

**BEYOND THE CLIMATE SCIENCE WARS: ELITE FRAMING AND  
CLIMATE CHANGE POLICY CONFLICT**

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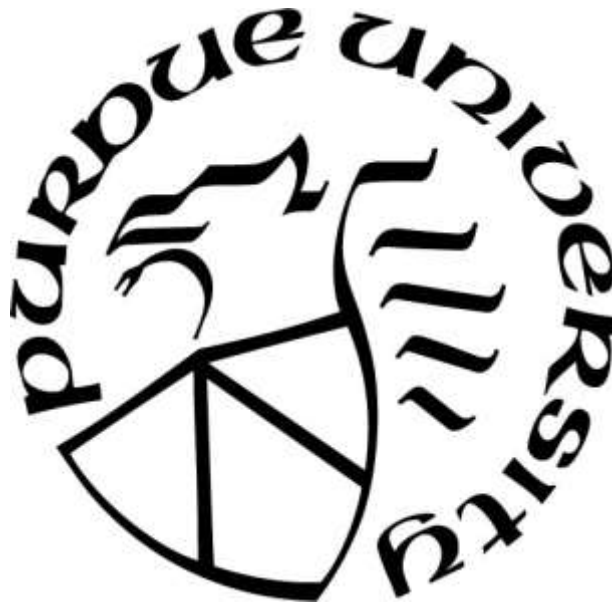
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*To Mumsey and Daddio.*  
“We do!”

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## ABSTRACT

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Title: Beyond the Climate Science Wars: Elite Framing and Climate Change Policy Conflict

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Stakeholders involved in debates around climate-energy policy shape public conversations through different “frames”: message units that strategically emphasize particular aspects of an issue while downplaying others. In this project, I investigate the presence of frames within climate change discourse and their political influence in the creation of climate-energy policies. Two types of frames are of particular theoretical interest: *science frames*, which highlight the scientific facets of the climate crisis, and *policy design frames*, which alternatively emphasize the non-climate impacts potentially arising from climate policies, such as economic and public health benefits or harms. Messages based on science frames have played a key role in climate change discourse, yet other scholarship argues that frames which avoid discussion of climate science, like policy design frames, may be more effective at building public support because they highlight the consequences of climate-energy policies that are more salient in peoples’ everyday lives. I explore these issues using qualitative content analysis to catalog the framing strategies of climate policy supporters and opponents. I then investigate the apparent influence of different frames in an on-the-ground case of subnational climate change policy conflict in action. Findings suggest that science frames may play a limited role when it comes to the development of actual climate policy at the state level, and importantly, that the strategic use of issue frames was able to level the playing field between environmental advocates and historically dominant industry actors. This work thus contributes to ongoing debates in the climate change framing literature by considering the “real world” of political communication coupled with an on-the-ground policy conflict.

## CHAPTER 1. INTRODUCTION

### 1.1 Framing the Climate Crisis

Issue frames are powerful tools used by policy elites for shaping narratives surrounding social problems while also suggesting the seemingly most-appropriate solutions to those problems. Indeed, framing research has played an important role in helping scholars make sense of how people “locate, perceive, identify, and label” (Goffman 1974) the world around them, especially in terms of how the public conceptualizes the most challenging policy issues of our day.

One such policy issue is the global climate crisis—a topic frequently polarized along partisan lines and characterized by antagonistic public discourse (Hart and Nisbet 2012; McCright and Dunlap 2011). Research has investigated which types of issue frames might be the most effective at generating public support for climate change and related energy policies. Existing scholarship has categorized climate change issue frames as belonging to one of three frame families: “science” frames, which draw attention to the quality of the evidence surrounding climate change, “climate impact frames”, which emphasize the consequences of climate change on human and ecological systems, and lastly, “policy design frames”, which highlight instead the various implications that climate energy policies would generate. Policy actors strategically draw on these different frame types to communicate their preferred narratives about the causes, consequences, and solutions to climate change as an issue.

As policy actors and scholars interested in climate change grapple with these strategic communication questions, certain frames have become of clear special interest. For example, one strand of debate within the academic literature has focused on the potential role of frames that emphasize the expert consensus around climate change. This body of work suggests that

consensus messaging can serve as a crucial “gateway belief.” in other words, when exposed to the frame, audiences are more amenable to acknowledging climate change as a genuine problem of concern, and in turn support political solutions to the issue. More specifically, the consensus of domain experts serves in this case as a heuristic shortcut to guide the beliefs of the public. Known as the Gateway Belief Model (GBM), this approach to engaging the public on climate change has become widely applied in climate change communication initiatives (van der Linden et al. 2015). Alternatively, other communicators stress the importance of messaging that takes into account the identities and values of specific groups within society—such as conservatives that might be predisposed to oppose climate policies, but who may be engaged instead by messaging that emphasizes small business success. Indeed, some work in this area contends that science frames can *increase* resistance to climate-energy policies (Pearce et al. 2017), a “boomerang,” or backfire effects that occurs when a motivated audience responds to a framing treatment in the opposite manner intended by the communicator (Zhou 2016). As such, how policy advocates and opponents frame climate change—and the effectiveness of those framing strategies—remains an important area of focus for ongoing policy and communication research, and the utility of science frames, in particular, is actively in debate.

However, much of our understanding around the use and presence of climate change frames comes from mass media content analysis, while our ideas about the effectiveness of frames for building climate-energy policy support arise from experimental work done in artificial settings. Surprisingly little is known about the presence of different issue frames in the communications of climate change policy leaders in the United States. Even more importantly, our understanding of climate change issue frames during real-world policy conflicts is limited.

This project contributes theoretically to these important questions by focusing on science frames. While science frames are central to heated debates within some climate framing and communications literature, previous work exploring the development of actual climate-energy policies has neglected almost entirely to ask specifically how these types of frames might shape policy outcomes. This is an oversight given the emphasis on science framing in climate change communication literature. As such, in this project I aim to bridge these bodies of work to begin bringing some clarity to the open question of if, when, and how discussions of actual climate science operate within policy arenas.

In this dissertation, I address these gaps by asking two main questions: First, *what issue frames do national-level policy actors use when communicating about climate change?* Secondly, *are these same issue frames also prevalent during a case of actual policy conflict, and what is the apparent political influence of different frames on policy outcomes?* Based on extant framing and climate change communication literature, I broadly hypothesize that science frames will be less widespread than other, non-science types of frames, and relatedly, that science frames will be less influential during an actual case of on-the-ground policy conflict.

This overarching hypothesis is first tested by using qualitative content analysis to investigate the publications of two comparable climate change policy actors during the same period: The Heartland Institute, a climate change policy opponent, and the Natural Resources Defense Council (NRDC), a policy advocate. In particular, I investigate the presence of science versus other, non-science frame types (such as climate change impact, public health, or economic frames, for example). In doing so, I quantify the range of issue frames used in contemporary climate discourse and generate a novel typology that captures this variation in both policy advocate and opponent communications. Findings from this work highlight how science-related

frames are *more* common in the Heartland Institute’s publications, and *less* common in the NRDC publications, as compared to other frame types. Relatedly, policy design frames—issue frames that draw attention to the various benefits a policy might generate—are the most common frame type in the NRDC publications.

In short, climate policy opponents like the NRDC emphasize policy design frames and climate impact frames over science frames. Partially, this can be explained by the high degree of expert consensus around the reality of anthropogenic climate change and its status as a “settled science”—in other words, NRDC writers can reasonably assume that this is a shared understanding amongst their audience. As such, the conversation can move past a discussion of the science and instead, focus on investigating the range of possible responses to the issue. This focus on policy frames can also be explained by the NRDC’s strategic goal of motivating audiences to take action in support of environmental policy initiatives. Given this, many of their publications follow a similar dynamic framing pattern: a climate impact “loss” frame that describes the consequences of the climate crisis, followed by a policy design “gain” frame outlining how a particular political solution would ameliorate the climate problem.

In contrast, climate change policy opponents seem to still in many ways be following the historical playbook of climate change skepticism: questioning the scientific reality of the climate crisis. However, in contrast to earlier work on climate change skepticism (e.g., McCright and Dunlap 2000), these findings show how Heartland’s more recent tactic focuses on undermining the researchers engaged in climate research as well as political actors, for example, who push for policy action. This approach deviates from the more “traditional” climate skeptic approach of arguing that climate change is not happening (Oreskes and Conway 2011). This shift may reflect some recognition from Heartland that the scientific uncertainty argument is a losing strategy, and

that public discourse has moved on to conversations about policy approaches and consequences. Similarly, it might be that shifting away from the most egregious science-denial frames may be an attempt to appease the partners or funders of the organization who find such anti-science messaging politically unpalatable (Worth 2018).

Building on these content analysis results, I next assess a recent case of Illinois climate-energy conflict: the surprising passage of the Future Energy Jobs Act (FEJA), an omnibus bill passed in December 2016. This heated debate over the future of the state of Illinois’s clean energy policy lasted for multiple years and involved a diverse range of stakeholders and several different competing bill iterations. Interestingly, policy actors throughout the case largely eschewed climate science frames, as well as any explicit public discussion of climate change more generally. In contrast, environmental advocates successfully used economic and consumer benefit frames to challenge historically dominant players in Illinois energy policy, and in doing so, achieved meaningful climate outcomes.

These findings across my empirical chapters are largely consistent with theoretical expectations about which frames are the most persuasive in building support for climate change policies, such as policy design frames that highlight *non-climate* gains from climate-energy policies (like consumer or health benefits), given their increased relevance to peoples’ everyday lives and priorities. Alternatively, science frames are potentially divisive for some audiences because they may induce contrast or “boomerang” effects—that is, policy positions or attitudes that are opposite from what the frame was intended to produce (Brewer 2002; Slothuus and de Vreese 2010; Zhou 2016).

In answering this study’s research questions, these results provide new data on the role of different framing strategies within climate change discourse in the United States. In particular,

my findings highlight the potentially decreased political utility of climate change science frames. Instead, we see how a climate-energy policy can succeed without needing to frame policies as having climate implications. This research project thus engages with the wider, timely debate on the efficacy of traditional science frames in shifting attitudes toward climate change, as well as exploring under-studied linkages between climate change communications strategies from key elites and to what extent such framing decisions are reflected in real climate-energy policy debates. Overall, this project generates novel findings that are central to the ongoing debate regarding science frames in the climate change framing literature and accomplishes these goals with a unique investigation into the “real world” of political communication and on-the-ground policy conflict.

## 1.2 Organization of the Study

My analysis continues as follows. In Chapter 2, I review the literature on framing, including prior work that has particularly focused on climate change as an issue. I aim to demonstrate how existing scholarship has neglected to investigate the actual framing strategies of climate change policy entrepreneurs in the United States, as well as the role of framing during on-the-ground policy conflicts. I also introduce and describe my typology of frame types, which is used throughout the rest of the dissertation, to assess frame prevalence in different settings systematically.

Moving into Chapter 3, I focus on the climate change framing strategies of the Heartland Institute think tank—a global leader in the proliferation of climate change skepticism. Using my typology, I assess the relative presence of science versus non-science frames within these publications. I expected that policy design frames would be more widespread than science frames, given recent work suggesting a diminishing emphasis on scientific uncertainty,



compared to a growing emphasis on the impacts of climate-energy policies. The findings indicate a surprising, continued reliance on science framing, but with a shift toward increased attacks on climate scientists and a spread of arguments about the impacts consumers would face because of new climate policies. As such, this research suggests a shift away from a simple “denial” of climate science, and toward messaging that is more salient to an audience’s immediate concerns as compared to previous forms of climate change skepticism.

Building upon my findings discussed in Chapter 3, in Chapter 4, I turn to the climate change framing strategies of the Natural Resources Defense Council (NRDC) with an assessment of the relative presence of science versus non-science frames. Again, I anticipated that policy design frames would be most widespread, as compared to science frames. Confirming this hypothesis, my findings indicate that policy design frames are the most prevalent, particularly frames that draw attention to a policy’s desirable economic consequences. However, science frames and climate change impact frames (which highlight the negative consequences of the climate crisis) were more common than would have been anticipated, given that existing framing research suggests negative frames are less effective than positive frames in soliciting some behaviors. In addition, a close assessment of the NRDC’s use of science frames demonstrates how the organization tends to only use these frames when responding to specific instances of climate change misinformation; for example, if the Heartland Institute had recently made public claims about the uncertainty of climate change science.

In Chapter 5, my research goes beyond that of many framing scholars to investigate not only *what* framing strategies are used by different political interests, but *how* these framing strategies may have influenced climate policy processes in practice. I investigate the prevalence and apparent influence of climate frames in the state of Illinois, which experienced tumultuous

climate-energy conflict throughout 2015 and 2016 over the state's use of renewable energy to reduce greenhouse gas emissions. I catalogue the framing strategies of different groups—state, non-state, and industry actors—as they battled over a series of competing bills. Working at the subnational level, I piece together a detailed causal story of how framing strategies shaped policy conflict outcomes. Again, I expected that science frames, as opposed to non-science frames like policy design frames, would be less widespread throughout the publications of the different groups. Relatedly, I expected that interviews with group representatives would indicate a strategic emphasis on policy design frames as part of a deliberate framing strategy, and that science frames would be less politically influential in final policy outcomes. Confirming these expectations, my findings from this chapter demonstrate how science frames played a minimal role in the public materials of actors engaged in this policy conflict and in shaping the final policy. Instead, stakeholders consistently framed their own and opposing policies in economic terms—all the while staying silent on the science.

Lastly, I close in Chapter 6 by recapping my major findings, and also discuss the practical and theoretical implications of these results. I argue that the utility of science framing “in the trenches” may be limited—and indeed counterproductive—in certain cases, and in doing so highlight the need for increased attention on the role of frames within actual policy processes.

## CHAPTER 2. FINDINGS FROM PRIOR STUDIES

### 2.1 Introduction

In the following sections, I outline prior scholarship on framing and climate change policy. I first introduce framing as a theoretical framework, and describe my two broad frame types of interest in this study—science frames and policy design frames. I then summarize findings from the literature that suggests which frame type might be the most politically effective at generating support for climate-energy policies.

### 2.2 Frames and Framing Effects

As one leading definition describes, “a frame is a central organizing idea for making sense of relevant events and suggesting what to do about them” (Gamson and Modigliani 2002, 57). In other words, a frame is a specific visual, written, or verbal message unit that strategically emphasizes certain aspects of an issue while downplaying others, with the intention of influencing how people perceive of that issue or situation. Framing theory suggests that how an issue is characterized will powerfully shape the way it is interpreted and understood by its audience, as well as shaping perceptions around which actors should be held accountable for problems and what the most appropriate solutions to a problem might be. Much as one might frame a picture to draw attention to particular elements of the image over others, one can also “frame” an issue to privilege certain cultural narratives and storylines. In doing so, frames define problems and “diagnose causes [...] make moral judgments [...] and suggest remedies” (Entman 1993, 52). Importantly, this three-stage process of diagnosing problems, making judgments, and suggesting remedies can be either explicit or implicit. For example, a text that comprises a frame

does not need to state a proposed remedy to an issue directly, but might only imply a general, appropriate course of action.

As such, framing theory revolves around the process by which individuals attempt to interpret and make sense of the world around them (Goffman 1974) and highlights the process by which people “develop a particular conceptualization of an issue or reorient their thinking about an issue” (Chong and Druckman 2007b). Frames are generally perceived as appearing in two incarnations: *frames in thought and frames in communication* (Chong and Druckman 2007b). Frames in thought describe how people process and interpret information individually and think about an issue. Alternatively, frames in communication, sometimes also known as issue frames, refer to the persuasive and strategic choices made by political actors’ intent on shaping the boundaries of political communication around a certain issue. The impacts of these kinds of strategic framing endeavors are known as framing effects (Chong and Druckman 2007b). Thus, a frame in communication can shape an individual’s frame in thought. The framing effect specifically occurs when a message about an issue changes an individual’s attitude toward that issue—most specifically, by adjusting the relative weight given to competing considerations around a topic (Chong and Druckman 2013).

The conceptualization of frames in this project aligns with other framing research where a frame is understood not as a “fact” but more akin to a persuasive argument. As Bolsen and Druckman (2015) point out, “frames are distinct from facts insofar as they prioritize a consideration that may—but need not—include factual content. Although frames sometimes include factual content, in practice, most frames are ‘fact-free’ (i.e., do not report a verifiable and reproducible observation stemming from the scientific method).”

Some foundational framing research in political communication describes how issue frames “act like plots or storylines” regarding an issue to shape the frame recipient’s opinion (Nelson, Clawson, and Oxley 1997). For example, Nelson, Clawson, and Oxley (1997) demonstrate how a Ku Klux Klan rally is variably tolerated by the public depending on whether the rally is framed as an issue of public order or as an issue of free speech. Similarly, Druckman and Nelson (2003) describe an issue frame as emphasizing “a subset of potentially relevant considerations” around a particular issue in order to shape public opinion.

Besides work investigating the use of specific frames as related to distinct policy topics, research has also explored various elements of frame delivery, such as frame strength (Chong and Druckman 2007a) or the lasting power of frame effects through time (Lecheler and de Vreese 2011), among other elements of framing in action.

Some framing work has more explicitly emphasized the psychological mechanisms that underlie framing effects. Importantly, frames differ in their effects on various audiences, especially depending on an individual’s particular beliefs and values. For example, peoples’ reasoning processes tend to be driven more by “directional” goals, as opposed to “accuracy” goals (Kunda 1990). That is, people are driven to follow self-serving lines of reasoning that allow them to process and interpret new evidence in a way that remains consistent with their prior beliefs. The idea of “cognitive load” is a helpful way of conceptualizing this activity. For example, processing incongruent information, such as a *positive* fact about a disliked presidential candidate, or a *negative* fact about a preferred political candidate, for example, requires greater cognitive effort (Redlawsk 2002). More simply, people who encounter incongruent information tend to “explain away” information that fails to conform with their prior beliefs, since this strategy offers a less arduous mental burden.

As such, beliefs are often counter-intuitively strengthened by exposure to arguments that challenge them: we tend to apply greater scrutiny to ideas that seem incongruent with the ideas we already have, while easily accepting arguments that confirm our prior beliefs (Braman et al. 2015; Hart and Nisbet 2012; Taber and Lodge 2006). This is especially true for people who are more invested in a given subject, as well as individuals who have greater factual knowledge about an issue (Bolsen and Druckman 2018; Kahan et al. 2012). Known as a backfire, “boomerang,” or contrast effect, this phenomenon predicts that individuals holding prior strong attitudes will become more extreme and fixed in their beliefs when faced with information that challenges them (Chong and Druckman 2007b; Hart and Nisbet 2012; Taber and Lodge 2006).

An important element of contrast effects is to recall that peoples’ identities are powerfully influenced by their broader social contexts. Thus, individuals tend to endorse positions that reinforce their group connections, particularly to those with whom they share important commitments (Kahan et al. 2012), as well as the cues received from key thought leaders within those social contexts. Indeed, Slothuus and De Vreese (2010) demonstrate the importance of partisan sponsoring of frame conditions and draw on motivated reasoning as the mechanism through which partisan framing effects operate. This kind of heuristic shortcut is understandable in an information-rich world where individuals rarely have time or resources to assess every issue relevant to their lives independently. In this way, political elites join the chorus of actors who signal “appropriate” attitudes and beliefs to their respective audiences.

### 2.3 Framing and Climate Change

These kinds of contrast effects are an important part of climate change discourse in the United States, especially in terms of partisan differences. Research has consistently indicated that

the American political atmosphere is increasingly polarized along partisan lines (Abramowitz and Saunders 2008). The public discourse surrounding many environmental issues proves no exception to this wider trend. When it comes to climate change, public opinion polling shows substantial differences between Republican and Democrat attitudes (Kiley 2015). For instance, as reported in Dunlap, McCright, and Yarosh (2016), Gallup research from 2016 suggests that partisan polarization around climate change has grown since 2008. For example, 76 percent of Democrats agree that climate change is currently underway, as opposed to 42 percent of Republicans—a 34 percentage point difference. Likewise, 84 percent of Democrats believe that climate change is the result of human activities, as compared to only 43 percent of polled Republicans (a percentage point difference of 41).

A wide range of public opinion, framing, and experimental work similarly demonstrates that Republicans and Democrats have very different beliefs about the reality of climate change and the importance of policy action. Indeed, political party affiliation is one of the most reliable indicators of an individual's beliefs on climate change (Hoffman 2011; McCright and Dunlap 2011). Such polarization is seen as a major obstacle for the development of progressive climate policy in the United States, given that polarization is characterized by a decreased willingness for political compromise and subsequent increases in policy gridlock (Political Polarization in the American Public 2014). In terms of climate change policy, partisan polarization exacerbates an aggressive and complex framing environment where “skeptics” and “warmists” attempt to make their conceptualizations, or framings, of climate change dominant throughout public discourse.

As such, research has demonstrated that framing can be influential at shaping perspectives on climate change and support for renewable energy policies, as well as in other cases of environmental and resource extraction issues. As Mossler et al. (2017, 64) note, frames

“typically emphasize particular aspects of climate change, like causes or effects, in order to highlight an appealing outcome (e.g., support for mitigation policy).” Indeed, work on climate change discourse has identified strategic issue framing as influential in shaping public attitudes toward climate-energy policy choices (Scannell and Gifford 2011; Spence and Pidgeon 2010; Wiest, Raymond, and Clawson 2015), as well as in the actual outcomes of policy decision making, such as the adoption or failure of specific pieces of policy (Rabe and Borick 2012; Raymond 2016; Skocpol 2013). Other research more generally investigates variation in effects based on frames that highlight potential gains or the avoidance of potential losses posed by climate change or by climate change policy (Bailey 2010; Bertolotti and Catellani 2014; Gifford and Comeau 2011).

Prior scholarly work has investigated the prevalence of climate-related frames in a variety of communication contexts, both regarding the actors who support climate change action and those who oppose it. The earliest research on climate change framing initially focused on categorizing and assessing frame types, and work of this nature continues to flourish. Scholars have turned their attention to a wide range of media and communication settings: newspapers and print media (Antilla 2005; Boykoff and Boykoff 2004; Carvalho 2007; Trumbo 1996; Weathers and Kendall 2015), opinion pieces and editorials (Elsasser and Dunlap 2013; Hoffman 2011; Young and Dugas 2011), television and radio (Boykoff 2008), social media, blogs, and online forums (Koteyko, Nerlich, and Hellsten 2015; Sharman 2014), think tanks and other non-governmental organizations (Boussalis and Coan 2016; McCright and Dunlap 2000), as well as intergovernmental bodies (O’Neill et al. 2015).

Much of this work reinforces that messaging related to the scientific and factual realities of climate change have traditionally been one of the most prevalent frame types within climate



discourse in the United States, with both supporters of climate change policy (van der Linden et al. 2015) as well as its outspoken opponents (Boussalis and Coan 2016; McCright and Dunlap 2000).

## 2.4 Science Framing in Climate Change Policy Opposition

Empirical work on the different frames used specifically by climate change opponents dates back to the 1990s, with the work of McCright and Dunlap (2000) serving as an important early investigation. Applying qualitative content analysis to 224 conservative think tank publications produced between 1990 and 1997, McCright and Dunlap describe the specific “claims” used by the conservative movement to oppose policy actions, where their use of the term “claim” maps well onto the idea of frames used in subsequent research. The authors found that anti-science claims challenging the scientific evidence for climate change were most common in their sample, appearing in 71% of all of the documents analyzed. At the same time, they also found a high percentage (62%) of documents with messages that focused on the harms caused by climate policies.

McCright and Dunlap also found important variations in these anti-science frames. The most common anti-science frames in their data from the 1990s related to the *uncertainty of climate change science*, which appeared in 62.9% of their sampled documents. The next most frequent science frame in the McCright and Dunlap study was the notion that climate change itself was *a myth or scare tactic*, one produced and perpetuated by environmentalists and bureaucrats, which appeared in only 18.3% of the documents they reviewed. Rather than stressing scientific uncertainty, this frame raised the more serious possibility of scientific and bureaucratic misconduct. Finally, they also looked for the prevalence of science frames

portraying climate change as *beneficial in different ways for human society* but found relatively few examples of these arguments.

In terms of the policy frames that McCright and Dunlap identified, the most common frame by far articulated general concerns about a climate policy's *harm to the economy*. This frame appeared in 58% of the documents in their sample, while the next most common policy frame, focusing on a policy's *threats to sovereignty* and concerns about *government overreach*, was present in just 4% of their sample. Their findings indicate that frames stressing scientific uncertainty and the general economic impacts of climate policies were initially both integral framing strategies of conservative think tanks publishing on climate change.

Other studies on climate opposition framing also emphasize the importance of frames stressing scientific uncertainty. Oreskes and Conway (2011) describe how climate policy opponents became “merchants of doubt” about climate science, trying to raise enough uncertainty to derail policy actions. Indeed, numerous studies cite the importance of a “denialist” strategy of creating uncertainty about climate science, documenting the appearance of scientific uncertainty frames in a wide range of media types (Antilla 2005; Carvalho 2007; Gavin and Marshall 2011; Hoffman 2011; O'Neill et al. 2015; Sharman 2014).

More recently, Boussalis and Coan (2016) used quantitative text-mining to identify 47 different topics in more than 16,000 documents from conservative think tanks opposed to climate policy over a 15-year timespan, from 1998-2013. They find that science topics were more common over this time frame than policy topics, and that think tanks in their sample increased their discussions of the uncertainty of climate science from 2008 to 2013, leading them to conclude that “denialism” focusing on scientific uncertainty remained important in organized climate policy opposition over this time period. Collectively, this research shows how portrayals

of climate change science as “uncertain” have long been a mainstay of organized climate change policy opposition.

This question of the public’s understanding of scientific consensus (and the consequences this poses for policy support) is particularly timely considering how many pressing social challenges experience a “consensus” or “knowledge” gap within the minds of the public (Plumer 2013). This term is used to describe the inconsistency between actual expert and scientific consensus around an issue versus the public’s perception of that scientific consensus and expert agreement. Such a gap has been shown to exist within the public perceptions of several different social issues besides climate change, such as vaccinations, nuclear energy, and genetically modified food products, for example.

This public misunderstanding of scientific consensus becomes of particular concern because policy support is difficult to cultivate when an issue is not recognized as a real and pressing problem. In climate change policy, this gap arises in large part from the strategies of actors who have a vested interest in stalling political action—such as fossil fuel interests, conservative think tanks, and others—who have deliberately undermined the development of meaningful climate change policy by promulgating “anti-science” or scientific uncertainty frames.

How should climate communicators address the consensus gap and the deliberate misinformation that perpetuates it? One approach, known as the Gateway Belief Model (GBM), has been adopted by some researchers and communicators. The GBM is a descriptive model that illustrates how peoples’ climate change opinions and attitudes might change. Most broadly, the GBM draws on the idea that an individual’s views about an issue are influenced by their

understanding of how *certain* or settled the science surrounding the issue might be (van der Linden et al. 2015).

The GBM itself describes a two-stage process. First, a “debiasing” step communicates to the public the extensive scientific agreement around an issue. Secondly, this change in perception instigates a series of other belief changes around the issue: in terms of the climate crisis, these changes include concern about the issue, belief in human causation, and support for political solutions (van der Linden, Leiserowitz, and Maibach 2019). In other words, belief in the scientific consensus of climate change is the important “gateway” for a series of other beliefs that directly link to support for action on the issue. As van der Linden and colleagues (2015) note, the consensus of domain experts thus serves as a heuristic shortcut which can powerfully shape the beliefs of the public.

Advocates of the GBM contend that a strength of the model is how it operates as a non-persuasive communication technique: that is, it supposedly only states the recognized scientific consensus around global anthropogenic climate change, without suggesting specific and necessary courses of policy action, and in doing so, would avoid inducing counterproductive contrast effects (van der Linden, Leiserowitz, and Maibach 2019). Somewhat relatedly, the model is also potentially powerful because it operates by adjusting peoples’ perceptions of group norms, as opposed to directly confronting individually-held beliefs or ideological tenets that tend to be more resistant to change. In comparison, people feel a strong motivation to align with group norms (Tankard and Paluck 2016) making this an easier avenue for facilitating policy support as the crucial, second-order consequence of the consensus message. If we understand consensus messaging as a type of frame—a message unit that highlights specific aspects of the climate issue, while downplaying others—this raises the question of in which context consensus

messaging (and science framing more generally) would be more or less effective at soliciting support for climate policies.

A range of recent studies provides empirical support for the GBM, even among conservative partisan groups who would be more likely susceptible to contrast effects. For example, several existing studies show that emphasizing scientific consensus around climate change has a depolarizing effect (Deryugina and Shurchkov 2016; Lewandowsky, Gignac, and Vaughan 2013; Myers et al. 2015; Rolfe-Redding et al. 2012). More modestly, other work suggests that consensus messages have a generally positive effect while leaving existing political differences unchanged (Bolsen, Leeper, and Shapiro 2014; Ding et al. 2011).

Despite how advocates of the GBM focus on correcting scientific misinformation as a means of building supporting for climate policy, other studies suggest that scientific frames should be on the decline more broadly within the wider climate crisis discourse. As evidence for climate change accumulates and becomes reported as “settled science” in the broader media (Young 2013), climate policy opponents may face new challenges to using uncertainty frames. Mass media content analysis has likewise demonstrated substantial changes over time in how climate change topics are covered by mainstream media. As Boykoff (2007) points out, over 96% of climate change coverage in leading American newspapers attributed climate change to human activities, consistent with the scientific consensus. This trend may even be apparent in newer interactive forms of social media, such as Twitter. For example, in their study of climate-skeptic Tweets related to Hurricane Sandy in 2012, Jacques and Knox (2016) find that climate change skeptic discourses tend to emphasize climate politics over science. Indeed, McCright and Dunlap (2003) note that climate knowledge has transitioned from a “frontier” to a “core” science, as described by Cole (1992). In other words, as evidence describing the existence,

causes, and consequences of climate change has gradually solidified since the early 1990s, organized climate change policy opposition may be forced to abandon some anti-science frames citing “uncertainty” and turn to new framing strategies as a means of delaying regulatory action.

In addition, besides just being less widespread in various publications, other studies suggest that science and climate change skeptic scientific misinformation frames may also be less politically important than they once were. Recent studies in psychology have documented how beliefs about ideology and policy are a key determinant for acceptance of climate science, rather than the other way around (Campbell and Kay 2014; Hart, Nisbet, and Myers 2015; Hennes et al. 2016). This perspective has led some scholars to call for movement away from a focus on better public understanding of climate science as the key to making greater progress on climate policy (Carmichael and Brulle 2017; Kahan 2015; Pearce et al. 2017).

Some research has questioned the ability for science frames to meaningfully overcome polarized beliefs (Kahan 2015). For example, research investigating changing opinions on genetically modified organisms found that scientific consensus frames produced very limited attitudinal shift amongst audiences that held views most incongruent with that of the expert consensus (Dixon 2016). In exploring how people form opinions around new technologies, and the role of factual information in shaping those perceptions, Druckman and Bolsen (2011) suggest through experimental work that factual information and science frames elicit attitude polarization and motivated reasoning, especially when individuals have pre-established opinions. Likewise, Hennes et al. (2016) find that the delivery of factual climate change information is not effective in shifting the climate change attitudes of certain cultural groups, while other research has demonstrated that individuals with the highest levels of technical and scientific reasoning

exhibit the most severe contrast effects and negative attitudes toward climate change actions (Kahan et al. 2012).

Some existing research has also specifically challenged the accuracy of the GBM, leading to ongoing academic debates. Most fundamentally, these critiques question whether different ideological groups uniformly use scientific consensus as a heuristic cue for shaping their own beliefs. In the case of climate change, this specific concern has to do with whether conservative partisans who are predisposed to challenging climate change would still value conformity with climate experts. As noted previously, exposure to a climate science or consensus message frame may elicit a “backfire” or contrast effect among these members of the political spectrum, and in doing so further stymie public support for climate policy actions.

As such, opponents of the GBM contend that the model is naive in its assumptions that people will support climate change policy upon becoming better-informed about climate change science (that is, by “closing” the consensus gap). For example, Kahan, Jenkins-Smith, and Braman (2011) argue that, according to the GBM, concern over climate change should be positively correlated with science literacy. Through a large representative sample of U.S. adults, the authors find instead that individuals with the greatest levels of technical reasoning and scientific literacy did not report the highest levels of climate change concern. They suggest that discord around climate change policy arises instead from the conflict between distinct cultural worldviews. Similarly, prior work has also investigated the role of consensus messaging in the context of genetically modified organisms and found that pro-consensus treatments did not decrease participants’ concerns about genetically modified organisms (Landrum, Hallman, and Jamieson 2019).

Indeed, Pearce et al. (2017) argues that emphasizing expert consensus misunderstands how scientific understanding shapes policymaking. As they note, “focusing on consensus amongst experts as a route to policy progress misunderstands the role of scientific knowledge in public affairs and policymaking” (723). As such, the role that consensus messaging and science frames play in climate discourse remains unsettled.

## 2.5 Benefits and Burdens: Economic and Public Health Policy Design Frames

Beyond frames that draw attention to the scientific reality or details of climate change, other frames might focus instead on the potential benefits or burdens associated with how policies are designed and implemented. Two of the most notable such frames are economic messages, as well as those that focus on public health considerations.

Economic frames highlight the financial consequences that policies could potentially generate, especially economic frames that describe costs to consumers and the economy (as opposed to costs borne by industries, for example). Research indicates that such economic frames are influential at shaping public sentiment and support for renewable energy policies (Boyd, Liu, and Hmielowski 2018; Harrison and Sundstrom 2013) and that personal financial costs may be one of the public’s highest concerns when it comes energy discussions (Bessette and Arvai 2018). Through experimental state-level survey work, Stokes and Warshaw (2017) find that respondents’ support for renewable energies is tied closely to perceived changes in their electricity bills, as well as perceived opportunities for job creation. Importantly, other work has suggested that these frames can help build support for climate-energy policies across political ideologies (Bain et al. 2016)



Equally, policy design frames have been politically influential in several recent climate policy conflicts. Raymond (2016), for example, finds that frames supporting public ownership of the “atmospheric commons” were a vital factor in the design and enactment of the Regional Greenhouse Gas Initiative (RGGI), a climate policy adopted by ten northeastern states in the U.S. in 2008, as well as in policy conflicts over the European Union’s ETS and Australia’s Carbon Pollution Reduction Scheme. In the case of the RGGI, auction revenues were explicitly linked to climate change mitigation efforts, as well as to concrete benefits for consumers and citizens that were both environmental and economic in nature. In addition, Skocpol (2013) attributes the failure of the American Clean Energy and Security Act in 2010 to economic frames, promulgated by bill opponents, which argued that the bill would create financial harm for the middle-class. Likewise, Stokes (2013) demonstrates that perceived economic impacts on consumers can seriously undermine public support for renewable energy policies. Part of this shift from scientific to policy design frames, especially those focusing on economic benefits, is related to the growing participation of subnational actors in shaping climate-energy policies. For example, Rabe (2008) notes that as U.S. climate policy becomes increasingly state-driven, governors consistently cast climate-energy policies as central to states’ long-term economic self-interest. Other research on recent climate policy also stresses the importance of economic, rather than scientific, messages in climate policy debates in several nations (Borick and Rabe 2010; Harrison 2012; Jevnaker and Wettestad 2017; Rabe 2016). Overall, this body of scholarship shows how important financial cost frames are when it comes to building and sustaining public backing for climate-energy policies.

Besides these economic frames, prior studies also highlight the potentially persuasive role of public health benefit framing, especially when it comes to messages that describe how policies would decrease the air pollution associated with burning fossil fuels (Scannell and Gifford 2011; Spence and Pidgeon 2010; Wiest, Raymond, and Clawson 2015). Mossler et al. (2017) find that

an air pollution mitigation frame generated the highest levels of policy support, across demographic groups, as compared to four other frames—climate change, global warming, ocean acidification, and carbon pollution. Similarly, Stokes and Warshaw (2017) suggest that messaging around the reduction of air pollution is only slightly less influential at increasing support for renewable energy policies as compared to frames describing job creation. Other recent framing work also provides compelling evidence that messaging focused on public health benefits can lead to increased support for climate policies (Myers et al. 2012; Walker, Kurz, and Russel 2018).

## 2.6 Making it Relevant and Personal? Policy Design versus Science Framing

In this section, I bring together research on both science and policy design frames, describing why we would expect science frames to be less politically effective than certain policy design frames—and in addition, why science frames would be not only less effective, but something actors may seek to avoid actively because they may be detrimental to building policy support. The puzzle of “which frame, when, and to whom” is in many ways the central question underlying framing research. As Feldman and Hart (2018) note, in the case of subnational climate policy, this question might be if and under what conditions policy advocates should openly link energy policies to climate change—thus incorporating science messaging—as opposed to focusing instead on the more potentially salient and immediate benefits, such as economic and health impacts, that renewable energy policies entail. Indeed, framing a policy in terms of climate change generally entails using science frames that emphasize the reality of the climate crisis, and the negative consequences it poses for the earth and human well-being.

In contrast, framing a climate-energy policy in terms of renewable energy opportunities means accentuating policy impacts that tend to be more immediately salient to the public, or at minimum, specific segments of the public. Prior research suggests that framing which emphasizes renewable energy development is more successful at generating public support, and thus buy-in from elected officials responding to their constituents' concerns, than framing that highlights climate change (Hamilton et al. 2018). More specifically, some work shows that initiatives emphasizing economic development goals for the growth of renewable energies tends to avoid partisan polarization, suggesting that focusing on renewable energy goals “appears to offer modest opportunities” in building policy success (Hess and Mai 2015, 5).

As much of this research highlights, actors do not uniformly absorb a frame's message; rather, the impact of a frame can be considerably influenced by the predispositions of the receivers (Clawson and Waltenburg 2003). This extensive scholarship has demonstrated how individuals assess framing messages through the filters of their value systems and prior knowledge (Brewer 2002) and that framing and political world views interact (Lachapelle, Montpetit, and Gauvin 2014). The clear implication of this for messaging around environmental issues is that diverse demographics interpret frames in different ways, reinforcing classic communication adages to know one's audience (Andrews et al. 2016).

Relatedly, other work describes the political importance of strategically *avoiding* frames that induce motivated information processing and contrast or “boomerang” effects (Zhou 2016). For example, when categorizing state behavior toward enacting climate change policies, Rabe (2004) describes one form of state action as the “stealth” state: subnational units that enact climate-friendly policies without ever advertising that they are doing so. Actors in these states use targeted framing approaches to build public support for their policies, strategies that may

indeed be crafted with an understanding that climate change is real but are framed and championed with careful attention to the economic and political realities of the state.

For example, subnational climate change action has been perhaps unexpectedly successful because policy discourse at the state level sidesteps climate change discussions that could become as contentious and polarizing as those taking place in national and international arenas (Rabe and Mills 2017). Similarly, investigating the votes of state legislators on natural gas bills, Kalaf-Hughes and Kear (2017) find that hydraulic fracturing policies which were framed as “win-win” for both the environment and the economy were able to generate effective bipartisan support, further highlighting the powerful role that frames can play in shaping policy outcomes. Other research finds that Republican partisans demonstrate lower support for policies when they are framed as being about climate change, as opposed to national security and air pollution (Feldman and Hart 2018b) or even renewable energy (Hamilton et al. 2018). The important point here is that variation in framing effects is not always about the saliency of personal benefits created by climate-energy policies, but rather has to do with broader social issues that resonate with the priorities of certain subcultures as a group, such as conservatives.

Indeed, as other scholars have argued, the “misinformation surplus/information deficit” perspective might misunderstand the current nature of opposition to climate change policies, which is more aptly understood as cultural differences in how information is processed and assimilated. As Pearce et al. (2017) contend, making science central to communication efforts also makes science a politicized target, thereby “place[ing] science in the firing line of those who would oppose particular climate policies,” concerns which have been confirmed in recent research on trust in science and scientific expertise in the United States (Motta 2018). Likewise, recent experimental evidence suggests that emphasizing scientific agreement amongst experts

does not necessarily “neutralize” motivated information processing around contentious political issues (Dixon and Hubner 2018).

In sum, a range of research suggests that despite substantial work on the effects of frames on individual attitudes about climate change and climate policy, we have less data on how frames have affected actual climate and energy policy choices in practice. Notably, little work has explored the presence or influence specifically of climate science frames within the policy-making process. In this respect, we might intuitively expect science messaging to play a key role since actors are more incentivized to address an issue once it becomes conceptualized as a problem. Consistent with some of the psychological and experimental work on public opinion, the limited existing case study work suggests that economic and public health frames may be more important than science-based frames in getting a new policy enacted. This is because many such economic and public health frames highlight positive implications of climate-energy policies that are more immediately tangible in peoples’ day-to-day lives, versus the perceived distance of climate change as an issue. Also, framing strategies that avoid explicit discussion of climate change or climate change science may successfully sidestep the generation of contrast effects, where a framing treatment induces the *opposite* outcome of what it aims to accomplish. For example, an individual who believes that climate change science is “junk” may double-down on that perspective when faced with climate change science frames contending that the research is sound. This general rationale informs my dissertation hypotheses.

## 2.7 Hypotheses

Based on the literature described in the previous section, I next outline my expectations for this dissertation. These hypotheses draw on work from psychological sciences, as well as limited

case study research, which suggests that people tend to be motivated by more immediate and salient issues such as the price of energy and public health implications. Also, these kinds of framing strategies avoid potential backfire effects sometimes associated with climate change science frames. As such, we should expect to see stakeholders mirroring these trends by communicating in strategic ways that they understand as resonating most effectively with their audiences; in other words, increased use of non-science frames.

In general, across all three of my empirical chapters, I propose:

**H<sub>1</sub>:** Policy design frames will be more common than science frames. Relatedly, and following these trends, I expect that:

**H<sub>2</sub>:** Policy design frames will most often focus on tangible costs to consumers, such as economic frames, as compared to other policy design frames. Lastly, in Chapter 5, while investigating an actual case of climate-energy policy conflict, I additionally anticipate that:

**H<sub>3</sub>:** Science frames will not only be less prevalent but potentially show less political influence in shaping final policy outcomes.

In short, I test three related hypotheses about the prevalence of different frames across a range of climate change policy opponents and supporters. With these hypotheses, I engage with ongoing debates about science frames, but also topical issues in opinion formation and policymaking research more broadly.

## 2.8 Typology of Climate Change Frames

In this section, I describe the typology of frames that I use to test my range of hypotheses. The pioneering analysis of McCright and Dunlap (2000) served as the initial starting point for the development of this typology. In their pioneering work, the authors attempt to make clear the

range of deliberate and systematic ways that conservative think tanks challenge the reality and urgency of anthropogenic climate change. Their definition of a “claim” follows the idea of a “frame” from Snow and Benford (1988) in that a frame helps to “locate, perceive, identify, and label” (Goffman 1974, 21) events or issues, with an emphasis on how this reordering and organizing suggests specific beliefs, actions, and interpretation on the part of actors immersed within a wider community. As such, although McCright and Dunlap predominantly use the language of “counter-claims” rather than “frames,” their discussion indicates that the kinds of statements they analyze are equivalent to the idea of an “issue frame” as used in this current study; that is, statements emphasizing a particular aspect or “storyline” within the broader climate change debate.

In their study, McCright and Dunlap (2000) survey the “echo chamber” at its source: the output of conservative think tanks between 1990 and 1997. The authors identified three major counter-claims that challenge global warming’s “legitimacy as a social problem.” These major claims are 1) that the evidence for global warming is weak or entirely wrong, 2) that the overall effect of global warming would prove beneficial, and 3) that political action to mitigate the supposed outcomes of global warming would do more harm than good.

While building off of this earlier research, my framing typology differs in several important ways from McCright and Dunlap’s work. First, I include many new frames in my typology, including detailed “sub-frames” that indicated a distinctive variation on a primary frame. This level of detail was not included in McCright and Dunlap’s work and crucially allows for a more fine-grained assessment of frame type, while still staying true to the three major frame “themes” that the authors identified. These new frames were based on more recent work on climate-energy policy framing, or were inductively generated during my process of assessing

pilot data for each empirical chapter. Secondly, McCright and Dunlap's original typology was only used to review the messaging strategies of climate change policy opponents, specifically, a range of conservative think tanks that were actively involved in disseminating climate skeptic materials throughout the 1990s. Using this as a starting point, the current typology has been adopted as a tool for interrogating the framing choices of both climate policy supporters as well as opponents. As such, each frame in the typology has a "pro" or a "con" variant to indicate the two sides of the same conceptually-consistent frame.

Building upon McCright and Dunlap's earlier work in these ways, I thus categorize frames as belonging to one of three broad frame families, consistent with the meanings of their original typology: (1) *science frames*, messages that promote or oppose climate policies based on scientific information around the changing climate, (2) *climate impact frames*, which justify or oppose a policy based on current or future projected impacts from climate change itself, or (3) *policy design frames*, which highlight the range of benefits and burdens that could be created by climate-energy policies in promoting or opposing them (see Table 2-1).



Table 2-1. Complete typology of climate change supporter and opponent framing strategies.

<b>Science Frames</b>
<i>Climate policies should be supported/opposed because the evidentiary basis of climate change is robust and accurate/weak and incorrect.</i>
<b>S1</b> The scientific evidence for climate change is <i>clear and certain/complex and uncertain</i> .
<b>S2</b> Mainstream climate science has <i>integrity and is not junk science/does not have integrity and is junk science</i> .
<b>S3</b> Climate change science is <i>misused for ideological and personal gain</i> .
<b>Climate Impact Frames</b>
<i>Climate policies should be supported/opposed because climate change would generate negative/positive impacts.</i>
<b>I1</b> Climate change would impact/improve <i>human quality of life and health</i> .
<b>I2</b> Climate change would impact/improve <i>agriculture and the environment</i> .
<b>I3</b> Climate change would impact/improve <i>economic systems</i> .
<b>I4</b> Climate change would have <i>national security implications</i> .
<b>Policy Design Frames</b>
<i>Climate policies should be supported/opposed because climate change policies would do more good than harm/more harm than good.</i>
<b>E1</b> Policy would help/harm <i>consumers financially</i> .
<b>E2</b> Policy would help/harm <i>the economy</i> at the state or national level.
<b>SL</b> Policy would foster/threaten <i>state leadership</i> .
<b>EN</b> Policy would help/harm <i>the environment</i> .
<b>RE</b> Policy would generate <i>reliable/unreliable energy systems</i> .
<b>SE</b> Policy would foster/threaten <i>national security</i> .
<b>SO</b> Policy would foster/threaten <i>national sovereignty</i> .
<b>ME</b> Policy would have a <i>measurable effect/no measurable effect</i> .
<b>PW</b> Policy is necessary/unnecessary and <i>wanted/not wanted by the public</i> .
<b>DW</b> Policy would help/harm countries in the <i>developing world</i> .
<b>QL</b> Policy would help/harm <i>human quality of life and health</i> .

As such, this typology describes the world of existing climate change frames arising in the communications of climate change policy opponents and advocates. The final typology includes 18 primary frames: four science frames, two climate impact frames, and 11 policy design frames (see Table 2-1). As noted above, I also occasionally code for “sub-frames” that indicate a distinctive variation on a primary frame. These are described in the chapters where they appear. Lastly, not every primary frame is included in the typology for each chapter; in

these cases, that frame did not appear in that chapter's sample at a high enough frequency to warrant discussion. For example, the policy design frame concerning national sovereignty (SO) is not included in Chapter 5. (This is reasonable, given that the chapter focuses on a subnational policy debate and as such does not draw on frames that emphasize a different scale of governance).

The coding decisions were based on my detailed codebook (See Appendix A). Consistent with qualitative content analysis, in each empirical chapter, I modified the codebook using a subset of documents not included in the final sample and created written decision rules and examples of different types of frames. I provide examples of language typical of a given frame in the results section of each chapter, and information on the specific coding rules for all frames is available in the full codebook. I used these detailed rules to systematically discern which specific frames were being strategically employed in each document, given that each document could contain multiple frames.

## **CHAPTER 3. THE CLIMATE CHANGE SKEPTICS: ASSESSING THE PREVALENCE OF CLIMATE POLICY OPPOSITION FRAMES**

### **3.1 Introduction**

In this chapter, I investigate the presence of issue frames in the publications of conservative think tanks who oppose policy action on climate change, and in particular, the Heartland Institute.<sup>1</sup> In the preceding chapter, I established the theoretical foundation that motivates my interest in understanding frame prevalence in the publications of climate policy thought leaders. Denial of climate change science has long been viewed as a central impediment to the development of climate-energy policy. Thus, it is crucial to understand how key thought leaders delegitimize climate change. Attention to framing strategies, in particular, helps researchers understand how people “locate, perceive, identify, and label” (Goffman 1974) events and issues, and how these kinds of interpretative actions shape the ways people think about possible solutions to complex policy problems (Nisbet 2009).

As described in Chapter 2, a countermovement of climate change skepticism is often credited with preventing the adoption of meaningful policy at the national level in the United States. Dating back to the 1990s, “merchants of doubt” engaged in documented campaigns to promulgate frames calling the certainty of climate change science into question and using that uncertainty to delay political action (Oreskes and Conway 2011).

More recently, some scholars have begun to question the political primacy of such “anti-

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<sup>1</sup>A previous iteration of this analysis can be found in Cann, Heather W., and Leigh Raymond. 2018. “Does Denialism Still Matter? Alternative Frames in Opposition to Climate Policy.” *Environmental Politics*. 27(3), 433-454, DOI: [10.1080/09644016.2018.1439353](https://doi.org/10.1080/09644016.2018.1439353)

science” frames for climate policy. Psychology research, for example, suggests that policy attitudes are often a determinant of belief in climate science, rather than vice versa (Campbell and Kay 2014; Hennes et al. 2016; Kahan, Jenkins- Smith, and Braman 2011). As also previously outlined, new political science research suggests that frames related to a policy’s distribution of costs and benefits have been more important than messages related to climate science in recent climate policy conflicts, especially in terms of a policy’s potential costs for energy consumers (Rabe 2004; Raymond 2016; Skocpol 2013). These issues have raised important new research questions about whether framing strategies for policy opponents might be shifting toward policy design and away from science skepticism. As such, this chapter contributes to the dissertation’s broader investigation: *what issue frames do national-level thought leaders use when communicating about climate change?* I begin to answer this question through an in-depth analysis of communications published and disseminated by the Heartland Institute, a conservative think tank recognized as a global leader in opposition to climate change policy (McCright and Dunlap 2003, Pooley 2010, Dunlap and Jacques 2013). Based in the United States, Heartland serves as a global clearinghouse for information among those skeptical of climate change and opposed to climate change policy. I investigate the relative prominence of different science and policy design-oriented frames in opposition to climate change policies through a qualitative content analysis of documents promulgated by Heartland between April 2014 and June 2015.

As described in Chapter 2, my hypotheses are grounded in recent research suggesting the importance of non-science frames in climate change politics. I posit that policy design frames will be more prevalent than science frames in my 2014-15 sample (**H<sub>1</sub>**), and that those policy design frames will focus most frequently on the tangible financial harms that climate change

policies impose on consumers (**H<sub>2</sub>**). Overall, I find mixed results regarding these specific hypotheses, but there is evidence that suggests that climate change opposition frames are changing in important ways. Although denialism still matters, it is taking new forms that mirror the changing political climate around climate change policy.

### 3.2 Think Tanks and Climate Change Policy Opposition

I focus my analysis on the framing efforts of a leading think tank with global reach as opposed to climate change action, the Heartland Institute, for several reasons. Conservative think tanks play a central role in opposition to climate policy, as well as other environmental policy issues (McCright and Dunlap 2003). Traditionally understood as producing and disseminating policy research with the aim of informing public policy debates (Medvetz 2012), think tanks opposing climate change policies sow doubt as to the seriousness and reality of anthropogenic climate change in order to stall and oppose policy actions (Dunlap and Jacques 2013; Jacques, Dunlap, and Freeman 2008; Oreskes and Conway 2011). Prior work has documented the financial ties between conservative think tanks and fossil fuel industries (Brulle 2014), while think tanks like Heartland have been described as the “engines” of the climate change “denial machine” (Boussalis and Coan 2016; Dunlap and Jacques 2013; Elsasser and Dunlap 2012). Such organizations, by way of the scientific legitimacy of their “in-house” experts (McCright and Dunlap 2003) achieve considerable global influence in both the public and political sphere: through books, op-eds, articles, policy documents, online posts, other forms of written media, interviews, and government hearings. This is especially true given the ease with which skeptic materials are circulated online (Holliman 2011; Lewandowsky, Oberauer, and Gignac 2013; Sharman 2014).

Think tanks also experience privileged status as “alternate academia”—a perception that such organizations produce legitimate scientific work (Dunlap and Jacques 2013; Medvetz 2012). Indeed, in the U.S., conservative think tank representatives often achieve direct access to policy elites when invited to testify at congressional hearings or provide briefings to decision makers, as well as access to classrooms via the distribution of learning materials.

The Heartland Institute is especially influential at shaping climate change discourse on an international scale. Internationally, Heartland is recognized as a think tank with some of the strongest networking capabilities (McGann 2017), and one of the highest-impact public policy think tanks in the U.S. (McGann 2015). As noted by *The Economist* (and reported on Heartland’s website), the organization is renowned as “the world’s most prominent think tank supporting skepticism about man-made climate change” (2012), a finding consistent with prior work in this area (Pooley 2010).

In summary, existing literature offers conflicting accounts of the importance of science frames. From a policy perspective, we would expect the framing strategies of the climate skeptic movement to be in the process of changing. Recent climate policy research suggests that new types of policy impact frames—especially those that focus on tangible harms to consumers and citizens—are becoming increasingly important within the wider political discourse on climate policy throughout the United States.

However, prior framing research indicates that opposition to the climate-energy policy has continued to focus most on challenging the scientific basis for urgently needed climate change action, with less emphasis on policy impact frames, at least through 2013. In other words, developments in the American climate-energy policy realm suggest that we should be seeing skeptic framing highlighting the negative impacts that climate policies will pose for consumers

and citizens (the policy will lead to higher bills for consumers) with less of an emphasis on undermining the validity and quality of climate science more generally (climate change is not happening).

As outlined in Chapter 2, I test two hypotheses regarding the expected prevalence of different frames in the Heartland sample for the 2014-15 period:

- H<sub>1</sub>:** Policy design frames will be more prevalent than science frames.
- H<sub>2</sub>:** Policy design frames will focus most frequently on the tangible financial harms that climate change policies impose on consumers.

If confirmed, these hypotheses would provide further evidence of an evolution of the climate policy debate away from a conflict over science and toward one more explicitly focused on the distribution of regulatory burdens and benefits.

### 3.3 Methods

I investigate these hypotheses through qualitative analysis of 340 documents published on the Heartland Institute's website from April 28, 2014 to June 29, 2015. I employ qualitative content analysis techniques to test my hypotheses regarding the prevalence of specific science versus policy design frames in contemporary use.

#### 3.3.1 Sampling

As noted above, Heartland is one of the most influential think tanks opposing climate change policies on a global scale, with framing strategies that shape and inspire climate-energy discourse around the world. Besides broadcasting its publications, the organization's website

also aggregates documents written by other think tanks, free-market advocates, and climate skeptics, making it a clearinghouse for a broad range of anti-climate policy publications from the United States and around the world.

I collected study documents through the Heartland Institute's website and include a diverse variety of article types: policy briefs, short opinion pieces, reviews and excerpts from books or scientific articles, transcripts from public talks, advocacy letters, and commentaries on current events, and others. The sample includes items published by Heartland as well as documents generated by other conservative think tanks and climate change policy opposition actors from around the world, and re-published or quoted by Heartland. In terms of the sampling timeframe, April 28, 2014 to June 29, 2015 was selected during the initial writing of this chapter to allow for an assessment of the most then-recent documents. Key climate governance events (and thus sources of potential bias within the sample) are noted in the Discussion section.

To assemble the sample, I used Heartland's "tags" for their posts, reviewing all documents that were tagged under the headings of "Climate Change" and "Climate Change: Social." These tags include any documents using the alternative language of "global warming" to describe climate change. In this way I effectively gathered all relevant documents for the study period. The final sample consisted of 340 documents.

### 3.3.2 Coding and Analysis

I identified the appearance of one or more frames in a given article through close textual analysis; this approach is appropriate given the study's goals for detailed and in-depth frames analysis (see Chong and Druckman 2007b) and is consistent with other leading studies on this topic. Dedoose 7.0 software was used for coding the data and for aggregating and analyzing coding trends.



As described in Chapter 2, I based my coding scheme (Table 3-1) on earlier research on climate opposition communication strategies, especially the influential work of McCright and Dunlap (2000), whose original typology of opposition claims I used to build my coding scheme initially. The Heartland variant of the final typology includes three primary “science” frames, two primary “climate impact” frames, and ten primary “policy design” frames. Also, I coded for a small number of sub-frames. For example, I identified sub-frames referring to the possibility that climate change may be caused by “natural cycles” as a notable sub-category of the larger “scientific uncertainty” frame; these were labeled as S1b, to indicate their inclusion under the general S1 uncertainty frame.

Once the detailed frame typology was finalized, coding proceeded on the new sample of 340 Heartland documents. For documents over ten pages in length, coding was limited to the executive summary or introductory section. If no clear introduction or executive summary was evident, then the document’s first ten pages were coded. Only 34 of the sample’s 340 documents, or 10% of the sample, were longer than ten pages. Secondary coding on a random subset of 51 documents (15% of the final sample) indicated acceptable levels of intercoder reliability: pairwise percent agreement for the presence or non-presence of a frame in each document ranged from 100 percent to 86 percent across all codes, while scores for Krippendorff’s  $\alpha$  yielded an average coefficient of 0.89. Secondary coding was performed by a trained colleague familiar with the typology.

To test my hypotheses, I compared the relative frequencies of different frames of interest. Thus, for **H<sub>1</sub>**, I compared the relative frequency of documents that contained science versus policy design frames. For **H<sub>2</sub>**, I compared the relative frequency of documents featuring the

specific policy design frame focused on financial harms to consumers (Frame E1) versus other specific policy design frames.

Table 3-1. Typology of climate policy opposition framing strategies.

<b>Science Frames</b>
<i>Climate policies should be opposed because the evidentiary basis of climate change is weak and incorrect.</i>
<b>S1</b> The scientific evidence for climate change is <i>complex and uncertain</i> :
<b>S1a</b> The nature of climate science is <i>difficult to discern</i> .
<b>S1b</b> Climate change is a function of <i>natural cycles</i> and unrelated to human activity.
<b>S1c</b> Climate change is not happening, and <i>warming is not being observed</i> .
<b>S2</b> Mainstream climate science <i>does not have integrity and is junk science</i> .
<b>S2a</b> Climate change dissenters are <i>unfairly persecuted</i> .
<b>S3</b> Climate change science is <i>misused for ideological and personal gain</i> .
<b>Climate Impact Frames</b>
<i>Climate policies should be opposed because climate change would generate positive impacts.</i>
<b>I1</b> Climate change would improve human <i>quality of life and health</i> .
<b>I2</b> Climate change would improve <i>agriculture and the environment</i> .
<b>Policy Design Frames</b>
<i>Climate policies should be opposed because climate change policies would do more harm than good.</i>
<b>E1</b> Policy would harm <i>consumers</i> financially:
<b>E1a</b> <i>Low income or elderly</i> consumers.
<b>E1b</b> <i>Minority</i> consumers.
<b>E2</b> Policy would harm <i>the economy</i> at the state or national level.
<b>SL</b> Policy would threaten <i>state leadership</i> .
<b>EN</b> Policy would harm <i>the environment</i> .
<b>RE</b> Policy would promote <i>unreliable energy systems</i> , leading to energy shortages or blackouts.
<b>SE</b> Policy would weaken <i>national security</i> .
<b>SO</b> Policy would threaten <i>national sovereignty</i> .
<b>ME</b> Policy would be futile <i>with no measurable effect</i> , is not possible, and is ultimately unrealistic.
<b>PW</b> Policy would be unnecessary and is <i>not wanted by the public</i> .
<b>DW</b> Policy would harm countries in the <i>developing world</i> .

### 3.4 Results: Climate Change Frames in Application

I find that the data do not support **H<sub>1</sub>** (that policy design frames will be more common than science frames). Policy design frames appear in 66% of all documents in my sample, whereas

74.1% of all documents contain at least one of the four anti-science frames (see Table 3-2), making it the most dominant type of frame in my sample.

However, there are several interesting patterns in the data among the various science frames, indicating new science framing strategies. The science frame portraying *the scientific evidence complex and uncertain* (S1) appears in 44% of documents. A common type of “uncertainty” frame is the portrayal of climate change as “difficult to discern” (S1a), which appears in 30% of my documents. A typical example of this frame focuses on a lack of consensus, the kind of policy opponent argumentation that the GBM directly addresses:

The extent to which the warming in the last two decades of the twentieth century was man-made and the likely extent of any future warming remain highly contentious scientific issues. (S1a, *Consensus? What Consensus?*)

Another uncertainty frame talks about climate change as potentially caused by “natural cycles” rather than human activity, and appears in only 18% of articles in the sample. The uncertainty sub-frame depicting warming as not being observed (S1c) appeared in just over 17% of documents. Typical examples of these two frames are given below:

Empirical studies indicate natural cycles outweigh human influences in producing the cycles of global warming and cooling, not only in the distant past but also recently. (S1b, *To Protect the Poor: Ten Reasons to Oppose Harmful Climate Change Policies*)

And all of this ignores a critical real-world observation: Despite a continued rise in CO<sub>2</sub> emissions, temperatures have not risen for the past 18 years. (S1c, *German Analysis Finds IPCC ‘Synthesis’ Lacks Facts*)

The next type of science frame (S2) questions the fundamental integrity of mainstream climate research by arguing that evidence from the mainstream climate researchers is *junk science*. This frame appears in 50% of documents, and generally attacks the credibility of mainstream climate change research by portraying scientists as producing work that is flawed and biased. Also, a variant of this frame decries climate change skeptics as unjustly persecuted (S2a, present in just over 24% of documents). The following examples illustrate variations of this framing strategy:

Stewart Franks examines the climate debate through Karl Popper’s theory that scientific material should be subject to constant examination and should be falsifiable. He finds much of today’s popular climate science fails Popper’s test of sound science. (S2, *Top Climate Skeptics Captured in One Book: Review of Climate Change the Facts*)

Scientists who deviate from the anthropogenic global warming playbook are likely to be harassed, have grants and proposals rejected without review, be treated more harshly than their peers, and be removed from positions of power and influence. (S2a, *Statement to the Environment and Public Works Committee of the United States Senate*)

Notably, this “unfair persecution” framing strategy appears more frequently than some scientific uncertainty sub-frames, such as the natural cycles frame (S1b) or the sub-frame suggesting that warming is not being observed (S1c).

An additional science frame argues that climate change science is *misused for ideological and personal gain* (S3), most notably by environmentalists, bureaucrats, and political leaders, who employ the specter of a changing climate as a scare tactic. This frame is present in 57% of documents. Similar to the discourse of “climatism cartel” as described by Bohr (2016), this frame emphasizes self-interested motivations by these actors to increase concern about climate change as opposed to a discussion of the science itself:

Climate researchers, political scientists, biologists, ecologists, and others found out how much funding would flow to them and how much influence they could wield if only they could stoke a perpetual state of alarm over the changing climate. (S4, *Investigation of Dr. Willie Soon: Smoke, No Fire*)

In sum, although I find continued use of many science frames, I find the greatest emphasis in 2014-15 to be on the lack of integrity of climate scientists and the bureaucrats, political leaders, and environmental advocates who support them, rather than on the uncertainty of climate science. I discuss the possible implications of this greater reliance on *ad hominem* attacks on climate scientists and their supporters, rather than the more moderate “scientists are uncertain” framing below.

Table 3-2. Prevalence of climate policy opposition framing strategies.

	<i>N</i>	<i>%</i>
<b>Science Frames*</b>		
<i>Climate policies should be opposed because the evidentiary basis of climate change is weak and incorrect.</i>	<b>252</b>	<b>74.1%</b>
<b>S1</b> The scientific evidence for climate change is <i>complex and uncertain</i> :	150	44.1
<b>S1a</b> The nature of climate science is <i>difficult to discern</i> .	101	29.7
<b>S1b</b> Climate change is a function of <i>natural cycles</i> and unrelated to human activity.	63	18.5
<b>S1c</b> Climate change is not happening, and <i>warming is not being observed</i> .	58	17.1
<b>S2</b> Mainstream climate science <i>does not have integrity and is junk science</i> .	170	50.0
<b>S2a</b> Climate change dissenters are <i>unfairly persecuted</i> .	83	24.4
<b>S3</b> Climate change science is <i>misused for ideological and personal gain</i> .	194	57.1
<b>Climate Impact Frames*</b>		
<i>Climate policies should be opposed because climate change would generate positive impacts.</i>	<b>53</b>	<b>15.6%</b>
<b>I1</b> Climate change would improve human <i>quality of life and health</i> .	21	6.2
<b>I2</b> Climate change would improve <i>agriculture and the environment</i> .	49	14.4
<b>Policy Design Frames*</b>		
<i>Climate policies should be opposed because climate change policies would do more harm than good.</i>	<b>224</b>	<b>65.9%</b>
<b>E1</b> Policy would harm <i>consumers</i> financially:	101	29.7
<b>E1a</b> <i>Low income or elderly</i> consumers.	44	13.2
<b>E1b</b> <i>Minority</i> consumers.	5	1.5
<b>E2</b> Policy would harm <i>the economy</i> at the state or national level.	81	23.8
<b>SL</b> Policy would threaten <i>state leadership</i> .	42	12.4
<b>EN</b> Policy would harm <i>the environment</i> .	20	5.9
<b>RE</b> Policy would promote <i>unreliable energy systems</i> , leading to energy shortages or blackouts.	23	6.8
<b>SE</b> Policy would weaken <i>national security</i> .	3	0.9
<b>SO</b> Policy would threaten <i>national sovereignty</i> .	11	3.2
<b>ME</b> Policy would be futile <i>with no measurable effect</i> , is not possible, and is ultimately unrealistic.	64	18.8
<b>PW</b> Policy would be unnecessary and is <i>not wanted by the public</i> .	39	11.5
<b>DW</b> Policy would harm countries in the <i>developing world</i> .	42	12.4

\*Percentage of documents featuring at least one frame of the Science, Climate Impact, or Policy Design type.  
Total N=340

For policy design frames, my findings support my second hypothesis (**H<sub>2</sub>**): the most common policy design frames focus on tangible financial harms to consumers. The financial harm to “all consumers” frame (E1) is the most common here, appearing in about 30% of all

documents. By comparison, a frame stressing general harm to the economy overall, at the state or national level (E2) appears in 24% of articles. Examples of these two frames clarify the difference between frames emphasizing harm to consumers, and those stressing general economic harm:

New transmission lines must be built to deliver wind power from remote wind farms. This imposes additional costs on electricity consumers... [it] will cost another \$2 billion—which is an additional \$200 per household per year. (E1, *Texas Comptroller Report Destroys Wind Industry Claims*)

I believe it is grossly irresponsible to continue with these [climate change] policies, which are having major impacts on the Australian economy. (E2, *Australia Poised to Repeal Carbon Tax*)

Although most financial harm to consumers' frames did not identify a specific group, a number of these frames focused on low income, elderly, or minority consumers. I determined that frames arguing that low income or elderly citizens will bear undue economic burdens as a result of climate change policies appeared in 13% of the articles. Specific mention of minority groups was less frequent, appearing in around 1% of articles. In this way, framing strategies in my sample focus less on harms to the economy overall, and more on “personalizing” these harms for specific groups like elderly energy consumers.

Escalating costs could force seniors and the poor to forgo meals and doctor visits just to afford electricity—a devastating consequence that could seriously impact their health. (E1a, *Study Shows State Energy Costs to Soar Under Clean Power Plant Rule*)

Several other policy design frames frequently appeared in the sample. The most common of these, and the third most common policy frame overall, contends that *proposed climate*

*change policies would have no effect on climate change* (frame NE). This frame occurred in 19% of all documents and stresses the growing emissions of other nations such as China and India or the global nature of the problem in general in criticizing any U.S. climate change policy:

Even if one buys into global warming, reducing CO2 emissions in the United States will have little effect because most of the increase in emissions comes from coal burning in Asia. (NE, *Renewable Electricity, a Technological Rip-Off, Environmental Loser*)

Other recurrent policy design frames include the ideas that the *policy would harm countries in the developing world* (frame DW) by unjustly limiting their economic growth, appearing in 12% of all documents; that a national or international climate policy is a *violation of state or local leadership* (frame SL), also appearing in 12% of all documents; and the *low priority* frame positing that action to fight climate change is not important compared to other policy issues, which appears in 12% of all documents. These frames and others as presented in Table 3-2 appeared far less frequently, however than the three most common policy design frames focusing on harm to consumers, harm to the economy, and the overall futility of any domestic policy to address this global problem.

Although they are not part of my major hypotheses, I note that impact frames are slightly more prevalent in my 2014-15 sample than in previous studies such as McCright and Dunlap's (2000) research, occurring in nearly 16% of documents. The most common impact frames discussed apparent evidence of ecosystems and species coping with or even thriving under new climate conditions—an interesting variation, perhaps, on the growing political interest in promoting resilience strategies toward climate change:

Moreover, there is substantial scientific evidence that increases in atmospheric carbon dioxide produce many beneficial effects upon the natural plant and animal environments of the Earth. (I2, *Arthur B. Robinson, Ph.D.*)



Although these impact frames remain relatively uncommon in comparison to policy or science frames, their increase is another indication of the ongoing changes in climate denialism discourse, away from uncertainty framing and toward other tactics. This set of frames is especially intriguing conceptually since acknowledging the existence of climate change contradicts the premise of the more widespread science frames, and are also some of the more factually untenable climate skeptic arguments.

### 3.4.1 Most Common Frame Types

Table 3-3 summarizes the five most common frames in the sample across all categories—science, benefit, and policy design. Notably, the frame attacking specific actors for misusing climate change science is for ideological and personal gain (S3) is the most prevalent, followed closely by a frame arguing that mainstream climate scientists produce biased research (S2). Thus, although science uncertainty frames are also common, they are less frequent than two kinds of frames attacking the integrity of the climate science process itself. The frame discussing climate change in terms of the harms of a climate policy to consumers is the fourth most common in my sample, followed by a second economic impact frame describing a climate policy’s negative effect on the economy overall. Also notable is the absence of frames describing a policy’s effects on national security from the top five, which is interesting given that national security is commonly cited as a key issue of concern for conservatives.

Table 3-3. Heartland: Top five climate change opposition frames.

Frame Type		<i>N</i>	%
<i>Science</i>	<b>S3</b> Climate change science is <i>misused for ideological and personal gain</i> .	194	<b>57.1</b>
<i>Science</i>	<b>S2</b> Mainstream climate science <i>does not have integrity and is junk science</i> .	170	<b>50.0</b>
<i>Science</i>	<b>S1</b> The scientific evidence for climate change is <i>complex and uncertain</i> .	101	<b>44.1</b>
<i>Policy</i>	<b>E1</b> Policy would harm <i>consumers</i> financially.	101	<b>29.7</b>
<i>Policy</i>	<b>E2</b> Policy would harm <i>the economy</i> at the state or national level.	81	<b>23.8</b>

### 3.5 Discussion

In this chapter, I find mixed support for my hypotheses. I did not find that policy design frames appeared more frequently than science frames (**H<sub>1</sub>**). However, I did find that a policy design frame stressing impacts on consumers was the most common of all policy design frames in my sample (**H<sub>2</sub>**), and one of the most common frames overall. These results indicate that although policy design frames remain less common than science frames in anti-climate policy documents promulgated by a leading conservative think tank, new science and policy design frames are more prominent. In particular, I note the prominence of frames attacking the integrity of climate scientists and their supporters, compared to a frame describing the uncertainty of climate science that was more central to the past communication strategy of climate policy opponents. Also, I highlight the prominence of frames describing the negative effects of climate policies on average citizens. Thus, denialism remains an active part of the framing strategy of leading climate policy opponents, but it appears to be taking on a new form that may or may not be as politically efficacious as the prior “uncertainty” frame was, especially compared to other

frames stressing climate policy impacts directly on members of the public. In this section, I discuss the two important framing strategies that seem to be emerging, and their implications for my broader research questions in this dissertation.

### 3.5.1 Current Framing Strategy #1: Attack the Scientist

The data indicate that science arguments remain prominent in the framing strategies of opponents to climate policy, yet the traditional emphasis on uncertainty is being surpassed by more extreme framing measures that attack the integrity of mainstream climate scientists and their supporters. This rhetorical strategy paints mainstream climate change science as low-quality in several ways. For example, one interesting variant contends that scientists skeptical of anthropogenic climate change are victims of the mainstream scientific and media orthodoxy, a “David versus Goliath” type conflict:

“Denial” and “manufactured doubt” are terms used by environmental extremists to denigrate scientists and others who express skepticism...likening such skeptics to Nazi sympathizers, heretics, or unscrupulous Madison Avenue ad men. (S2a, *Advocacy Group Forces Catastrophe “Consensus” on Schoolkids*)

As such, this trend appears to be a shift compared to earlier studies. For example, McCright and Dunlap (2000) found that “junk science” and “scare tactic” frames were far less common in their sample than arguments about the uncertainty of climate science, a result echoed by other studies of earlier climate policy opposition as described in Chapter 2. Even a more recent study (Boussalis and Coan 2016) on think tank framing documented a relative decline in similar “science integrity” frames from 2012 to 2014.

This apparent shift in denialism strategy away from stressing scientific uncertainty and toward attacking climate scientists is consistent with the growing expert agreement on climate science (McCright and Dunlap 2003). Whether these integrity-based frames will be as effective in moving public opinion or political support for new climate policies remains to be seen. While denialism may not be over, it may be shifting into a novel and potentially more extreme form, and one that still relies on explicitly undermining the validity of climate science.

### 3.5.2 Current Framing Strategy #2: Scare the Consumer

Although policy design frames have not surpassed science frames in terms of frequency of appearance in the sample, they have assumed a prominence that appears to reflect their changing importance in climate change politics. Rather than emphasizing harm to industry or the national economy, economic frames from climate policy opponents are personalizing the negative economic impacts of climate policies on individual consumers. This is consistent with recent developments in political discourse around several climate change policy disputes in the United States and other nations (Rabe 2010; Raymond 2016) and suggests that future conflicts over climate policy actions will continue to revolve more around tangible impacts on the public. It will be important to see whether future efforts to promote “consumer benefits” of a climate policy, or other frames stressing public health improvements or avoided climate change impacts on local residents, intensify among climate policy supporters. It will also be important to see how the growth of the integrity-based attacks on climate science fair in comparison to these policy design frames in future political conflicts.

In addition, new policy design frames reflect the growing partisan conflict over the role of government in civic life in general. Consistent with growing restiveness among political conservatives, a more novel state and local sovereignty frame has become apparent in this 2014-

15 sample: stressing that climate policies are unfair exercises of central government power. This trend can be seen in resistance to greater EPA authority over climate emissions in the United States, and in a similar resistance to perceptions of “overreach” by the European Commission in administering the EU Emissions Trading System (Skjærseth 2017). Again, this is consistent with the expectation that anti-science arguments have started to be less politically salient in the climate policy discourse.

More specifically, and referring to this project’s broader research questions, these findings reinforce the long-standing role of scientific uncertainty frames when it comes to undermining support for climate-energy policies. As outlined in Chapter 2, there are many good reasons to suspect that all policy actors would be moving away from science-based framing strategies.

Future work could build on these preliminary findings in several important ways. For example, it would be valuable to consider how effective some of these frames are in changing public opinion on climate policy, especially the science “integrity” frames and consumer policy frames; to compare the relative prevalence of these “elite” frames to frames in the mainstream media (and across numerous country contexts) during similar time periods; to explore whether climate policy opponents use policy design frames more frequently in communications about specific policy proposals versus communications on climate change in general; and to determine the patterns of science and policy design frames being used by supporters of climate change policy actions, and not just their opponents. Whether these supporters and opponents are “in sync” or not in terms of how they are debating future climate policies may be quite important in terms of explaining future policy outcomes in this area. I begin to investigate some of these questions in in Chapter 4 and Chapter 5.

Lastly, several influential climate change and climate governance events occurred around and during this study's time frame from April 28, 2014 to June 29, 2015 which should be acknowledged. Most notably, these include record-low temperatures throughout much of Canada and the United States (commonly known as the 2014 Polar Vortex) in early January 2014, continuing intensification of Californian drought throughout 2014, the release of the IPCC's Fifth Assessment Synthesis Report (AR5) in early November 2014, the October-December 2014 United Nations Climate Change Conference (COP 20) in Lima, Peru, the release of *Laudato si'*, "On care for our common home", in May 2015 (the second encyclical of Pope Francis which addresses issues of environmental degradation and climate change), the 2015 controversy of the Keystone XL pipeline and its rejection by the Obama administration in November 2015, and lastly, the November-December 2015 United Nations Climate Change Conference (COP 21) in Paris, France, which focused on negotiations for the Paris Agreement.

From a competitive framing perspective, events like the release of the IPCC's report, for example, would elicit an increased use of science frames in Heartland publications. However, the overall variety of climate-related events is reasonably typical, and as such, we would expect a similar range of frames over a different time period.

### 3.6 Conclusion

New climate change policy remains elusive in the U.S. and other nations, and an organized countermovement of climate change skepticism has been widely successful in preventing the adoption of meaningful policy at the national level—as part of broader trends of anti-regulatory sentiment and mobilization across multiple issue areas.

In this chapter, I systematically assessed documents promoted by a leading climate

change policy opponent, the Heartland Institute, from April 2014 to June 2015. In doing so, I explored how a prominent climate opposition group currently frames climate change as an issue. My results suggest that although denialist science frames remain prominent, it appears that climate policy opponents are moving toward different framing strategies that stress more personal attacks on the integrity of climate scientists and their allies, rather than arguments about scientific uncertainty. Whether these new frames will be as effective politically remains to be seen. At the same time, my results suggest that climate policy opponents are adopting new policy design frames stressing tangible costs of climate policies for consumers, rather than other policy criticisms. This suggests that climate opponents are emphasizing the negative effects of climate policies on average people, in addition to their anti-science arguments.

Although anti-science arguments have not disappeared, my results are consistent with the argument that denialism is different today than it was 20 years ago as the debate moves toward identifying more immediate and tangible impacts on the public from these policies. My evidence of a growing concern with the impacts of climate policies, especially their impacts on consumers in terms of higher energy prices, is consistent with other research suggesting that science claims may be less prominent in future policy debates—while more prosaic but salient arguments about “who pays” for climate policies play a greater role.

## **CHAPTER 4. SUPPORTERS AND SKEPTICS: COMPARING ELITE ISSUE FRAMES IN CLIMATE CHANGE POLICY DISCOURSE**

### 4.1 Introduction

In this chapter, I investigate the framing strategies of climate-energy policy supporters in the United States and focus particularly on one major actor: The Natural Resources Defense Council (NRDC). I compare my findings on frame prevalence to the results from Chapter 3, and in doing so draw a comparison between two major climate-energy actors in the United States. Encouraging the implementation of effective climate change policy is one of the most urgent issues for many environmental non-profit and advocacy groups across the United States. As described in the previous chapter, this effort is made additionally complex by partisan polarization around the issue and the organized opposition to policy progress from climate change “skeptics” like the Heartland Institute.

Like other elite communicators and policy leaders, supporters for climate-energy policy strategically employ various issue frames to foreground certain storylines around climate change as an issue, and in doing so, hope to strengthen a specific conceptualization of climate change as a problem—casting particular policy approaches as seemingly-natural solutions. However, very little work has specifically sought to highlight the strategic communication choices of climate change policy advocates, or to compare these strategies with the framing choices of climate change policy opponents. As noted in Chapter 2, most climate change communication work has investigated the framing decisions of general media outlets (such as newspaper or television, for example) or the strategies of climate change policy opponents.

An ongoing debate in the climate change communication world has increasingly drawn attention to the role of *science* frames, arguments that highlight the technical reality of climate



change and details about the researchers who generate such findings. Recent controversies have particularly focused on the role of “consensus messaging”: a framing approach that stresses the importance of communicating the extensive scientific consensus around the reality of climate change. In contrast to this consensus messaging method, other scholars highlight the need for frames that stress other, more tangible and personally relevant impacts of climate change policy to generate public support for those policies. As described in Chapter 2, some empirical work suggests that science-related arguments are more likely to exacerbate partisan polarization around climate change and in doing so further erode support for climate change policies. For example, non-science frames might highlight the public health impacts of climate change. While these discussions on the role of science framing proliferate in the pages of academic journals, less work has considered the actual presence and political influence of science versus non-science frames within the real-world communications of stakeholders actively involved in climate change policy conflicts.

With this background in mind, this chapter investigates two questions: First, *to what extent are different messaging approaches—science versus non-science frames—reflected in the strategies of climate change policy supporters in the United States?* Secondly, *how do these advocate framing strategies compare to the framing strategies of climate change policy opponents, during the same period?* I explore these issues by conducting a content analysis on documents published between April 2014 and June 2015 by the NRDC, a mainstream environmental non-governmental organization (ENGO) which campaigns for climate action in the United States. These results are then compared to findings from Chapter 3, which investigated frames used by the Heartland Institute. As related to that study, my hypotheses here are grounded in current framing research which suggests that science frames are likely to be less

effective than non-science frames, for certain audiences, in generating support for climate change policies, as opposed to some frames that describe other facets of the climate change issue, such as economic or health implications. I find that policy design frames are the most prevalent frame type throughout my sample documents, although science and climate change impact frames are perhaps more common than we would expect.

## 4.2 Hypotheses

In Chapter 3, I described the growing and still unresolved controversy around the role of traditional science frames in climate change discourse, and relatedly, disagreements around best practices for approaching or overcoming partisan climate change denialism. While science frames are still widely in use by some climate change communicators, much of the framing literature suggests that science frames are ineffective at shifting attitudes toward climate policy and may generate strong contrast effects. Given this research, we would expect science frames to be less common in the NRDC's publications since they would be making strategic choices about employing non-contentious frames that resonate with a diverse readership to incite pro-environmental behavior. This is a reasonable assumption since the NRDC is a professionalized organization which we can thus expect to have an informed, coordinated communication campaign.

As the current body of research suggests that science frames may be less effective in some circumstances than non-science frames, we should expect to see policy advocates like the NRDC adjusting their communication strategies accordingly; especially given current research which indicates that science frames can be polarizing and may backfire when attempting to build support for climate-energy policies. As such, it seems likely that on-the-ground-strategies of

environmental advocacy groups would avoid framing climate change policy in terms of scientific consensus. Likewise, current research indicates that actors like the Heartland Institute who oppose policy adoption would continue to focus their framing strategies on climate change science. Building upon the hypotheses described in Chapter 2, I expect that:

**H<sub>1</sub>:** Science frames will be *less prevalent* in the communications of actors who support policy adoption, versus other frame types.

Similarly, since the NRDC is a legacy environmental group, we would expect to see them choose framing strategies that would appeal to a wider base, such as more positive messages that highlight the direct benefits that people might receive because of climate change policies. In this way, we might expect to see the NRDC more frequently framing climate change in terms of positive co-benefits or “kindred policies” as a means of generating support among their membership for climate-friendly policies, and in doing so draw upon specific policy design frames like economic or public health arguments. Given this, I posit that:

**H<sub>2</sub>:** Specific policy design frames that focus on tangible costs to consumers, such as economic frames, will be *more prevalent* in the communications of actors who support policy adoption, versus other frame types.

The rest of the chapter proceeds as follows: First, I describe both the NRDC and the Heartland Institute and justify their importance as comparative thought leaders in the United States. Next, I outline my methods, present results, and discuss some of these findings.

### 4.3 The Natural Resources Defense Council and the Heartland Institute

Environmental non-governmental organizations (ENGOS) serve as the mediators between scientific understandings of environmental issues and the public. In doing so, they possess an ability to generate powerful “interpretive frameworks” that shape how people make sense of climate change as an issue (Doyle 2009). Indeed, ENGOS have historically been tremendously influential in shaping the political discourse around the climate crisis. Here, I focus my analysis of policy advocates on the NRDC, which describes itself as “work[ing] to safeguard the earth—its people, its plants and animals, and the natural systems on which all life depends.” The advocacy group was formed in 1970 by Yale Law School students who envisioned the organization as an environmental law firm staffed by lobbyists, scientists, and lawyers (Hestres 2015). As of 2017, the NRDC reported 590 staff, and yearly revenue of USD \$117,129,000 for 2017.<sup>2</sup> The group is commonly understood as a “legacy” environmental group (Bosso 2005), a designation for organizations that operate as a “permanent feature of the American political landscape” (Hestres 2015). Such groups generally focus a large part of their work on climate change advocacy and dedicate significant resources in pushing for both state-specific and federal-level policy. The NRDC has also positioned itself as having particular strengths in policy and scientific expertise. While difficult to make causal claims about the impact of ENGOS on policy outcomes (Baumgartner et al. 2009), the NRDC is generally understood as having influentially shaped the discourse around climate-energy policy in the United States, not to mention an array of other environmental issues. In describing the organization’s approach to policy advocacy, Hestres (2015) notes that, in contrast to other

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<sup>2</sup> Charity Navigator: Natural Resources Defense Council  
<https://www.charitynavigator.org/index.cfm?bay=search.summary&orgid=4207>

common civil society tactics like direct action or pressuring corporate entities to change their environmental practices, the NRDC focuses on policy expertise and the persuasion of elite decision makers. With their various online publications, the NRDC attempts to encourage “low-threshold online actions” (Hestres 2015) such as members of the public making comments to the EPA in support of prospective climate policies. Recent science communication work has demonstrated the significant role of new media as part of climate discourse: online blog platforms, Facebook, Twitter, YouTube, and others (Koteyko, Nerlich, and Hellsten 2015). Indeed, scholars have noted how the Internet has transformed advocacy group operations in the United States, leading, for example, to the creation of “Internet-mediated advocacy organizations” (Karpf 2012). As pointed out by Pickerill (2003), the Internet has certainly played a significant role in how advocacy groups attempt to disseminate information and politically engage publics by way of “computer-mediated communication.”

While legacy environmental groups such as the NRDC may not be as deeply invested in online campaigning as other group types, they still make heavy use of the Internet’s ability to expand the reach and volume of their messaging. For example, the Internet and social media allow advocacy groups to spread information, make appeals to their members, reinforce and maintain membership commitments to the group, and gain quick and direct access to policymakers (Nulman and Özkula 2016).

These online environments feature discussions between climate scientists, the public, political activists, elected officials, and other policy entrepreneurs (Pearce et al. 2015). The public relies heavily on elites to broadcast information, where elites are understood as those who “devote themselves full time to some aspects of politics or public affairs” (Zaller 1992, 6), an appropriate characterization of the NRDC.

Another recent line of research has also highlighted the crucial role that cues from party elites play in shaping public opinion on climate change (Merkley and Stecula 2018), and the NRDC focuses much of its efforts on influencing the attitudes of such political leaders. As such, the strategic framing decisions of an organization like the NRDC becomes extremely important to understand within the wider context of climate change communication in the United States. While actors like the NRDC and other ENGOs are thus understood as crucial actors within climate policy, very little framing work has examined their specific communication strategies.

Heartland and the NRDC differ in some important respects, particularly in terms of scale and organizational makeup. Heartland was established in 1984 and is classified as a nonprofit organization.<sup>3</sup> The organization reports a full-time staff of 39, with an additional 500 “academics and professional economists” serving as policy advisors, 33 “senior fellows,” and 275 elected officials who pay dues to the organization. Recent total revenue for Heartland is reported at nearly USD \$6,000,000 for 2017.<sup>4</sup> In contrast, the NRDC, a membership-based organization, reports 590 staff members and 2017 revenue of USD \$117,129,000. As of 2016, the NRDC reported 590 staff, an approximate membership of 3 million.<sup>5</sup> As a membership organization, the NRDC is also more broadly accountable to this base and would also target many of its publications toward that group.

Regardless, the organizations do also share several crucial similarities which make them strong candidates for a comparative framing study. Both position themselves as scientific groups

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<sup>3</sup> One watchdog group notes that the organization is close to being more restrictively classified as a “private foundation,” given that roughly only 35% of its financial contributions come from public support (Heartland Institute n.d.).

<sup>4</sup> Charity Navigator: Heartland Institute.

<https://www.charitynavigator.org/index.cfm?bay=search.summary&orgid=9486>

<sup>5</sup> Natural Resources Defense Council, Inc. Consolidated Balance Sheets.

[https://www.nrdc.org/sites/default/files/nrdc\\_financial\\_fy17.pdf](https://www.nrdc.org/sites/default/files/nrdc_financial_fy17.pdf)

with expertise in policy analysis. In doing so, they similarly aim to reach elected officials and civically-engaged members of the public as the audiences for their publications. While they embody the partisan, polarized debate around climate change in the United States, neither organization is representative of the most radical or fringe perspectives from their respective sides of the climate debate. As such, the NRDC and Heartland serve as appropriate counterparts for investigating the framing strategies of elite national-level actors.

#### 4.4 Research Design

Again, my expectations for the NRDC documents are that **H<sub>1</sub>**: Policy design frames will be more common than science frames, and secondly, **H<sub>2</sub>**: Policy design frames will most often focus on tangible costs to consumers, especially economic consequences. To test these hypotheses, I conducted a qualitative content analysis of 331 documents published by the Natural Resources Defense Council from April 28, 2014 to June 29, 2015, and then compared these frame frequencies to the results from Chapter 3, which investigated the framing strategies of the Heartland Institute during the same time frame. Given that this study explores frame frequencies from climate change policy supporters, the frame typology uses the inverse, or positive “pro” climate change action variants of each frame. For example, while frame I4 in Chapter 3 contends that climate change would *improve* human quality of life and health, the inverse version of this frame in Chapter 2 instead argues that climate change would *negatively* impact the human quality of life and health.

##### 4.4.1 Sampling

The NRDC publishes a diverse range of articles and documents on its website. I used the website’s embedded search function to select the “Climate Change” and “Energy” filter options,

to create an initial sample. Documents were then individually screened by searching for key words: “climate change,” “global warming,” “greenhouse gas,” and “carbon.” This ensured their relevance to the research questions posed in this study. All documents containing at least one key term were added to the sample. Since the sample size was more than 1,300 documents, systematic random sampling was used to generate a final sample of 331 documents, spanning from April 2014 to June 2015, mirroring the same time frame assessed in Chapter 3. Slightly different search terms and sampling strategies were used between the NRDC and Heartland samples due to their websites’ different organizational structures and tagging systems, but both approaches maximized the collection of the most relevant group of documents that are appropriate for comparison.

#### 4.4.2 Coding and Analysis

The coding procedure for this analysis directly follows that of Chapter 3. I identified the presence of one or more frames in an article through close textual analysis, as consistent with other research in this area. My coding scheme (Table 4-1) is a variant of my primary climate framing typology described in Chapter 2. As previously noted, frames within the typology can be conceptualized as supporting or opposing climate change policy. As such, the majority of frames in this current chapter can be understood as directly inverse to the frames introduced in Chapter 3. However, several frames are unique to the NRDC sample and did not frequently appear (in their inverse forms) in the Heartland documents: frame I3 (climate change would impact economic systems), I4 (climate change would have national security impacts), and frame QL (that a policy would harm/help human quality of life).



Table 4-1. Typology of climate policy supporter framing strategies.

<b>Science Frames</b>
<i>Climate policies should be supported because the evidentiary basis of climate change is robust and accurate.</i>
<b>S1</b> The scientific evidence for climate change is <i>clear and certain</i> .
<b>S2</b> Mainstream climate science has <i>integrity and is not junk science</i> .
<b>S3</b> Climate change science is <i>misused for ideological and personal gain</i> .
<b>Climate Impact Frames</b>
<i>Climate policies should be supported because climate change would generate negative impacts.</i>
<b>I1</b> Climate change would impact <i>human quality of life and health</i> .
<b>I2</b> Climate change would impact <i>agriculture and the environment</i> .
<b>I3</b> Climate change would impact <i>economic systems</i> .
<b>I4</b> Climate change would have <i>national security impacts</i> .
<b>Policy Design Frames</b>
<i>Climate policies should be supported because climate change policies would do more good than harm.</i>
<b>E1</b> Policy would help <i>consumers financially</i> .
<b>E2</b> Policy would help <i>the economy</i> at the state or national level.
<b>SL</b> Policy would foster <i>state leadership</i> .
<b>EN</b> Policy would help <i>the environment</i> .
<b>RE</b> Policy would generate <i>reliable energy systems</i> .
<b>SE</b> Policy would benefit <i>national security</i> .
<b>SO</b> Policy would foster <i>national sovereignty</i> .
<b>ME</b> Policy would have a <i>measurable effect</i> .
<b>PW</b> Policy is necessary and <i>wanted by the public</i> .
<b>DW</b> Policy would help countries in the <i>developing world</i> .
<b>QL</b> Policy would benefit <i>human quality of life and health</i> .

To test my hypotheses, I compare the relative frequencies of all frames highlighted in my typology. Coding decisions were based on the detailed codebook developed in Chapter 3, then additionally modified on a separate, earlier sample of NRDC documents for the current project through a pilot study.

#### 4.5 Results: Framing Support for Climate Policy Action

The findings confirm my hypotheses that **H<sub>1</sub>**: policy design frames would be more common than science frames in the NRDC publications and **H<sub>2</sub>**: that certain policy design frames which focus on tangible costs to consumers would be the most prevalent frame type in the NRDC publications, versus other frame types. In particular, I find that at least one policy design frame is present in 47% of the NRDC advocacy documents, while only 30% of documents contain a science frame (see Table 4-2 below). However, impact frames—not part of my original hypotheses—are widely prevalent throughout the NRDC publications, with at least one impact frame appearing in 37% of documents. Each of these frame types are discussed in the following section.

Table 4-2. Prevalence of climate policy supporter framing strategies.

	<i>N</i>	<i>%</i>
<b>Science Frames*</b>		
<i>Climate policies should be supported because the evidentiary basis of climate change is robust and accurate.</i>	<b>99</b>	<b>29.9%</b>
<b>S1</b> The scientific evidence for climate change is <i>clear and certain</i> .	57	17.2
<b>S2</b> Mainstream climate science has <i>integrity and is not junk science</i> .	15	4.5
<b>S3</b> Climate change science is <i>misused for ideological and personal gain</i> .	47	14.2
<b>Climate Impact Frames*</b>		
<i>Climate policies should be supported because climate change would generate negative impacts.</i>	<b>123</b>	<b>37.2%</b>
<b>I1</b> Climate change would impact <i>human quality of life and health</i> .	103	31.1
<b>I2</b> Climate change would impact <i>agriculture and the environment</i> .	29	8.8
<b>I3</b> Climate change would impact <i>economic systems</i> .	19	5.7
<b>I4</b> Climate change would have <i>national security impacts</i> .	3	1.5
<b>Policy Design Frames*</b>		
<i>Climate policies should be supported because climate change policies would do more good than harm.</i>	<b>155</b>	<b>46.8%</b>
<b>E1</b> Policy would help <i>consumers financially</i> .	64	19.3
<b>E2</b> Policy would help <i>the economy</i> at the state or national level.	78	23.6
<b>SL</b> Policy would foster <i>state leadership</i> .	33	10.0
<b>EN</b> Policy would help <i>the environment</i> .	5	1.5
<b>RE</b> Policy would generate <i>reliable energy systems</i> .	14	4.2
<b>SE</b> Policy would benefit <i>national security</i> .	3	0.9
<b>SO</b> Policy would foster <i>national sovereignty</i> .	19	5.7
<b>ME</b> Policy would have a <i>measurable effect</i> .	10	5.1
<b>PW</b> Policy is necessary and <i>wanted by the public</i> .	49	14.8
<b>DW</b> Policy would help countries in the <i>developing world</i> .	1	0.3
<b>QL</b> Policy would benefit <i>human quality of life and health</i> .	45	13.6
*Percentage of documents featuring at least one frame of the Science, Climate Impact, or Policy Design type. Total <i>N</i> = 331		

#### 4.5.1 Science Frames

Over a quarter of all documents in the sample include at least one scientific framing of climate change; that is, where the evidence for climate change is portrayed as correct and reliable. There are two primary variations on this frame: The first, S1, emphasizes that the

scientific evidence for climate change is clear and certain, including consensus messaging frames that explicitly describe how scientists agree about the reality of climate change. These types of frames are present in 17% of articles. The second variation on this frame theme is the idea that mainstream climate science has integrity and is not “junk science,” while the supposed scientific work of skeptic researchers is unreliable (S2). This argument appears in about 4% of documents. The third variation, S3, describes anti-policy misinformation as arising from actors with vested interests (such as fossil fuel industries). This portrayal appears in 14% of articles. Examples of these frames are included below:

The Earth is being ravaged by climate change, and the evidence is overwhelming. The American Association for the Advancement of Science recently said: “Levels of greenhouse gases in the atmosphere are rising. Temperatures are going up. Springs are arriving earlier. Ice sheets are melting. Sea level is rising. The patterns of rainfall and drought are changing. Heat waves are getting worse, as is extreme precipitation. The oceans are acidifying.” (S1, *Saving Mother Earth from Climate Change*)

Back in the 1960s, the tobacco industry fabricated a debate—a “manufactroversy,” if you will—over whether cigarettes contributed to lung cancer. The goal was to create an illusion of scientific debate to confuse the public. Sound familiar? The same thing is happening right now with climate deniers who purposefully spread misinformation about climate change and “teach the controversy” in schools in order to keep polluting businesses booming. (S2, *Spin Doctors: A New Film Shines a Light on the Pundits Who Lie About Climate Change*)

[It’s about] the dishonest lobbying of fossil fuel interests. The American Legislative Exchange Council—the secretive coalition of corporate executives who want to write their own state laws—is currently trying to dismantle renewable portfolio standards. (S3,

*Colorado Senate Plays Politics with Clean Air; Up to the House Protect Colorado's Environment)*

#### 4.5.2 Policy Design Frames

Next, nearly half of the documents, 46%, contained at least one policy design frame, making this frame family the most prevalent across the sampled documents. As noted, this frame describes climate change policies as doing more good than harm through a variety of ways. The most common of these frames, present in 23% of documents, is the idea that a particular climate policy would be beneficial to the economy at the state or national level (E2)—including claims about how policies might generate jobs or help small businesses, for example. Relatedly, the next most common frame is E1, which is present in just over 19% of documents and highlights how a policy would be good for consumers by saving them money. The following two examples illustrate the tone of these frames:

The first-ever limits on carbon pollution from power plants can save American households and business customers \$37.4 billion on their electric bills in 2020. (E1, *New Carbon Pollution Standards Can Save Americans \$37.4 Billion on Electric Bills, Create 274,000 Jobs*)

And California is certainly proving that cutting carbon pollution, transitioning to cleaner energy sources, and creating a robust and growing economy actually go hand-in-hand. (E2, *New Analysis: California is Already Cutting Carbon Pollution and Reducing Vehicle Fuel Expenditures*)

Following these two “financial benefit” frames, the next two most widespread policy frames portray climate policies as wanted by the public (frame PW, present in nearly 15% of

sampled documents) and the idea that climate change action would benefit human quality of life and health (frame QL, in nearly 14% of documents). The portrayal of climate change policy as wanted by the public casts climate change policies as in high demand by many citizens, usually by pointing to findings from public opinion polls. For example:

But the American public has a different agenda—an urgent desire to curb the harmful impacts of climate change. An ABC News/Washington Post poll this week found that 70 percent of Americans support limits on carbon pollution from power plants. (PW, *There They Go Again: Industry Responds to Proposed Carbon Standards with Same Old Arguments*)

The quality of life (QL) frame, on the other hand, paints climate change policies as being important measures for improving or protecting human quality of life and health. In some ways, this frame is a “companion” to the impact frame, I1, in that climate change policies are described as ameliorating the discomforts and different health risks posed by a volatile and changing climate. However, the QL frame includes “co-benefits” arguments—the idea that climate change policies will also generate desirable outcomes not necessarily directly related to decreases of greenhouse gas emissions, such as decreased childhood asthma or more walkable communities. The examples below illustrate these important nuances:

Action to combat climate change... will clean up air pollution so kids breathe easier. It means better transportation systems with more choices to get from one place to another; it means cooler, greener, walkable neighborhoods that are more pleasant to live in. (QL, *The People's Climate March: Join Us on September 21 to Make History*)

The Obama administration unveiled plans to cut U.S. carbon pollution emissions... leading to climate and health benefits worth as much as \$93 billion while

avoid up to 6,600 premature deaths and up to 150,000 asthma attacks in children. (I1, *Canada Confirms its Ever-weakening Climate Policy as the U.S. Announces Ambitious Plan to Cut Carbon Pollution*)

Lastly, another policy design frame of interest is the argument that climate-energy policies are important for protecting the leadership of subnational political units. This subnational action frame (SL, present in 10% of sampled documents) makes an argument about the importance of subnational climate change action—at the city, regional, or state level—and frames climate policies as a way that these units can assert their independence by meeting their own specific climate mitigation goals or adaptation needs. For example:

State leaders, power companies, and other stakeholders aren't rushing to get on McConnell's bandwagon because they know states have even more tools at their command than EPA - tools that can help do the job in the way that best fits their state... in short, federal plans will be flexible and affordable, but states can create individualized plans that will work even better. Federal plans good, state plans better. (SL, *Energy Efficiency and Renewables: The Cheapest, Smartest Way for States to Cut Carbon Pollution*)

#### 4.5.3 Climate Impact Frames

Finally, climate impact frames were the second most widespread of the three major frame types, with nearly 38% of all documents containing at least one of these frames. This group of five frames highlights a range of arguments made for how climate change would be harmful as it occurs. Notably, by far the most common of these frames is the idea that climate change will have detrimental consequences for human quality of life and health (I1), a depiction that appears in 28%, more than a quarter, of all documents examined—making it the most prevalent of all

detailed sub-frames described throughout the sample of NRDC documents. This frame describes climate change as creating serious health risks or loss of life, or more generally making life more difficult or unpleasant. This frame highlights the ways that climate change would be (or already is) negatively impacting humanity's wellbeing and health. Many of these claims concern damages from extreme weather events, such as Hurricane Sandy in late 2012, or drought in California during 2013, which the NRDC's authors explicitly link to climate change. For example:

Damage wreaked by Hurricane Sandy is a glimpse of what is to come with future storms as climate change fuels rising seas and more powerful extreme weather events. (I1, *Preparing for Climate Change: Lessons for Coastal Cities from Hurricane Sandy*)

Of the remaining four frames, all appear in less than 10% of the sampled documents. Lastly, the top five most common detailed sub-frames are outlined in Table 4-3 below.

Table 4-3. The NRDC: Top five climate change policy supporter frames.

Frame Type		N	%
<i>Impact</i>	<b>I1</b> Climate change would impact <i>human quality of life and health</i> .	94	<b>28.4</b>
<i>Policy</i>	<b>E2</b> Policy would be help <i>the economy</i> at the state or national level.	78	<b>23.6</b>
<i>Policy</i>	<b>E1</b> Policy would help <i>consumers</i> financially.	64	<b>19.3</b>
<i>Science</i>	<b>S1</b> The scientific evidence for climate change is <i>clear and certain</i> .	57	<b>17.2</b>
<i>Science</i>	<b>S3</b> Climate change science is <i>misused for ideological and personal gain</i> .	47	<b>14.2</b>



#### 4.6 Comparing Supporters and Skeptics

When compared to the policy opponent frame frequency data from Chapter 3, we can see that science frames are indeed more prevalent in the Heartland Institute documents versus the NRDC documents. At least one science frame was present in 74% of the Heartland sample, versus 30% in the NRDC sample—a percentage-point difference of 44%. Mirroring the NRDC documents, policy design frames were the second most common frame type, with at least one frame present in 66% of documents. Lastly, compared to their use by climate skeptics, climate impact frames are much more prominent in the NRDC publications: identified in 37% of documents versus 16% of the Heartland documents.

Interestingly, the results also indicate that Heartland, overall, uses a greater variety of frames per document, as compared to the NRDC. One possibility for this is that the authors of Heartland publications are less professionalized than their NRDC counterparts as well as likely experiencing less editorial oversight—and as such, more free-rein to generate less rhetorically-focused publications incorporating “everything but the kitchen sink.” The full comparison between each frame is presented in Table 4-4 below (a modified typology showing each frame’s positive and negative connotation).

Table 4-4. Comparing climate policy advocacy and opposition framing strategies.

	<i>NRDC</i>	<i>Heartland</i>
	<i>%</i>	<i>%</i>
<b><i>Science Frames</i></b>		
<i>Climate policies should be supported/opposed because the evidentiary basis of climate change is robust and accurate/weak and incorrect.</i>	<b>29.9</b>	<b>74.1</b>
<b>S1</b> The scientific evidence for climate change is <i>clear and certain/complex and uncertain</i> .	17.2	44.1
<b>S2</b> Mainstream climate science has <i>integrity and is not junk science/does not have integrity and is junk science</i> .	4.5	50.0
<b>S3</b> Climate change science is <i>misused for ideological and personal gain</i> .	14.2	57.1
<b><i>Impact Frames</i></b>		
<i>Climate policies should be supported/opposed because climate change would generate negative/positive impacts.</i>	<b>37.2</b>	<b>15.6</b>
<b>I1</b> Climate change would impact/improve <i>human quality of life and health</i> .	28.4	6.2
<b>I2</b> Climate change would impact/improve <i>agriculture and the environment</i> .	8.8	14.4
<b><i>Policy Design Frames</i></b>		
<i>Climate policies should be supported/opposed because climate change policies would do more good than harm/more harm than good.</i>	<b>46.8</b>	<b>65.9</b>
<b>E1</b> Policy would help/harm <i>consumers financially</i> .	19.3	29.7
<b>E1a</b> <i>Low income, minority, or elderly consumers</i> .	1.2	14.7
<b>E2</b> Policy would help/harm the economy at the state or national level.	23.6	23.8
<b>SL</b> Policy would foster/threaten <i>state leadership</i> .	10.0	12.4
<b>EN</b> Policy would help/harm the <i>environment</i> .	1.5	5.9
<b>RE</b> Policy would generate <i>reliable/unreliable energy systems</i> .	4.2	6.8
<b>SE</b> Policy would foster/threaten <i>national security</i> .	0.9	0.9
<b>SO</b> Policy would foster/threaten <i>national sovereignty</i> .	5.7	3.2
<b>ME</b> Policy would have a <i>measurable effect/no measurable effect</i> .	5.1	18.8
<b>PW</b> Policy is <i>wanted/not wanted by the public</i> .	14.8	11.5

## 4.7 Discussion

Characterized by a lengthy time horizon and often intangible causes and consequences, climate change is a psychologically distant phenomenon, making it less likely to inspire urgent policy change as compared to other environmental problems. However, given the dire consequences that climate change poses for the wellbeing of humanity and earth's ecological systems, organizations across the world and in the United States, like the NRDC, work to raise

awareness about climate change as a problem. These organizations champion policies that will help ameliorate the causes of climatic change as well as deal with the now-inevitable consequences. How thought leaders communicate about climate change matters, and it helps make different policy options more or less politically feasible. As such, framing is a powerful aspect of how we as a society talk, think about, and address vexing issues like the climate crisis. More specifically, framing sets the stage for how problems are conceptualized, and as part of that, which solutions seem the most appropriate and timely. Framing foregrounds aspects of a problem, while pushing other aspects to the background, and indeed, frames themselves are arguments about how issues should be thought about.

For these reasons, an accurate understanding of the messaging strategies of key climate change communicators is important. Recent scholarly discussion has explored what the most appropriate role might be for messaging that focuses on the scientific reality of climate change. In the initial results suggested here, we see that science frames (describing the technical realities of climate change and the actors who produce such work) are less prevalent than policy design frames (describing how policies are designed, and emphasizing how policies are desirable and generate *positive consequences*). As such, we can consider that the NRDC is perhaps following much of the contemporary framing literature which suggests that building public support for climate-energy policies is best met by making the positive impacts from these policies relevant and directly immediate to peoples' day-to-day lives, as suggested in Chapter 2.

However, initial results also indicate that climate change impact frames (which describe the *negative consequences* of a changing climate) are almost just as prevalent. Science frames and policy design frames have been the major focus of theorizing and study throughout this project. However, climate impact frames, the third major frame family described in my typology, warrant additional

discussion. Indeed, the most common detailed frame is the idea that climate change would negatively impact human quality of life and health, which was apparent in just over 28% of sampled documents. In some ways this initially may seem counterintuitive, since prior research suggests that negative messaging is not necessarily effective for inciting action on climate change—but leading potentially instead to a sense of hopelessness or paralysis. Indeed, framing literature has described how “positive” frames highlight potential gains, while “negative” frames highlight potential losses (Bertolotti and Catellani 2014; Gifford and Comeau 2011; Leiserowitz 2007; Morton et al. 2011; Spence and Pidgeon 2010). Extant research indicates that people tend to be risk-averse (Tversky and Kahneman 1974), which would suggest that negative loss frames would act as powerful motivators to spur policy action and interest in climate change as an urgent, timely issue. However, other research has indicated that while fearful representations of climate change are memorable and attention-grabbing, they ultimately “distance and disempower” peoples’ sense of personal connection with climate change as a problem (O’Neill and Nicholson-Cole 2009). In contrast, positive frames make tangible the beneficial impacts from climate-energy policies, and in doing so diminish the psychological separation generated by the temporal and geographical distance of climate change as an issue (Wiest, Raymond, and Clawson 2015).

As such, characterizing of the NRDC’s framing strategy as simple “doom and gloom” in this way misses a more complex story about the dynamics of framing in action. Extant research also highlights how combinations of positively and negatively framed messages go hand-in-hand to cultivate attitudinal or behavioral changes. This more nuanced framing effect is especially important when considering the NRDC’s communication strategies since so many of their publications serve as a “call to action”: donating to a cause, spreading the word about an issue on social media, or encouraging readers to contact the EPA, for example.

Secondly, in some ways the extensive presence of science messaging is still greater than expected, with science-related frames appearing in 30% of the sampled documents. Closer attention to how the NRDC uses these kinds of science frames reveals a more interesting story, where the use of science frames becomes a reactive strategy. In instances where the NRDC documents portray climate change in terms of science frames, the organization is pushing back on topical pieces of misinformation being distributed by other actors, like the Heartland Institute. For example, the American Legislative Exchange Council (ALEC) made claims in late 2014 that carbon dioxide emissions were not causing polar ice to melt and sea levels to rise. As a result, the NRDC pushed back with a series of publications naming ALEC as climate change deniers and highlighting their active opposition to climate change policy. Hence, the NRDC discusses climate change through scientific frames when responding to specific misinformation events. In this way, the NRDC tends to not explicitly talk about the science unless climate policy opponents raise questions about the veracity of climate science first. The “reactive” use of these science frames is particularly interesting in light of the discussion around the Gateway Belief Model (GBM) as described in Chapter 2. More specifically, these results show how the NRDC is engaged in a deliberate counterframing strategy, especially around the use of science frames. Counterframing is an important element of policy disputes, especially over time. Stakeholders react to each other’s communication strategies, attempting to establish their preferred narrative of an issue’s causes, consequences, and seemingly-best solution, and “figures prominently in the dynamics of framing over time” (Chong and Druckman 2013). Again, this reiterates how real-world, competitive framing is a dynamic process, where the NRDC uses certain frames most often in response to inaccurate claims from other actors, like climate change skeptic groups.

Next, this chapter also compares the prevalence of frame types between the NRDC and the Heartland Institute, comparable actors who exemplify two perspectives in the climate change “debate.” Most notably, the results indicate the comparably heavy reliance on science messaging in think tank documents, evident in all three detailed science frames. Perhaps most striking is the difference in S2 between both samples—the frame that defends or disputes the integrity of mainstream climate science: present in less than 5% of the NRDC sample, but present in a clear half of Heartland documents.

#### 4.8 Summary

My goal in this chapter was to investigate the strategic framing choices of a climate change advocacy organization, and then comparing those findings to a comparable climate change policy opponent group. I expected that (**H<sub>1</sub>**) science frames would be less common in the NRDC publications versus other frame types. Secondly, when looking only at the NRDC publications, I expected that (**H<sub>2</sub>**) policy design frames would be most prevalent, compared to other frame types. The results of the qualitative content analysis support these expectations. However, science frames were still reasonably prevalent in the advocacy documents, and a closer examination of these publications shows how the NRDC takes an active role in refuting attacks on the veracity of climate science. Conversely, science frames are more common in Heartland publications, versus other frame types, based on the earlier findings from Chapter 3. In Chapters 3 and 4, I have generated an overview of framing strategies employed by climate change policy opponents and supporters at the national level in the United States, identifying to what degree advocates are relying on science as opposed to non-science frames. In Chapter 5, I consider these

national, elite trends within the context of a subnational on-the-ground policy conflict in the state of Illinois.

## CHAPTER 5. STRATEGIC FRAMING IN THE ILLINOIS CASE OF SUBNATIONAL CLIMATE-ENERGY POLICY

### 5.1 Introduction

In February 2015, a diverse group of Illinois environmental stakeholders calling themselves the Clean Jobs Coalition introduced an ambitious proposal for new climate-energy legislation: the Clean Jobs Bill (CJB). Making a case for job growth and consumer savings, public health benefits and assistance for low-income communities, the bill could potentially transform the state's energy landscape to sow the seeds for future explicit greenhouse gas emissions targets. Over a year later, in December 2016, the bipartisan, omnibus Future Energy Jobs Act (FEJA) was signed into law and contained many of the most critical elements of the original CJB. In a state where energy policy is typically dominated by powerful utilities and industry groups, how was the Coalition able to secure such a surprising political win?

In this chapter, I argue that those environmental advocates were successful because they strategically harnessed the power of positive issue frames—especially those emphasizing economic benefits and consumer protections—while minimizing their use of science frames. Crucially, by using *negative* economic frames, advocates were also able to weaken the political influence of the historically-dominant industry and utility actors within the state.

We know that framing theory has emerged as an important tool for investigating the political discourse of climate change, especially given the contentious nature of the debates around the issue. Perhaps surprisingly, far fewer studies have explored the influence of these different types of frames in the enactment of actual climate-energy policies. Here, political influence is understood as how instrumental frames were used in terms of securing support for the policy. Although some researchers have examined the role of issue frames in the creation of



new carbon pricing policies (Rabe 2018; Raymond 2016) and other studies have compellingly explored framing as part of sub-federal energy policies (Houle, Lachapelle, and Purdon 2015; Kalaf-Hughes and Kear 2018; Stokes and Warshaw 2017), these studies remain limited and do not explicitly discuss the potential role of science frames in these policy conflicts—an important question given the emphasis placed on science messaging by climate change communicators. In this chapter, I engage with this gap by posing two research questions: 1) *What kinds of science and non-science frames were prominent in a major climate-energy policy conflict—the enactment of the 2016 Future Energy Jobs Act in the state of Illinois?*; and 2) *What was the possible political influence of those frames on the results of that process?*

As noted in preceding chapters, existing framing and policy research suggests that economic frames and some public health frames (i.e., arguments about how policies are designed, and the financial or health impacts these would pose for citizens) might be *more* effective at generating support for climate-energy policies, especially because these kinds of effects are psychologically “near” and in doing so garner more public support, and thus prove more politically palatable for policymakers. Alternatively, we would expect that scientific and informational frames might be *less* effective at bolstering support, especially among demographics that might be pre-disposed to dismiss climate change as a problem, such as some conservatives.

I test these claims through a within-case analysis of the real-world policy debate over the FEJA. In doing so, I bring new and more rigorous qualitative data to these important questions by investigating the framing strategies of stakeholder groups as they championed their climate-energy policies while challenging others, and in the end were able to generate a bill with

meaningful—and somewhat surprising—environmental outcomes given the dynamics of interest group politics.

For this within-case analysis, I focus on the state of Illinois as an important and understudied case of a subnational policy. Despite a difficult political climate, Illinois passed the Future Energy Jobs Act (FEJA, SB 2814) at the end of 2016. This intense debate about changing the state's energy landscape spanned several years and involved diverse stakeholders, competing bill iterations, and various arguments around the necessity of policy action and the potential impacts to state residents and businesses. As noted earlier, this policy episode was initiated by a group of environmental stakeholders, the Illinois Clean Jobs Coalition. This focus on a subnational case is especially pertinent given the sustained lack of federal climate action, which has made climate-energy policies at the subnational level a crucial area of focus for policy scholars (Rabe and Borick 2013). In addition, messages from national or international groups such as Heartland or NRDC are focused on policies at multiple scales—international, national, and increasingly common subnational actions.

Despite substantial work on the effects of frames on individual attitudes about climate change and climate policy, we have less data on how the use of frames have affected actual climate and energy policy choices in practice. Consistent with some of the psychological and experimental work on public opinion as described in Chapter 2, existing case study work suggests that economic and public health frames may be more important than science-based frames in getting a new policy enacted. As such, I explore the following hypotheses, as initially posed in Chapter 2:

**H<sub>1</sub>:** Science frames will be less common in the policy debate, compared to non-science policy design frames that instead emphasize the economic and public health benefits of climate-energy policies.

**H<sub>3</sub>:** Science frames will have been less politically influential within the policy process as compared to other non-science frame types.

Interview data and content analysis work reveals not only the prevalence of economic frames and consumer benefit frames (**H<sub>1</sub>**) but also underscores their deliberate use by environmental advocates and the degree to which such frames resonated with policymakers and the public throughout the multi-year policy debate, and were politically influential in shaping final policy outcomes (**H<sub>3</sub>**). In addition, the surprising nature of the ambitious environmental goals in the final bill provide additional evidence that this economic framing was important to the bill's passage and final provisions.

The results ultimately demonstrate that framing played an influential role in this policy debate. Stakeholders reported that the use of frames were critical for shaping the final policy outcome, and were clear about the types of frames they relied on and with what political effect. Economic frames—such as arguments about impacts to consumers and the economy overall, as well as statements that framed potential policies as developing Illinois' ability as a leader in green energy—were extremely important for the success of the final bill, as well as in the initial bill developed by environmental advocates. Indeed, this first bill successfully set the terms of the policy debate and shaped the most relevant and appropriate framing strategies to be adopted by other stakeholders. This becomes especially clear when assessing the different bill provisions that succeeded or failed throughout the multi-year debate. These same frames of economic growth and consumer benefits and protections, in particular, were also primary talking points used by elected officials when describing their support for the final legislation, echoing the framing strategies of both environmental advocates and industry leaders who came together to

negotiate the final bill. All of this is important evidence of the apparent influence of the new, economic and consumer benefit frames for this particular policy process.

In contrast, I find that science frames played a minimal role in the public materials of actors engaged in the policy conflict, mirroring some findings from Chapter 3 and 4. While climate change policy opponents and supporters operating at the national level drew more often on science and climate impact frames (as discussed in Chapters 3 and 4), on-the-ground stakeholders in the FEJA dispute consistently framed their own and opposing policies in economic terms. Also, some stakeholders spoke explicitly to the importance of carefully avoiding scientific messages, which were understood as not just politically ineffective, but also “toxic” and detrimental for policy success. Lastly, conversations with stakeholders, taken into account with my press release analysis, strongly reinforce how the public terms of engagement throughout the policy debate were not about climate. This is surprising given the significant climate impacts that are possible with FEJA’s passage.

The rest of this chapter proceeds as follows: I summarize the Illinois case then outline my methods and typology of frames. Following this, I review my findings and describe the results from a content analysis of stakeholder press releases, news media items, along with data from interviews with key actors. I conclude the chapter with a brief discussion of my findings.

## 5.2 Case Selection and Background

The state of Illinois has several qualities that make it an important case for considering the influence of climate frames. The state is representative of a number of other states facing similar climate-energy challenges, including mixed partisan control of government, a diverse assortment of energy interests including coal, nuclear, and renewable energies, strong urban and rural

economies, and a varied group of stakeholders invested in the climate-energy process (such as small business owners, large industrial interests, environmental justice organizations, political representatives at both the city and state level, labor interests, and smaller as well as more mainstream environmental groups). Illinois has previously been described as an “opportunistic state” when it comes to the development of climate-energy policy, with several different programs to address greenhouse gas emissions and with a reoccurring focus on economic concerns (Rabe 2004). Recent research also indicates that Illinois is one of the most competitive states when it comes to control over state leadership, suggesting that Illinois experiences very high legislative polarization across both chambers of government (Hinchliffe and Lee 2016).

The recent Illinois debate around climate-energy policy was initially sparked by the introduction of the Clean Jobs Bill (CJB), an effort of the Illinois Clean Jobs Coalition. The Coalition emerged in early 2015 as an alliance of environmental groups, renewable energy businesses, religious communities, labor groups, and other non-governmental organizations who were interested in furthering the development of renewable energy within the state as well as developing various climate change-related goals. Other major actors included Exelon, a nuclear energy provider, and its subsidiary, Commonwealth Edison (ComEd), both of whom introduced several of their bills throughout the policy dispute. Based in Chicago, Exelon is the largest energy provider in the state and a long-dominating force in Illinois energy policy, especially given that Illinois receives roughly half of its energy from nuclear power (NEI 2014). Exelon is the nation’s largest nuclear power operator (Lydersen 2016c). Other utility groups (Ameren) as well as coal interests (Dynergy), both based in the southern parts of Illinois, also became important players in the policy debate.

In total, four major bills to address the state's energy and climate change concerns were introduced throughout the 98<sup>th</sup> and 99<sup>th</sup> general assembly. All failed to pass by the conclusion of the latter session on May 31, 2016. Afterward, policy advocates focused on salvaging key components of the bills and combining them into new legislation, which was a significant challenge given the divergent interests involved. A first compromise bill was drafted by Exelon but also failed to gain traction. Finally, the FEJA was introduced in November 2016. Considered by many stakeholders to be a "Christmas tree with something for everyone" (Interview 5), the bill contained several key features of earlier bill iterations: controversial funding for two of Exelon's nuclear facilities, major expansions to energy efficiency programs for ComEd and Ameren, funding for low-income programs and renewable energy jobs training, caps on costs to residential and business energy consumers, and lastly, long-needed changes to the state's dysfunctional renewable portfolio standard (RPS) program. Despite major obstacles and a diverse group of negotiators and priorities, the FEJA ultimately passed with bipartisan support in early December 2016.

### 5.3 Methods

In **H<sub>1</sub>**, I expect that specific non-science frames (highlighting the economic and public health benefits of climate-energy policies) will be more common in arguments over the competing Illinois bills while science frames will be less common. To test this, I analyze the framing strategies of the two primary Illinois stakeholders (the Clean Jobs Coalition as compared to the industry groups Exelon and ComEd) through qualitative content analysis of press releases. I also assess news media articles to understand how media framing of the bills might differ from stakeholder representations and to also gain a sense of public discourse around the policy

debates. Press releases were gathered online from the Coalition, Exelon, and ComEd websites, for a total of 64 press releases spanning from February 4, 2015 to April 14, 2017. This exhaustively covers all formal statements made separately by the Coalition as well as the industry groups Exelon and ComEd. This press release analysis was supplemented by an exhaustive search of publications from several Illinois newspapers: *The State Journal-Register* (covering Springfield), the *Chicago Daily Herald* (covering Chicago and surrounding areas), the *News-Gazette* (covering East Central Illinois), and the *Chicago Tribune*. This range of publications is a representative selection of important outlets in Illinois that provide content to various types of audiences, and were available in LexisNexis at the time of data collection and are all within the top ten daily Illinois newspapers by circulation.<sup>6</sup> Also, I included all relevant documents from *Crain's Chicago Business*, a specialty business periodical that frequently published in-depth reporting on the political struggle over the Clean Jobs Bill and its alternatives. Media documents were gathered through LexisNexis Academic using a wide range of search terms to ensure that no relevant articles were overlooked.<sup>7</sup> This sampling strategy produced a final sample of 134 news media articles.

For both the press release and news media items, I assessed frame presence through manual human coding using NVivo 11 software, which allowed for a close read of publications. As in previous chapters, the typology of possible climate-energy frames (Table 5-1) was originally drawn from McCright and Dunlap (2000), then expanded to include more detailed additional sub-frames, then further modified in the present chapter to reflect both the potential

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<sup>6</sup> Agility PR Solutions, "Top 10 Illinois Daily Newspapers by Circulation," Retrieved September 15, 2018 from <https://www.agilitypr.com/resources/top-media-outlets/top-10-illinois-daily-newspapers-by-circulation/>.

<sup>7</sup> Terms used were "Clean Jobs Coalition," "Clean Jobs Bill," "Exelon," "ComEd," "Next Generation Energy," "Low Carbon Portfolio Standard," "Future Energy Plan," "Future Energy Jobs" as well as "clean energy," "climate change," and "global warming."

policy support and the policy opposition versions of each frame. The validity of the coding categories was tested on a distinct subset of documents. Lastly, individual documents served as the units of analysis and were coded for the presence or non-presence of each frame. In other words, each document could contain multiple frames, but each frame would only be coded once within a document. The same typology was used for both the press releases and the news media items. Some frames present in previous chapters were not included in the current version of the typology, given their absence from the study's sample.

For **H<sub>3</sub>**, I anticipated that science frames would be less politically influential throughout the policy process as compared to other non-science frame types. While the content analysis helped establish the general presence or non-presence of different types of frames throughout the policy process, semi-structured interviews with key individuals involved in the debate over the various bills, leading to the final FEJA, helped assess the role of these different frames in the policy process, as well as why groups chose certain framing strategies over others.

Thus, I test the chapter's second hypothesis regarding the apparent influence of framing strategies based on data from key informant interviews and textual documents related to the introduction, negotiation, and adoption of the final Illinois renewable energy law, using a process tracing methodology.

Initial interview participants were noted during the content analysis stage, a process which helped to reveal key actors and organizations central to the case. Additional participants were solicited through a snowball sampling method though no new actors were suggested who had not already been considered as potential participants. In total, 11 semi-structured interviews were conducted: one with an Exelon executive, five with elected officials (two more pro-environment, Democrat officials, two pro-Exelon Republican officials, and one former Democratic elected



official who had been closely involved with the initial Clean Jobs Bill), and three individuals from environmental and labor organizations. One person from this latter group was interviewed twice, first in 2016 and again in 2018. Each interview averaged 45 minutes in length and was audio-recorded and transcribed in its entirety.

Interview participants were all provided with an information form describing the purpose of the study, potential risks, data handling procedures, and an indication of approval from Purdue University's Institutional Review Board. In accordance with that form, interview participants were informed verbally at the beginning of each interview that their comments would be kept confidential.

Process tracing served as the methodological backbone throughout the case. Process tracing is understood as the "systematic examination of diagnostic evidence selected and analyzed in light of research questions and hypotheses posed by the investigator" (Collier 2011, 823), and helps to unearth the contextual reality of a case by emphasizing change over time and through the systematic examination of "diagnostic evidence." As described by Tansey (2007), elite interviewing is an important component of process tracing methods given the researcher's goal to "obtain information about well-defined and specific events and processes" (2). To elaborate, the purpose of interviews is to corroborate information that has been gathered from other sources, as well as to help reconstruct the series of events that led to the bill's passage. Interview data with key stakeholders was foundational for triangulating findings from the press release and media content analysis. This process clarified and fine-tuned my historical understanding of the case as informed by the earlier content analysis work. For example, interviews with stakeholders helped confirm that the major framing strategies I had identified were accurate. More importantly, interview data was crucial for understanding the strategic

framing decisions that stakeholders made throughout the policy conflict and in this way served as crucial diagnostic pieces of evidence. In addition, interviews with a wide range of stakeholders, including several elected officials, allowed me to triangulate perspectives on the factors that were most important in the passage of the final compromise bill, including the linked framing strategies and policy designs of the different interest groups.

## 5.4 Results

In general, content analysis data show strong support for **H<sub>1</sub>**: that non-science, specific policy design frames—especially economic frames—were much more prevalent throughout the Illinois renewable energy bill debate. In addition, there is also good evidence that key interests consciously chose non-science frames for greater political influence, and that those frames did indeed shape the final outcome of the policy process, also confirming **H<sub>3</sub>**. This section considers results for each of these main hypotheses.

### 5.4.1 Testing H<sub>1</sub>: Frame Prevalence in Published Stakeholder Materials

As suggested by the bill's title, financial benefit themes of job creation and economic growth, as well as consumer savings, were the most prominent frames employed throughout the policy campaign (see Table 5-1) and upon which support for the final FEJA bill ultimately hinged. Public health benefits, environmental benefits, and arguments about fostering Illinois' ability to become a green energy leader also appeared in the campaign rhetoric to promote the bill, both for the Coalition and industry press releases. Also, both stakeholders emphasized the “state leadership” frame, which is present in nearly half of each groups' publications. Notably, discussion of climate change was almost absent from the press releases of both organizations.

Table 5-1. Prevalence of frames in stakeholder publications.

	Coalition Press Releases		Industry Press Releases	
	N	%	N	%
<b>Science Frames*</b>				
<i>Climate policies should be supported/opposed because the evidentiary basis of climate change is robust and accurate/weak and incorrect.</i>	<b>1</b>	<b>3.1%</b>	<b>0</b>	<b>0%</b>
<b>S1</b> The scientific evidence for climate change is <i>clear and certain/complex and uncertain</i> .	1	3.1	0	0
<b>S2</b> Mainstream climate science has <i>integrity and is not junk science/does not have integrity and is junk science</i> .	0	0	0	0
<b>S3</b> Climate change science is <i>misused for ideological and personal gain</i> .	0	0	0	0
<b>Climate Impact Frames*</b>				
<i>Climate policies should be supported/opposed because climate change would generate negative/positive impacts.</i>	<b>2</b>	<b>6.2%</b>	<b>0</b>	<b>0%</b>
<b>I1</b> Climate change would impact/improve <i>human quality of life and health</i> .	2	6.2	0	0
<b>I2</b> Climate change would impact/improve <i>agriculture and the environment</i> .	0	0	0	0
<b>I3</b> Climate change would impact/improve <i>economic systems</i> .	0	0	0	0
<b>Policy Design Frames*</b>				
<i>Climate policies should be supported/opposed because climate change policies would do more good than harm/more harm than good.</i>	<b>32</b>	<b>100%</b>	<b>31</b>	<b>100%</b>
<b>E1</b> Policy would help/harm <i>consumers financially</i> .	31	96.9	24	77.4
<b>E2</b> Policy would help/harm <i>the economy</i> at the state or national level.	30	93.8	27	87.0
<b>SL</b> Policy would foster/threaten <i>state leadership and sovereignty</i> .	16	50	13	41.9
<b>EN</b> Policy would help/harm <i>the environment</i> .	14	43.8	16	51.6
<b>RE</b> Policy would generate <i>reliable/unreliable energy systems</i> .	2	6.3	19	61.2
<b>SE</b> Policy would enhance/threaten <i>national security</i> .	0	0	1	3.2
<b>QL</b> Policy would help/harm <i>human quality of life and health</i> .	17	53.1	10	32.2
<i>*Percentage of documents featuring at least one frame of the Science, Climate Impact, or Policy Design type.</i>	<i>Total N = 32</i>		<i>Total N = 31</i>	

Secondly, the analysis of news media documents shows that newspaper coverage of the policy debate was broadly consistent with how stakeholders framed the various bills (Table 5-2). Most specifically, general reporting on the policy debate shows very little coverage on the

climate change aspects of the issue. Instead, we see a heavy emphasis on policy design frames, and economic arguments in particular.

Table 5-2. Prevalence of frames in media coverage.

	<i>News Media Coverage</i>	
	<i>N</i>	<i>%</i>
<b>Science Frames*</b>		
<i>The evidentiary basis of climate change is robust and accurate/weak and incorrect.</i>	<b>3</b>	<b>2.8%</b>
<b>S1</b> The scientific evidence for climate change is <i>clear and certain/complex and uncertain</i> .	3	2.8
<b>S2</b> Mainstream climate science has <i>integrity and is not junk science/does not have integrity and is junk science</i> .	0	0
<b>S3</b> Climate change science is <i>misused for ideological and personal gain</i> .	0	0
<b>Climate Impact Frames*</b>	<b>8</b>	<b>7.3%</b>
<i>Climate change would generate negative/positive impacts.</i>		
<b>I1</b> Climate change would impact/improve <i>human quality of life and health</i> .	4	3.7
<b>I2</b> Climate change would impact/improve <i>agriculture and the environment</i> .	1	0.9
<b>I3</b> Climate change would impact/improve <i>economic systems</i> .	1	0.9
<b>Policy Design Frames*</b>		
<i>Climate change policies would do more good than harm/more harm than good.</i>	<b>94</b>	<b>86.2%</b>
<b>E1</b> Policy would <i>help/harm consumers</i> financially.	64	48.1
<b>E2</b> Policy would <i>help/harm the economy</i> at the state or national level.	50	45.9
<b>SL</b> Policy would foster <i>state leadership</i> and sovereignty.	14	12.8
<b>EN</b> Policy would <i>help/harm the environment</i> .	6	5.5
<b>RE</b> Policy would generate <i>reliable/unreliable energy systems</i> .	9	8.2
<b>SE</b> Policy would <i>enhance/threaten national security</i> .	0	0
<b>QL</b> Policy would <i>benefit human quality of life and health</i> .	16	14.7
<i>*Percentage of documents featuring at least one frame of the Science, Climate Impact, or Policy Design type.</i>	<i>Total N = 109</i>	

The prominence of particular frames throughout the policy episode demonstrates how certain concerns remained central to stakeholders throughout the debates. In the next section, I describe how the policy dispute proceeded, and the role that framing played in shaping the final

policy outcomes. I also include examples of press release and media data in the following sections to further illustrate and corroborate findings from my interviews.

#### 5.4.2 Testing H<sub>3</sub>: Stakeholder Perspectives and the Political Influence of Frames

Echoing the qualitative content analysis results, interviews with individuals closely involved in the bill negotiations demonstrate that the focus on economic benefits was a careful decision on the part of environmental stakeholders, while science frames, and any discussion of climate change even more broadly, were consciously excluded from how the bill was framed. Elected officials also echoed these same frames during interviews when explaining their support for the final bill. Although other factors were important in the ultimate success of the final climate-energy bill in Illinois, the evidence in this section also indicates how the final result of the political process is hard to explain without also accounting for the influence of the dominant frames in the process. These particular frames continued to provide support for the parts of the bills that were most successful and which survived from one iteration of the legislation to the next. More specifically, the bill provisions most strongly associated with economic and public health framing showed lasting power, while other bill provisions—like those associated more explicitly with climate change—were dropped. In this way, Illinois was able to pass a comprehensive climate-energy policy with bipartisan support, an outcome infrequently seen in other states around the country. In this section, I describe how the original Clean Jobs Bill was proposed by environmental advocates in the Clean Jobs Coalition, the introduction of competing and subsequent bill iterations, and the final passage of the 2016 FEJA.

#### 5.4.2.1 The Illinois Clean Jobs Coalition: Developing the Clean Jobs Bill

By the later months of 2014, environmental stakeholders had begun to meet and discuss the possibility of new environmental legislation. The Illinois Clean Jobs Coalition emerged from these groups as an alliance of environmental groups, renewable energy businesses, religious communities, labor groups, and other non-governmental organizations—a loose extension of a more informal group of environmental stakeholders who regularly collaborated within the state (Interview 8). These actors knew that an opportunity for ambitious energy legislation was on the horizon given the recent development of the EPA Clean Power Plan (CPP). The Obama-era CPP would have required each state to come up with a plan for decreasing carbon emissions. Seemingly coming down the pipeline, the CPP offered a window of opportunity for environmental advocates interested in climate action. Indeed, advocates closely involved in the design of the first Clean Jobs Bill explicitly indicated that the bill arose as a response to the CPP, a deliberate strategy to gain greater legislative attention (Interview 4a; Interview 2).

Importantly, the coalition of advocates putting together ideas for the Clean Jobs Bill sought to address a wider range of energy and climate issues for the state, including addressing major problems with Illinois' Renewable Portfolio Standard (RPS). The state of Illinois first implemented its RPS program in 2008, with standards that called for 25% of the state's electrical energy consumption to come from renewable sources by 2025. However, structural problems with the RPS—exacerbated by the state's 2012 Municipal Aggregation Act—made the RPS largely dysfunctional. The situation generated roughly \$117 million of state funding held in limbo and unable to be spent, despite its intended purpose of supporting renewable energy procurement within the state. Given the state's wider economic problems and long-standing budget impasse, environmental actors were concerned that the earmarked funds would be

diverted for other purposes beyond renewable energy. Indeed, the legislature borrowed \$98 million from the fund in 2015 (Maloney 2016). In broader terms, the consequences of this issue with the RPS meant that the development of wind energy had utterly stalled within the state, with essentially no investment and no new development of wind capacity, since 2013. This issue meant that modification of the RPS was a crucial goal in terms of renewable energy development for Illinois (Trabish 2015).

In short, the need to respond to the CPP created a unique opportunity to put several different environmental ideas on the legislative agenda, especially in terms of repairing the “broken” RPS. These goals seemed especially urgent given the considerable political power of industrial actors like Exelon, who had also been raising concerns in Springfield for several years on the potential closures of their less profitable nuclear facilities within the state. As a powerful political force in Illinois, Exelon had historically been able to act decisively to have its legislative goals met with little opposition. Parties with coal interests, especially in the southern parts of Illinois, had similarly enjoyed political sway in Springfield and were beginning to express concerns about energy policy. As such, the Coalition members felt that getting their legislation on the table as quickly as possible would be crucial for achieving any kind of policy success, particularly as a way of preemptively shaping the terms of the debate (Interview 4a). In this way, environmental advocates behaved strategically in accordance with framing theory: extant work shows that the frames received earliest by an audience powerfully shape attitudes on an issue, serving as the “anchoring” point against which all subsequent frames are evaluated (Chong and Druckman 2013). As one advocate noted:

There were also rumblings that Exelon and ComEd wanted something... so we also had a sense that if we didn't put out a bill... the ground was set by the utilities, and we were never allowed anything in after that. So we wanted to make sure we had something out there (Interview 3).

As such, the Clean Jobs Bill was introduced in the Illinois House and Senate on February 19 and 20 of 2015 (see Table 5-3). The bill had three major objectives: (1) modify the state's Renewable Portfolio Standards (RPS) to increase Illinois' renewable energy goals to 35% by 2030, up 20% from current levels, (2) enact a new energy efficiency rule to create a 20% reduction in statewide power consumption by 2025, and (3) introduce market-based strategies for cutting carbon dioxide emissions, particularly by creating a cap and trade program. The proposal included a provision where 65% of auction proceeds from the proposed carbon market would be designated to fund energy efficiency and renewable energy throughout the state (Lydersen 2015). The Coalition argued that adopting this range of measures would generate 32,000 new jobs throughout the state during the next several decades, would create consumer savings of roughly \$1.6 billion dollars, and position Illinois to readily comply with the CPP (ICJC 2015b).



Table 5-3. Proposed bills in Illinois climate-energy policy, 2015-2016.

<i>Bill</i>	<i>Introduction Date</i>	<i>Political Sponsors</i>	<i>Key Policy Advocates</i>	<i>Primary Framing Strategies</i>
<b>The Clean Jobs Bill</b> (HB2607/SB1485)	February 19/20, 2015	HB2607: Reps. Elaine Nekritz, Robyn Gabel, Michael Fortner, Christian Mitchell  SB1485: Sens. Don Harmon, David Koehler, Jacqueline Collins	The Clean Jobs Coalition	Job growth and consumer savings. Benefits for public health and future generations. Assistance for low-income communities, and environmental protection.
<b>The Low Carbon Portfolio Standard</b> (HB3293/SB1585)	February 26/20, 2015	HB3293: Rep. Lawrence M. Walsh, Jr.  SB1585: Sen. Donne Trotter	Exelon	Saving jobs and implementing consumer protections.
<b>The Future Energy Plan</b> (HB3328/SB1879)	February 26/20, 2015	HB3328: Rep. Robert Rita  SB1879: Sen. Kimberly Lightford	ComEd	Resilient, secure, and efficient energy systems. Consumer choices with personalized services and financial assistance.
<b>The Next Generation Energy Plan</b> (Amendment No. 2 to SB1585)	May 5, 2016	Sen. Donne Trotter	Exelon, ComEd, Ameren Illinois	Economic growth and job preservation, reliable energy, and assistance for low-income communities.
<b>The Future Energy Jobs Act</b> (SB2814)	November 15, 2016  Signed into law Dec. 1, 2016	Rep. Robert Rita	Exelon, ComEd, and some actors from the Clean Jobs Coalition	Economic growth and job preservation, low-carbon energy, energy conservation, and renewable energy.

One individual from the Natural Resources Defense Council (NRDC), closely involved with the negotiations, made it clear that the group decided very early on that the Clean Job Bill's major focus should be on economic benefits, and that doing so was a crucial part of their communications strategy—and one that was ultimately very politically effective. As he noted, “we focused on the economic message... [with] a combination of good messaging, and good analysis to support those arguments, we could build a good narrative” (Interview 4a).

Content analysis findings show how claims that the Clean Jobs Bill would “help the economy overall” (E2 in Table 5-1) appeared in 93.8% of the group’s press releases, while messages highlighting how the bill would “help consumers financially” (E1) appeared in 96.9% of press releases. These two frames, in particular, indicate the exceptional importance of job creation and consumer protections and benefits throughout the policy process. For example, as one Coalition member noted in a press release, “the Illinois Clean Jobs Bill will help put more dollars back in the wallets of Illinois families and it’s the only bill under consideration that does so” (ICJC 2015c).

Public health impacts were also described by Coalition stakeholders as a secondary framing strategy, though to a lesser degree. In the group’s published materials, this “benefits for human quality of life and health” frame (QL) appears in just over half (53.1%) of the documents. For example, one press release noted that the Clean Jobs Bill would present a genuine opportunity “to improve public health” (ICJC 2015a) by moving the state away from coal-fired electricity production.

As a state Senator relatedly described, “we talk about health risks [in connection with greenhouse gas emissions]. Just exacerbate[ing] asthma, and lung-related diseases, the closer you are to the coal plants... the south side of Peoria has health indicators that are of concern” (Interview 6). Likewise, one former state Representative remarked that health messaging was important “for some pockets of folks, specifically those that live near power plants and had been negatively impacted by coal ash or pollution itself, and then just... environmentalist people concerned about climate change. But it was not a top message that we had, for sure” (Interview 1).

These kinds of health issues were often specifically linked to minority communities in Illinois. As one advocate noted, polling indicated that Latino voters tended to be the demographic most concerned with health issues associated with climate change, especially in terms of air pollution from coal plants. As such, several Latino legislators throughout the policy debate were vocal about their concerns regarding asthma in Latino communities, though the emphasis on jobs and consumer impacts remained the primary talking points (Interview 2). While health benefits were foundational to environmental organizations within the Clean Jobs Coalition, the group focused closely on messaging that would resonate “on the ground” in Illinois, making both health and climate change messaging less crucial framing approaches (Interview 4a).

Also, part of the tension around framing the CJB as a climate or public health bill arose from the coalition not wanting to appear “anti-coal,” or in opposition against specific technologies or certain elements of local economies within the state. This balance was particularly critical given that the coalition had developed such a strong pro-jobs and pro-economic platform, which would be undercut if they appeared so openly to oppose certain business operations. One senator, who noted that his base is largely labor and environmental advocates, echoed this tension between environmental goals versus speaking directly against coal. As he described, environmentalist actors were mindful about appearing to blame individuals involved with the Illinois coal industry: “people who are trying to just feed their family... they're going to work and trying to do the things that everyone wants to do” (Interview 6). This awareness of not wanting to “demonize coal” was similarly echoed by a Republican Senator, who mentioned this as a reason for climate change messaging playing a minimal role (Interview 10).

Along this line, one environmental Coalition member noted that messaging which could be considered potentially divisive or less politically popular might be outsourced to a coalition partner, as opposed to coming directly from the Coalition itself (Interview 4b). For example, framing that drew attention to the health implications of coal-fired power plants might get taken up by an organization like the Respiratory Health Association, an outspoken and prominent member of the Coalition and a natural partner who could speak credibly to the health concerns of burning fossil fuels (Interview 4b). This strategy of exporting potentially controversial messages is also evident in Coalition press releases and was echoed by other stakeholders during interviews. For example, framing which portrayed the bill as specifically tied to climate change concerns—like protecting future generations are attributed to Coalition partners, such as faith-based organizations or small businesses.

Along a similar line, any environmental benefits attributed to potential policies were only discussed in such a way that allowed for the reintroduction of economic concerns. These kinds of environmental frames appeared in 43.8% of all Coalition press releases and described how the Clean Jobs Bill would “help the environment” (frame EN). Notably, these were typically general claims about how the policy would “improve” or “protect” the environment, and linked back to economic benefits that would arise from advanced environmental protections. For example, Coalition press releases describe the bill as a “rare opportunity to expand Illinois’ economy and enhance our environment” (ICJC 2015d) and argue that a “better environment and a better economy go hand in hand” (ICJC 2015b). The bill’s impact on climate change emissions does feature more prominently in mainstream media coverage. For example, a *Chicago Daily Herald* article notes that while the Clean Jobs Bill would save consumers money, it would, more importantly, lead to decreased CO<sub>2</sub> emissions throughout the state and in doing so, help address

the global climate crisis (Sullivan and Schmidt 2015). Similarly, other media articles maintained that the bill would work to “slow down and reverse the effects of climate change” (Bates 2015).

In short, advocates for the Clean Jobs Bill emphasized specific policy design frames in their official communications, with a clear focus on financial benefit frames for consumers and the state economy as a whole.

Framing around climate change is one major exception to this messaging consistency. Besides the fixes to the state’s RPS program and increased energy efficiency measures (both of which are seen as contributing toward consumer savings and general economic growth), another major part of the original Clean Jobs Bill had been the proposed cap and trade program. Despite being the third “leg” of the bill, openly framing the Clean Jobs Bill as a piece of climate change legislation had always been politically tenuous. This was especially the case given the inherent tensions between an explicit climate frame versus the Coalition’s primary jobs messaging—particularly in a coal state like Illinois. Several stakeholders noted this tension and proposed that at least throughout 2015 and 2016, advocates did not want to appear to be demonizing coal (Interview 6, Interview 10).

#### 5.4.2.2 Industrial Interests: The Low Carbon Portfolio Standard and the Future Energy Plan

Closely following on the heels of the Coalition’s Clean Jobs Bill, Exelon and ComEd released their own legislation: the “Low Carbon Portfolio Standard” (LCPS) from Exelon and the “Future Energy Jobs Plan” (FEJP) from ComEd in early February 2015. The Coalition’s earlier release of the Clean Jobs Bill—and its wide popularity—meant that both industry bills from the onset were forced to engage with many of the “asks” that the Coalition had already proposed, such as energy efficiency standards and the growth of the “green energy economy.” Crucially, this meant that industry stakeholders could not ignore the Coalition’s earlier,

successful framing strategy of emphasizing jobs, economic benefits, and consumer protections. More specifically, this meant that Exelon and the utility companies were put in the difficult position of needing to argue against a jobs bill—engaging in a defensive counterframing strategy to undermine the Coalition’s messaging while attempting to build support for their own policy proposals.

As such, Exelon's LCPS legislation focused on the economic consequences of nuclear plant closure, while ComEd’s proposed bill (FEJP) was positioned as meeting the need for resilient and secure energy systems while also contributing to consumer benefits and savings.

The LCPS was mostly intended to assist two of the company’s potentially struggling nuclear power plants in Illinois by requiring state utilities to purchase “low-carbon” energy credits for 70% of their power requirements. While other low carbon energy sources were technically eligible (such as wind and solar), the bill’s minimum level of energy production effectively excluded all sources except for nuclear from qualifying for the credits (Trabish 2015). As such, critics argued that the credits would provide Exelon with roughly \$300 million a year while other renewable sources would receive minimal support. The plan became pejoratively known as the “nuke rescue bill” (Daniels 2014). The bill was intended to limit rate increases to no more than 2% above 2009 levels; about a \$2 increase to household bills every month (Trabish 2015).

ComEd’s related bill, the FEJP, was designed to work in tandem with the LCPS. It focused on restructuring electricity rates and developing solar power, but more controversially, included a change to the way Illinois residential customers would pay for energy delivery: a transition from rates based on overall consumption, to fixed kilowatt-hour rates based on peak demand usage (Tweed 2015). Also known as a mandatory demand charge, these fees are

calculated based on a consumer's electricity use during times of peak demand. While ComEd argued that demand charges allow consumers to make better choices about their energy use habits, opponents contended that the charges would be confusing and likely lead to higher electricity bills. Equally controversial, the implementation of a demand charge would have supplanted "net metering," an arrangement that allows households with home solar systems to transfer surplus power back onto the main grid, helping to lower their own costs. Many environmental groups argued that dismantling net metering would create considerable disincentives for the adoption of home solar systems (Daniels 2015).

Like the Coalition documents, industry press releases also made heavy use of economic frames, but with a greater emphasis on broader impacts to the state economy (frame E2 in table 5-1), which appeared in 87% of their press releases. While the Coalition's Clean Jobs Bill was portrayed as a way of creating new jobs, Exelon's legislative efforts instead focused on job preservation: without appropriate policy, nuclear facilities would be forced to close and in doing so destroy host communities. As noted by one supporter in a news media item, "it's the jobs, the families, the schools, the libraries, our police and firefighters who will be devastated by the closing of plants" (Byron Chamber of Commerce 2015). Consumer benefit frames were the next most prevalent throughout industry press releases, evident in 77% of documents. Like the Coalition, industry press releases typically positioned their potential policies as being more financially sound than their opponents. In particular, critique of the Clean Jobs Bill focused on financial concerns, especially the threat of higher electricity rates for consumers (e.g., ComEd 2015) as well as criticisms focusing on the expense and unreliability of renewables in particular.

Interestingly, in terms of environmental messaging, 52% of industry press releases included an environmental frame, arguing that a policy would "help or harm the environment"

(EN). Similarly to the Coalition documents, these frames focused on general, unspecified environmental benefits. Exelon press releases that did discuss more specific environmental consequences tended to focus on the benefits of nuclear power as a source of “zero-carbon” energy. Indeed, industry actors framed nuclear power as a crucial energy source for addressing climate change, and one that was not appropriately recognized for its environmental benefits. As one press release noted, industry policies were simply seeking to “level the playing field by treating all sources of clean energy equally.” Such discussion of environmental benefits appeared more frequently in the industry than Coalition documents and was also typically discussed in greater length and detail. Lastly, industry documents also included the “policy would foster state leadership” frame, which was present in 42% of the press releases. Like the Coalition materials, this frame emphasized the opportunity for Illinois to be a leader in the “green energy economy.”

Like the Clean Jobs Bill, both pieces of legislation failed to pass by the end of the 2015 session but did set the stage for subsequent rounds of policy development: the initial compromise bill between both major stakeholders (The Next Generation Energy Plan), and then the final FEJA following negotiations throughout the summer of 2016.

#### 5.4.2.3 A Possible Compromise? The Next Generation Energy Plan and Future Energy Jobs Act

Once the competing bills from ComEd and Exelon had been introduced, environmental advocates got the message from policymakers that the best chance for policy success would be through a collaborative bill. As a representative from the Citizens Utility Board noted, “pretty quickly, we got the sense from leadership that not any one of us was going to go forward. But if the three of us [the Coalition, Exelon, and ComEd] could work it out, there might be a shot” (Interview 3). As such, all three earlier bills were set aside, and actors began meeting to negotiate an omnibus piece of legislation.



As the end of the legislative session approached in May 2016, ComEd and Exelon announced a new joint bill: “The Next Generation Energy Plan” (NGEP), which supporters framed as a compromise bill that would advance the interests of all major stakeholder groups. While members of the Coalition had been in discussions with the utility companies for over eight months, the release of the NGEP came as a surprise; none had previously seen the bill’s text. This first omnibus bill included a wide range of measures, such as a possible \$140 million in new funding for solar and customer solar rebates through modification of the state’s RPS, and \$1 billion in assistance for low-income households (Daniels 2016). Most notably, ComEd committed to a new energy efficiency standard that would decrease its electric sales by 19% by 2025, and 23% by 2030, which, in turn, would lead to lower emissions and lower bills for consumers, in the range of four to ten billion dollars in the next 15 years (Interview 4a). Some environmental groups applauded these elements of the NGEP, which substantially reflected provisions of the original Coalition legislation as well as key messages about consumer benefits and jobs growth through renewable energy development.

However, the bill also incorporated controversial aspects of the two earlier industry plans: rate-restructuring proposals for ComEd customers, including the elimination of net metering, and the proposed funding for Exelon’s nuclear facilities, although the NGEP did include new provisions meant to increase transparency around plant profits. Compensation was now focused specifically on Exelon’s two most-threatened nuclear facilities (the Cordova and Clinton plants), and with support contingent on a full review of the plants’ financial situations as conducted by the Illinois Commerce Commission and the Illinois Power Agency.

As with the LCPS, Coalition members and their allies remained concerned about potential harms to consumers and the development of new solar installations through the demand

charge and the new electricity rate surcharge (Spector 2016). A final stumbling block to the compromise proposal emerged when Ameren Illinois successfully lobbied for an amendment to weaken the bill's energy efficiency goals for its service area.

As a result of Ameren's success to decrease its efficiency targets, the Citizens Utility Board (CUB), a consumer watchdog group and Coalition member, opposed the new legislation, as did the Union of Concerned Scientists, Illinois' Attorney General's Office, and other environmental stakeholders (Journal Star 2016). Ultimately, the NGEP compromise bill did not gain sufficient support to be called for a vote before the end of the legislative session on May 31. Stakeholders attributed this lack of success to poor timing given other events within the state, such as the ongoing budget impasse (Interview 9) and the need for additional time for negotiations to be worked through (Interview 10). In particular, the lingering issue of rate increases and negative consumer impacts continued to stymie agreement amongst stakeholders, further testifying to the importance of consumer benefit messages in the policy debate.

#### 5.4.2.4 The Future Energy Jobs Act

Finally, stakeholders turned to the FEJA during fall of 2016 as the next possible route forward for Illinois' energy future. The debates around the new omnibus bill picked up where discussions around the NGEP had left off: a diverse array of actors eager to be involved in wide-ranging energy legislation in the state.

Dynegy was one of the more controversial stakeholders keen to be advantageously included in possible omnibus legislation, much to the dismay of environmental advocates. At the time, the Texas-based company operated numerous natural gas and coal-fired power plants in downstate Illinois. Dynegy was the second-largest power generator in the state, and in particular, dominated the central and southern portions of Illinois (the company has since merged with

another corporation, Vistra Energy, in April 2018). As several interviewees noted, Dynegy's involvement in the bill would have undermined the crucial but implicit environmental agenda that the Coalition was working toward. As one environmental advocate put it, it would have meant that the group was "no longer talking about a clean energy future... we're talking about burning rocks from a century ago" (Interview 4). Along the same vein, one senator remarked that "we were like okay, we took care of nuclear, we're not going to take care of coal. It's really bad. Coal is like really, really bad" (Interview 5). However, media accounts reported that executives from Exelon and Dynegy were in talks which did not bode well for Coalition members. Similarly, another mentioned that "there was a real threat, throughout this process of negotiating a bill with Exelon, that Dynegy's facilities would make their way into the final package" (Interview 4).

Indeed, the initial version of the FEJA included provisions which would provide financial support for two downstate Dynegy coal plants, as well as funds to potentially re-open a third plant (Lydersen 2016b). Called the "Fixed Resource Adequacy Plan" or FRAP, costs from coal plant subsidies would have been passed on to ratepayers. The FRAP proved extremely unpopular and was removed from the final version of the bill. Coalition members and some Exelon supporters stressed that the FRAP was completely untenable due to the environmental implications of supporting coal, and also highlighted environmental justice implications. Crucially, press releases and media accounts criticizing the amendment did so on economic and not environmental terms. For example, a blog post from the Union of Concerned Scientists (a Coalition member) described the FRAP as supporting "uneconomic coal plants by providing hundreds of millions of dollars in market subsidies" (Collingsworth 2016) and made no mention of climate change or greenhouse gas emissions produced by the plants.

Another tertiary actor important in FEJA negotiations was Ameren. A distribution utility like ComEd, Ameren's service territory encompasses the south and central Illinois regions, while ComEd covers the north. Initially, Ameren was in a position where its customers would be impacted by rate increases (due to the nuclear-support portion of the bill) yet would experience none of the cost-savings associated with the energy efficiency provisions. Ameren was ultimately brought into the fold and committed to energy efficiency targets that were still more modest than ComEd's: 16% energy savings by 2035 versus ComEd's goals of 21.5%; but these numbers were acceptable to Coalition members. Importantly, Ameren maintained leverage during FEJA negotiations, since the utility company was able to pull-in much-needed votes that counterbalanced Dynegy's hostility in the southern portion of the state, which ultimately allowed the company to negotiate the lowered target.

Lastly, of note, Republican then-Governor Bruce Rauner's administration came in with final asks around the overall costs to the bill, and in particular, insisted on hard caps to the potential costs of the bill to both industrial and residential electricity consumers. Part of this motivation for a keen interest in consumer costs likely arose from the governor's ties with the Illinois Manufacturer's Association, who are significant energy users and had been longstanding supporters of the governor. As such, any new legislation that threatened to hike electricity rates would have been of concern to the organization.

These eleventh-hour debates again point to the extreme importance of economic frames around the FEJA's potential costs. Interviewees reiterated that these hard caps, in particular, those added to the industrial class portion of the bill, helped "push it over the finish line" (Interview 7), and assuage legislators who were concerned about rate increases (Interview 8). Even with these price caps, other actors still did not support the bill: including then-Attorney

General Lisa Madigan as well as the American Association for Retired Persons (AARP). As one labor advocate noted, several elected officials also withdrew their support for the bill, even those who were “normally pretty good on [environmental] issues but had to vote no, because of perceived rate impacts” (Interview 8). Again, these holdouts reinforce the powerful influence of economic and consumer impact frames throughout the policy conflict, especially when it came to the threat of rising electricity prices for consumers. As one labor advocate noted:

There was a lot of discussion around the price tag of the bill overall. At the last minute, the governor’s office and the attorney general all raised objections to the cost, and the bill-cost cap was put in, which was kind of unique... certainly, in the final weeks during the veto session, that drew a lot of attention: ‘how expensive is this going to be?’ (Interview 3).

Finally, the Future Energy Jobs Act was signed into law by Governor Rauner during the last day of the Illinois General Assembly’s veto session, December 1, 2016. After an intense period of final negotiations, with numerous provisions added and dropped (see Table 5-3 below), the bill was perceived as a major win for environmentalists (Roberts 2016). Coming into effect in June 2017, the FEJA included yearly funding for two Exelon nuclear facilities (known as the Zero Emissions Standard, or ZES, lasting for ten years), major expansions to energy efficiency programs for ComEd and Ameren, \$750 million in low-income programs (including \$360 million in funds for solar programs and job training initiatives for ex-offenders and foster children), and, crucially, \$180 million a year to enhance the state’s long-defunct RPS program, allowing for increased investment in renewable energy development (Lydersen 2016a). As noted, the bill included amendments to limit costs to residential customers as well as industrial energy users (Maloney 2016), put in place thanks to the last-minute pressure from Governor Rauner.

Despite media coverage that continued to portray the legislation as a “nuke bailout,” the bill was widely hailed as a successful piece of legislation with major wins for stakeholders from the Clean Jobs Coalition like the Natural Resources Defense Council, the Little Village Environmental Justice Organization, the Sierra Club, the Environmental Defense Fund, Union of Concerned Scientists, and the Citizens Utility Board—many of whom were won-over in support of the bill by the last-minute changes. In addition to the Rauner administration’s emphasis on consumer protections, two other crucial changes included the removal of subsidies for Dynegy coal plants, as well as ComEd’s reversal on demand charge metering and its proposed elimination of net metering. It was a two-year conflict over the bill itself, and yet the push for key elements of the FEJA had been ongoing far longer—closer to seven years—since issues with the state’s RPS first arose.

In sum, stakeholders consistently described how communications around their proposed bills strategically focused on economic benefits. Three variations of this economic frame were important throughout the policy debate: 1) the creation of new jobs by bolstering the state’s renewable energy industries (originating from the Clean Jobs Bill), 2) the need for job preservation in communities hosting Exelon’s threatened nuclear facilities, and 3) consumer protections for homes and businesses that would be potentially impacted by new energy policy. In addition, the final major showdowns around the bill focused almost exclusively on costs to consumers: a pushback against ComEd’s proposed demand charge metering and the perception that it would prove expensive to consumers and deep concerns about the zero-emissions standard similarly raising costs. The zero-emission standard managed to pass, with stronger consumer protections in place. Meanwhile, throughout the entire policy episode, energy efficiency measures—much-lauded as a “low hanging fruit” for reducing carbon emissions—were

consistently framed instead as a surefire way for consumers to save money on their monthly bills. This framing was widely perceived as surprisingly successful given the historical power differences between environmental advocates and industry actors. Perhaps even more surprisingly, these central framing strategies changed very little throughout the policy conflict, even when the policy goals of the original Clean Jobs Bill were absorbed into the later, negotiated compromise bills and leading into the final success of the FEJA. This consistency was also confirmed in conversations with Coalition stakeholders. As one environmental advocate who was central to communication efforts noted, “to abandon the narrative, and the brand that had been built around the Clean Jobs Bill—not only would have been a mistake, but there was no support for doing that. It was a tried and true message, and that was the one to lead with” (Interview 4b). Again, this indicates the importance of economic frames throughout the policy dispute.

## 5.5 What About the Climate?

Neither the Clean Jobs Bill nor the Future Energy Jobs Act was actively framed in terms of climate change, a strategy that environmental advocates generally described as a clear-cut decision. Interviewees from all stakeholder groups occasionally offered differing perceptions as to the extent to which climate framing was important or influential within the policy negotiations. However, all reiterated that the FEJA and earlier bills were most effectively pursued without using climate change language. As one environmental advocate remarked, “I think there’s certain messages that resonate with our supporters, our true believers... but otherwise, the job messaging is the way to go” (Interview 2). Multiple Coalition members touched on the need for a balance between economic and climate or public health frames, which

was often a precarious one, a tension that still lingers within the state as the CJC champions FEJA and moves toward developing new policy (Interview 4b). Several factors influenced this, all relating to the perceived unsuitability of a climate frame for generating public and legislative support. First, while public discourse around climate change was generally viewed as less politicized in Illinois than at the federal level (Interview 8, Interview 3), there was still a strong sense that, as a talking point, climate change would be unnecessarily toxic. Several stakeholders expressed concerns that climate change as a term had become too partisan, which was something that stakeholders were especially mindful of considering they were aiming to pass a bipartisan bill. Advocates felt they could readily accomplish climate goals without making the legislation openly about addressing the state's greenhouse gas emissions. As a member of the Illinois Environmental Council remarked,

When you don't use that word [climate change], but you bring forward solutions that are going to address it anyway, and you talk about it, jobs and economic development, and economic growth, it's just got a lot more support... we didn't need to bring it up to make it clear that that's what was happening (Interview 2).

A pro-Exelon Republican senator echoed this sentiment, noting that “climate change is a very polarizing topic... so I would say it was not as much a conversation when the bill was being passed, otherwise, both parties would just fall back on their climate change talking points. Other attributes resonated more—certainly jobs” (Interview 7). The cap and trade component of the policy was dropped from later versions of the legislation. This shift reinforces how climate change framing was not an important part of messaging around the bill, and in fact, was actively avoided. While advocates could have framed a greenhouse gas emissions limit in non-climate ways, they instead envisioned the FEJA as a preliminary “stepping stone” toward an eventual, explicit climate policy. This made pushing an emissions limit less of a priority. In addition, one



environmental advocate also noted that the cap and trade proposal ended up drawing adversarial attention away from energy efficiency and the RPS adjustment goals, the other two “legs” of the Clean Jobs Bill. In this way, this early, explicit climate change messaging may have also served an important rhetorical purpose of shifting attention from Exelon's preferred framing (Interview 4a).

Importantly, while both the CJB and the FEJA were consistently portrayed in terms of their impacts for the Illinois economy and consumers, both were still implicitly understood by stakeholders as climate bills. In other words, even though climate change frames were used sparingly throughout the policy conflict, the final legislative outcome was unarguably a climate change bill. Not only does the FEJA pose serious consequences for renewable energy and greenhouse gas emissions within the state, but there is also consistent evidence that the majority of policy actors involved in the development of the bill saw it as climate legislation, as opposed to a piece of legislation focused singularly on jobs and economic benefits.

For example, environmental advocates described the new act as “laying the groundwork” for a more explicit climate change policy for Illinois in the years to come. As one interviewee elaborated, “when we talked about the FEJA, we described it as the most significant piece of climate change legislation in Illinois history. *So that sort of word came in more when we passed it*” (Interview 2, emphasis added), yet stakeholders were clear that climate change or science messaging was not used in lobbying efforts throughout the actual policy process. Again, this reinforces that even though the FEJA was framed in terms of economic growth and job creation, it was and continues to be widely recognized as a climate change policy. This is also evident in media analysis and coverage of the bill following its passage, which hailed its potential climate impacts (e.g., Roberts 2016). As another interviewee from a consumer advocacy group

explained, “First, we’re going to fix the RPS, and then nuclear is a zero-emission resource: this is laying the groundwork for the next time we come back, and we’ll have a carbon goal” (Interview 3). Indeed, in 2017, the Coalition launched a campaign, “Listen. Lead. Share.” to solicit input from the public about clean energy development in the state. Building from these findings, the group introduced The Clean Energy Jobs Act (HB 3624/SB 2132) in February 2019, with the intention of expanding on the FEJA’s climate goals (Lydersen 2019).

While viewed as unnecessarily divisive, conversations around climate change were in some cases also seen as unnecessary given an assumed mutual consensus on the reality of the issue (Interview 5). As one actor from the Environmental Law and Policy Center noted, “It’s interesting because I don’t know if I’ve had a conversation with a legislator about climate change. I think it might just be... ‘I know where you stand.’ It’s not like a debate” (Interview 8).

Similarly, another interviewee mentioned that the way he approached the question of climate messaging, particularly in the earliest days of the first Coalition bill, was more through a lens of “regulatory inevitability” given perceptions that the federal government would be forcing states to take action on climate given the at the time seemingly-impending CPP:

It’s kind of bypassing the whole debate and the argument around science and the concerns, and just addressing... ‘you have to come up with a solution to this.’ And there’s an easy way and a hard way. The easy way is you take your own initiative; the hard way is that the federal government does it for you (Interview 4b).

From the Exelon perspective, the FEJA’s zero emissions standard was seemingly part of a larger nationwide strategy positioning nuclear power as a climate-friendly energy option, and in turn deserving of government support. Indeed, by mid-2016, Exelon had had success with a similar zero emissions credit policy in New York, and again in 2018 in New Jersey (Cahill 2018). As seen in the media items and press release documents, somewhat surprisingly, stronger

environmental messaging around the bills eventually came from Exelon, which leaned heavily on this portrayal of its nuclear facilities as clean, “zero emission” energy sources, especially as a way to try and counteract the immense popularity of the “nuke bailout” message (Interview 10). While there is heated debate among environmentalists as to what degree nuclear energy should be classified as a renewable energy source, pro-Exelon legislators in support of the FEJA adopted this framing during committee sessions and debates, as well as when discussing the bill during interviews (Interview 7). Indeed, Exelon was very successful at building support for their climate message in the general assembly (Interview 4b).

In sum, neither the environmental advocates of a new climate change and renewable energy bill nor their opponents in the utility and energy sector used climate science framing during this two-year conflict, even while the bill was without a doubt an important piece of climate change policy. When climate change was specifically mentioned, this tended to be in the very earliest messaging around the bill, and the very last following the FEJA’s successful passage. The actors who most frequently used an explicit climate change frames were not environmental advocates, but nuclear energy supporters. Instead, most communications stressed the economic consequences of prospective policies, as well as arguments about public health, state sovereignty and leadership, the reliability of energy systems, and some discussions of the environment more broadly. Perhaps surprisingly, industry actors more frequently made direct reference to the climate crisis and the need for “carbon free” energy production.

## 5.6 The Success of Framing

There are several ways for thinking about and evaluating the political influence of frames within the Illinois policy conflict. One of the most crucial pieces of evidence is how interviewees

uniformly spoke to the extreme importance of economic frames in the bill's passage, both in terms of fears about costs to consumers, as well as potential benefits. The media content analysis (which included newspaper articles as well as opinion pieces and letters to the editor) also points to how this trend was ubiquitous in wider public discussions around the potential bill.

Indeed, if the economic frames introduced by the Coalition had not mattered, then we would have expected to see these arguments wane over time. Given what we know about interest group politics, we would also have expected to see the Coalition have less meaningful engagement with the development of the final compromise bills. This was explicitly reiterated by interviewees, who expressed their surprise at how the policy process and outcomes around the FEJA were unique, and had likely changed the dynamics of policy debates in the state for years to come. As one advocate noted, environmentalists were able to “gain power,” and “stop ComEd and Exelon and simply doing what they'd done in the past, which is to march in and get their bill passed, and the environmentalist groups might get some crumbs” (Interview 1). This outcome was surprising in part because it followed the environmentalist agenda and the Coalition's initial proposals more closely than the utilities and industrial interests.

A crucial element of this framing success arose from the Coalition's ability to frame opposing bills competitively, and doing so in large part by enlisting local media. In particular, environmental advocates gained power in the policy dispute through this astute competitive framing, particularly when it came to Exelon's major goal of securing funding for struggling nuclear power plants. As one advocate noted, in the early parts of the dispute, the Coalition was successful at having the media to frame Exelon's initial bill as a “nuke bailout,” with serious political outcomes:

Even legislators who are pro-Exelon were calling it a bailout. So we were able not only to elevate clean jobs, but we were able to clobber them with that bailout message, for what

they were looking for...legislators who routinely would be like ‘Oh, I’m with ComEd and Exelon’ would be like ‘Eww! I don’t want to vote for a bailout.’ That’s not good messaging. If I’m only for a bailout, and not for these other things, that doesn’t do well politically. So we were very successful with highlighting that message (Interview 1).

This political influence via the media was much more successful compared to earlier environmental disputes in the state. As another environmental advocate remarked, for example, one Coalition press release decries the costs to consumers from rival policies, focusing especially on Exelon’s “nuclear bailout bill,” or the ComEd’s solar rebate “bait and switch” for solar customers (ICJC 2016). Media accounts in support of the CJB also noted how it would be accomplished without “a large price tag for taxpayers” since it would be spurred by private innovation (Fortner, Sandack, and Tyron 2016). Another advocate commented that, “From day one, Exelon was on its heels almost defending, and explaining, more on our terms than their own” (Interview 4b). In other words, the Coalition’s strategic use of issue frames was able to level the playing field between environmental advocates and the utility and energy industry.

Another possible explanation for why the Coalition was able to accomplish most of their legislative goals in this process relates to how Exelon so badly needed support for its struggling nuclear facilities (Interview 6), and therefore wielded its political influence to make that happen. A crucial moment in the development of the policy dispute was when Exelon announced its final deadlines for the closure of the Cordova and Clinton plants (Interview 9; Interview 7). However, this alone does not explain the endurance through time of the Coalition’s CJB framing strategy, let alone the inclusion of so many of the Coalition’s big-ticket items in the final bill, many of which focused on consumer benefits and new jobs for the state.

Consumer and job impacts were critical issues in Illinois at the time of the policy dispute, and environmental advocates “using a combination of good narrative, and good policy” (Interview 4a) generated a framing strategy that powerfully linked the economic aspects of their proposed policy goals to those desired outcomes. If the Coalition had focused on climate (science) frames, then the industry and utility companies would have been able to undermine that framing strategy by drawing on arguments from the typical climate “skeptic” playbook—such as arguing that it was not the right time in Illinois for that particular type of climate bill, for example. By focusing almost exclusively instead on the issues of jobs and consumer protections, environmental advocates forced the utility and energy industry to engage in a very different kind of communications battle and created an astute narrative that resonated with policymakers, the public, and other interested parties throughout the state.

## 5.7 Conclusions

In this chapter, I investigated a prominent case of subnational climate change policy and asked what issue frames in communication stakeholders used to describe their bills, and how politically effective those framing strategies ultimately were. In deriving these questions from the broader existing research on climate change framing and the political utility of science versus other types of frames, I first hypothesized that science frames would be less common in stakeholder publications versus non-science frames. Secondly, I hypothesized that within the actual policy process itself, science frames would be less politically influential as compared to other frame types, such as those that emphasize economic or public health impacts of climate-energy policies.

Throughout this case of policy conflict in Illinois, I find support for both of my hypotheses: climate change framing was ultimately not politically influential, and was actively avoided by environmental actors, while the framing that proved influential focused on jobs as well as financial protections and benefits for consumers. Climate change framing that did appear in the bill served to a) lay the legal groundwork for future policy, which would explicitly address the issue of a carbon cap for Illinois, b) signal environmental motivations to the ‘true believers’ of climate change as an issue of concern, and c) provide some political cover and justification for Exelon as it petitioned the state for funds to support struggling nuclear facilities, consistent with its national strategy of building support for beleaguered nuclear plants. Furthermore, any discussion of climate change generally linked back to economic concerns.

These findings reinforce that economic and public health frames are politically efficacious in generating support for climate-energy policies. This study echoes similar findings from earlier work that investigates the role of frames during policy processes; however, my study uses a more closely specified set of frames and operates through a more structured and rigorous analysis, particularly via the formal content analysis of stakeholder press releases. While Illinois is a single case, my results are potentially generalizable to similar subnational cases around the United States, particularly states with mixed partisan control of government and a diverse set of industrial interests.

While public conversations between researchers and science communicators often focus on explicit climate change and climate science messaging, this case shows instead how successful policy can still be enacted without public engagement with the “climate change debate.” Indeed, the initial campaign for the Clean Jobs Bill—spearheaded by environmental advocates—could very well have focused on how climate change is real and important, but

instead emphasized jobs, costs to consumers, and the economic growth and leadership of the state of Illinois as a whole. As summarized by one communications person within the Coalition:

We had already ginned up a campaign about new jobs coming into the state, private investment coming into the state, and all the benefits associated with reducing peoples' bills via energy efficiency, for consumer savings. Those things really won the day (Interview 4b).

Furthermore, conversations with environmental advocates and other stakeholders reveal that not only were economic frames seen as more politically effective at gathering support for prospective policies but that climate change messaging was viewed as detrimental for moving any policy forward. In terms of climate framing, stakeholders were generally unified with the sense that climate change was not an important or powerful messaging strategy. Those other messaging strategies were more salient "so [climate change] is really not our best messaging, since there's other ways to talk about it that don't involve the words 'climate change.' So let's do that." (Interview 1). This is also reflected in the Coalition's earlier abandoned cap and trade provision, which once again reflects the importance of economic frames and the difficulty that advocates had making that particular policy component "fit" with the that message. While the final bill included provisions that met the specific and varied interests of diverse members of the Coalition, these gains were not consistently discussed by stakeholders nor reported widely or in great detail in stakeholder press releases or news media items. Rather, messaging continued to focus on "jobs, jobs, jobs, jobs, jobs" (Interview 1). As mentioned previously, the Coalition is expanding its framing strategy in its next piece of proposed legislation, The Clean Energy Jobs Act, to include more explicit discussions of environmental justice and climate goals. However, these aims are still directly linked to jobs and economic growth, especially in terms of



“achiev[ing] equity in the clean energy economy... provid[ing] support for communities of color and rural communities” (ICJC 2019).

In this way, Illinois stakeholders followed in the footsteps of prior issue advocates who found this approach to be the most salient at gathering support, especially across party lines. More specifically, the rhetoric matches that found in California and other states around climate policies serving as drivers for general state economic benefits, as opposed to only focusing on consumer protections (Karapin 2016; Raymond 2016). Previous research has also noted how this kind of “green jobs” frame has been used to neutralize and supplant older arguments about “jobs versus the environment,” and in particular, to position renewable energy policies as a solution to economic woes in the wake of the 2008 financial crisis (Coley and Hess 2012).

This work also contributes to conversations within the framing and climate communications literature on wider debates over the appropriate role for science frames around contested public issues. This project also fits into recent scholarship on interest group politics in energy transitions research by exploring the political dynamics of transformative energy policies that “threaten incumbent industries and impose substantial costs,” and as such, must overcome considerable obstacles in order to sustain necessary political support (Stokes and Breetz 2018). Indeed, this case of the Illinois climate-energy policy is a prime example of how a new coalition was able to maneuver around historically powerful players.

Lastly, these findings resonate with results from earlier framing studies that highlight the importance of economic frames for leading to policy success (e.g., Kalaf-Hughes and Kear 2017). More pointedly, in terms of climate science and climate change frames more broadly, the Illinois case highlights that the bipartisan policy success was possible through careful framing, including strategically avoiding undue mention of climate. The Illinois case is a prime example

of what Rabe (2004) describes as the avoidance of the “anguished, often moralistic rhetoric that has polarized national debate and made any semblance of consensus at that level so elusive”

(23). These questions matter because understanding why and how stakeholders used the framing strategies they did—and the political consequences of these choices—is central to ongoing questions of how climate-energy policies gain momentum in challenging political times.

## CHAPTER 6. CONCLUSIONS

### 6.1 Introduction

In this dissertation, I asked: *What issue frames do national-level policy actors use when communicating about climate change?* Secondly, *are these same issue frames also prevalent during a case of actual policy conflict, and what is the apparent political influence of different frames on policy outcomes?* Overall, I argue that science frames may have a limited utility in terms of climate-energy policy “in the trenches,” especially in contrast to certain framing strategies which instead emphasize the more tangible implications of potential policies. As such, this project speaks to the ongoing debate around the role of certain science frames within climate change communication more broadly. In this concluding chapter, I summarize key findings and policy implications of this project, as well as highlight lingering questions and point to directions for future work.

### 6.2 Research Findings and Theoretical Implications

In Chapter 3, I investigated the framing strategies of climate change policy opponents—climate change “skeptics”—and propose **H<sub>1</sub>**: policy design frames would be more widespread than science frames, which challenge the certainty of climate change science. I likewise expected that **H<sub>2</sub>**: those policy design frames would focus most often on the threat of tangible, financial harms created by climate-energy policies. These expectations were shaped by work on climate change discourse which suggests that public conversations around the issue have been moving past science-based discussions to focus on criticisms of policy outcomes. My findings show that attacking climate change science remains surprisingly prevalent (at least, during my study’s

timeframe of 2014-15), disconfirming **H<sub>1</sub>** in this case. However, the nature of these attacks on climate science has indeed shifted. Documents in my sample showed a newer tactic of criticizing climate researchers and of more generally accusing mainstream climate science as being biased and lacking integrity. This stands in contrast to more “traditional” skeptic science frames that instead emphasize the complexity of climate systems and argue that no warming is occurring. Conversely, my findings in Chapter 3 do support **H<sub>2</sub>**, indicating the prevalence of policy design frames that highlight tangible harms to consumers and the economy.

Next, in Chapter 4, I investigated the framing strategies of climate change policy supporters and in doing so also draw comparisons to my climate change skeptic data from Chapter 3. I similarly posed that **H<sub>1</sub>**: science frames would be less widespread in the communications of policy actors who support policy adoption versus other frame types. I also anticipated that **H<sub>2</sub>**: particular financial policy design frames would be most prevalent in my sample, as compared to science and climate impact frames. Results confirm that science frames were indeed less widespread than policy design frames, in this case confirming **H<sub>1</sub>**. This approach is perhaps related to the presumably already-high levels of climate science acceptance among the organization’s target audience and membership base, making belaboring the scientific evidence redundant. This same dynamic is also somewhat evident in the Illinois case presented in Chapter 5. As one interviewee noted, no one ever asked him directly about climate change, since ‘belief’ in the phenomenon was not perceived as an open question (Interview 8). Findings also confirmed **H<sub>2</sub>**, with almost half of all the sample NRDC documents containing at least one policy design frame. Of the five most widespread frames, two were economic frames that emphasized how climate-energy policies would be beneficial both to consumers and to the economy overall.

Lastly, in Chapter 5, I expected to find similar results in terms of **H<sub>1</sub>**: again, that certain policy design frames (especially financial and public health benefit frames) would be more prevalent than science frames. This echoes other recent work exploring the climate policy process which identifies the important role of specific types of benefit framing, such as Raymond (2016). Extending this further, I expected that not only would science frames be less widespread than certain policy design frames, but that interview and process tracing data would affirm that **H<sub>3</sub>**: science frames were less politically influential in shaping final policy outcomes. The results confirmed both hypotheses. Economic frames were ubiquitous throughout the policy debates, while science frames rarely appeared in media accounts around the policy disputes, nor press releases from major stakeholders. Additionally, interviews with key stakeholders and a process-tracing analysis in connection with my content analysis data strongly suggested the crucial political importance of economic and consumer benefit frames in terms of shaping final policy outcomes.

What do these findings suggest about how three different actors engage with climate science, and use science frames? First, I show how climate change policy opponents continue to draw from the historic skeptic playbook by using science frames that undermine the legitimacy of climate change (albeit in some novel ways, especially by questioning the integrity of climate scientists). Next, I show how policy supporters tend to engage with science frames when participating in counterframing efforts that defend science against the claims of policy opponents, thus indicating a dynamic framing process. Lastly, in the Illinois case, we see actors avoiding science frames, motivated by a sense that the science is a) “settled” and does not need to be explicitly discussed, and b) that science frames are unnecessarily divisive, and not as effective as other frame types for initiating on-the-ground support for climate-energy policies.

Meanwhile, all three actors invoked consumer costs and economic impact frames and participated in competitive framing relationships with other actors through the strategic use of positive and negative frames. I elaborate on some of these key take-aways in the following section.

### 6.3 Science Frames, Counterframing, and Agenda-Setting

What do my results tell us about the possible role of science frames in advancing climate change policy and the role of the Gateway Belief Model (GBM) in particular? In Chapter 3, we see Heartland using anti-science frames to attack mainstream science, and even more pointedly, to undermine the perceived integrity of scientists as a group. We know that attacks on climate science have historically been very powerful at delaying policy action, and in turn, there is a reason to believe that charging scientists with bias and a lack of integrity is an effective strategy for undermining the public's trust in scientific work.

This is important because the underlying mechanism that makes the GBM work is the extent to which the audience sees the legitimacy in scientists as a referent group. One important factor in determining whether a particular frame will induce contrast effects has to do with how audiences relate to the referent group of that frame. In the case of climate science frames, this relevant referent group is climate scientists, meaning that an individual's processing of a climate science frame will depend on the trust or value they place in climate scientists as a group. In terms of the GBM, the specific consensus messaging frame referent would be the degree to which an individual values conformity with scientific authority.

This question of trust in scientists and in the scientific process—and how elites and other policy actors attempt to manipulate these perceptions—is normatively crucial, and also timely

given recent trends in the U.S. where diverse sections of the public challenge the legitimacy of scientists and of scientific findings, especially when those findings confront their core beliefs or values (Lewandowsky and Oberauer 2016). This pattern is true of both liberals and conservatives and occurs across a range of substantive issue areas besides climate change: the safety of genetically modified organisms, nuclear energy, childhood vaccinations, or belief in evolution, for example (Kennedy and Funk 2016; Kiley 2015). One reason for this may have to do with the political activities of scientists themselves. For example, Motta (2018) demonstrates that the 2017 March for Science increased polarized perceptions not around scientific findings, but scientists personally. In terms of the GBM, van der Linden et al. (2017) contest that “expert consensus-perceptions (perceptions of what other, non-political groups believe) are a non-identity threatening cognition” (55). However, this only holds true as long as climate change scientists are perceived as non-political. In short, if the kinds of anti-science frames promulgated by Heartland still decrease trust in climate scientists, this, in turn, would be effective at neutralizing the GBM’s capacity for generating policy support.

What does this all mean for climate policy advocates, such as the NRDC at the national level, or the actors in Illinois attempting to pass climate change legislation? As noted, findings in this project indicate that climate policy advocates largely eschew climate science frames, except in specific instances of counterframing. In Chapter 4, I described how the NRDC publications rarely employed science frames. Rather, the organization would want to keep the climate conversation focused on other aspects of climate change. For example, through their dynamic pairing of climate impact and policy design frames in their online publications, the NRDC specializes in crafting “calls to action” meant to incite their audience to become politically engaged with climate issues. When science frames are employed, it is typically in direct response

to specific misinformation events of climate change denial perpetrated by actors like Heartland. One can imagine the kind of tension that the NRDC authors would find themselves in—a reluctance to engage in, and in turn legitimize, a “debate” over the science, but at the same time an unwillingness to let such misinformation go unchallenged in the public sphere.

As Chong and Druckman pose, “if the initial framing of an issue can bias and distort expressions of public opinion, the antidote would seem to be debate, specifically exposure to a counterframe” (2013, 2). Intuitively, we might think that false or misleading information should be directly and firmly corrected, but as Chong and Druckman (2013) point out, such “counterattacks” might induce contrast effects, where the attitude or belief being challenged is inadvertently strengthened. Indeed, research on controversial policy topics shows how debates tend to intensify uncertainty, as both “sides” of an issue attempt to undercut the opposing position through sparring “reputational politics” (Greenberg, Knight, and Westersund 2011).

This reality also demonstrates the often-invisible agenda-setting capabilities of a group like the Heartland Institute. While their documents may not be widely read, or taken seriously by a large portion of the population, the anti-science frames that they employ preemptively shape what and how policymakers, communicators, and scientists talk about climate change when anticipating a rhetorical attack from denialist quarters. Indeed, some research has directly demonstrated how this kind of skeptic discourse has modified how climate scientists frame their own work. For example, Lewandowsky et al. (2015) show how scientists themselves become susceptible to uncertainty-based arguments around the legitimacy and reality of climate change.

Importantly, at this point, the actual documents published by Heartland do not even need to be widely read to achieve influence. Rather, certain conservative intellectuals and other public



figures who oppose policy action can know that the skeptic “brain trust” is out there: a coalition of “experts” who provide legitimacy to their point of view.

The avoidance of science frames in Illinois can likewise be explained by competitive framing dynamics and the agenda-setting abilities of actors like Heartland, and the relationship between national-level actors and state-level policy conflicts. For example, many stakeholders involved in the Illinois Future Energy Jobs Act case conscientiously avoided the use of science and climate frames. Actors on both sides of the aisle were frank about wanting to avoid communication strategies which they perceived as partisan, polarizing, and “toxic.” In this way, we see how anti-science frames in national-level discourse—instigated and perpetuated by Heartland and other actors in the “denial machine”—powerfully shapes the agenda of state politics, at least in this instance.

Indeed, Pearce et al. (2017) argues that emphasizing expert consensus misunderstands how scientific understanding actually shapes policymaking. This criticism of the GBM model argues that when climate advocates keep focusing on the science, policy opponents respond by continuing to push back with science-based misinformation or induce contrast effects.

This may especially be the case in places where public acceptance of climate change science is still thin on the ground, such as Alabama, Texas, or Arizona. In these settings, some portion of the public may be amenable to an expert consensus message about the reality of climate change. Indeed, shifting the views of this particular audience with a consensus message may represent viable “low-hanging fruit” for building public support for climate change policy. On the other hand, climate skeptic sections of these communities would more likely experience contrast effects as a result of science consensus messaging. As Chong and Druckman (2013) note, “uniformly successful communications strategy may be impossible as tactics that are

effective on those with weak attitudes may be counterproductive on those with stronger viewpoints.”

Complicating matters further, public understanding of the climate crisis (and general support for climate change policy more broadly) are not necessarily linked to actual behavioral changes that lead to political change or increased engagement. This unfortunate possibility raises questions about the utility of framing research focusing on individual-level framing effects, at least in terms of a normative desire to address global greenhouse gas emissions. This reinforces the importance of research which systematically investigates framing during the actual policy process, as with the FEJA case in Chapter 5.

Work by scholars such as van der Linden and others who investigated the GBM valuably show how the application of science frames plays an important role in building public support for climate-energy policies, at least in particular contexts, and it seems likely that the GBM would be important for generating long-term support for climate policy.

Based on existing work exploring contrast effects and counterframing, it seems possible that engaging in science framing may unintentionally continue to cede ground to climate change skepticism, at least under some conditions. Furthermore, this kind of information deficient approach focusing on scientific consensus could stymie the diverse ways in which the problems associated with climate change might be addressed since a focus on scientific framing potentially prevents a wider, much-needed discussion about actual policy approaches and tools for addressing the climate crisis.

### 6.3.1 The Debiasing Possibilities of Mechanistic Science Frames

While consensus science messages have thus become the subject of debate within climate communication discourse, a different kind of science argument has been the subject of promising

research. “Mechanistic” arguments can be understood as explanations for how something actually works. Asking people how something works may moderate polarized attitudes, and more so than asking them to describe or rationalize why they hold the polarized belief. For example, Fernbach et al. (2013) suggest that asking participants to generate mechanistic explanations forces them to confront and realize their ignorance of a policy’s actual complexity. In this way, mechanistic explanations might be a promising “debiasing procedure” though little work has specifically explored this in terms of climate change. One exception is work by Ranney and Clark (2016) which does demonstrate that exposure to a mechanistic climate change message can shape belief in anthropogenic climate change and support for climate-energy policy across the political spectrum.

This strand of research suggests that prompting individuals to explain reasons for why they believe in or support a particular point of view will not moderate their position; rather, as described previously in this dissertation, this leads to a “boomerang” effect of deepened entrenchment and more polarization (Hart and Nisbet 2012). On the other hand, if individuals are asked to explain *how* something works, they will attempt to explain and possibly in doing so, moderate their support for that policy or become amenable to adjusting their position on an issue. As such, this particular kind of science frame may be an intriguing avenue for further research.

#### 6.4 Limitations on Findings and Directions for Future Research

In Chapters 3 and 4, limitations to my findings include potential bias introduced by the study time frame, operating from April 2014 to June 2015. In Chapter 5, a possible limitation is that Illinois is only one subnational unit, potentially raising questions about the generalizability of the case study findings. However, as noted, the purpose in this study was to use a single case

as a testing site to explore the ongoing debates with the climate change communication literature on the role of science frames, as opposed to establishing a generalizable theory for the utility of frame types in subnational policy contexts. With that being said, “purple states” like Illinois feature a diverse mixture of robust political identities, a mixed energy landscape, and historically strong coal interests. Illinois also represents an important example of a state policy process that contemplated climate policy in the broader context of renewable energy issues, rather than more narrowly in terms of carbon pricing, which has been the focus of many previous case studies (e.g., Rabe 2018; Raymond 2016).

Thus, such settings offer an important opportunity for considering how climate-energy policies are framed and consequently succeed or fail. In consideration of the Gateway Belief Model, and utility of certain science frames, they also offer a new opportunity for shaping how we think about climate change as a public issue. Exciting and important future work should, therefore, focus on assessing the role and influence of science frames versus alternative frames in other cases of subnational policy conflict around climate-energy policies, and in doing so continue to build a deeper understanding of framing during policy processes.

Additional work in this area might continue to focus on how the framing strategies of climate policy opponents and supporters differ from one another. In particular, future research should investigate how framing strategies differ based on the expected audience: Republicans as opposed to Democrats, different facets of the media, and so on. Relatedly, additional future work could elaborate on the temporal and dynamic aspects of competitive framing in action, especially in terms of a) how policy opponents and supporters engage with and respond to one another, and b) how the frame usage of different actors interacts with and is shaped by external events, such as developments in climate governance or energy policy, as well as other impactful political

events. For example, Raymond (2016) shows how, in the case of the Regional Greenhouse Gas Initiation, positive economic frames were a response to arguments by utilities about higher consumer costs from carbon pricing. Additional research continuing along these lines would shed new light on counterframing during policy conflicts, as well as how and when we could expect counterframing to occur.

In closing, by exploring the political importance and efficacy of science frames versus non-science frames, this current research is of interest to policy and framing scholars, as well as science communicators, especially considering the application of framing theory to on-the-ground policy dynamics and policy change—processes which are often neglected by framing literature. More generally, this research contributes toward resolving larger questions about how controversial policy issues are framed by elite actors, as well as understood by the public. In sum, climate science knowledge does not need to be the only framework that leads to the adoption of climate-friendly policies (Kahan, Peters, Wittlin, et al. 2012). Scholarly pursuits could focus less on finding the “right” types of frames, but rather, the frames that are the most appropriate for a specific audience, and a particular situation—and in doing so, move past engagement with the climate science “wars.”

## APPENDIX A: CLIMATE CHANGE DISCOURSE CODEBOOK

*Climate Change Discourse Codebook: Skeptics and Supporters.* Last Updated April 2019

Summary of Codes:

<b>Science Frames</b>
<i>Climate policies should be supported/opposed because the evidentiary basis of climate change is robust and accurate/weak and incorrect.</i>
<b>S1</b> The scientific evidence for climate change is <i>clear and certain/complex and uncertain</i> .
<b>S1a</b> The nature of climate science is <i>difficult to discern</i> .
<b>S1b</b> Climate change is a function of <i>natural cycles</i> and unrelated to human activity.
<b>S1c</b> Climate change is not happening, and <i>warming is not being observed</i> .
<b>S2</b> Mainstream climate science has <i>integrity and is not junk science/does not have integrity and is junk science</i> .
<b>S2a</b> Climate change dissenters are <i>unfairly persecuted</i> .
<b>S3</b> Climate change science is <i>misused for ideological and personal gain</i> .
<b>Climate Impact Frames</b>
<i>Climate policies should be supported/opposed because climate change would generate negative/positive impacts.</i>
<b>I1</b> Climate change would impact/improve <i>human quality of life and health</i> .
<b>I2</b> Climate change would impact/improve <i>agriculture and the environment</i> .
<b>I3</b> Climate change would impact/improve <i>economic systems</i> .
<b>I4</b> Climate change would have <i>national security implications</i> .
<b>Policy Design Frames</b>
<i>Climate policies should be supported/opposed because climate change policies would do more good than harm/more harm than good.</i>
<b>E1</b> Policy would help/harm <i>consumers</i> financially.
<b>E1a</b> <i>Low income or elderly</i> consumers.
<b>E1b</b> <i>Minority</i> consumers.
<b>E2</b> Policy would help/harm <i>the economy</i> at the state or national level.
<b>SL</b> Policy would foster/threaten <i>state leadership</i> .
<b>EN</b> Policy would help/harm <i>the environment</i> .
<b>RE</b> Policy would generate <i>reliable/unreliable</i> energy systems.
<b>SE</b> Policy would foster/threaten <i>national security</i> .
<b>SO</b> Policy would foster/threaten <i>national sovereignty</i> .
<b>ME</b> Policy would have a <i>measurable effect/no measurable effect</i> .
<b>PW</b> Policy is necessary/unnecessary and <i>wanted/not wanted</i> by the public.
<b>DW</b> Policy would help/harm countries in the <i>developing world</i> .
<b>QL</b> Policy would help/harm <i>human quality of life and health</i> .

## GENERAL INFORMATION:

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### **Units of Analysis:**

The sample documents are assessed for presence or non-presence of each frame, as opposed to the frequency of each frame or the most dominant frame. As such, each document can potentially contain all frames. Sentences can be broken down and coded as containing several frames, although no specific text fragment (two or three words) can be coded as more than one frame. Segments should only be coded for the lowest level of frames.

### **Positive/Negative:**

Each frame has a positive and negative variant. The “pro” variant indicates support for climate change action, while the “con” variant indicates opposition to climate change action.

Language for overarching frame themes originally based on McCright and Dunlap (2000).<sup>8</sup>

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<sup>8</sup> McCright, A.M., Dunlap, R.E., 2000. Challenging global warming as a social problem: An analysis of the conservative movement’s counter-claims. *Social Problems*, 47(4), 499–5

# SCIENCE FRAMES: THE EVIDENTIARY BASIS OF CLIMATE CHANGE IS ROBUST AND ACCURATE/WEAK AND INCORRECT

Policy should be supported/opposed because scientific evidence for climate change is “settled,” and scientific consensus is clear climate change is detrimental, human-caused, and unprecedented/Criticizes the scientific evidence and general beliefs in support of the existence of climate change. Argues that the problematic condition does not exist.

	<i>Negative</i>	<i>Positive</i>
<b>S1</b> The scientific evidence for climate change is <i>clear and certain/complex and uncertain</i> .	<b>S1a.</b> Climate science as “contradictory,” “murky,” “flawed,” “incomplete”: <b>climate science is complicated, and climate systems are “complex.”</b> Climate might be changing, but we just don’t know what’s really going on or why. Argues that the data might be difficult to understand.	<b>Climate is definitely changing, definitely caused by human activities, and will pose unprecedented negative consequences.</b> Nature of climate science is clear. The scientific consensus is certain. Climate is changing, and evidence is very clear and complete. Describes climate science as “clear,” “established fact,” “irrefutable truth,” “consensus.”
	<b>S1b.</b> climate change might be happening, but <b>human activity is not or could not be the cause.</b> Changing temperatures are just part of the natural cycles of the earth, and climate change comes and goes over eons – the climate has always changed: sunspot variation, ocean currents, volcanic eruptions, etc. Keywords might include “natural cycles/factors,” “thousands of years/eons/millennia,” and mention of various warm periods of ice ages.	
	<b>S1c.</b> Climate change is <b>just not happening</b> , as evidenced by bad winters, harsh cold spells, and other cold weather incidents. Look especially for language about a global temperature “pause” or “plateau.”	
<b>S2</b> Mainstream climate science has <i>integrity and is not junk science/does not have integrity and is junk science</i> .	<b>Attacks the credibility of mainstream climate science.</b> Mainstream climate scientists are motivated by hidden agendas. Not incompetent, but deliberately mislead the public, leading to tarnished public perceptions of science. Might refer to “ClimateGate,” the hockey stick model, and Michael Mann. In contrast to climate “alarmists,” skeptic researchers are on the side of sound/real science.	<b>Affirms the credibility and integrity of mainstream climate science.</b> Mainstream climate scientists are producing sound science and report findings honestly. Often portrayed heroically and are on the side of sound/real science.



	<b>S2a. Climate change dissenters are unfairly persecuted.</b> “Realist” scientists are persecuted and censured—mainstream climate scientists, the media, and other actors wage smear campaigns against skeptics. Orthodoxy attacks any realist climate scientists who dare speak out, David vs. Goliath imagery.	<b>S2a. Mainstream scientists are persecuted</b> and harassed for defending “sound science.” Climate deniers should be no-platformed.
<b>S3</b> Climate change science is <i>misused for ideological and personal gain</i> .	<b>Climate change is a scare-tactic</b> , fear-based tool used by hysterical, radical environmentalists, governments, politicians to advance financial and ideological interests. More aggressive and personal attacks and name-calling, as opposed to a discussion of the science. “Alarmists,” “doomsday crowd” who are anti-energy, anti-progress, anti-fossil fuel.	<b>Climate deniers promote climate change skepticism to advance financial and ideological interests.</b> Right-wing political leaders use discussions of climate change, as a hoax, to advance their own agendas.

#### CLIMATE IMPACT FRAMES: CLIMATE CHANGE WOULD GENERATE NEGATIVE/POSITIVE IMPACTS

Policy should be supported/opposed because climate change is problematic and would pose a variety of threats/would not be problematic and would pose potential benefits.

	<i>Negative</i>	<i>Positive</i>
<b>I1</b> Climate change would impact/improve <i>human quality of life and health</i> .	<b>Climate change generates day-to-day improvements in human well-being and improves human health, including saving lives.</b> Warmer weather makes daily life easier, or saves lives, but any general claims about “improving life,” or “bringing benefits to humankind” or “benefits outweigh the costs” belongs here. Also includes health benefits and lives saved. Warmer temperatures decrease the spread of disease and sickness as well as reducing life-threatening cold conditions. Lowered death rates around the world.	<b>Climate change will generate day-to-day impediments to human well-being:</b> less predictable climate patterns make day-to-day life more difficult. <b>Climate change generates life-threatening conditions through unpredictable weather and other impacts.</b> Increased death rates around the world.
<b>I2</b> Climate change would impact/improve <i>agriculture and the environment</i> .	Climate change (especially increased carbon dioxide, warmer temperatures, and increased precipitation) would <b>improve the productivity of agriculture and natural ecosystems</b> , leading to better-domesticated crop production and vegetation growth, while more land around the world opens up for cultivation. <b>Climate change increases biodiversity</b> , improves the health of ecosystems, and	Climate change leads to <b>decreased agricultural productivity</b> . Distinction from other impact frames in that it specifically points to crop failures, etc., as well as damage to natural systems. Might <b>emphasize general ecosystem harm or describe impacts to specific species</b> .

	allows species better access to needed resources.	
<b>I3</b> Climate change would impact/improve <i>economic systems</i> .	<b>Climate change itself (as opposed to climate-energy policies) would create new business opportunities</b> and incentives to improve economic systems.	<b>Climate change would impact economic systems.</b> Unlike other impact frames, specifically describes the economic and financial burdens generated by climate change.
<b>POLICY DESIGN FRAMES: POLICIES WOULD DO MORE good than harm/HARM THAN GOOD</b> Policy should be supported/opposed because policy solutions are able to solve the issue, and are more positive than negative/Policy solutions are more detrimental than ameliorative, creating numerous negative consequences.		
	<i>Negative</i>	<i>Positive</i>
<b>E1</b> Policy would help/harm <i>consumers</i> financially.	<b>Climate policy will hurt consumers by making them pay more for goods and services and increasing the costs of living.</b> Describes increased electricity prices and payments and may discuss how “American families” or the “average family” are the hardest hit. Other keywords include “customers,” “consumers,” “rates/prices.” Even if the document is discussing energy production at the subnational level, any mention of prices counts as this frame. Does <b>not</b> include more general statements about harms to poor families in the developing world, which is DW, but does include discussions of domestic minorities, low-income, and elderly.	<b>Consumers will pay less and save money. Policy will have a positive financial impact,</b> or at least no negative financial impact, on most residents of the political unit considering action. Consumers will get more money back, have lower rates/prices. “American families” or the “average family,” “middle class” all benefit. Other keywords include “customers,” “consumers,” “rates/prices.” Any mention of prices. Does <b>not</b> include more general statements about benefits to poor families in the developing world, which is DW, but does include discussions of domestic minorities, low-income, and elderly.

<p><b>E2</b> Policy would help/harm <i>the economy</i> at the state or national level.</p>	<p><b>General effects of a policy on national or state-level economies: impedes economy, blocks economic growth.</b> Discussion of GDP belongs here, as well as general job losses or other data that does not specifically talk about one of the subgroups mentioned above. Also includes general statements about a policy being “expensive” or “costly,” even without mentioning taxpayers or specific actors.</p>	<p>Focuses on <b>general effects of a policy on national or state-level economies:</b> Policy will have a positive financial impact, or at least no negative financial impact on the economy of state or nation. Policy will increase state economic development by increasing renewables and “green” industries.</p>
<p><b>SL</b> Policy would foster/threaten <i>state leadership</i>.</p>	<p><b>Describes the loss of sovereignty at state and local levels – in other words, the illegitimate use of government power and intrusion of government into state-level issues.</b> Often highlights the “overreach” of government power, especially administrative agencies such as the EPA. EPA is out of control, a rogue agency, needing to be reined in. In the 2014-2015 sample, discussions of the EPA’s Clean Power Plan often include this frame.</p>	<p><b>Describes how policy will enhance local sovereignty and develop subnational leadership.</b> Emphasizes fairness to subnational units, opportunities for them to exert independence and decision-making. In the 2014-2015 sample, discussions of the EPA’s Clean Power Plan often include this frame.</p>
<p><b>EN</b> Policy would help/harm <i>the environment</i>.</p>	<p><b>Policies cause more environmental damage than they solve.</b> Mitigation actions are shortsighted, policies to address climate change actually increase environmental degradation and disrupt ecosystems. Fossil fuel use protects ecosystems from being degraded, how renewable energy kills wildlife, how biofuels destroy ecosystems, or how a certain policy will perversely create more greenhouse gas emissions. Any general claims of policy harming the environment in any way goes here.</p>	<p><b>Policy enhances non-human use of the natural world or at least does not harm it.</b> Policy will protect vulnerable ecosystems and specific species. Does NOT include protection of the environment for human well-being or use. Any general claims of policy “enhancing the environment” belong here.</p>
<p><b>RE</b> Policy would generate <i>reliable/unreliable energy</i> systems.</p>	<p><b>Policies could cause energy shortages, cause blackouts, or create an unreliable electricity supply.</b> This frame stresses the wastefulness of renewable energy systems in contrast to “reliable coal.” May generally highlight how renewables necessitate back-up sources of power because of their “inherent intermittency.” Developing renewable energy systems is a waste of time and resources, potentially dangerous, and leads to blackouts.</p>	<p><b>Policy will not cause energy shortages or unreliable energy supply,</b> but rather enhance sources of energy in a consistent and reliable way. Developing renewable energy systems is an exciting opportunity for reliable new types of energy creation and distribution.</p>

<p><b>SE</b> Policy would foster/threaten <i>national security</i>.</p>	<p><b>Climate policies will harm natural security.</b> Describes national security themes in a fairly narrow way. Global agreements increase opportunities for military espionage, and military preparedness is harmed by efforts to develop renewable technologies.</p>	<p><b>Policy contributes to national security.</b> Often entails an argument about how developing renewable energy increases national security.</p>
<p><b>SO</b> Policy would foster/threaten <i>national sovereignty</i>.</p>	<p><b>Stresses threats to American sovereignty at the hands of powerful international bureaucrats</b> – and other interests – who are not accountable to any government or actors. Conspiratorial allegations of attempts to establish “world order” and concern over global “power grabs.” Discussion of the UN belongs here if it talks about threats to national political control or authority, but not necessarily if it is a discussion of the UN and international systems more broadly. Includes key phrases such as “global control,” “global climate tyranny,” “world governance,” “concentrated political authority,” and so on.</p>	<p><b>Policy is a legitimate use of state power.</b> Policy is a fair and appropriate use of legitimate government authority. Discussion of the UN belongs here if it talks about national involvement to find climate solutions. “Constitutional,” “appropriate regulation,” collaboration with states, etc. Allows the nation the opportunity to be a global leader in climate governance, etc.</p>
<p><b>ME</b> Policy would have a <i>measurable effect/no measurable effect</i>.</p>	<p><b>Any proposed action is futile</b>, for several possible reasons. China and India would continue to emit greenhouse gases on massive scales, making American efforts a drop in the bucket. “environmentally pointless” or will have “no environmental impact.” Also skeptical that a policy’s emissions reductions could be sufficiently large to have any effect on the global problem, or that a policy’s proposed reductions are possible to achieve in practice.</p>	<p><b>Policy has a significant measurable effect, is possible, and realistic.</b> Policy will contribute significantly to reducing climate change and its negative impacts will have a meaningful influence on global carbon emissions and will generally “matter.”</p>
<p><b>PW</b> Policy is necessary/unnecessary and <i>wanted/not wanted by the public</i>.</p>	<p><b>Even if climate change were happening, it is not a significant issue, and the public does not see action on climate change as a priority</b> (as indicated by public opinion polls). Other issues, such as terrorism, poverty, public health crises, or economic concerns, are worthier of attention. Focuses more on explicit statements about the public not caring about climate change, but not when the document’s author might indirectly imply that other issues are more urgent.</p>	<p><b>Climate change is a major priority compared to other issues that the public might care about. Public wants to see action.</b> Other issues might be important but are not necessarily as urgent or critical. Explicit statements about the public caring about climate change. Often discusses results from opinion polls that may focus on very broad or very specific demographics, but overall, makes the argument that the public explicitly cares about climate change and wants to see action.</p>

<p><b>DW</b> Policy would help/harm countries in the <i>developing world</i>.</p>	<p>Variety of <b>harms that climate change policies would inflict on the developing world and the “global poor.”</b> Policies also immoral and unjust because they deny fossil fuel which is needed to improve standards of living in these very poor regions. “Energy poverty,” “inexpensive fossil fuels,” and a focus on the necessity of fossil fuels for improving economies and lifting or keeping people out of poverty. Any mention of colonialism or imperialism, talk of “condemning” or “immorality” and “sacrificing” or destroying lives in the developing world to meet the interests of elitist western environmentalists.</p>	<p>Describes the variety of <b>help that climate change policies would bestow on the developing world and the “global poor.”</b> Policies economically assist developing nations and the global poor, especially through new renewable energy technologies, “lifting up” other nations, extending other nations the same benefits that the West has experienced, etc.</p>
<p><b>QL</b> Policy would help/harm the <i>human quality of life and health</i>.</p>	<p>Policy would perversely <b>decrease human quality of life and health.</b></p>	<p><b>Climate change policies are important for improving or protecting the human quality of life and health unrelated to climate change.</b> Similar to I1 impact frame, but QL frame includes “co-benefits” arguments that climate change policies will also generate desirable outcomes not necessarily directly related to decreases of greenhouse gas emissions</p>

## APPENDIX B: RESEARCH INFORMATION SHEET

Purdue IRB Protocol #: 1606017819 - Expires: 31-MAY-2019

### RESEARCH INFORMATION SHEET

#### *Understanding State Climate / Energy Policies*

Principal Investigators:  
Heather Cann and Leigh Raymond  
Purdue University  
Dept. of Political Science

Purpose of Research: To understand the role of issue framing in the design and implementation of state climate and energy policies, for an article and/or book on this topic.

Nature of Participation: 30-60 min interview, which may be audiotaped with your permission.

Risks: Minimal, no greater than everyday life. Although there is a very small chance of loss of confidentiality of your information, extensive precautions to keep your comments and identity confidential are listed below, should you prefer your comments to remain not for attribution.

Benefits: You will not have any direct benefits by participating in this study.

Confidentiality: The researcher will keep your comments on this topic during this interview confidential, unless you authorize the researcher to attribute comments to you by name. You may change the confidentiality of your comments at any time during or after the interview with the researcher. If you give permission for the researcher to record the interview, the researcher may keep copies of the interview recordings indefinitely in a secure location. Confidential transcripts and/or recordings will be identified with a unique code number, matched to your name on a single document only kept in a locked cabinet in the researcher's office. The code key will also be indefinitely maintained, and only the principal investigator and co-investigator will have access to these documents. The project's research records may be reviewed by departments at Purdue University responsible for regulatory and research oversight.

#### Voluntary Nature of Participation

You do not have to participate in this research project. If you agree to participate you can withdraw your participation at any time without penalty. You may decline to answer questions during the interview for which you are not comfortable providing a response.

#### Contact Information:

If you have any questions or concerns about this research project, you can contact Leigh Raymond at 765-494-4182 or [lraymond@purdue.edu](mailto:lraymond@purdue.edu), or the Institutional Review Board at Purdue University, Ernest C. Young Hall, Room 1032, 155 S. Grant St., West Lafayette, IN 47907-2114. The phone number for the Board is (765) 494-5942. The email address is [irb@purdue.edu](mailto:irb@purdue.edu).

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- Zhou, Jack. 2016. "Boomerangs versus Javelins: How Polarization Constrains Communication on Climate Change." *Environmental Politics* 25(5): 788–811.

## VITA

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### EDUCATION

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*Ph.D., Political Science.* Purdue University. May 2019.

*M.A., Political Science with a concentration in Ecological Sciences and Engineering.* Purdue University, May 2015.

*B.E.S., Honours Environment and Resource Studies; English Language and Literature Minor;* Co-operative Program. University of Waterloo, June 2012.

### ACADEMIC APPOINTMENTS

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2018 - present—Visiting Assistant Professor of Environmental Studies, Department of Earth and Environment. Franklin & Marshall College.

### PEER-REVIEWED RESEARCH

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Cann, Heather W., and Leigh Raymond. 2018. "Does Denialism Still Matter? Alternative Frames in Opposition to Climate Policy." *Environmental Politics*. 27(3), 433-454, DOI: [10.1080/09644016.2018.1439353](https://doi.org/10.1080/09644016.2018.1439353)

### Manuscripts in Progress

Cann, Heather W. "Climate Change? We Don't Use that Word": Framing in a Case of Subfederal Climate-Energy Policy"

Cann, Heather W. "Supporters and Skeptics: Elite Issue Frames in American Climate Change Policy."



Cann, Heather W., and Janel Jett. “Donald Trump and a Resurgence of Denialism? How Presidential Rhetoric Shapes Elite Discourse on Climate Change.” Upcoming book chapter in the *Year in CSPAN Archives Research*, 2018.

Cann, Heather W. “Talking Science? The Political Influence of Science Frames in Subfederal Climate-Energy Conflict.” Book prospectus.

## **FELLOWSHIPS and AWARDS**

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2018 – *Purdue Bilsland Dissertation Fellowship* (\$20,000). A competitive fellowship that provides support to outstanding Ph.D. candidates in their final year of degree completion.

2017 – *Purdue Research Foundation Research Grant* (\$17,645). Competitive fellowship for one year of dissertation research support.

2013 – *Ecological Sciences and Engineering Lynn Fellowship* (\$13,463 for the first year). A four-year award package designed for the recruitment of outstanding PhD-track students in interdisciplinary graduate programs at Purdue University.

## **GRANTS**

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2018 – Center for C-SPAN Scholarship and Engagement, 2018 Research Funds (\$1,250)

2018 – Ecological Sciences and Engineering, Graduate Student Travel Award (\$500)

2018 – Purdue Climate Change Research Center Graduate Student Travel Grant (\$500)

2018 – Canadian Political Science Association Graduate Student Travel Grant (\$300)

2018 – College of Liberal Arts PROMISE Travel Award, Tier 2 (\$1,490)

2017 – Canadian Political Science Association Graduate Student Travel Grant (\$300)

2017 – College of Liberal Arts PROMISE Travel Award, Tier 2 (\$1,500)

2016 – Graduate Student Travel Award for *Who Do They Think They Are? Cultures of Climate Scepticism, Anti-Environmentalism, & Conservative Environmentalism Symposium*. UBC Okanagan, Kelowna, BC, Canada (\$400)

2016 – College of Liberal Arts PROMISE Travel Award, Tier 1 (\$750)

2015 – Purdue Climate Change Research Center Graduate Student Travel Grant (\$1,100)

## **PEDAGOGICAL AWARDS and EXPERIENCE**

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2017 – Nominated for the *Purdue University Graduate School Teaching Award*. The highest honor presented in recognition of graduate student teachers at Purdue.

2016 – *Teaching Academy Graduate Teaching Award*. Honors graduate students with teaching responsibilities from across campus for their dedication to students and their outstanding teaching contributions.

## **Independent Instructor**

*On Campus:* Introduction to Environmental Policy (POL 223). College of Liberal Arts required core curriculum. Purdue University.

- Spring 2016 (49 students)
- Fall 2015 (59 students)

*Distance Learning:* Introduction to Environmental Policy (POL 223). College of Liberal Arts required core curriculum. Purdue University.

- 2018 (25 students)
- 2017 (18 students)
- 2016 (21 students)
- 2015 (29 students)

### **Teaching Assistant**

Introduction to Environmental Policy (POL 223) Purdue University. Fall 2014; Spring 2015.

### **CONFERENCE PRESENTATIONS**

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2019 – Cann, Heather W., and Janel Jett. “Donald Trump and a Resurgence of Denialism? How Presidential Rhetoric Shapes Elite Discourse on Climate Change.” Midwest Political Science Association Annual Conference. April 4-7. Chicago, IL.

2018 – Cann, Heather W., and Janel Jett. “Donald Trump and a Resurgence of Denialism? How Presidential Rhetoric Shapes Elite Discourse on Climate Change.” Center for C-SPAN Scholarship and Engagement, 2018 Research Conference. October 21-23. Purdue University, West Lafayette, IN.

2018 – Cann, Heather W. “Supporters and Skeptics: Elite Issue Frames in American Climate Change Policy.” Association for Environmental Studies and Sciences Annual Conference. June 20-23. American University, Washington, DC.

2018 – Cann, Heather W. “Supporters and Skeptics: Elite Issue Frames in American Climate Change Policy.” Canadian Political Science Association Annual Conference. May 30-June 1. Regina, SK, Canada.

2018 – Cann, Heather W. “Supporters and Skeptics: Elite Issue Frames in American Climate Change Policy.” Midwest Political Science Association Annual Conference. April 5-8. Chicago, IL.

2017 – Cann, Heather W. “Climate-Energy Policy and Framing Strategies: Science versus Non-Science Messaging.” Canadian Political Science Association Annual Conference. May 30-June 1. Toronto, ON, Canada.

- 2016 – Raymond, Leigh and Cann, Heather W. “Normative Framing and Climate Policy Innovation.” American Political Science Association Annual Conference. September 1-4. Philadelphia, PA.
- 2016 – Cann, Heather W., and Raymond, Leigh. “Science versus Policy Framing in Climate Policy, 2000-2015.” Midwestern Political Science Association Annual Conference. April 7-10. Chicago, IL.
- 2015 – Cann, Heather W. “Across the Blogosphere: Framing Climate Change Skepticism in Traditional and Online Communication Landscapes.” Western Political Science Association Annual Conference. April 2-4. Las Vegas, NV.
- 2015 – Cann, Heather W. “Local Food in the Balance? The Canada-EU Comprehensive Economic and Trade Agreement (CETA) and Food Sovereignty”. Midwest Political Science Association Annual Conference. April 16-19. Chicago, IL.

## **SERVICE**

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### **Reviewer:**

*Environmental Politics* Journal. Published by Taylor and Francis.  
*Politics, Groups, and Identities* Journal. Published by Taylor and Francis.

### **Department Service:**

2018 - 2019 – Graduate Student Representative on the Department Head Search Committee  
 2018 - 2019 – Faculty Graduate Committee Representative  
 2015 - 2018 – Peer Mentor for incoming junior scholars  
 2015 – Devin Roberson Memorial Award Committee  
 2014 – Graduate Student Recruitment Committee and Graduate Student Host  
 2014 – Graduate Student Senator

### **Purdue Climate Change Research Center (PCCRC) Grad/Post-Doc Group:**

2015 - 2016 – Organizing Committee Member

### **Graduate Parent Support Network:**

2018 - 2019 – President  
 2017 - 2018 – Vice-President

## **PUBLISHING EXPERIENCE**

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Summer 2014 – Guest Editorial Assistant

*Politics, Groups, and Identities* Journal. Western Political Science Association. Hosted at Purdue University and Published by Taylor and Francis.

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## ADDITIONAL TRAINING

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### Methods & Pedagogical Training:

September 2018 – *Surviving the Zombie Apocalypse: Workshop on Creating ‘Governing After the Zombie Apocalypse’ Course*. From the High-Impact Learning Opportunities Project Series, Purdue University. Facilitated by Dr. Rorie Solberg, Associate Professor of Political Science, Oregon State University.

This workshop explored creating and administering a high impact, scenario-based course for teaching political science and social justice content, using the facilitator’s example of a post-apocalyptic society recovering from and adapting to life after a zombie pandemic.

Summer 2015 – *Institute for Qualitative and Multi-Method Research (IQMR)* at Syracuse University, Program in Mixed-Methods Research.

Broadened theoretical understanding and practical proficiencies in a range of qualitative research methods, including NVivo and Dedoose software, interviewing political elites, archival research, and more.

### Professional Development:

August 2018 – *Safe Zone Training*, Purdue University LGBTQ Center. Intensive workshop empowering participants to support LGBTQ students, staff, and faculty.

August 2018 – *Trans Inclusion Training*, Purdue University LGBTQ Center. Intensive workshop to explore transgender identities and terminology, discuss relevant laws and policies that protect transgender and gender non-conforming people in higher education settings, and develop and adopt necessary skills to support trans students, staff, and faculty.

July 2018 – *Green Zone Training*, Purdue University Veterans Success Center. Provide faculty and staff with a deeper understanding and appreciation of the veteran and military experience as well as develop tools to serve these students better.

November 2015 – *QPR (Question, Persuade, Refer) Gatekeeper Training for Suicide Prevention*, Purdue University. Suicide Prevention Training leading to the ability to recognize the warning signs of suicide, and how to help.

## PROFESSIONAL AFFILIATIONS

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2018 - present – Association for Environmental Studies and Sciences  
 2016 - present – Environmental Studies Association of Canada  
 2015 - present – International Environmental Communication Association  
 2013 - present – Midwestern Political Science Association  
 2013 - present – American Political Science Association  
 2013 - present – Canadian Political Science Association

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**REFERENCES**

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