prior coal closure announcements. In both states, interest groups' influence was central to policy development and enactment. The MSF is in general a useful and flexible framework to analyze different states' transition approaches, but inadequately theorizes the importance of coal communities in the policy process.

Section 2 contains a literature review about the concept of just transition, the social and economic problems arising from coal closure, and the policies that seek to mitigate these problems. Section 3 summarizes the features of the MSF. Section 4 describes the methodology employed in this paper. Sections 5 through 7 analyze recent state involvement in coal transition policies using the structure provided by the MSF: sections 5 and 6 provide in-depth case studies of Colorado and New Mexico, while section 7 describes developments in the other six states that advanced transition policy

in the past two years. Section 8 reflects on the MSF's ability to explain state transition policy actions to date. Section 9 concludes the paper.

2. The need for a just transition from coal

The decline of the U.S. coal industry has been decades in the making. Domestic coal production has fallen by over one-third from its peak in 2008, driven primarily by reduced demand in the electric power sector, which consumes over 90% of domestic coal production (Culver and Hong, 2016; Morris et al., 2019). Coal mining jobs have fallen even more precipitously, decreasing by over 70% from 1985 due to increased mechanization as well as the industry's general decline (Carley et al., 2018). Coal power generation has also declined and now contributes less than one-third of U.S. generation compared to approximately one-half in 2007 (Morris et al., 2019). The fall of coal power has primarily been due to competition from cheap natural gas, although increasing affordability of renewables, stagnant electricity demand, and clean air regulations have also contributed to the decline (Carley et al., 2018; Morris et al., 2019). Although the decrease in U.S. coal jobs has been primarily market-driven to date, decarbonization needed to achieve climate targets will result in future job losses that are policy-driven and will likely occur more rapidly than past declines (Rosemberg, 2010).

2.1. Defining just transition

Academic and policy literature on decarbonization has increasingly recognized the unequal distribution of costs from decarbonization, and has emphasized the need to incorporate justice and equity into climate action (Ciplet and Harrison, 2020; Markkanen and Anger-Kraavi, 2019; Muttitt and Kartha, 2020; Newell and Mulvaney, 2013). Newell and Mulvaney (2013) emphasize that energy transitions should address "the key political economy questions of 'who wins, who loses, how and why' as they relate to the existing distribution of energy, who lives with the side effects of its sites of extraction, production, and generation, and who will bear the social costs of decarbonizing energy sources" (133). These inequalities have been addressed at a global level regarding countries' responsibility and capacity to reduce emissions (Muttitt and Kartha, 2020; Newell and Mulvaney, 2013). Disruption from mitigation at a domestic level will also be significant and are beginning to be discussed more thoroughly, including recognition that decarbonization will result in significant transformation, elimination, or displacement of existing jobs (Rosemberg, 2010).

Just transition has historically focused on the impacts of sustainability initiatives on labor and employment. Much of this literature is gray literature from labor organizations and other advocacy groups, rather than academic writing (Stevis et al., 2020). The just transition concept originated with U.S. oil, chemical, and atomic workers in the 1970s before spreading internationally and integrating with climate policies in the 2000s (International Trade Union Confederation, 2009). In the U.S., environmental advocates have increasingly incorporated just transition principles into their platforms (Labor Network for Sustainability, 2016; Stevis et al., 2020). However, the term has received criticism from many U.S. union leaders and members, who have criticized the idea as a

"smokescreen" or "an invitation to a fancy funeral" due to the lack of real examples of successful transition (Labor Network for Sustainability, 2016, p.10).

As just transition has become more widespread, use of the term has expanded beyond its original labor-focused meaning to incorporate other aspects of climate, energy, and environmental justice. Eisenberg (2019) notes that policy, legal, and academic uses of just transition fall into two broad categories: (1) the remedy of historical inequalities in exposure to the hazards of the current fossil-fueled system, and (2) the protection of workers and communities dependent on carbon-intensive industries. The former, more expansive definition can range from directly energy- and environment-related issues such as energy democracy or environmental racism, to broader societal shifts such as slavery reparations, Indigenous sovereignty, and broad economic redistribution (Ciplet and Harrison, 2020). The range of uses has led to increasing contestation over what a successful just transition entails (Eisenberg, 2019; Stevis et al., 2020). This paper does not attempt to resolve these differing interpretations, recognizing that each has important contributions to the vision of a zero-carbon future. However, the analysis hereafter employs the second, labor-oriented definition of just transition to narrow the scope of policies considered, acknowledging that full consideration of social justice implications of climate policy are beyond the scope of this paper.

2.2. Just transition policy

The long history of dependence on coal and the relative economic and geographic isolation of many coal communities exacerbates the challenges of a just transition. Coal mine and plant closure will result in direct job losses for employees and indirect job losses along the coal supply chain or supporting services (Headwaters Economics, 2019; World Bank Group [WBG], 2018). Coal jobs usually offer considerably more generous wages and benefits than other nearby employment, making it difficult to find comparable re-employment options (Eisenberg, 2019; Partridge and Steigauf, 2020; WBG, 2018). Coal workers' skills may also not be easily transferable to alternative sectors (Caldecott, et al., 2017; Headwaters Economics, 2019).

At the community level, coal facilities often generate a significant portion of local tax revenue, the loss of which can impair the provision of key public services (Green and Gambhir, 2019; Headwaters Economics, 2019). Many communities have depended upon coal as their primary industry for decades and have often under-invested in other sectors, which not only produces severe vulnerability to coal closure, but also generates strong cultural connections to coal that can hinder movement away from the industry (Caldecott et al., 2017; Carley et al., 2018; Headwaters Economics, 2019; Olson-Hazbourn, 2018; Rosenfeld, 2015; WBG, 2018). Such economic dependence is exacerbated by the geographic isolation of many coal towns, which impedes recruitment of new employers to the area (Olson-Hazbourn, 2018; WBG, 2018). Cultural dependence on coal can also impair communities' willingness to acknowledge that coal closure is coming, which can prevent successful transition planning (Caldecott et al., 2017; Carley et al., 2018; Haggerty et al., 2018). These

challenges are exacerbated when facility closure is announced abruptly with little time to plan for impacts (Headwaters Economics, 2019).

Policy proposals for a just transition to remedy these problems have primarily centered on workforce development and economic revitalization. Rosemberg (2010) outlines the following policies as necessary components of adequate just transition policy:

- Investments in zero-carbon, job-creating sectors
- Research on social and economic impacts from decarbonization
- Consultation and dialogue with impacted stakeholders
- Training and education to prepare for a zero-carbon economy
- Social supports, such as unemployment payments and other income supports
- Local economic diversification planning.

Other policies include financial support to local governments to replace lost tax revenue from coal closure, which could involve reforms expanding local control over taxation and budgeting authority or direct payments to local governments (Headwaters Economics, 2018). Green and Gambhir (2019) describe potential policy mechanisms to deliver these benefits, outlined in Table 1. Policymakers' primary motivations for enacting transition policies include protecting the well-being of coal workers and communities, ensuring equity and fairness in decarbonization, or avoiding political backlash to climate action (Green and Gambhir, 2019). Just transition framing to protect workers and create jobs can counter "jobs-versus-environment" rhetoric that hindered past attempts at enacting environmental policy (Eisenberg, 2019). Failure to mitigate transition impacts can generate increased opposition to decarbonization (Caldecott et al., 2017; Healy and Barry, 2017).

Table 1: Policy mechanisms and examples for transition support (Green and Gambhir, 2019)

Mechanism type	Examples
Grants, cash payments, or loans	For workers: wage supplements, relocation support, or unemployment benefits
	For communities: tax revenue replacement, or funding of remediation costs
Provision of public goods and services	For workers: training, careers counseling, or entrepreneurship support
	For communities: infrastructure investment, diversification planning, or capacity-building for local leadership
Long-term policy planning to manage coal phase-out	Creation of government bodies, or long-term strategies or coordination of government policy to ensure an orderly and predictable retreat from coal
Carve-outs and provisions in policies that cause transition	Grandfathering provisions or exemptions, or use of newly-created revenue sources for transition support
Changes in fiscal policy	Tax increases to fund transition or tax breaks to incentivize investment in coal communities
Symbolic acts	Memorials or museums or public recognition of coal contributions and heritage

The U.S. federal government has enacted several of these policies to address past economic transitions, which have been used as references for coal transition policies. Two prominent examples are the Trade Adjustment Assistance Act (TAA) program providing cash payments, retraining, and relocation support for workers who lost jobs due to global trade, and the Northwest Forest Plan (NWFP) providing payments to timber-dependent counties to supplement lost tax revenue (Eisenberg, 2019; Haggerty et al., 2018; Pollin and Callaci, 2019). In 2016, the Obama Administration launched the POWER initiative to fund workforce and economic development in communities affected by coal plant and mine closure. However, the Trump Administration has shrunk the program significantly (Cecire, 2019).

Outside the U.S., Germany has been a leading figure in managing coal transition policy. Coal mining has been a major German industry for decades, and coal still provides nearly 40% of power generation in Germany despite its renewables-focused Energiewende and rhetoric of climate ambition (Oei, et al., 2020). In 2018, Germany convened a Commission on Growth, Structural Change, and Employment consisting of unions, industry, environmental NGOs, and policymakers to determine how German coal use should evolve in order to achieve national climate goals. After over six months of negotiations, the Commission recommended that Germany end coal generation by 2038 and develop a long-term revitalization strategy for coal-impacted regions (Federal Ministry for Economic Affairs and Energy, 2019). Germany also convened union representatives in lignite regions to participate in a Structural Reform Commission effort to determine transition provisions and pathways for coal closure (Sartor, 2018). In 2020, German policymakers approved legislation to end coal use by 2038 and provide €40 billion in workforce retraining, economic development, and infrastructure investments in coal regions (DW, 2020).

In general, there have been few examples of truly successful transition policies, particularly for coal. An international analysis of coal just transition policies by the World Bank Group (2018) found that coal workers experienced protracted unemployment and significant earnings losses in almost all cases of coal mine closure despite national policy support. Within the U.S., the TAA has been criticized for providing inadequate support to workers, with a significant share of displaced workers now employed in low-wage jobs (Pollin and Callaci, 2019). The NFWP failed to address long-term economic diversification in timber counties, many of which are now in economic distress as federal payments wane (Eisenberg, 2019). Ultimately, policies that fail to remedy underlying dependence on a single industry will likely be unsuccessful in encouraging long-term prosperity among workers and communities (Eisenberg, 2019). Although analyzing policy effectiveness is important for a successful transition, this paper does not address the outcomes of coal transition policies to date.

2.3. Sub-national action

Aside from the POWER program, most transition support during coal closure – if it exists at all – has been centered around individual plant closures. The Centralia Coal Plant in Washington and the Mohave Generating Station in Nevada have been two high-profile examples. In 2011, plant owner-operator TransAlta agreed to phase out coal at Centralia by 2025 after years of negotiations with the state of Washington to reduce air pollution and emissions (Lindblom and Welch, 2011). The memorandum agreement for plant closure was formalized in legislation with SB5769, which required TransAlta to provide $55 million in transition funding for economic development and energy investment in the impacted community. In Nevada, the Mohave Generating Station was retired by its California-based owners in 2005 for financial reasons. In 2013, after litigation over the transfer of pollution credits associated with the plant, the California Public Utilities Commission in 2013 approved the use of Mohave pollution credit revenues to fund renewable energy projects for the Navajo and Hopi tribes, who had depended on Mohave for employment and royalties prior to its closure (Rosenfeld, 2015). Despite these successful examples, many coal facilities have closed with no formalized commitment to transition support.

Until recently, there have been few attempts to create a statewide framework guiding coal transition. The only major instance of such a policy prior to 2019 is New York's S6408-C, which established a $30 million Electric Generation Facility Cessation Mitigation program compensating local governments for tax revenue lost due to power plant closure. The legislation was enacted after grassroots efforts among environmental, labor, and community groups in Tonawanda, New York, which was facing the imminent closure of the coal-fired Huntley Generating Station (McGowan, 2017). The New York fund is considered to be the first power plant transition fund created in the country (Skibell, 2020).

The past two years have seen a significant spike in state action, with eight states advancing or passing coal transition legislation. Colorado, Minnesota, New Mexico, and New York have enacted legislation with transition provisions for fossil fuel-dependent communities. Transition legislation has been introduced but not yet passed in Illinois, Maryland, Montana, and West Virginia. A summary of these bills is listed in Table 2.

Given the recency of this resurgence in state transition policy, very little gray or academic literature has addressed states' role in the coal transition or states' decisions to address transition support. Consequently, little attention has been paid to the policy processes behind state transition efforts, although policy process frameworks have been applied to other state energy policies (Gray and Burnell, 2020). Just transition literature in general also lacks empirical coverage of past and current transition policies (Green and Gambhir, 2019). This paper addresses these gaps by outlining state transition policy efforts in the past two years, with particular focus on Colorado and New Mexico.

Table 2: Summary of state legislation on coal transition, 2019-2020

State	Bill number	Year	Transition-related provisions	Status
Colorado	HB 1314	2019	- Creates Office of Just Transition, Just Transition Advisory Committee. - Requires coal plant operators to submit Workforce Transition Plan.	Passed
	SB 236	2019	- Permits inclusion of assistance to coal workers and communities as part of cost recovered/financed under securitized bonds. - Requires utilities to pay local gov't for lost coal plant property tax revenue when accelerated retirement is proposed.	Passed
Illinois	SB2132/ HB3624 (Clean Energy Jobs Act)	2020	- Creates Energy Community Reinvestment Fund for community and workforce assistance, incentives to hire displaced workers and invest in former coal plant/mine communities. Funded by 6% coal severance fee. - Creates Displaced Energy Worker Bill of Rights to provide education, pension, and healthcare protections for coal workers.	Failed to pass in 2020
Maryland	SB 887	2020	- Creates Fossil Fuel Community Transition Account to provide grants for coal workers and communities. Funded by RGGI allowance sales proceeds.	Failed to pass in 2020
Minnesota	HF 1842	2020	- Creates Community Energy Transition Grant Program for coal workers and communities. Initial funding from state Renewable Development Account.	Passed
Montana	HB 467	2019	- Requires portion of securitized bond proceeds to be used for transition assistance to coal communities and workers.	Amended out of final legislation
New Mexico	SB 0489 (Energy Transition Act)	2019	- Creates three energy transition funds dedicated to tribes, community economic diversification, and displaced workers. Funds from securitized bond proceeds. - Convenes community advisory committees to provide recommendations on use of funds. - Requires construction of replacement resources in the school district of the closed plant. - Requires employment of apprentices for new electricity generation construction.	Passed
New York	S6599 (Climate Leadership and Community Protection Act)	2019	- Requires a percentage of benefits of spending on clean energy investments to be directed to disadvantaged communities, including fossil-dependent communities. - Creates apprenticeship and workforce programs for displaced fossil fuel workers. - Mandates spending of clean energy funds in disadvantaged communities, incl. fossil-dependent communities.	Amended out or weakened in final legislation
West Virginia	HB 4574	2020	- Creates Coal and Timber Transition Office, Coal and Timber Transition Advisory Committee. - Requires coal plant and mine operators to submit Workforce Transition Plan.	Failed to pass in 2020

3. The Multiple Streams Framework

Kingdon (2011) originally posited the Multiple Streams Framework (MSF) in 1984 to understand how policy agendas are established given the ambiguity of solutions to a problem, the time constraints of political proceedings, and the shifting preferences of actors in the policy arena. Since then, the framework has been applied to policy decision-making and implementation in various subject areas, including environmental policy (Herweg, Zahariadis, & Zohlnhöfer, 2018).

The MSF describes agenda-setting and decision-making as determined by three independent "streams": the problem stream, policy stream, and politics stream. These streams shape political action when successfully coupled by a "policy entrepreneur" during a "policy window." This process is visualized in Figure 1.
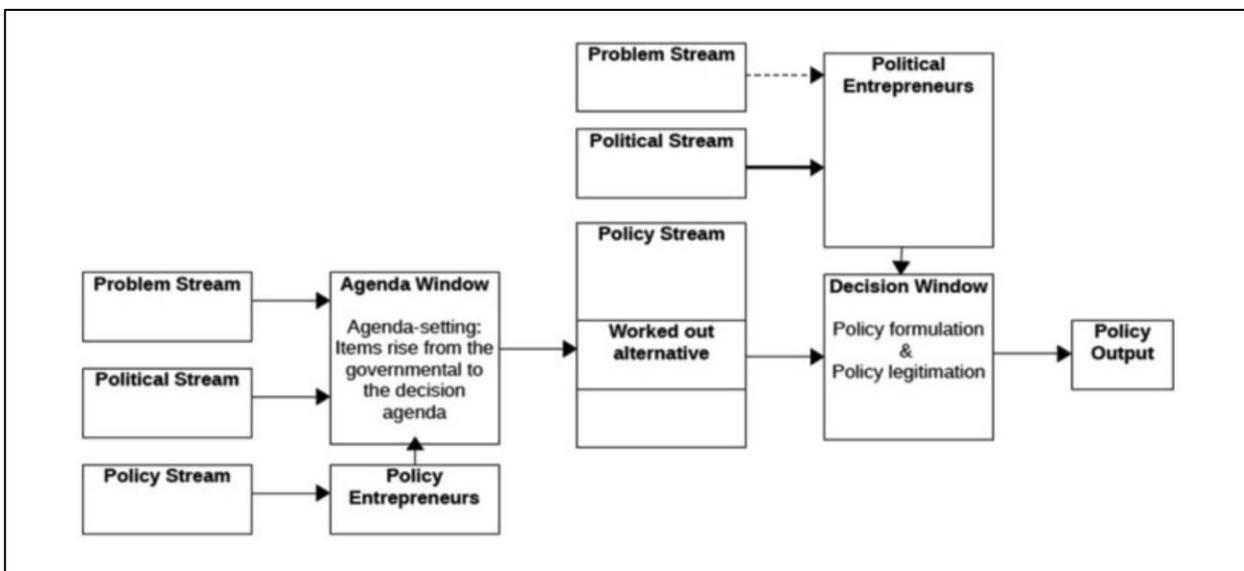
Figure 1: A visual representation of the MSF (Source: Herweg, Zahariadis, & Zohlnhöfer, 2018)

The MSF assumes that policy decisions and actors are irrational due to ambiguity, time constraints, and unfixed preferences. Ambiguity refers to the multitude of perspectives and disciplines through which a problem can be interpreted, leading to a wide array of potential solutions. Time constraints limit policymakers' ability to process information and take action, leading to scarcity and competition in the issues that can be addressed at any given time. These two factors result in imperfect policy preferences among actors, which can change depending on problem framing and available information.

The problem stream describes the issue that a policy is intended to address. Under the MSF, a problem exists when real-world conditions differ from citizens' or policymakers' preferred circumstances, and when the resolution of the issue is perceived to require state policy action. Problems are subjective constructs rather than objective truths, and only become relevant in the policy sphere when framed to demand policymakers' attention (Herweg, Huß, and Zohlnhöfer, 2015). Policymakers become aware of problems through changes in indicators (such as unemployment rate

or emissions rates), sudden developments (such as an acute crisis or disaster), and feedback from citizenry and other stakeholders (Herweg, Zahariadis, & Zohlnhöfer, 2018).

The policy stream refers to the development of policy ideas by interest groups, researchers, and public servants who form the "policy community." The MSF posits that after ideas are generated, the policy community discusses and refines these ideas, primarily by "arguing" with one another. The ideas that survive this "softening up" process are generally those that are technically, socially, and financially feasible (Kingdon, 2011). Path dependence is also relevant, as proposals that deviate significantly from past policies or norms may be less viable. Finally, solutions proposed or adopted in other constituencies can be disseminated across policy communities and can more easily survive the softening-up process (Lovell, 2016).

The final stream is the politics stream, in which policymakers bargain with one another to shape the agenda or pass policies. The three key components of this stream are the national mood, interest group actions, and government actions (Kingdon, 2011). The national mood refers to the general sentiment and priorities of the citizenry as interpreted subjectively by policymakers. Interest groups also influence politics, as the political viability of a policy is shaped by the number and power of interest groups that lobby on the policy. Finally, governments are relevant, as the ideological affiliation of elected officials and the relationships among policymakers can determine a policy's likelihood to be considered.

In order for a policy idea to enter into political agendas (referred to in the MSF as the "coupling" of the policy and politics streams), a policymaker must support and advocate for the idea. Coupling is much more likely to succeed at specific and short-lived opportunities, which Kingdon (2011) terms "policy windows." Herweg, Huß, and Zohlnhöfer (2015) further refine the policy window concept by distinguishing between an "agenda window" to add a policy to the political agenda, and the "decision window" to implement the policy. Agenda windows can open in either the political stream or the problem stream. Examples of the former include partisan shifts in government control, freshman legislators beginning their terms, or marked shifts in national mood. Examples of the latter could include significant changes in indicators or feedback, or the occurrence of a major event. Windows can occur on a predictable basis (e.g., regular elections or reporting deadlines) or be unpredictable (unexpected events or crises).

The role of the policy entrepreneur is to ensure that their preferred policy makes it through the agenda window. Policy entrepreneurs first advocate for their solutions in the policy stream to gain the support of the policy community, then work to couple their preferred policy with the other two streams. When an agenda window opens, policy entrepreneurs must successfully combine their solution with a pertinent problem, and convince policymakers to add it to the agenda. Policy entrepreneurs do not necessarily have to be politicians or policy experts; any actor in a policy-relevant

role, such as academics, interest groups, or bureaucrats, can act as a policy entrepreneur (Herweg, Zahariadis, & Zohlnhöfer, 2018).

Finally, the "decision window" opens after a policy is added to the agenda, during which the policy must amass a sufficient political majority to be enacted. The primary actor at this stage is the policymaker who advocates for the policy, also known as the "political entrepreneur" (Herweg, Huß, and Zohlnhöfer, 2015). Herweg, Huß, and Zohlnhöfer (2015) posit three ways to gain this majority: (1) package deals, in which multiple policies are combined to gain additional support for a political entrepreneur's preferred policy, (2) concessions, in which political entrepreneurs weaken their proposal to gain support, and (3) manipulation, in which political entrepreneurs can reframe the problem to build pressure on fellow policymakers to act, or wield personal power and influence to compel policymakers to join.

The MSF has received criticism for lacking falsifiable hypotheses and for being overly generic (Sabatier, 2007). Some authors have generated their own general hypotheses around the MSF, while others have posited specific hypotheses based on specific cases or policy areas (Herweg, Zahariadis, & Zohlnhöfer, 2018). In the case of this paper, the MSF's breadth and general applicability is a strength to allow for easy comparison of policy elements across states. Rather than expand an already broad framework by analyzing other generic hypotheses, this paper will instead use the original framework throughout the analysis, propose hypotheses of policy success within the topic of coal transition policy, and take a critical view of factors missing or underrepresented in the framework.

4. Methodology

The research for this dissertation was conducted between June and August 2020. The results are based on semi-structured interviews with 48 stakeholders involved in just transition-related legislation in the U.S. This dissertation surveys U.S. states that advanced or enacted legislation on a just transition from coal in 2019 and 2020. This refers to legislation that dedicates funding to; creates programs, incentives, or mandates for; or requires the study of communities or workers affected by coal closure. Participants were interviewed across eight states that advanced legislation regarding coal just transition in 2019 and 2020: Colorado, Illinois, Maryland, Minnesota, Montana, New Mexico, New York, and West Virginia.

4.1. State and participant selection

The list of states surveyed was determined by searching for news articles on state-level transition policies and reviewing resources from energy-focused NGOs, such as the State Policy Opportunity Tracker for Clean Energy organized by Center for the New Energy Economy, or the Just Transition Fund's media database. This list of states was then regularly cross-checked with interviewees to ensure that all states with significant action on transition were included.

45 semi-structured interviews were conducted with 48 participants who were directly involved with the transition policy development process. Interviews were used for data collection to gain personal insights into the policy development process, the details of which are rarely publicized. Legislative text of state bills was also consulted to verify interviewees' accounts of bill process and content. Interviews were conducted over the phone or via video conference, depending on participants' preference. Interviews were audio recorded and later transcribed; interviews where participants declined audio recordings were transcribed real-time by the interviewer. An initial set of interviewees was identified through convenience sampling with existing contacts through the energy research NGO Rocky Mountain Institute. Subsequent participants were identified through snowball sampling. This targeted outreach of policy insiders is appropriate to gain insight into the highly resource-intensive and often restricted-access process of creating and negotiating legislation (Van Audehove, 2011).

Participants were deliberately selected to include a range of affiliations, including environmental NGOs, labor unions, utility companies, tribal and community organizations, transition-focused organizations, the legislature, executive agencies and offices, and local government. A list of participants' interview codes, their state affiliation (where relevant), and their organization type is listed in Table 3. A full list of participants' organization affiliations is noted in Appendix 1. Due to the sensitive nature of legislative negotiations, quotations have been anonymized and will be referenced based on the participant's state and organization type (e.g., "a Colorado labor representative").

Table 3: Interview participants and affiliation

Code	State	Category
101	(None)	Transition NGO
102	(None)	Environment (consultant)
201	Colorado	Environment (consultant)
202a	Colorado	Environment (NGO)
202b	Colorado	Environment (NGO)
203	Colorado	Environment (NGO)
204	Colorado	Environment-labor NGO
205	Colorado	State gov't (executive)
206	Colorado	Union/federation
207	Colorado	Environment (NGO)
208	Colorado	Union/federation
209	Colorado	State gov't (legislature)
210	Colorado	Local (government)
211	Colorado	Local (government)
212	Colorado	Utility
213	Colorado	Racial justice NGO
301	Illinois	Environment (NGO)
302a	Illinois	Environment (NGO)
302b	Illinois	Environment (NGO)
401	Maryland	Environment (NGO)
501	Minnesota	Environment (NGO)
502	Minnesota	Local (consultant)
503	Minnesota	Utility
504a	Minnesota	State gov't (executive)
504b	Minnesota	State gov't (executive)
505	Minnesota	State gov't (legislature)
601	Montana	Environment (NGO)
602	Montana	Transition NGO
701	New Mexico	Environment (NGO)
702	New Mexico	Environment (NGO)
703	New Mexico	Local (NGO)
704	New Mexico	Environment (NGO)
705	New Mexico	Tribal NGO
706	New Mexico	Union/federation
707	New Mexico	Environment (NGO)
708	New Mexico	State gov't (legislature)
709	New Mexico	State gov't (executive)
710	New Mexico	Environment (NGO)
711	New Mexico	Utility
712	New Mexico	State gov't (executive)
801	New York	Environment (NGO)
802	New York	Environment (NGO)
803	New York	Environment (NGO)
804	New York	Environment (NGO)
805	New York	Local (government)
806	New York	Union/federation
901	West Virginia	Environment (NGO)
902	West Virginia	State gov't (legislature)

A base set of questions was used for each interview and adapted for the state and organizational affiliation of the interviewee. Questions focused on (1) the origins of the legislation and changes to content of the bill, (2) the positions of the interviewee's organization and of other stakeholders involved in negotiations over the bill, (3) the rationale behind the bill's provisions, including what state conditions and what other policy examples, if any, informed the content of the bill, and (4) lessons learned through the legislative process that other states should replicate or avoid in the future. The base question set is included in Appendix 2.

4.2. Data analysis

Following the interview stage, interview notes and transcripts were analyzed using thematic analysis based on Braun and Clarke (2006)'s approach. Before interview analysis, literature was surveyed to identify relevant topics and questions around process and policy design for coal transition. All interview notes and transcripts were then read and organized by state. A "theoretical" and "semantic" approach was taken in initial code development, as analysis focused on specific questions rather than all emergent data content and was based on interviewees' explicit statements rather than on latent assumptions revealed through the data (Braun and Clarke, 2006, p.84). Codes were divided into (1) the legislative process in each state, and (2) transition policy development in general. Codes were then reviewed to identify themes;

the MSF was used as a foundation for thematic analysis of each state's process, whereas themes around broader transition questions were identified more organically based on the data and codes. Data were reviewed again to determine whether themes accurately reflected the data and to code any data that was missed in earlier passes. The final theme definition and writeup were again divided into (1) state-specific themes based on the MSF, and (2) themes that emerged across states relating to broader transition issues.

4.3. Reflections on methodology

Despite efforts to ensure comprehensive coverage and objective analysis, biases will inevitably emerge due to time constraints and interviewees' participation. First, due to the short research period and lack of preexisting connections, few coal community members or workers were directly interviewed. Where possible, local government and union representatives were interviewed to provide these perspectives, although individual representatives cannot perfectly reflect the viewpoints of all constituents. Many participants shared their own experiences working with coal communities and workers, including the beliefs that they perceived these groups to have. While these outsider perceptions cannot accurately capture coal community and worker opinions, documenting these viewpoints is helpful to understand stakeholder dynamics in policy development, which inevitably involves advocates and policymakers who do not come from a coal background.

Second, due to the author's preexisting relationships with environmental advocates, environmental NGOs are disproportionately represented among interview participants. To counter these biases, interview questions focused on factual questions of the bill's development, rather than normative questions on the value of a bill. Non-environmental stakeholders were also interviewed to ensure a more representative set of perspectives. Statements made by environmentally-affiliated interviewees were cross-checked with non-environmental interviewees to assess completeness and accuracy.

Finally, the COVID-19 pandemic limited access to certain stakeholders, as some relevant decision-makers were occupied with COVID response, and other potential interviewees may have lacked access to reliable broadband to conduct an interview. Given the limited research period, little could be done to avoid the impacts of the pandemic.

5. Case study 1: Colorado

Colorado's coal just transition policy was often referenced by interviewees as one of the most comprehensive state approaches to date. In 2019, Colorado passed 11 energy-related bills, including a commitment to reduce statewide carbon emissions 90% by 2050 from 2005 levels, and a mandate for Xcel Energy, the state's largest investor-owned utility (IOU), to achieve 100% carbon-free electricity by 2050. Two bills included transition support for coal workers and communities: SB236, which allowed the use of securitization to fund transition support, and HB1314, which created a statewide Office of Just Transition (OJT) to develop a transition plan and study transition benefits. The provisions of each bill and the evolution of the bill during the session is described in Table 4.

This section discusses the development, negotiation, and passage of the securitization and OJT legislation based on interviews with 14 stakeholders. Colorado illustrates the case of a state with numerous coal plants whose transition policies were closely tied to Democratic climate policy priorities. Transition provisions were included in part to address the coal plant closures that had been accumulating prior to 2019, but were primarily borne out of recognition of future costs from decarbonization. Colorado's two transition policies were largely siloed.[1] This approach led to different sets of interest groups participating in each bill due to differing incentives and time constraints. All interviewees had focused on only one of the two bills. The negotiation and passage of Colorado transition policy illustrates the influence of interest groups (utilities' opposition, for securitization, and labor's power, for OJT), funding constraints, and the political importance of addressing transition to enable climate policies to pass.

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[1] Colorado's constitution requires bills to contain provisions relating only to a single subject, resulting in narrowly-defined bills rather than more diverse omnibus packages.

Table 4: Summary of coal transition provisions in 2019 Colorado legislation

Policy	Introduced	Changes in enacted legislation
Securitization	*Bill number: HB1037*	*Bill number: SB236*
	Authorizes the use of securitization to reduce ratepayer costs due to power plant retirement	**(Same)**
	- **Requires the utility to pay a portion of the net present value of savings** associated with use of securitization to the newly-created Colorado Energy Impact Assistance Authority (EIAA) - **EIAA will administer transition assistance** to plant, mine, and transport workers and communities impacted by coal plant closure, including retraining, wage support, and tax revenue compensation - **Requires EIAA to receive input from a local advisory committee** and work in partnership with local government and school district administrators	- **Allows utilities to include transition support** to coal plant workers and communities as part of costs financed using securitized bonds - **Requires utility to pay local governments or school districts** to cover the costs of any projects originally planned to be funded by property tax revenue from a plant facing accelerated retirement
	Requires the utility to file a workforce transition plan documenting the number of affected workers and future employment plans	**(Same)**
Office of Just Transition	*Bill number: HB1314*	*Bill number: HB1314*
	Creates OJT to establish benefits to workers and communities affected by job loss in coal mine, plant, or related supply chains or are disproportionately impacted by coal pollution. Specifically notes that coal workers are eligible for wage differential benefits for three years.	- **Creates OJT to estimate and respond to impacts** of loss of coal jobs on workers and communities in coal mine, plant, or related supply chains. - **Orders OJT to submit a state Just Transition Plan** studying potential benefits to workers and communities and funding options
	Creates Just Transition Advisory Committee (JTAC) to advise OJT on benefit and grant administration	**Creates JTAC to develop draft Just Transition Plan**, specifically asks committee to study wage differential benefits
	Requires utilities to file a workforce transition plan prior to coal plant closure, documenting the number of affected workers and future employment plans	**(Same)**

5.1. Problem stream: Steady decline of coal

Colorado's coal industry has been declining for the past decade, despite the state's rich coal resources. In 2010, 12 coal plants larger than 50MW were operating in Colorado, with a total state coal capacity of 6.2GW (Global Energy Monitor [GEM], 2019a). Prior to the 2019 legislative session, 3.5GW across seven plants had retired or announced retirement before the end of their useful lives, driven by declining coal competitiveness, air quality concerns, and compliance with state environmental policy (GEM, 2019a). Coal plant closures also have spillover effects for the state's six remaining coal mines; the vast majority of coal mined in Colorado is used for electricity generation, both in domestic plants and exported to other states (Energy Information Administration, 2020).

Colorado will see significant losses in employment and tax revenue as coal facilities close. Approximately 2,200 workers employed in coal mines, power plants, or related supply chains face the risk of job loss, with few options for comparably high-paying jobs once coal facilities close (Dougherty and Beck, 2020). Loss of tax revenue will disrupt local governments' abilities to provide key services, and economically isolated rural communities will be hit particularly hard. Of the eight coal plants still in operation in 2019, half are located in rural non-metro counties (U.S. Department of Agriculture, 2007). One county, Moffat County, depends on one coal plant and two coal mines for nearly 10% of county workforce and 44% of county property taxes (Dougherty and Beck, 2020).

Before the 2019 session, continued announcements of coal plant closure were clear indicators of the decline of coal in Colorado. Utility and policymaker announcements presaged continued coal closures, now driven primarily by climate goals. In 2018, Xcel Energy announced a goal to provide 100% carbon-free electricity to all customers by 2050. Democratic lawmakers had also repeatedly sought to pass aggressive climate policy that would eventually require coal plant closure. The Colorado coal industry's steady decline and the recognition of social disruptions from future climate policy brought transition impacts to state policymakers' attention.

5.2. Policy stream: Two separate approaches

5.2.A. Securitization

Ratepayer securitization is a financial tool that uses ratepayer charges to issue low-interest bonds, essentially allowing utilities to refinance loans on remaining coal debt (see Figure 2). Securitization was originally used in the 1990s to compensate utilities for financial losses due to power market deregulation, but has since been used for a variety of applications, including environmental regulation compliance and disaster recovery (Forrester, 2013). Many national environmental NGOs have promoted securitization for early coal plant retirement, to reduce ratepayer costs compared with more traditional financing methods such as accelerated depreciation, as well as to ensure utilities' financial health and ability to repay any remaining debt on the plant (Benn et al.,

2018; Varadarajan et al., 2018). Several environmental advocates have proposed using these ratepayer savings from securitization to fund transition assistance (Richardson, 2019; Varadarajan et al., 2018).
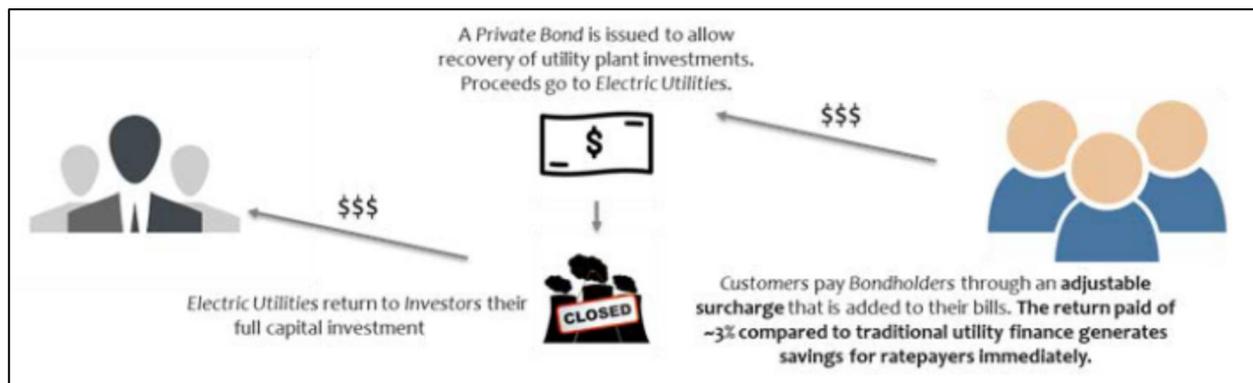

Figure 2: A visualization of ratepayer securitization (Source: Varadarajan et al., 2018)

Based on these national discussions, in the mid-2010s, a small group of climate-oriented energy experts began to workshop securitization for coal retirement and transition assistance in Colorado. While the primary objective of securitization was to facilitate electricity decarbonization, these advocates recognized the need to address social impacts from coal plant closure. One environmental consultant commented:

> *"It became apparent to me as we were talking about our goal to retire these plants early that we were going to cause real economic damage to communities. It just made sense to me that you had to look at how to mitigate that adverse economic impact."*

In 2016, these advocates proposed the idea of securitization with transition funding to a newly-elected state representative, who agreed to take on the policy and introduced a bill in the 2017 session. The sponsor sought out input from union representatives, who helped propose specific transition provisions. Xcel opposed the use of securitization, since it would significantly reduce utility earnings compared to conventional financing methods; consequently, Xcel was not engaged in shaping policy content.

5.2.B. Office of Just Transition

The OJT effort dates back to 2018, when labor unions began discussing their stance on climate policies. One union representative noted that state lawmakers' attempts to introduce climate legislation in the 2018 session sparked "*a lot of conversation with labor, in terms of what it would take for us to get on board [with climate policy], if anything.*" In February 2018, a coalition of unions representing fossil fuel workers and other sectors convened for a jobs and climate caucus. A participant in the caucus described unions' agreement to advocate for a just transition:

> *"Through legislation or market forces, there's a high likelihood that people will be transitioning out of these jobs in the next ten to twenty*

years. Do we want to be leading on this and doing everything we can for the members through a transition, or do we want to be blocking legislation that also deals with climate change? We answered, we want to lead on this for the workers, and we think the best way to advocate for the workers and address the environment is through advocating for strong supports when they're transitioned out."

At the time, just transition was a novel concept to most Colorado union leaders. Key resources to gain familiarity with the idea of transition included labor unions in Washington and Oregon who had experience negotiating for coal transition support, Colorado organizers involved in advocacy around just transition for chemical workers in the 1990s, and collaboration with academic researchers studying transition. Given the uniquely high salaries and benefits of coal jobs, union representatives were particularly interested in wage differential benefits, which compensate coal workers for any difference between their prior income in the coal industry and their new income after coal closure.

As this labor caucus progressed, a second set of coalition meetings across labor, environmental, and racial justice organizations began in spring 2018. The groups convened to collaboratively develop principles for a just transition, not only for fossil-dependent workers and communities but also for communities disproportionately impacted by fossil pollution and future generations impacted by climate change. Several interviewees pointed to this process as important for building relationships and trust, especially across environmental and labor interests whose policy priorities have historically been directly at odds. These meetings helped advocates come to a shared understanding of transition principles and build broader support for transition policy.

While these processes were important in gaining familiarity with the concept of just transition, developing transition principles, and building relationships across stakeholders, they did not result in specific policy proposals. The policy concept within HB1314 was developed by labor organizations, but was only completed after the 2019 session began, as described below.

5.3. Politics stream: Shift in partisan control

Prior to the 2018 election, the Colorado House and governor's office were controlled by Democrats, while the Senate was held by Republicans. Due to the Republican Party's history of opposing climate policy, Democrats' efforts to push ambitious climate legislation usually died in the Senate (Gray and Burnell, 2020). In 2018, Democrats gained a majority in the Senate, thus controlling both chambers of the legislature. Democrats held the governor's seat as the term-limited incumbent John Hickenlooper was replaced with Jared Polis, who ran on a platform to achieve 100% renewable energy in Colorado (Hood, 2018).

Interviewees generally agreed that the primary interest groups on Colorado energy policy are Xcel, labor unions, and environmental groups. Coming into the 2019 legislative session, interest

groups were broadly aligned in recognition of the need for or inevitability of climate action, as seen by Xcel's carbon-free electricity commitment and coalition meetings on just transition among unions and environmental groups.

5.4. Policy window: Interest groups' influence

Nearly all interviewees agreed that Democrats gaining control of the Senate in the 2018 election opened the agenda window to act on climate policy and associated transition impacts. The pathway through the decision windows for securitization and OJT differed primarily due to participation of different interest groups – resistance from utilities for securitization, and support from unions for OJT.

5.4.A. Securitization

The first attempt to pass securitization legislation in 2017 (HB1339) passed the House but died in the Republican-controlled Senate. Interviewees attributed this failure in part to Republicans' and rural communities' desire to maintain coal operations rather than plan for closure. Additionally, Xcel's resistance to the bill reduced chances of passage because of its political influence and because it delayed the bill's introduction until the last month in the session, which reduced chances of bill passage due to the time-constrained nature of the legislative session. Advocates and the bill sponsor chose not to run the bill in 2018, anticipating the same partisan barriers.

In 2019, with Democratic control of the legislature, securitization legislation had much better prospects for passage. The energy experts who originally developed the policy proposal continued to play an important role as policy entrepreneurs, working closely with the bill sponsor to advance and negotiate the bill. The bill sponsor himself was also highly engaged and committed to the legislation, thanks to his own past expertise in energy issues, the lessons learned from the 2017 attempt at the bill, and at the relationships he developed since taking office in 2017. In 2019, unions were much less engaged in the securitization bill, which interviewees attributed to labor's focus on OJT legislation but suspected may also have been driven by pressure from Xcel. Consequently, negotiations were primarily conducted among environmental advocates, legislators, and the utility.

Xcel's continued resistance to securitization and the associated transition measures was the primary barrier to the bill's passage. To overcome this opposition, the provisions in the original HB1037 were combined with a utility-backed securitization bill (HB1313) and placed into a third bill (SB236), which is the final bill that passed. The transition provisions in SB236 were watered down from the original proposal, which interviewees attributed to Xcel's opposition. One environmental advocate commented:

> *"The utility did not want transition assistance at all… The version of the bill that had come back from the utility would X-out everything that had to do with transition assistance, so it was a matter of negotiating*

> *it back into the legislation, but that meant leaving it as a really bare*
> *bones description."*

This concession was needed for the bill to pass through the decision window, illustrating the importance of interest groups in shaping the outcome of this policy.

5.4.B. Office of Just Transition

Democratic victories in the 2018 election forced labor representatives to convert their nascent discussions about just transition into formal policy much more quickly than they had anticipated or preferred. Consequently, HB1314 was not introduced until well after the session began. In developing the legislation, labor groups continued their internal conversations, where members suggested and supported the idea of creating an OJT and ensuring that wage differential benefits were included as a form of transition support. Colorado unions remained the policy entrepreneurs and steered the content of the bill throughout the session; union leaders also consulted with academic researchers who provided feedback on some policy provisions.

The original version of HB1314, which created new transition benefits, passed the House and advanced in the Senate but was stopped by a veto threat from the governor. According to interviewees, the governor's office was concerned about the cost of transition funding and the precedent that dedicated funding for coal workers would set for any future economic transitions. These funding concerns were exacerbated due to constitutional limitations on budget increases, which make any new taxpayer-funded program highly contentious due to competition with other policy priorities. To overcome this opposition, the final version of HB1314 included only the creation of the OJT and establishment of the JTAC to consider future options for transition assistance and did not include any direct funding for transition support. One labor representative described unions' willingness to accept this compromise:

> *"We recognized the timeframe that we had to generate the legislation*
> *and completely grasp the enormity of the problem. We weren't going*
> *to be able to legislate it in that cut. But having a state agency that was*
> *dedicated to the transition was both symbolic in terms of the state*
> *prioritizing just transition for communities and workers, but also*
> *strategic in that there would be dedicated resources to tackling the*
> *problem."*

Most interviewees acknowledged that passing HB1314 was needed politically to ensure that unions did not oppose other climate legislation in the 2019 session, which was a major priority for the Democratic Party and the newly-elected governor. Consequently, climate-focused policymakers had a strong incentive to support the bill. Interest groups were also aligned in favor of HB1314.

Environmental interviewees noted the moral necessity of including transition provisions as part of climate packages and advocated in favor of the bill. Utilities were also supportive or neutral on HB1314, likely because none of the bill provisions would have impacted utility profits or required utility financial support. The ability of the OJT to pass through the decision window was thus due primarily to the weakening of its funded mandates, its inclusion as a package deal with other climate provisions, and interest groups' support of the bill.

6. Case study 2: New Mexico

In 2019, New Mexico passed the Energy Transition Act (ETA), which required public utilities to achieve 100% net-zero electricity by 2045 and included transition support provisions for workers and communities affected by coal plant closure. Unlike Colorado, whose transition policies consisted of two different bills in the same session, New Mexico's transition efforts originated in the same bill, which evolved over the course of two sessions. All interviewees pointed to the introduction of a 2018 securitization bill drafted by the Public Service Company of New Mexico (PNM), the state's largest IOU, as the origins for what later became the ETA. The provisions of the 2018 and 2019 bills are described in Table 5.

This section discusses the development, negotiation, and passage of the ETA based on interviews with 12 stakeholders. Compared to Colorado, which had several operating coal plants, New Mexico only had 3 operating plants at the start of 2019, with the largest plant having just announced closure. Although New Mexico did include transition policies in a broader climate bill, this link was more due to the circumstances of the plant closure and the desire to respond to associated impacts, rather than a political need to address transition to ensure climate policies would pass. New Mexico's process illustrates the importance of interest group alignment and state policymaker leadership to ensure passage of the bill, both of which were facilitated by government-led stakeholder consultation to develop ETA provisions.

Table 5: Evolution of bill provisions in New Mexico transition legislation

2018	2019
Bill number: SB47	*Bill number: SB489*
Authorizes use of securitization for coal plant retirement	**(Same)**
Requires PRC to authorize utility ownership of replacement resources located in the same county as the retired resource	**Requires utilities to apply for 450MW of replacement power resources**, which must be sited in the school district where the retired plant is located
	- **Requires 100% carbon-free electricity by 2045** for public utilities - **Requires that 5.5% of proceeds from securitized bonds be transferred to three newly-created transition funds**: an Indian affairs fund, an energy transition economic development assistance fund, and an energy transition displaced worker assistance fund - **Convenes a community advisory committee** in each community affected by plant closure to provide recommendations on how grant funds will be disbursed - **Requires a portion of construction labor for electric generation facilities to be sourced from apprenticeship programs**, and assists displaced coal plant workers in enrolling in apprenticeship programs

6.1. 2018: PNM's securitization bill

6.1.A. Problem stream

The 1,848MW San Juan Generating Station (SJGS) is one of three coal plants in New Mexico with a capacity larger than 50MW. SJGS is majority-owned by PNM. In 2015, PNM agreed to shut down two of the four units at SJGS to comply with federal haze regulations; these units formally retired in 2017. As part of the regional haze settlement, PNM was permitted to recover only 50% of the undepreciated value of the two units (New Mexico Public Regulation Commission, 2015). In 2017, PNM announced plans to retire the remaining two SJGS units by 2022, compared to its original retirement date of 2053. PNM thus needed to evaluate financing options to recover costs for the full plant's retirement.

6.1.B. Policy stream

PNM had considered securitization as a financing option with the closure of the first two SJGS stacks, although it was not employed in the final settlement. With the new plans to abandon SJGS entirely, PNM again turned to securitization as their preferred financing option. Many interviewees speculated that PNM's support of securitization (compared to Xcel's resistance to it in Colorado) was due to New Mexico's unique regulatory environment – interviewees frequently referred to the state Public Regulation Commission (PRC) as "*dysfunctional*," such that stakeholders had lost confidence in the institution's ability to make predictable or well-reasoned rulings. Additionally, some advocacy groups and legislators have been increasingly willing to challenge the utility's interests. One environmental advocate observed:

> *"The regulatory environment here is much crazier and unpredictable.*
> *You have advocates that are intent on destroying the utility…*
> *Securitization was a way for [PNM] to financially survive."*

As a result, PNM may have been more willing to accept securitization despite it being less lucrative than traditional financing options because it would reduce uncertainty around cost recovery.

6.1.C. Politics stream

PNM, like many IOUs, has historically played a significant role in the state legislature. For the 2018 bill, PNM's lobbying influence and personal relationships with policymakers were much more important factors in the politics stream than partisan control in the state, which at the time had a Democratic-controlled legislature and Republican-held governor's office.

6.1.D. Policy window

PNM's ability to act as policy entrepreneur and ensure their securitization bill passed through the agenda window is almost entirely due to PNM's political influence. However, the securitization bill alone was unable to pass through the decision window due to opposition from environmental

advocates who protested bill provisions guaranteeing utility ownership of replacement resources. This initial opposition resulted in a year of negotiations over the bill and the introduction of renewables and transition provisions into policy discussions.

6.2. 2019: Energy Transition Act

6.2.A. Problem stream: A major plant closes

After the 2015 agreement to close the first two SJGS stacks, PNM originally anticipated continuing operations in the other two stacks until 2052 (Grover, 2018a). However, in 2017, PNM announced plans to retire SJGS fully by 2022 and to eliminate coal from its generation by 2031 (Stanfield, 2017). Although the closure of the first two units resulted in no layoffs from plant employees, closure of the full facility is projected to result in nearly 1,500 lost jobs across the plant and the San Juan Mine, whose sole customer is SJGS and whose owner filed for bankruptcy in 2018 (Grover, 2018a; Grover, 2018b). San Juan County, where the plant is located, is estimated to bear over 85% of direct and indirect job losses from plant and mine closure (Highland Economics, 2017). The county also receives 10% of its tax revenue from the plant and the mine (Grover, 2018a). The Navajo Nation will also be impacted, as 27% of SJGS employees are Navajo and the Nation will bear 56% of tax revenue losses from coal extraction (Highland Economics, 2017; Nguyen, 2019).

The SJGS closure announcement was the direct catalyst for lawmakers' consideration of transition supports. One environmental advocate noted:

> *"New Mexico is a small state, so one coal plant has a really big impact… The retirement of San Juan was really significant for new Mexico. The legislation was definitely crafted around how to deal with that set of circumstances."*

The Four Corners region of northwest New Mexico where SJGS is located has had a long history of mining, fossil fuel production, and power generation that has turned the area into what one local stakeholder called "*sacrifice zone*." Many of these same dependency problems exist for the Four Corners Power Plant and Escalante Generating Station, New Mexico's two other coal plants. Recognition of this degree of economic vulnerability, the benefits that the state had reaped from coal regions, and the imminence of social impacts from SJGS closure all helped bring transition issues to policymakers' attention.

6.2.B. Policy stream: Broad consultation

The ETA consisted of three primary policy components: securitization, the 100% renewable portfolio standard (RPS), and transition provisions. The securitization provisions were drawn from the PNM bill, while the transition and RPS components were developed independently.

Conversations across utilities, environmental advocates, and unions began in the 2018 session to introduce decarbonization and transition requirements to PNM's securitization bill. However, due to New Mexico's legislative calendar which alternates between 30-day "short" sessions and 60-day "long" sessions, 2018 was a short legislative session and the session ended before stakeholders were able to arrive at a consensus.

Significant appetite existed among policymakers and interest groups to tackle these interconnected energy issues. Between the 2018 and 2019 sessions, the Speaker of the House directed his staff to hold several large meetings across interest groups and legislators, as well as dozens of meetings with individual constituents to determine stakeholders' perspectives and priorities for energy legislation. Not all relevant stakeholders participated; some interviewees remarked that a handful of legislators representing the Farmington area "*refused*" to participate. Nonetheless, interviewees agreed that most ETA transition provisions were finalized through this process, including the use of securitization to fund transition, establishment of apprenticeship requirements, and school district reinvestment mandates.

Prior to the 2018 session, New Mexico had seen relatively little discussion of coal transition support policies, given that the early retirement of SJGS had only just been announced. Labor representatives helped develop the ETA's workforce transition provisions, particularly the requirement to hire apprentices for electric generation construction. Secretaries across several executive agencies were also highly engaged in the ETA development process. One agency interviewee described studying past U.S. examples of coal plant closure, but noted that "*none of it was a perfect fit to the circumstances… and timeline that we had.*" Although the bulk of ETA transition provisions were settled during Speaker's process, the Indian affairs transition fund was not created in the legislation until during the session. While tribal groups had been consulted to some extent during the Speaker's process, many interviewees noted that outreach to tribal interests was insufficient at the start. The Secretary of Indian Affairs was instrumental in creating a specific tribal fund in the ETA, recognizing that Native communities faced unique challenges that a generic workforce or economic development program could not sufficiently address.

6.2.C. Politics stream: State leadership and interest group alignment

In 2018, Democrats retained control of both chambers of the legislature and gained control of the governor's seat with the victory of Michelle Lujan Grisham, who ran on a platform to boost renewable energy generation in the state. After taking office, she made the ETA a personal legislative priority, and many interviewees credited her leadership for the ultimate passage of the bill. Key legislative leaders, namely the Speaker of the House and Senate Majority Leader, were also highly invested in crafting and passing the ETA, which assisted the bill's passage. Democratic leadership had been seeking to enhance the RPS for many years prior to 2019, since the existing RPS was

scheduled to plateau in 2020, which provided additional support to take on energy legislation. This focus on climate mandates also made environmental NGOs a key interest group shaping the ETA.

6.2.D. Policy window: A climate-transition package

The agenda window of the ETA opened with the PNM bill, and was further enhanced by the election of Governor Lujan Grisham. PNM and environmental and labor groups, who had driven development of the bill's provisions during the 2018 session and Speaker's process, continued to be the primary policy entrepreneurs behind the bill.

The combination of securitization, clean energy, and transition policies into a single bill was only decided at the start of the 2019 session, driven in large part by the governor's involvement. Some interviewees attributed this consolidation to the interconnected nature of the energy policy provisions, while other participants described the choice as a "*strictly political calculation*" to ensure that the policy would be able to pass out of two key senate committees (710). Nearly all interviewees commented on the high degree of involvement that policymakers (particularly the governor, Speaker of the House, Senate Majority Leader, and the bill sponsors) had in shepherding the ETA through the session. Many cited this level of support from political leadership as a key reason for the ETA's passage.

Interviewees generally agreed that the history of negotiations during the 2018 session and the Speaker's process were crucial to the ETA successfully passing through the decision window. These processes were key to educate stakeholders and legislators on relevant energy and transition issues, and also to arrive at general consensus on policy provisions. Interviewees across nearly all interest groups commented that environmental groups, utilities, unions, and tribal groups – many of whom have traditionally been at odds with one another – were largely unified in support of the ETA. For PNM, the timing of the session was likely a key factor: the 2019 legislative session was the only long session before SJGS is due to retire in 2022, and the utility thus had added incentive to arrive at an agreement that year to achieve their preferred financing option. Interviewees also remarked at the wide range of stakeholder outreach in developing the ETA, which one environmental advocate described as "*bigger than anything I had seen before*." Several interviewees commented on the relative ease of the 2019 negotiations. One labor representative said, "*I didn't have to be as adamant as you might think – [legislators] were like we know these people and they're asking for something reasonable*."

Many interviewees stated that the transition provisions in the ETA helped the bill's overall chance of passage. Interviewees speculated that transition support and clean energy mandates helped dispel some advocates' opposition to securitization, and thus enabled passage of the ETA as a package. The history of uranium mining in the state, which crashed abruptly in the 1980s with almost no state support, also contributed to legislators' support of the bill. One agency interviewee commented:

"Several legislators had personal – either themselves or their families – experience with [the uranium crash] in the '80s. They really felt like… it's very important to help the workers. I can think of several votes we got because of that, that we probably would have lost from conservative Democrats if we hadn't had the transition pieces in the bill."

The consolidation of these three policy threads, consensus among stakeholders, and dedicated support from the governor and legislative leaders were critical to the ETA's passage.

7. Lessons from other states

The case studies above have shown in depth how Colorado and New Mexico addressed transition policies within their particular coal dependence and political circumstances. Many of these same themes are generalizable to other U.S. states facing the question of coal decline. This section incorporates insights from the other six states surveyed in this paper and looks generally at influences on state transition policy, describing how other states have moved through the MSF streams, what unique issues have emerged outside Colorado and New Mexico, and what lessons are broadly representative of states' experiences.

7.1. Problem stream

Each state has experienced or anticipated social and economic losses from coal closure to differing degrees. States varied in the number of in-state coal plants and mines and degree of economic dependency. For example, Illinois, has 34 coal plants larger than 500MW, while Montana only has one (GEM, 2019b). However, Montana's sole plant is 2,272MW in size and contributes 47.3% of the state's power generation capacity, and thus would generate much more significant effects if it were to close (GEM, 2019c). In economically isolated, coal-dependent areas, even a relatively small number of jobs lost can have an outsized local impact and demand a policy response (Headwaters Economics, 2019; Olson-Hazbourn, 2018).

Interviewees in many states commented that recent closure of coal plants was a major factor in garnering attention on transition issues, reflecting the MSF concept that sudden crises are important in bringing problems into the policy space. However, not all stakeholders may agree or realize that coal plant closure is imminent. Indications of a coal plant's vulnerability to closure, such as decreasing capacity factors or cost of alternative generation sources, may not be easily understandable for those unfamiliar with energy markets. Utilities are also often reticent to publicly disclose plans for plant closure before such decisions are final. Many stakeholders have expressed being caught off guard by plant closure, which can happen unpredictably and with little advance notice. One local government official in Colorado commented:

> *"I didn't expect [the plant to close] as soon as it did… In some ways*
> *that was a relief to the community because they knew something was*
> *up, they knew something was coming, but they didn't know what… they*
> *didn't know how much their job was in jeopardy."*

Failure to arrive at a common understanding of the likelihood and timeline of coal plant closure can complicate views of the transition problem, as stakeholders and policymakers may view the issue with very different senses of urgency.

Additionally, anticipation of these costs does not necessarily mean that stakeholders or policymakers agree that transition is the best solution. Across nearly all states surveyed, interviewees noted that a common reaction from coal communities, workers, or legislators faced with the prospect of coal decline was to seek to prop up the coal industry, rather than plan for transition. These disagreements illustrate the MSF principle of ambiguity, where one problem (the social and economic costs of coal closure) can yield different preferred solutions.

7.2. Policy stream

Stakeholders in many states drew from a similar set of historical and international policy examples, particularly the U.S. Trade Adjustment Assistance Act and the German energy transition. States also learned from one another as state action became more widespread, illustrating the MSF hypothesis that solutions implemented in one jurisdiction can more easily survive the softening-up process in the policy community of another jurisdiction (Lovell, 2016). Interviewees in several states referenced learning from Colorado's approach, which is widely seen as one of the most comprehensive state-level transition policies to date. For example, the text of West Virginia's OJT legislation was nearly identical to Colorado's. However, many interviewees noted that the lack of historical examples of successful transition made it difficult to develop transition policy.

While the MSF posits that the policy community is formed before a policy passes through the agenda window, in many states, the policy community was not clearly defined prior to a bill's introduction, and policy proposals were not decided – or even considered – until well past the agenda window. Stakeholder dialogues were instrumental in forming the policy community in many states. In some states, such as Colorado, Illinois, and New York, NGOs and grassroots organizations conducted coalition-building and listening sessions to determine climate and transition priorities prior to introducing a bill. Other states, such as New Mexico, conducted stakeholder conversations after legislation had already been introduced. The Colorado and West Virginia OJT approach mandates a stakeholder dialogue to inform future transition policy. Interviewees from these states commented that stakeholder engagement prior to introducing legislation can help improve stakeholder buy-in and avoid fights among interest groups later on in the process. However, given the often contentious histories between stakeholder groups, generating the level of trust needed to embark on such a process may be difficult – one interviewee in Maryland commented:

> *"It would have been very difficult, if not impossible, to specifically get the environmental community and the organized labor community in a room together in Maryland to hash out that kind of proposal… The trust was not really there, the conversation didn't want to be had."*

While nearly all interviewees viewed stakeholder engagement and coalition-building as key to ensure proper representation and enhance the political prospects of a policy, stakeholder processes

may fail to represent all interests unless inclusion is solicited intentionally. Given the wide range of coal closure impacts, the stakeholders affected by transition may not typically be involved in energy policy and thus may be overlooked in stakeholder outreach, such as in the initial underrepresentation of tribal groups in New Mexico. Advocate-driven coalition efforts may also lead to an echo chamber of ideas, even if diverse perspectives are sought. For example, in Illinois, despite environmental groups hosting listening events in coal communities, one interviewee observed:

> "*Most people attending these events, whether this is what we wanted or sought out, were people who were already supportive of the environmental movement and concerned about climate change.*"

Thorough stakeholder outreach and participation will be needed for effective and inclusive transition efforts, particularly if transition policy is driven by these stakeholder processes.

7.3. Politics stream

Unsurprisingly, the politics stream is where states have diverged the most due to different political conditions. States were largely similar in terms of the types of interest groups who engaged in transition policy (utilities, unions, and environmental groups), so this section will focus on how partisan affiliation affects policymaker views of transition. Table 6 shows the party that controls the governor's office and legislature in each of the surveyed states.

Table 6: Partisan control of government in surveyed states

State	Governor	Lower Chamber	Upper Chamber
Colorado	Democrat	Democrat	Democrat
Illinois	Democrat	Democrat	Democrat
Maryland	Republican	Democrat	Democrat
Minnesota	Democrat	Democrat	Republican
Montana	Democrat	Republican	Republican
New Mexico	Democrat	Democrat	Democrat
New York	Democrat	Democrat	Democrat
West Virginia	Republican	Republican	Republican

Democratic lawmakers tended to prioritize climate action and support transition policies to minimize the social costs of decarbonization or avoid political backlash. States whose legislatures are controlled by Democrats (Colorado, Illinois, Maryland, New Mexico, and New York) all included transition policies as part of broader climate packages. However, interest in climate action does not always produce interest in transition policies. For example, since 2018, Democratic lawmakers in California, Hawaii, Maine, Nevada, Virginia, and Washington have all passed legislation to reach 100% carbon-free electricity or to achieve 80% or higher reductions in carbon emissions by 2050 or sooner. None of these states included transition support for fossil fuel workers or communities as part

of their climate mandates. Investigating why these states chose not to pursue transition policy is beyond the scope of this paper, but these states' policies may illustrate the failure of worker and community advocates to attract the attention of policymakers, or the lack of political power of these constituencies such that transition proposals were ultimately scrapped in the final bill.

Republican policymakers had mixed stances on transition policies depending on their views of the future of the coal industry and the role of government. Interviewees in both Democratic- and Republican-controlled states noted that representatives of coal communities, who were almost always Republican, often refused to engage on transition policy due to the desire to keep coal plants and mines open rather than consider transition. Given the long history of climate denial and obstructionism within the Republican Party, support for ambitious climate action was out of the question in states with greater Republican control (Minnesota, Montana, and West Virginia). In Minnesota, currently one of two U.S. states whose legislative chambers are controlled by different parties, the need for bipartisan collaboration resulted in a bill focused on community needs, rather than more sweeping energy policy. This narrow scope and bipartisan appeal enabled the bill to pass even amidst response to COVID-19.

In Montana and West Virginia, both states with a deep history of conservative politics and dependence on extractive industries, transition provisions met policymaker opposition due to the desire to keep coal plants and mines open rather than discuss transition. Another major source of opposition was Republicans' objection to government involvement. A Montana environmental advocate described the effort to include transition in the 2019 securitization bill:

> *"In the first committee in the House, which is controlled by Republicans, they stripped the transition funding component – they called it 'socialization.' One of the representatives on the committee… represents the Colstrip area, and she voted to remove transition funding. When I asked her why, she said the bill wouldn't have passed with it.*

> *Republicans just think transition funding is socialism, and they're just not interested. There's a whole group of them who don't believe it's necessary because the plant will never close, but even that group is starting to morph into saying it's just socialism, [and] even if the plant closes, that's not just not the way to go about business – the best thing we can do is keep the plant open as long as possible."*

West Virginia's 2020 transition policy faced similar complaints, particularly due to the deep legacy of coal in the state. One interviewee in the legislature commented:

"Despite the huge losses in coal production and coal jobs, the coal lobby is still very strong in West Virginia... There's been so few successful politicians who have publicly talked about this in West Virginia that there's an uncertainty about it – nobody wants to go first."

Even with these concerns, the OJT bill passed the West Virginia House unanimously on its first attempt – a success that even proponents of the bill described as unexpected. Part of this success is due to the inclusion of timber workers and communities in transition provisions, which secured the support of key legislative leadership representing timber districts. Participants also speculated that the ironclad grip that the coal industry had over state politics may be weakening, as the 2020 session saw West Virginia lawmakers pass an unprecedented policy to expand solar generation.

7.4. Policy window

In all the states surveyed, policy entrepreneurs successfully brought transition policies through the agenda window. The policy entrepreneur in each state influenced the type of policy proposed and the policy window chosen. In Minnesota, coal communities were the primary policy entrepreneurs, with the agenda window opening from both gradual coal decline and recent major plant closure announcements. In Illinois, Maryland, Montana, New York, and West Virginia, transition policies were first proposed by environmental groups. More liberal states (Illinois, Maryland, and New York) included these transition provisions as part of climate packages, while more conservative states (Montana and West Virginia) proposed transition provisions without climate mandates. Illinois' and New York's agenda windows were opened primarily by shifts in state mood, since both were fueled by several years of grassroots engagement, as well as renewed attention to climate following nationwide Democratic victories in the 2018 election. Maryland, Montana, and West Virginia's agenda windows were shaped more by gradual changes in indicators of coal's decline.

States had differing success moving transition policies through the decision window. Three key factors across states include time constraints, funding, and the combination of transition with climate provisions. The time-constrained nature of policymaking is a central component of the MSF and was a key factor in policy outcomes in several states, such as West Virginia where the 2-month legislative session gave bill proponents little time to promote the bill in the Senate after it passed the House. Several interviewees noted that past attempts to introduce a bill can help a policy pass, since less time would need to be dedicated to policymaker education and engagement. In 2020, the onset of the COVID-19 crisis derailed state policy action for weeks as policymakers focused attention on pandemic response. Illinois and Maryland adjourned their sessions early, which interviewees cited as the primary reason why transition policies failed. In Minnesota, advocates ultimately succeeded in

passing the bill after COVID escalated, which one local consultant credited to the strength of constituent and policymaker collaboration before COVID.

Funding for transition provisions was also a major point of contention. Policymakers must first decide whether to fund transition assistance at all. Colorado and West Virginia opted to create an OJT rather than transition assistance programs largely because of political and budgetary challenges finding funding. Creating new funding by targeting specific industries, such as utilities or coal mines, may induce these entities' opposition to transition policy, as was seen by backlash from utilities in Colorado's securitization effort.[2] Proposals to use existing funding sources, such as carbon trading proceeds in Maryland or a state renewable development account in Minnesota, generated some opposition from institutions currently funded by those sources. Interviewees in several states also noted policymakers' concern that the precedent of creating funded coal transition programs may render states liable to fund future transition support in other industries. These funding debates will only become more difficult given that state budgets have been decimated by COVID (Aratini, 2020). Resolution of funding debates will depend on the political influence of interest groups advocating for or contesting funding sources, and policymakers' ability to push their preferred funding mechanism.

The political dynamics that emerge from linking transition policies to climate policies have also been influential in many states. Policymakers and advocates often expressed that transition policies can make climate policies more politically palatable. Many advocates in Colorado, New Mexico, and New York, all of which succeeded in passing transition provisions alongside climate packages, cited this broad-based combination of issues as a reason for their legislative success. However, climate policies can have the reverse effect of making *transition* policies *less* politically palatable, since coal-dependent stakeholders' acceptance of transition policies – already challenging due to cultural attachment to coal and differing views of coal's viability – can be particularly difficult when tied to climate policies that would mandate coal closure. One Illinois environmental advocate expressed:

> *"If we were just advocating for the just transition piece of [the bill known as] CEJA by itself, I think our support would be a lot greater, but because CEJA is such a huge, comprehensive bill, it does have these very aggressive decarbonization goals that there's opposition [to]."*

These dynamics illustrate that MSF hypotheses that forming a "package deal" can improve chances of policy passage may not apply equally to all provisions included in that package and instead depend

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[2] Transition funding from securitization uses only revenues from ratepayer charges, not utility shareholder contributions. Still, some interviewees speculated that transition provisions in the securitization bill made Xcel concerned about public scrutiny of utility involvement in transition support.

on the influence of interest groups and policymakers backing the policies in question (Herweg, Zahariadis, & Zohlnhöfer, 2018).

8. Reflections on the Multiple Streams Framework

8.1. Role of coal communities

Although coal communities, as the beneficiaries of transition support, are clearly an essential part of transition policy formation, they are rarely effectively engaged in the policy process. This fact not only means that the MSF fails to adequately theorize their importance, but also may implicate the acceptability and effectiveness of transition policies.

8.1.A. Community participation in the policy process

Participants across almost all of states noted that coal communities often feel left out of policy development and negotiation. While some interviewees attributed this disengagement to ideological refusal to consider a world without coal, there do exist real barriers to community participation that are often unaddressed. Much of this sense of exclusion is rooted in a perceived divide between policies that cater to urban priorities but leave rural communities behind, exacerbated by cultural and geographic distance between rural communities and state capitals. One local government official in Colorado stated:

> *"We weren't involved in drafting up the bill, they didn't ask us. From here to [the state capital] Denver is a 4 hour drive. They give you 3 minutes to talk, and then it's a 4 hour drive back... I don't think [legislators] really care. They just want to see coal go away."*

Stakeholder-led coalition efforts have sometimes failed to deliberately engage coal community participants. For example, the organizers of coalition discussions informing Colorado's OJT did not include communities as part of the initial effort. These stakeholder processes represent some of the only opportunities that coal communities have to shape policy, since many lack the capacity to engage in detailed state-level lobbying (Haggerty et al., 2018). Transition advocates in several states noted that legislative representatives of coal communities often failed to engage in policy negotiations, which further deprives coal communities of the ability to influence state policy.

8.1.B. Community attitudes toward transition

Coal communities' attitudes toward the transition from coal are also important to inform transition policy development. Coal communities and their members are diverse and should not be seen as monoliths; interviewees commented that coal community members hold a range of opinions about the future of coal and the need for decarbonization. Three factors shaping communities' acceptance of transition repeatedly emerged across states: divergent views on the causes of coal decline, the history of boom-and-bust cycles of extractive industries, and deep cultural attachments to coal.

Although extensive analysis has demonstrated that the coal industry's decline to date has been driven by market forces, coal communities often attribute the cause of decline primarily to environmental policy. An environmental researcher who worked with coal communities in Minnesota noted:

> *"They would talk about how environmental policy is shutting down coal plants… There was very, very little discussion about the economics of coal… They would say instead that [coal] is cheap."*

Community members may lack familiarity with energy markets and therefore may not recognize the declining economics of coal power. One local consultant in Minnesota noted that once these market trends were made clear to community members, they became much more willing to plan for coal closure:

> *"You start to see [that] this is not a decision about Becker [a coal community], this is a decision about global energy markets… Once you get a little bit of that global perspective, you're less likely to feel like… a victim."*

Additionally, the volatility of extractive economies can prevent communities from recognizing a more permanent industry decline. One interviewee in West Virginia commented that many believe that "*the coal industry has gone through cycles forever, and this is just another cycle*." The cultural attachment to coal is another major barrier to acknowledgment of coal decline, especially in a public forum. Many interviewees noted that local decision-makers or representatives may recognize in private that coal transition is inevitable, but will deny it publicly. Several interviewees also described sense of a fear that acknowledging or planning for a transition will only expedite coal closure. One transition policy advocate commented about her experience with coal workers' views:

> *"In their mind, there's no other way to live. [They think,] I've done this my whole life and I can't see another future… There is a huge belief that if we say it out loud, we'll either be interpreted as promoting it, supporting it… or that it will be true. That if we don't talk about it, it's not going to happen."*

Even if coal communities do not actively participate in the policy process, many interviewees noted that community attitudes on transition were important influences on statewide understandings of transition, although interviewees often had conflicting assessments of what communities' beliefs actually were. Community attitudes around transition can also shape policymakers' willingness to consider transition. For example, one lawmaker in West Virginia noted:

> *"There's a group of people who readily acknowledge it in private but are hesitant to say anything in public. I believe that's because their constituents don't believe it and they feel like they're going to be out of touch with their constituents and lose their election if they acknowledge it."*

Clearly, the attitudes of coal communities – whether real or imagined – can have significant impacts on the types of transition policies proposed and their likelihood of passing.

8.1.C. Implications for MSF

As a result of communities' general lack of engagement with the policy process, they do not fit neatly into the MSF streams. While communities experience impacts from coal closure in the problem stream, the MSF posits that problems only become relevant in the policy world when framed to demand policymakers' attention – an action that communities are not always capable of completing. Communities' participation in the policy stream is prevented by their lack of capacity and failure to be engaged in stakeholder processes. The absence of a specific lobbying presence for coal communities, and representatives' refusal to engage in legislative discussions, also limits direct community influence in the politics stream.

Minnesota's transition effort clearly illustrates the potential that coal communities have to shape the policy process. Power plant communities in Minnesota have a long history of cooperation through the Coalition of Utility Cities (CUC), a network of plant communities that lobbies on policy priorities. The CUC was the primary policy entrepreneur in Minnesota's 2020 transition legislation. All of Minnesota's coal plant communities have also developed proactive plans to respond to coal plant closure, which has been seen in very few other states (Partridge and Steigauf, 2020). Although the sole example of Minnesota is not sufficient to draw sweeping conclusions, the fact that transition policy was able to pass despite a legislature with split partisan control and in the midst of the COVID-19 pandemic suggests that proper community engagement can have transformative effects on the transition policy process.

Finally, although this paper does not evaluate transition policy outcomes, communities' acceptance of transition has been noted as a key determinant of the success of transition policy (Carley et al., 2018; Haggerty et al., 2018). Effective community engagement in policy development will be important to improve local buy-in to state frameworks, ensure that state policies target community needs, and achieve policy goals of ensuring an equitable transition from fossil fuels.

8.2. MSF hypotheses for coal transition

Although the MSF is an imperfect tool to study coal transition policies, as evidenced by the poor theorization of the role of coal communities, it does provide useful insights about the factors that enable states to pass these policies.

The policy relevance of coal decline depends the degree of economic disruption from coal closure, the timeline of coal closure, and the desire for states to enact transition policy in response. Transition policy development has been primarily informed by learning from other countries, states, and histories of economic transition. Whereas the MSF posits that policy communities are formed prior to the agenda-setting stage, in many states, policy communities have only formed in response to policy introduction. Stakeholder processes have been a key part of transition policy formation in many states, which can help align interest groups in support of a policy but may face difficulty building trust among stakeholders who often have contentious histories. The affiliation of participants involved in these stakeholder processes is a major determinant of the content of policy proposals.

Politically, transition policy prospects depend on state partisan control, legislative time constraints, funding, and ties to climate provisions. States controlled by Democrats tend to include transition policies as part of climate packages due to their preexisting emphasis on climate policy. Republican-dominated states may be less willing to take on transition questions due to desires to preserve the coal industry or to aversion to creating new government programs. The need for bipartisan compromise for a transition policy to pass may result in more narrow policies rather than sweeping policy packages. Time and funding constraints can impair the chances of passing transition policy. Finally, the political benefits of linking transition provisions to climate policies may only accrue to one of the two policies: transition provisions can make climate policies more viable, but climate provisions can make transition policies more controversial.

Based on the state experiences described above, I propose hypotheses for each component of the MSF, outlined in Table 7.

Table 7: MSF hypotheses on coal transition policy process

MSF component	Hypothesis
Problem stream	- Transition policies are more likely to be considered by policymakers if states have a **greater number of coal facilities** or a **greater degree of economic dependence** on those facilities - Transition policies are more likely to be considered if **closure of coal facilities is imminent** - **Disagreement about the appropriate state policy response** to coal closure (e.g., continued desires to support coal rather than manage the decline) will impede consideration of transition policy
Policy stream	- Transition policies developed by **representative coalition or stakeholder processes**, particularly those that include **influential interest groups**, are more likely to be considered - Transition policy approaches that have **already been passed in other states** or countries are more likely to be considered
Politics stream	- Transition policies that **align with the majority party's policy priorities or ideological views** on the role of government are more likely to be considered - Transition policies in states with **liberal politics are more likely to be linked to climate provisions** - Transition policies in states with **conservative politics are more likely to be tailored to specific coal community and worker needs**
Policy window	- Policy entrepreneurs will more successfully bring their policies through the agenda window if they are **politically influential** (e.g., important interest groups or influential policymakers) - Policy windows are more likely to open with **new announcements of coal facility closure**, or with **policymakers' desire to pass new policies** that would result in plant closure - Transition policies that are supported by a **broad range of interest groups**, and that are not opposed by any uniquely influential interest groups, are more likely to pass - Transition policies that are supported by **politically influential policymakers** are more likely to pass - Transition policies introduced with **more time remaining** in legislative sessions, or **after past legislative attempts**, are more likely to pass - Transition policies that **do not require additional funding**, or whose proposed funding sources **do not receive significant opposition from interest groups**, are more likely to pass - Transition policies linked to climate policies are **only more likely to pass if policymakers in that state prioritize climate action**

9. Conclusion

As global carbon emissions continue to rise, the pace of economic transformation needed to achieve net zero emissions will only accelerate, which will intensify the social disruptions that result. Recent action by U.S. states to address the social impacts of coal decline can provide valuable lessons to other policy actors seeking to ensure an equitable distribution of costs due to decarbonization. This paper studied eight U.S. states that passed or proposed policies on a just transition for coal workers and communities.

By applying the Multiple Streams Framework to in-depth case studies of two states and to broader policy action in six states, I have helped answer the question: how does the process of developing transition policy affect U.S. states' ability to pass legislation on a just transition from coal? I find that states' ability to pass transition legislation primarily depends on:

- the nature of the problem, including the degree of coal dependence and the timeline of coal closure
- the formation of policy proposals, including the interest groups involved and the strength of coalition or stakeholder initiatives
- the politics of the state, especially the partisan affiliation of policymakers and their views on the need for climate policy or the role of government
- the negotiation of policies during legislative sessions, including time constraints of policymaking, the funding source for transition support, and the linking of transition and climate policies.

Through two in-depth case studies, I also address the question: how can Colorado and New Mexico's approach to transition policy contribute to our understanding of coal just transition policies? Colorado illustrates a case of policymakers planning for future coal closure to help achieve climate priorities, while New Mexico illustrates efforts to ease the impacts from already-announced coal closure. Colorado's debates over securitization and Office of Just Transition legislation illustrates the influence of interest groups in shaping policy content and outcomes. Interest groups were also highly influential in New Mexico, although the ETA process was significantly less contentions than Colorado's due to alignment of incentives among the utility, unions, and environmentalists. New Mexico's experience also illustrates the benefits of committed state policymaker leadership to ensure bill passage.

Throughout the paper, I employ the MSF to analyze state policies to answer the question: how can the MSF contribute to our understanding of the formation and enactment of coal just transition policies? The flexibility of the MSF has been useful to compare policy action across economically and politically diverse states to identify cross-cutting themes. This paper has used the MSF to advance hypotheses regarding the factors that shape coal transition policy development. However, the MSF fails to accurately capture transition policy processes in two ways. First, policy communities may

form only after agenda windows for transition policies open. Second, the MSF fails to account for groups that are targeted by transition policies but may not actively participate in the policy process. The needs and attitudes of these groups – in this case, coal communities – may be important to shape lawmaker's policy preferences and will be a central determinant of the effectiveness of any policies passed.

While the increase in recent state action bodes well for future efforts to address transition impacts, the ability of states to successfully achieve a just transition remains to be seen. The dearth of empirical examples of successful economic transitions is a major challenge for new policy development, particularly for industries that are as deeply entrenched as coal and fossil fuels. Future research can analyze the effectiveness of state policies to date, including which tools receive the greatest local buy-in and which enable the greatest long-term prosperity for workers and communities. For policy processes, future research could more closely examine whether transition policies improve the political prospects of climate policy, looking at why certain states were able to pass ambitious climate goals without including transition provisions, and which transition measures are most effective at garnering widespread support for climate action. Other research could take a more society-wide view of a just transition to see whether states are enacting policies that will provide a just transition for all, including remedying historical inequities in fossil fuel damages. Future research can build on the hypotheses generated in this paper about the factors that enable states to pass transition legislation.

Phasing out fossil fuels to avoid catastrophic climate change will be the greatest and most rapid economic transformation in human history. Climate advocates cannot afford for decarbonization policies to be derailed over concerns about their social costs – and can afford even less to risk locking in a system that reproduces historical inequalities. A just transition approach can help ensure that costs and benefits of decarbonization are evenly distributed, and create a truly sustainable future.

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Appendices

Appendix 1: Organization affiliation of interviewees

- BlueGreen Alliance
- Center for a New Energy Economy
- Center for a New Energy Economy
- Center for Energy and Environment
- Colorado AFL-CIO
- Colorado Department of Labor and Employment
- Colorado People's Alliance
- Colorado Senate
- Conservation Colorado
- Crest Policy Consulting
- Dine CARE
- Flaherty & Hood, P.A.
- Illinois Environmental Council
- International Brotherhood of Electrical Workers, Local 111
- JASenergies
- Just Transition Fund
- Just Transition Fund
- Minnesota Department of Commerce
- Minnesota Department of Commerce
- Minnesota Power
- Minnesota Senate
- Moffat County Board of County Commissioners
- Montana Environmental Information Center
- Natural Resources Defense Council
- New Mexico Building & Construction Trades Council
- New Mexico Energy, Minerals, and Natural Resources Department
- New Mexico House of Representatives
- New Mexico Indian Affairs Department
- New York Renews
- New York Renews
- New York Renews
- New York Renews
- Policy Solutions Institute
- Prairie Rivers Network
- Prairie Rivers Network
- Public Service Company of New Mexico
- Routt County Board of County Commissioners
- San Juan Citizens Alliance
- Sierra Club
- Sierra Club
- Sierra Club
- Tonawanda Town Board
- West Virginia House of Delegates
- West Virginia Rivers
- Western Clean Energy Campaign
- Western Environmental Law Center

- Western New York Area Labor Federation, AFL-CIO
- Western Resource Advocates
- Xcel Energy

Appendix 2: Base question set for interviews

Background
- Before we begin, could you provide an overview about your involvement with coal transition in this state, the areas or stakeholders you focus on, and how your work has evolved?
- How did the legislation progress from your perspective? What is the goal of this legislation, how did the idea behind this legislation begin, what were the major events that shaped the bill, and how did the content change?

Policy development
- Who was the first to call for transition? Whose idea was it to bring this up now? Where did the idea originate from?
- How did you decide upon this specific set of priorities to include in this bill? i.e., why these provisions, and why now?
  - o Were there any provisions that you would have liked to include, but didn't propose because you didn't think it was politically feasible to pass?
  - o Were there any provisions that you did propose, but were cut from the final product?
- Had there been previous efforts to pass just transition policy? If so, how did those efforts inform yours?

Policy negotiation
- How did you pick your legislative champion / how did you become the legislative champion?
- What education/outreach did you do among policymakers? What worked or failed in that?
- What were the other key groups involved in development of the state policy on just transition, either within the legislature, governor's office, or outside groups?
  - o What role did they play in efforts to create state policy on just transition?
  - o What were their priorities, and how did those priorities compare to yours?
  - o Were some groups more successful than others in getting their priorities written into law? Why do you think those groups succeeded?
  - o Which groups opposed this legislation, and for what reason? Why were they unsuccessful at blocking the legislation in the end?
- How did the following actors view this legislation: unions, utilities, environmental advocates, coal communities, the governor?
- What community outreach did policymakers conduct during or prior to development of this policy?

Politics and other barriers
- Do you think that transition policies make climate policies more palatable? And do you think that climate policies make transition policies more palatable, or more controversial?
- What's your hypothesis about what causes transition policies to succeed or fail?
- What factors do you believe were in place that enabled the bill to pass?
- What do you think would need to change for the provisions that were either cut or never introduced to be enacted?
- How have policymakers' understanding of transition evolved over time?

Impact and other takeaways
- Do you think this bill is sufficient to meet its stated goals? What next steps will be needed to achieve broader just transition objectives?

- What would you want actors in other states to learn from your experience? What should they avoid and what should they replicate?
- If you could do start from the beginning, knowing what you know now – what would you have done differently?
- Is there anything that I haven't asked you about that you want to discuss?