Climate-Energy Policy and Framing Strategies: Science versus Non-Science Messaging

Paper Presented at the Canadian Political Science Association Annual Meeting

Toronto, ON.

June 1, 2017

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Abstract

This paper investigates the presence and potential political influence of "science frames" in climate change policy discourse. Science frames, historically central to the discussions around many contentious policy issues, describe technical details about the changing climate as well as making arguments about the scientists who produce such knowledge. Recent work in climate policy developments and framing research suggests that science frames will be less prevalent in current climate change discourse, though other research continues to stress the importance of science frames for generating policy support. By examining a prominent 2015-2016 case of climate and energy policy debate that occurred in the state of Illinois, I investigate the role of science frames and stakeholder framing strategies. Through a case study approach and content analysis of 64 stakeholder press releases, this initial work demonstrates that science frames were largely non-existent in stakeholders' official published materials, while policy design frames, and especially "financial" frames that espoused economic benefits to different groups of actors, were ubiquitous. These preliminary results suggest implications for broader ongoing debates on the appropriate role of science frames within climate change discourse, as well as other contentious policy issues.

Introduction

Global anthropogenic climate change is well-acknowledged as a serious environmental issue, and one that poses daunting social and technological challenges (Newell and Patterson 2010). Yet public discourse around climate change remains fraught – particularly in the United States, where beliefs and attitudes around the issue have become increasingly polarized along partisan lines (Hart and Nisbet 2012; McCright and Dunlap 2011). As such, and given the predictably contentious public conversations around climate change, framing theory has become an important tool for investigating climate change discourse. Such research has sought to identify how different frames – or arguments – might shape attitudes toward climate change policy (Scannell and Gifford 2011; Spence and Pidgeon 2010; Wiest, Raymond, and Clawson 2015) or influence the climate change policy process itself (Raymond 2016), particularly at the state level (Rabe and Borick 2012).

Of these frames, those that attempt to justify climate policies in terms of climate science findings have especially come under debate within climate communications and framing research. These "science frames" describe technical details about the changing climate, as well as posing arguments about the researchers who generate such findings. Employed by climate policy opponents and supporters alike, science frames are in many ways at the heart of conflict over which framing strategies are most likely to change public opinion and influence policy makers on climate policy issues, relating in turn to broader questions around motivated reasoning and the difficulties of attitudinal change. For example, many scholars and communicators have heavily emphasized the notion of "scientific consensus", a frame that stresses the near-ubiquitous agreement amongst experts about the presence and negative consequences of human-induced climate change (Cook et al. 2016; van der Linden et al. 2015). Alternatively, other work has emphasized the importance of targeted messaging, and differences in motivated information processing, as a more meaningful way of supporting climate-energy policy adoption

This paper begins to contribute to this debate over science framing in climate policy by investigating the current prevalence and nature of science versus non-science frames as used by stakeholders involved in an on-the ground policy conflict, one that took place in the American state of Illinois during 2015-2016. Illinois has experienced an intensive debate over proposals to change the state's energy landscape, a debate which largely focused on a major new legislative proposal introduced in February 2015, the Clean Jobs Bill (CJB). This episode of policy conflict eventually led to the passage of similar legislation, the Future Energy Jobs Act, in December 2016.

As such, this paper asks: what is the prevalence of science versus alternative frame types "in the field" during a case of on-the-ground climate policy conflict?

Prior Work: Framing a Changing Climate

Framing theory revolves around the process by which individuals attempt to interpret and make sense of the world around them (Goffman 1974). A "frame" is a message unit that strategically emphasizes certain aspects of an issue while downplaying others, with the intention of influencing how people consider of or perceive a particular issue or situation. Indeed, framing highlights how "people develop a particular conceptualization of an issue or reorient their

thinking about an issue" (Chong and Druckman 2007a, 104). For example, Nelson, Clawson, and Oxely (1997) demonstrate how a Ku Klux Klan rally is tolerated by the public, to very different degrees, depending on whether the rally is framed as an issue of public order or as an issue of free speech. In this way, 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.

The impacts of such strategic framing endeavors on audiences, known as framing effects (Chong and Druckman 2007a) thus pose powerful consequences for shaping the realm of possible policy responses to social issues. 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 2007b) or the lasting power of frame effects through time (Lecheler and de Vreese 2011), among other elements of framing in action.

Framing and Climate Change Policy

Research on climate change policy has identified framing as widely influential in shaping climate change policy attitudes, from stakeholders who are in support of climate change action to those who are against it. Early work in 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 environments: 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 2012; Hoffman 2011; Young 2011), television and radio (Boykoff 2008), social media, blogs, and online forums (Koteyko, Jaspal, and Nerlich 2013; Sharman 2014), think tanks and other non-governmental organizations (McCright and Dunlap 2000; Boussalis and Coan 2016), as well as intergovernmental bodies (O'Neill et al. 2015). While using diverse approaches and often adopting very different frame typologies, such work has consistently demonstrated the existence of wide-ranging substantive frame types in how climate change is discussed, and the ongoing centrality of science-based arguments.

Beyond assessing and categorizing frame prevalence in this way, other work has sought to explore the effectiveness of different issue frames in shaping attitudes toward climate change. Here, scholars typically investigate various frames understood as relevant for shaping attitudes, beliefs, and reactions to climate change and climate change policy, and where specific frame manipulations are theorized as potentially more or less important to various targeted audiences (Maibach, Roser-Renouf, and Leiserowitz 2008) – from divergent partisan identities (Severson and Coleman 2015) or to groups categorized by degree of belief in climate change (Hine et al. 2016; Leiserowitz 2007).

Overall, a wide range of substantive issue frames have come under the scrutiny of researchers in these areas. "Positive" or "negative" impact frames highlight potential gains versus the avoidance of potential losses of climate change and climate change policy (Bertolotti and Catellani 2014, Gifford and Comeau 2011; Moser and Dilling 2007). More specifically, "environmental impact frames" stress the risks from climate change and from other air pollutants associated with burning fossil fuels (Scannell and Gifford 2011; Spence and Pidgeon 2010;

Wiest, Raymond, and Clawson 2015). Some studies suggest that specific "public health" frames are most successful at eliciting support for new policies, as opposed to frames focused on national security or environmental considerations (Myers, Nisbet, Maibach, and Leiserowitz 2012). Alternatively, "policy impact" frames might stress a policy's potential benefits for citizens (Albertson and Busby 2015) such as "economic benefit" frames describing the distributions of policy costs and benefits, which some recent work suggests may be increasingly important in recent climate policy developments (Raymond 2016; Skocpol 2013; Rabe 2010).

In general, research focusing on these kinds of framing manipulations asks how construing the issue of climate change in different ways shapes public acceptance of climate change science, support for climate-energy policies, or encourages pro-environmental behaviors associated with climate change adaptation or mitigation.

Arguing the Science

Historically, so-called "science" frames have been one of the most important and prevalent frame types in climate discourse in the United States with both supporters of climate change policy to its outspoken opponents. In terms of climate policy opponents, the pioneering work of McCright and Dunlap (2000) applied content analysis to 224 conservative think tank tank publications produced between 1990 and 1997 to describe the specific used frames by the conservative movement to oppose policy action. Overall, McCright and Dunlap (2000) found that anti-science frames 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 frames focused on the harms caused by climate policies, suggesting the importance of those arguments even during the peak of climate skepticism.

More recently, Boussalis and Coan (2016) used quantitative text-mining methodologies to identify 47 different topics in more than 16,000 documents from conservative think tanks opposed to climate policy over a 15-year span of time from 1998-2013. The authors find that science topics are more common over this time frame than policy topics, although the relative prevalence of science versus policy topics varies by year and by think tank. These findings about the continued prevalence of climate science frames suggest that "denialism" focused on scientific uncertainty has remained crucial for organized climate policy opposition, at least through 2013.

Similarly, science frames also appear central to climate policy supporters, though somewhat less empirical work has categorized their nature and prevalence. One common approach is the information deficit/misinformation surplus model (Bauer, Allum, and Miller 2007). From this perspective, successful climate change communication is seen as needing to counteract denialism by introducing higher-quality information: more and better presentation of the scientific facts. For example, one popular strategy has focused on highlighting the public's inaccurate perceptions on the expert consensus around climate change. While the scientific reality of climate change is unequivocal (Cook et al. 2013; 2016), research suggests that many Americans still do not realize how extensive this scientific consensus is. One recent report noted that merely one in ten Americans (11% of the population) understand that over 90% of climate scientists believe climate change is both already happening and caused by human activity (Leiserowitz et al. 2016).

Such misperceptions are understood as detrimental to accurate climate change beliefs, and in turn inhibit support for climate-energy policy (Maibach et al. 2014). Many scholars have stressed that an accurate understanding of the expert consensus around climate change is a crucial "gateway belief" for generating a larger groundswell of public support for climate action (Dixon 2016). Known as the Gateway Belief Model (GBW), scholars in this tradition stress the importance of deliberate "consensus messaging": clear, simple, and consistent factual science messaging that attempts to educate the public on this misunderstood agreement amongst experts (van der Linden et al. 2015).

However, other bodies of work – often drawing more explicitly from framing backgrounds – have questioned the ability for this kind of science frame to meaningfully overcome polarized beliefs or diminish the "consensus gap" between the public and scientific experts (Kahan 2015). For example, research on the GBM's capacity to shift 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). Similarly, 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 is not effective at shifting opinions. Instead, science frames showed clear evidence of eliciting attitude polarization and motivated reasoning, especially once study participants had formed opinions of the two different technologies (genetically modified foods and carbon-nanotubes). 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 reasoning and scientific reasoning indicates, in turn, the most severe contrast effects and negative attitudes toward climate change action (Kahan et al. 2012).

Based on this body of research, it seems likely that frames describing the certainty or uncertainty of climate science, and related scientific messages, should be less politically effective or relevant in today's climate policy conflicts.

While such work suggests that science frames in communication are less effective at shifting climate change attitudes, recent policy research indicates that traditional science frames have also played a less crucial role in subnational climate-energy policy developments in the United States, though the relative efficacy of science versus other types of frames has not yet been tested. For example, Raymond (2016) finds that public benefit frames were a vital factor in the design and enactment of the Regional Greenhouse Gas Initiative (RGGI), a climate policy adopted by 10 northeastern states in the U.S. in 2008. Similarly, Skocpol (2013) attributes the failure of the U.S. American Clean Energy and Security Act in 2010 to arguments describing the economic harms the policy would cause to the middle class promulgated by opponents of the bill, rather than arguments over climate science. Other work on recent events in climate policy also stresses the importance of economic, rather than scientific, frames in different climate policy debates (Borick and Rabe 2010; Rabe 2016; Harrison 2010).

As such, we would expect to see traditional science frames having less capacity to

influence climate change attitudes and beliefs, and in turn, becoming less salient in actual policy developments. Overall, we thus see a still unresolved controversy around the role of traditional science frames in climate change discourse. In an America where climate change research and progressive energy policy are increasingly unlikely at the federal level, debate around the best approaches for overcoming partisan climate change denialism are particularly important for states.

Given these prior bodies of work on climate change and framing, as well as recent findings on climate-energy policy dynamics, I anticipate that science-related frames will be *largely absent from an on-the-ground case of climate change policy development,* and will be considered – by policy stakeholders – to be not as effective as frame types that instead emphasize personal impacts created by the competing policies under discussion.

Methods

To begin investigating the framing strategies of Illinois policy stakeholders, I conducted in-depth content analysis of stakeholder press releases – this exhaustively covers all formal statements made by the major actors involved with the policy conflict on their respective championed pieces of legislation. Press releases were gathered online from stakeholder websites for a total of 64 press releases spanning from February 4, 2015 to April 14, 2017. Frame categorization was assessed through human coding, using a framing typology originally based on McCright and Dunlap's (2000) categorization of frames employed by climate change skeptic conservative think tanks. This typology was expanded by Raymond and Cann (2016) to include more detailed additional subframes, and further modified in the present project to reflect both the policy support and the policy opposition aspects of each frame. Future developments of this project will incorporate appropriate intercoder reliability measures.

This formal press release content analysis was supplemented by an exhaustive search of relevant publications from two Illinois newspapers: the State Journal-Register, a state-wide Illinois publication, as well as the Chicago Daily Herald, a local paper. Documents were gathered through LexisNexis Academic. A wide range of search terms were used to ensure no relevant articles were overlooked: "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". This collection of documents has been casually reviewed, and will undergo formal content analysis in future project iterations.

In terms of case selection, Illinois has several qualities that make it a valuable case for considering the influence of climate frames. It is fairly representative of a number of other states facing similar climate-energy challenges: mixed partisan control of government, a diverse assortment of energy interests including coal, nuclear, renewable energies, both 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 on several scales, and mainstream environmental groups). As noted by Rabe (2004), Illinois functions 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. Recent research also indicates that Illinois

scores as one of the most highly-competitive states when it comes to control over state leadership, showing that Illinois experiences very high legislative polarization across both chambers of government (Hinchliffe and Lee 2016).

Overall, this episode in Illinois energy policy poses an intriguing case of climate policy debate in action, particularly when it comes to the framing strategies employed by the different groups of stakeholders involved. This case has the added practical benefit of being resolved, and only recently so, helping make it a logical place to explore climate-energy framing dynamics in action.

The Illinois Case

In total, four major competing bills to address the state's energy and climate change concerns were introduced throughout the 98th and 99th general assembly, all of which failed to pass by the 99th session's conclusion by May 31, 2016. Following this, policy advocates focused on salvaging key components of the bills and combining them into new legislation, a significant challenge given the divergent interests involved – and yet the Future Energy Jobs Bill (SB 2814) passed with bipartisan support in early December 2016. Illinois' several recent years of tumultuous years of climate-energy development were additionally complex by the state's backdrop of budget gridlock and the introduction of the EPA's Clean Power Plan (CPP) in August 2015. I review the story of this recent climate-energy conflict in the following section, focusing on the environmentally-backed Clean Jobs Bill (CJB).

The Clean Jobs Coalition

The CJB was introduced separately in the Illinois House and Senate on February 19 and 20 of 2015. The bills were spearheaded by the Illinois Clean Jobs Coalition (ICJC), an alliance composed of environmental groups, renewable energy businesses, religious communities, labor groups, and other non-governmental organizations. The law had three major objectives: (1) modify the state's Renewable Portfolio Standards (RPS) to increase Illinois renewable energy goals to 35% by 2030, up from 20% currently, (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 invest" program. More specifically, 65% of auction proceeds from this proposed carbon market would be designated to fund energy efficiency and renewable energy throughout the state. In particular, funds would be channeled toward low-income communities, and communities that had previously hosted power plants, while 10% of auction funds would go to communities dealing with pollution from power plants and another 5% would be focused on job transition programs for those affected by power plant closures (Lydersen 2015). Overall, the ICJC maintained that adopting this range of measures would generate 32,000 new jobs throughout the state during next the next several decades, and that the bill would create energy customer savings of roughly $1.6 billion dollars while also and positioning Illinois to readily comply with EPA's CPP (ICJC, 2015e).

Although the coalition of advocates putting together ideas for the CJB sought to address a wider range of energy and climate issues for the state, including major problems with Illinois' RPS policy as enacted and implemented, the need to respond to the recent EPA Clean Power

Plan (CPP) created a unique opportunity to put these ideas on the legislative agenda. At least one advocate closely involved in the design of the bill indicated that describing it as a response to the CPP was important for gaining greater legislative attention. At the same time, this also allowed the environmental coalition to get a proposal on the table earlier than the state's utility companies, who had been raising concerns for several years on the potential closures of their less profitable nuclear facilities in the state.

Industrial interests: The Low Carbon Portfolio Standard and the Future Energy Plan

As such, leading energy companies Exelon and Commonwealth Edison (ComEd, a subsidiary of Exelon) soon introduced competing bills for the CJB: the Low Carbon Portfolio Standard (LCPS) and the Future Energy Plan (FEP). An energy company based out of Chicago, Exelon is the United States' largest nuclear power operator (Lydersen 2016a). Perhaps unsurprisingly, the LCPS was largely intended to provide assistance to two of the company's potentially struggling nuclear power plants in Illinois, a state that receives roughly half of its energy from nuclear power (NEI 2014). The LCPS required utilities to purchase low-carbon energy credits for 70% of their power requirements. While other low carbon energy sources were technically eligible, the bill's minimum level of energy production to qualify effectively excluded all sources except for nuclear from qualifying for the credits (Trabish 2015). In this way, critics complained that the low carbon credits would provide Exelon with roughly $300 million a year for its nuclear production, while other renewable sources would receive minimal support. Indeed, the plan became pejoratively known as the "nuke rescue bill" (Daniels 2014). In terms of consequences for consumers, the bill limits any rate increase to no more than 2% above 2009 levels – about a $2 increase to household bills every month (Trabish 2015).

The FEP was designed to work in tandem with the LCPS, and largely focused on restructuring electricity rates and developing solar power. The bill would allow ComEd to invest around $400 million in community solar while continuing to expand and develop their microgrid[1] technology and related infrastructure throughout the state. Most controversially, the FEP proposed changes to how 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 say that the charges would instead be confusing and likely lead to higher electricity bills. Additionally, the implementation of a demand charge would supplant net metering, which many environmental groups note would pose a considerable disincentive for consumers looking to install their own home solar systems (Daniels 2015).

A possible compromise? The Next Generation Energy Plan and Future Energy Jobs Act

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). This plan was portrayed as a compromise, with supporters arguing that the legislation advanced the interests of all major stakeholder groups. The NGEP entailed a wide range of measured, including a possible

[1] A microgrid is an independent collection of electricity sources and buildings that can run independently of the larger grid, thus contributing toward reliable energy security.

$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 18.5% 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 (Magrisso 2016). Environmental groups applauded these elements of the NGEP, which substantially reflected provisions of the environmental CJB.

However, the bill also incorporated controversial aspects of the two earlier industry plans: rate-restructuring proposals for ComEd customers, and the proposed funding for Exelon's nuclear facilities. The NGEP's proposed rate restructuring changes continued to meet resistance, particularly the proposed demand charge. In addition, NGEP still provided significant funding for the Exelon's two nuclear facilities. Rather than the low carbon energy credit program, the bill provided between $170 and $290 million for these facilities from a surcharge applied to ComEd and Ameren Illinois (a major utility for southern Illinois) customers, leading to a roughly $2 bill increase per month per household. The compensation for the two nuclear facilities was now 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, bill opponents remained concerned about potential harms to consumers and to 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, the Citizens Utility Board (CUB), a consumer watchdog group, 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 compromise bill did not gain sufficient support to be called for a vote before the May 31 end of the legislative session.

Finally, the Future Energy Jobs Act (FJA, SB 2814) was signed into law by Illinois governor Bruce Rauner on December 1, 2016. Scheduled to take effect in June 2017, the FJA includes key components from all previous bills. One key component includes yearly funding for two Exelon plants, the Clinton and Quad Cities facilities. Each will receive $235 million a year for the next decade under the law's "zero emission credit" (ZEC) program. Besides the nuclear payments, other bill provisions include major expansions to energy efficiency programs for ComEd and Ameren, $750 million in low income programs – which includes $360 million 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 RPS program, allowing for increased investment in renewable energy development (Lydersen 2016b). The bill ultimately dropped controversial changes to the state's net metering mechanisms for home solar systems, as well as provisions that would have provided payments for coal plants in the southern part of the state. Finally, the bill included an amendment to limit costs to residential customers (Maloney 2016). Despite the substantial subsidies for the utility's nuclear facilities, the bill was still widely hailed as a successful compromise piece of legislation, with major wins for environmental stakeholders from the CJC, such as the Natural Resources Defense Council, the Sierra Club, and the Environmental Defense fund – all of whom were won-over in support of the bill by last-minute changes (Maloney 2016).

Stakeholder Framing Strategies

The following section describes the press release framing strategies of the three major stakeholders, as well as incorporating findings from the mainstream media analysis. Overall, climate science frames were essentially non-existent throughout the stakeholder press releases, which instead prominently featured impact and policy design frames, particularly frames citing financial benefits or harms.

Table 1. Illinois climate-energy conflict: frame prevalence in all stakeholder press releases

	Total N = 64	
	N	%
Science Frames *The evidentiary basis of climate change is robust and accurate/weak and incorrect.*	**1**	***1.6%***
The scientific evidence for climate change is *highly certain or uncertain*:	0	*0*
Nature of climate science is *clear or complex*	1	*1.6*
Climate change is a function of *human activities or of natural cycles.*	0	*0*
Climate change is *happening or is not happening.*	0	*0*
Mainstream climate research is *"sound" or "junk" science.*	0	*0*
Climate change scientists or dissenters *produce objective or biased research.*	0	*0*
Climate change scientists or dissenters are *unfairly persecuted.*	0	*0*
The IPCC is a *reliable source* or *it purposefully creates false consensus.*	0	*0*
Climate change is used as a *tool for ideological and financial interests*.	0	*0*
Climate change is used as a *political tool for government leaders.*	0	*0*
Impact Frames *Climate change or climate change policy would generate positive/negative impacts.*	**27**	***42.2%***
Climate change or climate change policy would improve or decrease *human quality of life.*	6	*9.4*
Climate change or climate change policy would improve or decrease *human health.*	22	*34.4*
Climate change or climate change policy would improve or damage *agricultural and natural systems.*	0	*0*
Policy Design Frames *Climate change policies would do more good than harm/more harm than good.*	**64**	***100%***
Policy would *financially help or harm*:	62	*96.9*
All consumers.	59	*92.2*
Low income, minority groups, or elderly.	16	*25*
Industry.	10	*15.6*
State or national level economy overall.	57	*89*
Policy would *fairly use tax dollars and assist taxpayers, or would unfairly waste tax dollars and harm taxpayers.*	1	*1.6*
Policy would *help or harm the environment.*	30	*46.9*
Policy would have a *significant and measurable effect for addressing climate change or would have no significant and measureable effect and is unrealistic.*	0	*0*
Policy would be *unnecessary or necessary given technological innovation.*	1	*1.6*
Policy would be *necessary because climate change is a public priority or not necessary because climate change is not a public priority in comparison to other issues.*	6	*9.4*
Policy would generate *reliable or unreliable energy systems*.	21	*32.8*
Policy would *enhance or threaten national security.*	1	*1.6*
Policy would *strengthen or weaken state or national sovereignty.*	29	*45.3*

Arguments for the CJB

As suggested by the plan's title, the financial benefit themes of job creation, economic growth, and consumer savings were one of the most prominent frames employed in the campaign to support the CJB. As one advocate involved with early strategizing for the bill noted, the choice to focus on a message of economic development and consumer savings was intentional, and it was important to stress that the bill would not "put costs on constituents." Public health benefits and environmental benefits have also appeared in the campaign to promote the bill, but to a lesser degree.

An emphasis on job creation was the most prevalent and consistent benefit frame. As chief sponsor Rep. Elaine Kekritz remarked in a 2015 op-ed supporting the bill, the CJB would create thousands of new jobs in the "clean energy industry". These consumer benefits emphasize that the policy, if implemented, would help to develop renewable technologies, and in turn generate thousands of new jobs for Illinois citizens. The Clean Jobs Coalition website echoes this message, promising that the plan will "build an innovative, diverse, and clean electricity system that costs less, delivers reliable power and creates thousands of good paying jobs" (ICJC website).

Indeed, adoption of the bill was often portrayed as an absolutely crucial step toward securing Illinois' position as a leader in green-energy production, one that would have "historic impact" (Siegel 2015). Adoption of the CJB would thus send a much-needed "strong signal to investors and employers who, too often, are taking their business to other states" (ICJC, 2015h). A major complement to this frame is the related argument that Illinois should be a green-energy leader. With other states like Oklahoma, Minnesota, and Iowa in the race for "clean jobs economies", Illinois is perceived as continuing to "fall behind". Creating welcoming business environments and attracting investment to the state is an essential means of attaining this leadership position, and strong policy to facilitate market certainty is a required necessity for businesses looking to invest in Illinois (Nekritz 2015). This kind of state leadership was also consistently portrayed as requiring urgent action: delay would create adverse consequences for the state's future. For example, an advocacy letter to governor Bruce Rauner from the ICJC urged, "Illinois cannot afford to be left out and attracting investment, capital and jobs in the rapidly-evolving field of clean energy is vital to the health of Illinois' economic future" (ICJC, 2015a). Here, the rhetoric matches that found in California and some other states around climate policies serving as drivers for general state economic benefits, as opposed to consumer protections (Raymond 2016).

CJB advocacy also emphasized consumer savings, however, especially in comparison with Exelon and ComEd's competing bills. An ICJC coalition press release notes how "Illinois consumers would save $12 billion by 2030 on their energy bills" (ICJC, 2015c). As one coalition member noted in a subsequent 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, 2015g). In this way, the policy was framed as actively assisting consumers, particularly "households" and "families" and especially the low-income families and neighborhoods who would receive targeted benefits from the plan (Siegel, 2015; ICJC 2015b).

CJB supporters relied to a lesser extent on the "impacts to taxpayers" frame, especially

when comparing the CJB to its rival bills. CJB materials typically portrayed Exelon and ComEd's bills as deeply *unfair* to consumers and taxpayers by generating major windfalls for the utility companies. The inherent unfairness of these rival policies most specifically focused on Exelon's "nuclear bailout bill", or the ComEd's solar rebate "bait and switch" for solar customers (ICJC, 2016). Media accounts also sometimes noted that the CJB would be accomplished without "a large price tag for taxpayers" since it would be spurred by private innovation (Fortner, Sandack, Tyron 2016).

Moving away from economic and consumer frames, the ICJC's materials also emphasized public health benefits. "Cleaner air means healthier people," said one press release (ICJC, 2015g), while another noted that the policy would present a genuine opportunity "to improve public health" (ICJC, 2015d) by moving the state away from coal-fired electricity production. Children feature prominently in many of these public health frames, as in the discourse surrounding the promotion of the CPP more generally. For example, as one coalition member noted, "we have a moral obligation to leave our children and grandchildren cleaner air to breath and a planet less exposed to the dangers of climate change" (ICJC, 2015f). Less frequently, those promoting the CJB also highlighted how it would assist low-income individuals who are particularly vulnerable to the negative effects of climate change. As one church leader put it, "as people of faith, we know that we have a sacred duty to be good stewards of the planet and to care for our brothers and sisters in need, who are often the people most impacted by climate change" (ICJC, 2015f).

Discussions of climate change or other environmental benefits in coalition advocacy materials tended to reintroduce economic concerns or focus on public health issues, For example, ICJC press releases describes the bill as a "rare opportunity to expand Illinois' economy and enhance our environment" (ICJC, 2015h), and argues that a "better environment and a better economy go hand in hand" (ICJC, 2015e). Likewise, a supportive op-ed noted that carbon pollution poses risks to local communities, and should be avoided, but that this is best accomplished by making Illinois "a more attractive place to do businesses", specifically for renewable energy industries (Fortner, Sandack, Tyron 2016). While environmental frames are less prominent in CJB advocacy materials, the bill's expected reductions in CO2 emissions do feature more prominently in mainstream media coverage of the bill. For example, a Chicago Daily Herald article notes that while the CJB will save consumers money, its more long-term benefits include substantial decreases in CO_2 emissions throughout the state, as well as negative climate change consequences globally (Sullivan and Schmidt 2015). Other media articles maintain that the CJB is the best strategy for meeting Illinois' CPP goals (Siegel 2015), and that the bill would work to "slow down and reverse the effects of climate change" (Bates 2015).

In short, CJB advocates clearly emphasized public benefit frames, with particular focus on financial benefit frames for consumers and for the state economy as a whole.

Arguments for alternative bills

Supporters of the Low Carbon Portfolio Standard (LCPS) also emphasized consumer benefits frames, with particular focus on the economic effects of a possible shutdown of Exelon's two threatened nuclear facilities. As one Exelon press release noted, the closure of the two facilities "would result in $1.8 billion annually in lost economic activity, 8,000 job losses,

and cost as much as $1.1 billion per year due to increases in carbon and other pollutants... the plant shutdowns would result in up to $500 million annually in higher energy costs statewide" (Exelon 2015). LCPS supporters also contended that closing the facilities would devastate the communities and families who rely on them. As one supporter noted in a web publication, "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).

In reply to this economic threat, the LCPS was framed as an efficient, practical strategy for decreasing greenhouse gas emissions – a challenge unlikely to be met without clean and reliable nuclear energy. As the same article argues, "we can never hope to meet our goals for carbon reductions and make progress towards a cleaner environment if we abandon clean nuclear" (Byron Chamber of Commerce2015). In addition, LCPS supporters tried to counter consumer benefit frames favoring the CJB by citing the potential expense and unreliability of renewables: "Renewable energy has a place and over time can grow," said one such argument, "but the additional costs of aggressive development of expensive and unreliable energy should not be forced on consumers and taxpayers when reliable carbon-free electricity is readily available" (Tolley 2015). More generally, criticisms of the CJB tended to focus on the threat of higher electricity rates for consumers, and the potential loss of jobs – the two main consumer benefit frames used by CJB supporters (e.g., ComEd 2015b; Jensen 2015).

Framing strategies around ComEd's Future Energy Plan (FEP) emphasized the creation of resilient and secure energy systems, as well as customer benefits and savings. As summarized in one press release (and repeated in others), the FEP "would expand access to renewable energy, increase energy efficiency, enhance the resiliency and security of the system and meet the growing demand among energy consumers for more choice and personalized services" (ComEd 2015b). Supporters of the FEP also emphasized the success of ComEd's current energy efficiency programs, both in terms of reduced energy costs as well as decreased carbon emissions, much like the CJB advocates. FEP promoters also highlighted the bill's financial assistance for many consumers, again similar to the consumer benefit framing stressed by CJB supporters (e.g., ComEd 2015c).

In addition, FEP frames also stress the added consumer benefits of more personalized service and increased consumer choices – two benefits that are novel to this piece of legislation. Customers are described in one press release as having access under the FEP to "programs and tools that help them personalize their electric service to fit their lifestyle" (ComEd, 2015a) through continued expansion of their smart grid installations and participation in ComEd's consumer benefit programs The smart meters could potentially facilitate new efficiency programs that would save households money, given that ComEd is able to remotely access and monitor in real-time household energy usage (Daniels 2015). Some advocacy materials also develop arguments around the FEP's capability to create "real" job growth – in contrast to the CJB, whose claims of job creation were met with skepticism by FEP advocates.

Some FEP advocates also framed the current policy for renewable energy as an unfair subsidy to a few customers by the majority of energy consumers. As one op-ed argued, the existing overall consumption rate schemes allow those with solar installations to pay less than they should for electricity "delivery," or the infrastructure that even solar customers need to stay connected to the grid. By contrast, the FEP's demand charge system is portrayed as more equitable to all consumers, without solar system uses receiving a free ride (Elliott 2015).

Opponents of the FEP largely focused on this same aspect of bill: the proposal to replace net metering, whereby customers with solar systems are credited for the energy their systems put back into the grid, with the demand charge system. As one opinion piece challenging the FEP argued, net metering is crucial for the development of a viable solar market and its removal would negatively impact small businesses (Walters 2016). In this way, ComEd's proposal was portrayed as unjust and deceptive for consumers, as well as interfering with the development of new technology to provide zero-carbon energy.

Discussion

As hypothesized, traditional science frames did not frequently appear in official stakeholder materials, although the totality of their near-complete absence was surprising. Policy advocates for the four bills, as well as the final compromise Future Energy Jobs Act, all adopted framing approaches relying instead very heavily different forms of policy design framing. Financial benefit frames, such as benefits for the state economy, consumer benefits or protections, help for low income or minority consumers, and economic benefits for industries – were nearly ubiquitous. Interestingly, mass media analysis and the public debate over the three bills lacked any serious "climate skeptic" perspectives – that is, frames questioning the need for the bills based on the alleged weakness of climate science, or any

Environmental stakeholders knew that an opportunity for ambitious energy legislation might be on the horizon given the development of the EPA Clean Power Plan (CPP). In the later months of 2014, environmental stakeholders began to meet and discuss the possibility for new environmental legislation. In terms of the framing strategies of the environmental group, one individual closely involved with the negotiations made it clear that the group decided very early on that the CJB's major focus would emphasize 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".

In terms of public health frames, or science frames that more explicitly touched on climate change, the environmental stakeholder remarked that, while health benefits were still foundational to environmental groups 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. Indeed, not only were climate-related science frames absent from the stakeholder press releases, but climate change was rarely explicitly mentioned. Such an approach echoes a sentiment increasingly heard in climate change communications – that the issue itself is so deeply polarized so as to make it immune to the influence of framing effects

Moving forward, this initial content analysis will be supplemented by examination of mass media articles on the Illinois case, as well as interviews with actors from each stakeholder group who were involved in the conflict. Conversations with individuals directly involved in the policy will be particularly important for making sense of stakeholder decision-making as they adopted or discarded particular framing strategies within the state-level climate-energy conversation.

Conclusions

This project investigates the framing dynamic of climate-energy policy in action through a case study analysis of Illinois. Given recent findings from policy research, we would expect that stakeholders in the Illinois climate-energy case would prioritize other framing strategies over science frames. Thus, I hypothesized that traditional science frames (such as claims around the scientific consensus on climate change, for example) would be mostly absent from an on-the-ground case of climate change policy development. A qualitative content analysis of stakeholder press releases confirmed this hypothesis, with an almost complete absence of science-related frames across stakeholder press release.

Instead, these official materials consistently emphasized the public benefits and policy design impacts. Indeed, initial conversation with one individual closely involved in the negotiations suggests that the focus on financial benefits was a careful decision on the part of environmental stakeholders, while science frames were deliberately excluded. Frames describing the financial impacts of their respective policies were especially widespread: arguments around impacts to consumers, industries, poor and minority-group communities, and for the development of Illinois economy. Science frames, despite still being a major area of focus for climate change communicators and framing scholars, appeared to play a minimal role in the public framing efforts of environmentalist and industry stakeholders alike.

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