Energy Efficiency Policy in

Arizona

Public Participation and Expert Consultation in the Policy Implementation Process

by

Drew Bryck

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Graduate Supervisory Committee:

Elisabeth Graffy, Chair
Michael Dalrymple
Clark Miller

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ABSTRACT

Many different levels of government, organizations, and programs actively shape the future of energy in Arizona, a state that lacks a comprehensive energy plan. Disparate actions by multiple actors may slow the energy policy process rather than expedite it. The absence of a state energy policy or plan raises questions about how multiple actors and ideas engage with state energy policy development and whether the absence of a comprehensive state plan can be understood. Improving how policy development is conceptualized and giving more focused attention to the mechanisms by which interested parties become involved in shaping Arizona energy policy. To explore these questions, I examine the future energy efficiency. Initially, public engagement mechanisms were examined for their role in policy creation from a theoretical perspective. Next a prominent public engagement forum that was dedicated to the topic of the Arizona's energy future was examined, mapping its process and conclusions onto a policy process model. The first part of this thesis involves an experimental expert consultation panel which was convened to amplify and refine the results of a public forum. The second part utilizes an online follow up survey to complete unfinished ideas from the focus group. The experiment flowed from a hypothesis that formal expert discussion on energy efficiency policies, guided by the recommendations put forth by the public engagement forum on energy in Arizona, would result in an increase in relevance while providing a forum for interdisciplinary collaboration that is atypical in today's energy discussions. This experiment was designed and evaluated utilizing a public engagement framework that incorporated theoretical and empirical elements. Specifically, I adapted elements of three methods of public and expert engagement used in policy development to create a consultation process that was contextualized to energy efficiency stakeholders in Arizona and their unique constraints. The goal of the consultation process was to refine preferences about policy options by expert stakeholders into actionable goals that could achieve advancement on policy implementation. As a corollary goal, the research set out to define

implementation barriers, refine policy ideas, and operationalize Arizona-centric goals for the future of energy efficiency.

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TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

Figure Page

Chapter 1

INTRODUCTION

The goal of this research is to examine public engagement during policy creation and break out these engagement processes into multiple steps that include public and expert consultation. The conclusions of a public engagement forum undertaken by the non-profit Arizona Town Hall organization were examined and utilized as input to expert consultation. The methodology for the consultation session, which was attended by prominent stakeholders in Arizona's energy efficiency discussion, was created specifically for this event through the combination of three existing engagement mechanisms. The process also dovetailed into the larger Energize Phoenix project, a city-wide initiative supported by a federal energy efficiency grant, which was the initial inspiration and support structure of this research. The policy idea guide which was critical to the stakeholder engagement was also created by Energize Phoenix staff with contributions from this author and was a goal of the research.

There are many forms of participation methods available to decision makers and researchers as they try to understand and frame complex policy scenarios as well as try to make actual policy. Recently, there has been a rise in interest in the field of participatory democracy. This interest stems from the desire of researchers, event organizers, and citizens for a range of voices to be heard on issues equally in a democratic setting. Many see the merits of a broader spectrum of participant inclusion materialize in a broader scope of opinions and facts collected, which can improve policy outcomes, in addition to simply reinforcing the perceived legitimacy of a policy process (Hoppe, 2011; Linstone and Turoff, 2002; Beierle and Cayford, 2002; Warren, 2008) Indeed, there are examples of successful participatory processes for addressing or thinking about complex policy issues. Arizona prides itself on a unique, historically validated annual event called Arizona Town Hall, which was dedicated to the issue of Arizona's Sustainable

Energy Future from 2011- 012 (AZ Town Hall2012; Biodiversity.wwviews.org, 2012; ReinventPHX, 2013).

Some public participation events are convened with the promise to participants of influencing the decisions of political leaders; World Wide Views Forum, for example, enlisted community participation from several locations around the globe to produce recommendations for the UN Convention on Biodiversity (Biodiversity.wwviews.org, 2012) on the premise that, in theory, recommendations collected in this fashion should be more relevant and easier to put into action for decision makers (Danish Board of Technology, 2009). In practice, however, this is not always the case (Delborne, 2011; Guston, 1999), and a poorly defined public engagement process may end doing more harm than good (Rowe & Frewer, 2004). For instance, the recommendations may be too broad and ungrounded to implement, which may be a disconnect from what participants are led to believe when they are recruited. Even general recommendations may be critical to setting an agenda for policy development, but this can be misunderstood and lead to frustration by public participants if organizers make promises, or urge participants to infer, that public voices will be heard and visible changes will immediately be made. In short, public participation is frequently conducted in a vacuum from any larger understanding of how such processes fit into policy development. This can increase the likelihood of being unsuccessful or, at least, of not knowing how to evaluate whether or not they have helped, impeded, or had no effect at all on policy development.

In order to increase the effectiveness of public participation, it is necessary to relate to some conceptual model of the policy process. In this thesis, I break engagement processes out into the different steps that correspond to steps in the life of a policy idea as represented in the Functions of Scientific Information (FOSI) model (Graffy, 2008). Of particular interest, what functional role did the Arizona Town Hall process have in terms of this model and what further participation processes could increase the likelihood of policy development? Specifically, can

expert discussion on energy efficiency policies, guided by the recommendations put forth by a public engagement forum on energy in Arizona, result in an increase in relevance and policy progress? The experiment presented in this thesis explores this question and designed a consultation process around two primary insights: (1) providing a forum for interdisciplinary collaboration that is atypical in today's energy discussions would likely lead to higher quality dialogue and outcomes; (2) the closer the policy idea is to formal implementation, the greater the depth of expert knowledge and discussion is required, rather than breadth of public opinion, to explore the specifics of implementation.

Consultation cannot be simply one or the other, public or expert, as these are not mutually exclusive. Decisions reached by experts have the potential to affect people who are not experts or who were not consulted directly and vice versa. To assume otherwise would ignore much of the work on democratic governance and public participation. Therefore, even though this experiment focused on the role of expert consultation in latter stages of policy implementation, care must be taken to consider all stakeholders who have the potential to be affected by an outcome and ensure their interests are taken into account during the decision-making process. In this experimental consultation, public interests were accommodated by proxy by seeking to include some expertise associated with consumer and public interest organizations.

As previously mentioned, it is important to consider how far along in the policy implementation process an idea is in order to select or create the most appropriate engagement mechanism. Utilized is the Functions of Scientific Information (FOSI) model, which was originally created as a heuristic tool to demonstrate the relationship between science and policy making in addition to emphasizing the instrumental value of information in the policy process (Graffy 2008), but works well for our purposes of showing a simplified step by step policy implementation model. Having such a framework to help think about the stages of policy development is critical when engaging in public participation planning and design. Without an

adequate rationale where a policy topic is on an implementation timeline, a designer of a public engagement mechanism runs the risk of missing the mark, i.e., asking the wrong questions, working with the wrong stakeholders, etc. In this instance the FOSI model is extremely useful for elucidating what stage of implementation energy efficiency policy is, and what next steps need to be taken. More specifically, recognizing where on the policy spectrum the Arizona Town Hall falls provides insight into what types of instrumental ideas and questions should be incorporated into a public engagement process. The FOSI model provides clearly delineated steps and is an extremely useful tool for holistically examining the complexity of a policy issue. In this case, it is utilized to examine furthering energy efficiency policy in Arizona and how different modes of engagement should be considered in order to maximize the benefit of any outreach undertaken. By mapping the Arizona Town Hall engagement process on to the heuristic model, we gain a better idea of how that mechanism functioned in the policy development process and, therefore, which stakeholders were most appropriate to consult, how the conclusions should be utilized or conveyed moving forward, and what factors to consider when planning next steps in participatory engagement.

Chapter 2

BACKGROUND/LITERATURE REVIEW

Energy in Arizona and Energy Efficiency Programs

As the world's supply of energy-producing resources is depleted, energy markets become more volatile. This in turn leads to discussions of energy independence in the United States (U.S.) by politicians who decry our dependence on foreign oil. Couple this with concerns about the copious GHG gas emissions and fears of global warming resulting from the burning of our domestic supply of "dirty" energy resources (coal and natural gas), and we are left with the motivation to explore alternative pathways to produce energy that could lessen the harmful effects of our current fuel mix while ensuring the continued growth of an economy on the rebound. One such pathway currently being explored on a large scale in the U.S. and Europe is energy efficiency (EE). The idea behind EE is that energy that is saved and not wasted due to inefficiency is just as good, if not better, than the generation of 'virgin' energy for a number of reasons, economic and otherwise. The most common types of EE programs in the U.S. are sponsored by utilities and are primarily focused on building and appliance efficiency in the commercial and residential sector. These types of programs accrue a cost, on average, of $.025 per kilowatt-hour (kWh), which equates to 'about one-third or less the cost of any new source of electricity supply' (Friedrich, 2009). In addition to being a cheaper alternative to conventional power sources, energy efficiency proponents tout it will:

- Upgrade infrastructure and increase property values
- Train a new workforce
- Create jobs locally
- Save customers on their utility bills

- Reduce greenhouse gas emissions
- Delay the construction of new power plants
- Reduce the need for energy imports in addition to improving national security

Utility-administered energy efficiency programs were introduced in earnest in the 1970's due to energy crises. From addressing the hard realities of the energy landscape of the late 70's, utility-sponsored EE programs flourished until around the mid 90's when states attempted to de-regulate the electric utility markets and energy efficiency funding floundered, dropping from $1.8 billion in 1993 to $900 million in 1998 (York, 2012). More recently, state policy makers have been creating a regulatory environment that allows utilities to pursue EE as a sustainable business (IEE, 2012), which in turn has fostered a significant increase in programmatic spending. One has only to look at the last two years of total EE expenditures to get a sense of the recent scale-up of spending. In 2011, utility-sponsored EE budgets totaled $6.8 billion, which was a 25 percent increase over 2010 (Barbose, 2009). In fact, Lawrence Berkeley National Laboratory projects in their 'medium case' scenario that funding will increase to $7.5 billion by 2020 (Barbose, 2009). As individual states enact their own policies, such as Demand Side Management (DSM) and Energy Efficiency Resource Standards (EERS) which foster utility sponsored EE programs, it is expected that funding will continue to rise.

Energy Efficiency in Arizona

Energy policy in Arizona needs to be critically examined for its long-term sustainability. The importance of energy in Arizona is most easily conveyed through its economic impact; however it also encompasses critical environmental and social equity components. In fact,

according to the background report prepared ahead of the 2011 Town Hall Summit at the Grand Canyon (Town Hall, 2011):

- The energy industry in Arizona represents about 4% of the state's GDP, or $10 billion of economic activity annually, including close to 20,000 jobs (Morrison Inst, 2011).

- Arizonans and Arizona businesses also spent $17.6 billion on energy in 2006, including $9.3 billion for gasoline and jet fuel and $5 billion for electricity. Of these expenditures, an estimated 68%, or $12 billion, left the state largely to pay for imports of fuels.

- This amounts to approximately $3,000 per person, per year (AZ Dept of Commerce, 2006).

- According to the Arizona Republic, two of Arizona's top 30 employers are energy companies: Pinnacle West (#20) and SRP (#30). Pinnacle West (which owns Arizona Power Services) and the Salt River Project (SRP) together employed over 11,000 people in 2010 (Miller, 2011).

The single largest fuel source of Arizona's current energy production is coal, specifically 20.9 million tons (40.9%) annually (Goodnick, 2011), the majority of which (13.5 million tons) is imported from out of state (Natl Mining Assc, 2009). Adding to the fuel mix is the nation's largest nuclear power plant (Palo Verde) located outside of Phoenix, which has an installed capacity of 3.9 GW (27.4% of total electricity consumed) (Goodnick, 2011). The remaining mix of fuel is made up of natural gas, hydroelectric, and petroleum, in addition to limited amounts of solar (101 MW installed, 90MW of which is distributed, and 3 GW planned) and wind. Arizona is currently ranked 20th in the nation for electricity consumption. Despite that fact, the State is a net energy producer and exports approximately 28% of its generated electricity (Goodnick, 2011).

Despite the current heavy reliance on fossil fuels for energy production, there exists a large opportunity for renewable energy in Arizona. The copious amount of sunshine days in Arizona makes solar a natural choice. The Northern part of the State also has potential for wind development. These two options are natural choices for energy production moving forward; however they are also affected by a number of extraneous variables such as siting concerns (Williams, 2007) and technological limitations (Evans, 2008). The built environment presents another avenue through which to tackle energy usage in Arizona. While it has proven technologies to obtain proven energy savings, energy efficiency has its own complex set of barriers that need to be overcome. There are currently utility sponsored programs, in addition to a federally-funded, municipal-run "Energize Phoenix" program, which are addressing energy efficiency in the built environment.

Chapter 3

ENERGIZE PHOENIX

Energize Phoenix (EP) is a community-scale energy efficiency project currently operating along the light rail corridor in Phoenix, AZ. The project is a collaboration between the City of Phoenix, Arizona State University (ASU), and Arizona Public Service (APS), the largest utility in the state. EP was funded from 2010 to 2013 through a $25 million grant from the Department of Energy Better Buildings Neighborhood Program (BBNP). EP represents a unique program that enjoys great credibility due to the expert knowledge of partner staff and the power of the partner organizations, themselves, within the community. Additionally, ASU's EP staff maintains broad community-based social networks and strong consultative relationships with community and state energy decision-makers.

The initial idea for this author's research was created in part as a spin off project from ASU's EP research. One of the overarching goals tasked to grant recipients by the BBNP was to develop and test new program models to catalyze market transformation in each unique geo-political climate. Exposure to the wide variety of ideas being attempted spurred this research interest and the subsequent stakeholder engagement project that was undertaken. This project has deep ties with EP project research and leveraged its network of energy professionals to convene stakeholders to discuss the future of EE in Arizona. Additionally, the two projects are intertwined by the background research that informed the policy options presented to stakeholders. That research was also used to develop an Energy Efficiency Idea Guide for Arizona (http://energize.asu.edu/docs/gios/energize/2012year2/ep-idea-guide-final-20130318.pdf). The guide is a resource of energy efficiency policy best practices that are tailored to Arizona, created by EP staff with contributions from this author. An earlier, unpublished, version of this guide was utilized for the stakeholder engagement process outlined below.

Chapter 4

THEORETICAL/CONCEPTUAL FOUNDATIONS

Framework and Methods of Deliberative and Participatory Policy Making

Policy making is a complex, reflexive, and iterative process. Understanding the different stages of framing, agenda setting, policy formulation, implementation, evaluation and understanding actors who weigh in at differing points is paramount. Recently, modern theories of governance are trending towards the use of participatory and deliberative methods of engagement when crafting policy. Public engagement is also recognized as a unique mechanism for creating collective decisions while reconciling competing perspectives. This is achieved through the 'institutional alignment between government, market system, and civil society' (Hoppe, 2011). Historically, more traditional forms of engagement excluded the general public as a source of opinions. Recently however there has been a push for inclusion of this group in the deliberation and decision making process in order to increase the legitimacy (perceived or otherwise) of the process or to simply garner broader input and policy impact. Deciding which type of outreach to undertake, however, is critical to the policy process and depends wholly on the nature of the problem at hand.

As pointed out by Hoppe (p 164), understanding the drivers and constraints for more democratic pluralism and deliberation in governance is extremely important. Despite its popularity, questions still need to be asked such as: why would someone choose a participatory approach to begin with? If the 'lay' public is not consulted directly then who should be? Further considerations need to be taken about what is the nature of expertise that qualifies certain participants, and what is the nature of the problem? Additionally, the event planner must address the emerging gap between 'the rhetoric of hoped-for or taken-for-granted benefits and their materialization in reality' (Hoppe, 2011) in public engagement with empirical evidence.

Traditionally, governments spoke with prominent stakeholders involved with the topics that they were creating policy to address. This is primarily due to the fact that policy makers themselves are usually not experts on the topic they are expected to legislate and be responsive to the varying political and economic status and motivations of interested parties. Following that logic, it makes sense that they would reach out to prominent individuals, organized interest groups, professional organizations, and industry representatives in order to garner a fuller picture of the topic. In addition to gaining information and learning about a topic through expert consultation, there exists the ancillary benefit of creating a political economy. There are many definitions of political economy depending on the context of its use. In terms of stakeholder consultation, communication scholar Vincent Mosco describes political economy as "the body of practice and theory offered as advice by counselors to the leaders of social organizations of varying degrees of complexity at various times and places" (Mosco, 2009). Consulting stakeholders by default encourages their participation without which many policy initiatives would fail. This type of policy making falls under the purview of the typical 'representative democracy' engagement process. Or, those representatives who were elected making decisions on behalf of the citizens they represent. Recently, however, this norm is being challenged by those who wish to see more opportunity for citizen engagement in policy choices (Bishop, 2002). This has given rise to a newer form of democratic participation which materializes in such forms as citizen advisory panels or committees, community meetings, collaborative forums, etc. Before examining different forms of more inclusive citizen engagement it is important to understand how *traditional* participation models work.

Democracy and participation

According to an extensive study of participation practices in 10 countries belonging to the Organization for Economic Co-operation and Development (OECD), Bishop and Davis (2002: 21-6) characterize five types of participation modes that differ from one another greatly (excerpt from Hoppe, 2011: 4-6).

- "Participation as consultation: the basic aim is to encourage comments on policy proposals; participants understand that their views may influence subsequent policy design, like in many citizen advisory boards, citizen panels or local boards (Williamson and Fung, 2004: 9–11).
- Participation as partnership: citizens, interest groups or organizations and professional or civic associations give policy recommendations through advisory boards, like in the many 'tripartite' advisory councils linked to state bodies; sometimes they are also involved in policy co-production, co-regulation and (community) co-management schemes without a final say.
- Participation as standing: citizens and stakeholders may influence policies (ex ante) through hearings (Williamson and Fung, 2004: 8–9) and (ex ante and ex post) through administrative review procedures.
- Participation as consumer choice: citizens get opportunities in service delivery to influence product specifications and preferred provider choices, like charter schools in some US states (Mintrom, 2003).
- Participation as control: final decisions are handed over to citizens by means of a referendum, like in Switzerland (Kriesi and Trechsel, 2008), or through other forms of direct control like the New England town meetings (Williamson and Fung, 2004: 6–8)."

I compared a version of 'participation as partnership' (in this case the non-profit Arizona Town Hall convening the workshop and acting as the civic organizer) with the more widely accepted 'participation as consultation' where consulted experts discussed specific policy proposals. In more traditional structures, democracy was viewed as the agency of elected officials created in tandem with organizations who hold a stake in the outcome. This type of democracy has historically worked because it is a representative democracy; by casting votes, citizens elect a person of power to make decisions on their behalf. Representative democracy is far from perfect, and when this traditional process does not adequately address the input from an attentive public, or it does not solicit it to begin with, the 'business as usual' approach opens itself up to criticisms of being a closed process which governance-driven democracy hopes to address (Hoppe, 2004).

Borrowing Gibson (2006)'s definition, Svara & Denhardt (2012) defined citizen engagement as "the ability and incentive for ordinary people to come together, deliberate, and take action on problems or issues that they themselves have defined as important (p. 5)." In order to improve a community's future, citizen engagement necessitates people's direct involvement in community affairs rather than reliance on indirect participation mediated by others such as experts, political bodies and public officials (Adler and Goggin, 2005; Svara & Denhardt, 2012).

Some scholars provide a better understanding of citizen engagement by contrasting the subject with citizen participation. Svara & Denhardt (2012) note that citizen participation is often used for informing citizens and gaining assistance and support from citizens, usually in one-way exchange between citizens and the government, but does not necessarily equate to citizen engagement. Citizen engagement focuses on "revitalizing democracy, building citizenship and reinforcing a sense of community" by incorporating, collaborating and empowering citizens (p. 5).

Similarly, Fung (2006) provides a theoretical spectrum of citizen engagement according to the degree of influence that the government expects to reflect results from public meetings into

real policy decisions, and contends that the typical participation exercise has little or no influence on policy. Fung (2006) also provides a spectrum of participant selection methods from the least to most inclusive: i) Expert administrators, ii) elected representatives, iii) professional stakeholders (those who are paid representatives of organized interests), iv) lay stakeholders (those who are not paid, but have a deep interest in the topic of public meetings and thus are more willing to invest time and efforts to participate), v) random selection of participants from the general population, vi) open, targeted recruiting in which participants are selected from subgroups who are less likely to engage, such as minority communities, vii) open, self-selection in which participants are from a subset of the general population but are wealthier and better educated, and viii) diffuse public sphere of mass media, secondary associations, and informal venues (p. 67-68).

Not only are representative participants necessary, but also the quality of deliberation in public meetings is critical to the success of public engagement. Drawing from deliberation literature, Powell et al. (2011) defines good deliberation as "all participants have adequate opportunities to speak, equal and adequate opportunities to contribute, and a right to comprehend what others are saying (p. 3)." In order for good deliberation to take place, participants should communicate by speaking understandably, listening carefully to what others are saying and treating others with respect (Powell et al., 2011, p. 3).

Due to the robustness of collecting perspectives from differing backgrounds, the ability to mitigate conflicts among groups is essential. Yet, conflict might stem from "hierarchies of expertise and societal power" not just from different opinion itself (Powell et al., 2011, p. 37). Although suppression of conflict by facilitators may prevent the diversity of viewpoints voiced within the deliberation and implicitly discourage dissent, there is also need of well-intentioned facilitators to foster the meaningful and respectful exchange of ideas (p. 37).

For authentic citizen involvement in deliberation, Snider (2010) stresses the importance of information accountability in allowing participants to assess whether their participation

activities and comments are reflected into the final decisions made by public officials. Particularly, Snider (2010) suggests enhanced "prospective" participation and "retrospective" participation. Both activities represent an access point to accountable information for citizen participants. Prospective participation refers to the meaningful opportunity for the public to give comments, such as at an official public meeting, before public officials have made a decision (p. 98). Retrospective participation refers to means of verifying the accountability of public officials who have made a decision regarding the issue subject to prospective public participation (p. 98).

Powell et al. (2011) points out that evaluative research on public deliberation should put more emphasis on participants' particular perspectives on deliberation, given that many public forums aim to foster healthy deliberation, empower participants, and give them a right to raise voice in scientific and technological decision-making (p. 4). However, there have been few efforts to explore how lay citizen participants experience public meetings dealing with technical and professional issues like energy topics, which is an example of governance-driven democracy.

Governance-Driven Democracy

More recently, in an attempt to cast a wider net for idea gathering and in an attempt to legitimize efforts in the public eye, government officials and administrators in addition to non-elected institutions, such as Town Hall, are increasingly experimenting with governance-driven democracy. The general backbone of this form of democracy is the idea of 'greater and earlier involvement of stakeholders and/or citizens in the official policy making process as public spaces where citizens may deliberate, that is, directly reason and learn with each other and their administrators or politicians about issues of the common good' (Hoppe, 2011). Governance-driven democracy relies on the tenets of strongly democratic ideals such as 'empowered

participation, focused deliberation, and attentiveness to those affected by decisions' (Warren, 2008). Governance-driven democracy, however, is not without its detractors.

This form of participation encourages wider and earlier participation by citizens unlike more traditional representative methods or closed networks. The rise in popularity of this methodology also raises questions about its use in regards to timing and evaluation. When should decision makers employ this method in relation to the FOSI model? What cases call for this method over more traditional ones? Questions such as these are important to consider before selecting a governance-driven democratic engagement approach. Utilizing one at the wrong time or undertaking one without proper planning might lead to more harm than good.

In terms of participants the Arizona Town Hall utilized expert and non-experts for their discussion on energy. However the consensus based method, where each statement has to be agreed upon by the group, controlled for arguments from authority from technical experts. Meaning that participants could disagree with technical statements on grounds of moral or ethical reasoning, as such the resultant recommendations were not overly technical. That does not mean they are any less relevant, it just indicates at what stage of the policy implementation process they are operating within. When mapping the Town Hall engagement outcomes on to the FOSI model (Figure 1), the organization is entering the policy discussion at multiple stages, but somewhere in between step 2 (issue framing) and step three (set social goals/priorities) with regard to introducing options for new policy development (Graffy, 2011). Simply by acknowledging the need for a Town Hall discussion on Arizona's energy future, Arizona Town Hall is entering the policy discussion past stage one of the model (emerging issues). Through starting the discussion on energy efficiency the issue is framed. Through the design of the multi-day Town Hall process, the discussion among citizens and subsequent publication of recommendations serve the roles of framing issues and setting policy priorities.

Table 1 A "Functions of Scientific Information" Model Linking Science and Policy

	Stages of the Policy Process	Corollary Functions of Science Information	Diagnostic Questions
1	Issues emerge	Announce discoveries	What did you find?
2	Frame issues	Put issues into perspective	What does it mean?
3	Set priorities	Test decision options and scenarios	What matters? What can I do?
4	Legislate priorities/ goals	Validate choices or trade-offs	What supports this position?
5	Implement goals	Enable implementation	Where? How?

Source: Adapted from (Graffy 1996, 1999).

Figure 1. Functions of Scientific Information (FOSI) model. (Graffy, 2008).

Chapter 5

METHODOLOGICAL BACKGROUND

Understanding Types of Problems

The topic of energy has many facets. Of particular interest is energy efficiency. In terms of designing participation methods to explore energy efficiency policy options, some time must first be spent classifying what type of problem it is. Utilizing the FOSI model to serve as our overview guide from start to finish, it becomes easier to understand what type of problem energy efficiency in Arizona represents. In the beginning stages, the problem is not well-defined and, therefore, a more inclusive engagement approach requires broader input to ensure all stakeholders have a chance to shape or frame the discussion. As the problem becomes more clearly framed, so does the specificity of corresponding norms, values and knowledge of those who are making decisions. The following diagrams provide a helpful typology of problem types and a framework for visualizing how well a problem is understood and what type of consultation is practical. The Town Hall event provided clarity to the energy issue in Arizona by creating a set of broad

recommendations for policy makers. The Town Hall process approached energy in Arizona as an 'unstructured' problem, meaning it was far from certainty on required and available knowledge, and far from agreement. (Figure 2). The Town Hall process resulted in recommendations that provided enough clarity to reclassify energy efficiency as a 'moderately structured' problem in which there was more certainty of the norms and values at stake. Essentially the Town Hall goals framed reasonably well norms and values at stake through the use of a partnership/hybrid forum but there was still uncertainty in the required knowledge. In order to increase the certainty of required knowledge and move the Town Hall to stage three of the FOSI Model the problem would need to be classified as a moderately structured problem. Therefore the public engagement experiment in this thesis was designed to match the new, moderate classification and, hopefully, further refine a moderately structured problem into a well-structured set of policy goals for implementation through the use of method of Partnership/co-management and Consultation (Figure 2). In order to perform the corollary to stage three of the FOSI model, testing decision scenarios, and to satisfy the requirements of moving closer to the certainty of required knowledge, experts were consulted.

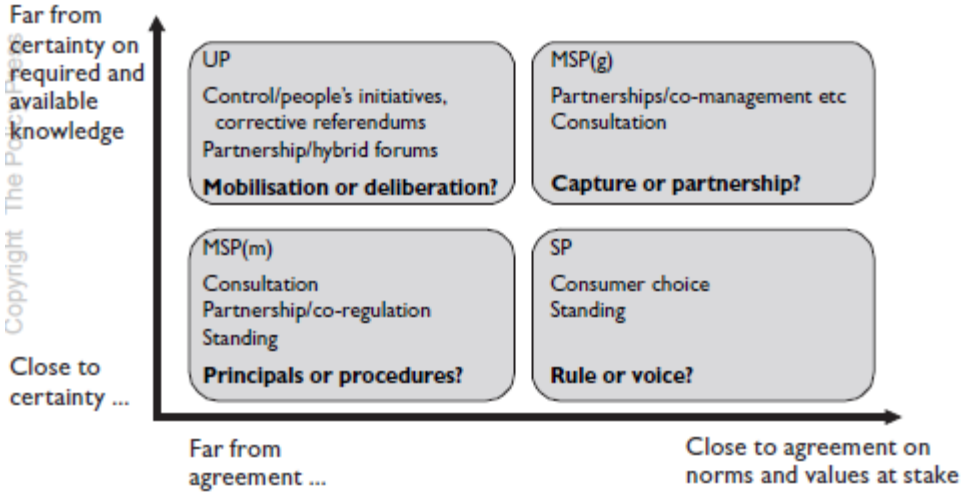

Figure 2: Problem Classifications. (Hoppe, 2011)

What Type of Problem is Energy Efficiency?

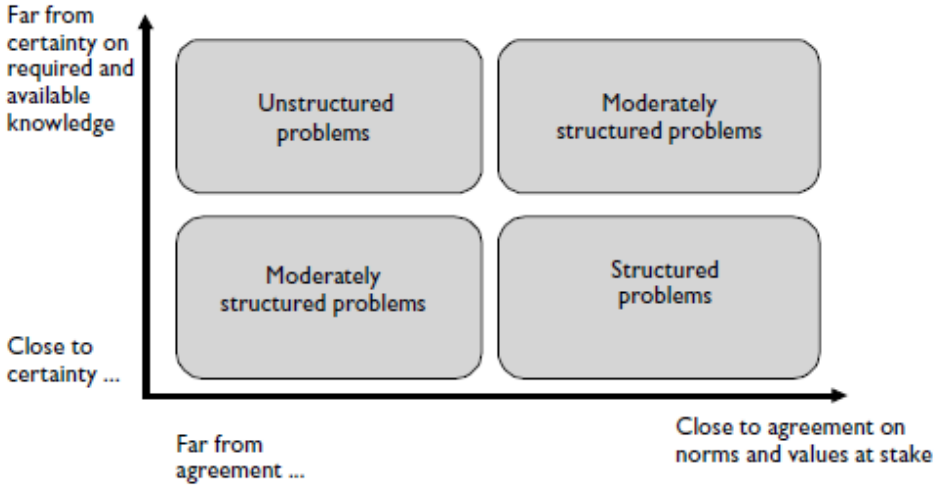

Figure 3: Simple Typology of Problem Structures and Corresponding Engagement Mechanisms. (Hoppe, 2011)

Energy efficiency is a nuanced problem. It has been shown to save consumers money while decreasing the need for new sources of energy. However, under some current regulatory structures, utilities have no incentive to participate in energy efficiency programs. Those utilities that are against energy efficiency typically operate under a business model which operates by maximizing the sale of electricity. Value and norms are not agreed upon and aligned in terms of the social goals underlying policy implementation. Under that scenario, knowledge about how to expand energy efficiency is counter-intuitive to the business model as it is encouraging the business to spend its capital convincing their customers to buy less of their product. There are many approaches being experimented with across the United States to overcome this economic barrier for utilities. Some of these include state government regulations, such as those in Arizona, mandating energy efficiency targets utilities must reach. Another example of innovative regulatory mechanisms is 'decoupling' utility profits from total electricity sales in favor of a guaranteed rate of return to the utility. By guaranteeing a set return independent of electricity sales, decoupling frees the utility to invest in renewable energy and energy efficiency programs.

There is close agreement on the norms/values and benefits presented by EE but the disagreement or lack of knowledge of the best way to implement it shows we are far from agreement on the certainty and required knowledge. In terms of Fig 3 and understanding the EE problem we are located in the upper right quadrant. EE in Arizona is a moderately structured problem and it will take the consultation and partnership of experts to create Arizona specific policies and programs.

If we establish that EE in AZ should be considered a moderate problem the participatory process should be a function of problem typology, and the point at which we will enter the policy discussion (FOSI Model) will be critical. That being said, the methodology for this study accounts for entering the policy discussion of a moderately structured problem in the late stages of the priority setting stage by testing decision options and scenarios with expert stakeholders. To design an appropriate expert consultation process, I propose a method that borrows elements from three well-established engagement models: Arizona Town Hall, World Wide Views Forum, and the Policy Delphi method. Each of these methods will be discussed in turn, highlighting basic elements, strengths to be borrowed and weaknesses to be overcome.

Planning and Running a Stakeholder Engagement Session

In the previous section, the rationale and background was laid out for choosing to utilize a public engagement mechanism. Next steps include choosing which of many stakeholder engagement mechanisms would be most beneficial for our purposes. Beierle and Cayford (2002) outline five steps one should consider when deciding to undertake a citizen engagement exercise:

1. Determine the need for public participation.
2. Identify the goals of the process.
3. Answer design questions.
4. Select and modify a process.

5. Evaluate the process.

Determining the need for Public Participation:

There are three rationales to consider when determining the need for a participation experience: instrumental, substantive, and normative. An instrumental rationale subscribes to the theory that public participation develops buy-in and builds trust in the policy making at hand. Substantive rationales follow the logic that public participation leads to better decisions, while normative rationales argue that the route to a better democracy is through citizen engagement (Beierle and Cayford, 2002). The energy efficiency focus group, in reality, holds a portion of the aforementioned rationales in its ethos. Substantive and normative rationales are guiding principles in the execution of the Arizona Town hall engagement (the results of which informed our process), being that they believe citizen engagement is critical to progress in the State (AZTownhall.org, 2013). Feeding off the outcome of the Arizona Town Hall, our process is also instrumental in the sense that it relies on creating buy-in around policy topics and ideas with the idea of refining them.

Furthermore Beierle and Cayford, while discussing the need for participation, suggest potential event holders must be willing to cede a rigid format and accept some degree of flexibility for participants to shape the discussion in whichever direction they choose. This was certainly the case for our purposes; the event was designed to start simply with a policy topic and have the participants shape the dialogue. Secondly, event organizers must recognize the legitimacy of the public's values and opinions. This second portion was also covered in the energy efficiency focus group as the public's suggestions and opinions were the beginning point of the expert discussion.

Identifying the goals of the Process

The outcome goals of the process were to operationalize or at least refine the Town Hall recommendations through the use of an expert focus group in the hope of producing more ready-for-implementation policy proposals in terms of the later FOSI stages of policy development. Additionally, there was a goal of utilizing the process to assist Energize Phoenix in the creation of their Energy Efficiency Idea Guide, the results of which would be enhanced by gaining insights into the levels of support stakeholders expressed toward different policy scenarios and options. The final goal was to experiment with participatory methods that suited the specific needs of our program goals and the needs of our participants that might increase the likelihood of arriving at these outcomes.

Answering Design Questions

Who should participate?

The whole premise of the creating the stakeholder event was to refine the results of the Town Hall, which had a broad spectrum of participants. Expert opinion was deemed a necessary prequalification for our event due to the need for a particular expertise on energy efficiency, based on the rationale presented above regarding the stage of policy development and classification of the problem. Expert participants were selected through researching organizations that had contributed to the discussion of the ACC Energy Efficiency Resource Standard rate case, and inviting whomever represented the energy efficiency side of those organizations. Also utilized was Energize Phoenix's network of contacts. Attempts were made to ensure that as many stakeholder groups with a variety of perspectives on the issues as possible were invited to be represented.

What Kind of Engagement is Appropriate?

There are typically two types of engagements chosen for public participation: information sharing and deliberation (Beierle and Cayford 2002). A deliberative engagement method was selected as appropriate for the EE focus group. This was due to the fact that deliberative processes encourage participants to discuss their values and identify common ground through a more iterative process. Since the goal of this process included high quality scenario testing, information sharing solely wasn't sufficient.

How Much Influence Should the Public Have

Beirele and Cayford outline two items when considering the influence of the public: What are the motivations of the participants, and how to build trust among participants? We cannot speak for the expert panel on why exactly they chose to participate, only hypothesize. One motivation for participation may have been the Energize Phoenix name; the participants may also have seen it as an opportunity to contribute to the discussion on energy efficiency. Additionally, using the Energize Phoenix name in tandem with the reputation of ASU may have contributed to the trust participants had in the process.

What Role Should the Government Play?

Many public participation events are run by government agencies due to their need to fact-find, share information, and build alliances. However, this experiment is based on the work of a non-profit organization (AZ Town Hall) and run through ASU, so the only role the government played (setting aside the fact that ASU receives some government funding) was through some participants who worked for state and local governments. Additionally the scenario-testing carried out was aimed at policy changes on the local scale.

Selecting and Modifying a Process

At the start of the design process, goals and potential pitfalls were identified by combining conceptual rationales with studying and analyzing three participatory methods to see how they handled different constraints. These are the 1) policy Delphi method, which is an online, survey-based individual voting method, 2) the World Wide Views Forum (WWVF) - an in-person, facilitated focus group and individual voting method, and 3) the Arizona Town Hall - an in-person, deliberative focus group and consensus statement method designed to create policy recommendations. The Delphi method was studied indirectly, through a literature search and case studies. Town Hall community meetings were observed in person and evaluated as a class project, and World Wide Views was observed through direct participation and subsequent evaluation as original background research for this thesis. Ultimately, the design for the EE focus group included a combination of in-person and online elements, including individual voting rather than consensus statements as the means by which participants expressed policy preferences. The decisions about what elements to borrow from each of the three methods satisfied the following requirements:

- Expedience: Having participants in one physical location would allow for a less drawn out process, favoring the in-person interaction of the WWVF and Town Hall methods over the online format of the Delphi.

- Perceived legitimacy: Having participants in a physical location would create more buy in and result in a richer discussion.

- Clarity: Conducting the focus group in person would allow the ability to better explain our intentions and clarify the process.

- Broader Input: The ability to have better initial discussion in person would help nurture a more robust online follow up.

- Alliance building: Having our stakeholders meet in person could potentially result in alliance building between interested parties that could help promote subsequent policy development and implementation.

- Anonymity: I valued the anonymous voting styles of the Delphi and the WWV method over the consensus group agreement required by the Town Hall for this focus group. This was incorporated into the design in order for the participants to feel more comfortable relaying their true feelings rather than being worried about ramifications from speaking freely in front of a group of peers about potentially controversial policy preferences.

Background of Methods Studied

Arizona Town Hall

The Arizona Town Hall is a non-profit organization that has undertaken a process of yearly democratic consultation that includes a diverse set of participants. It is an experiment in participatory democracy, and strong civic engagement is a cornerstone of the process. Participation requires no specialized knowledge beyond what background information is distributed to participants before the collaborative process begins, but selection and invitation of participants attempts to replicate the diversity of the Arizona population and includes subject experts as well as non-expert interested parties. During 2011 and 2012, the 99th Town Hall devoted itself to the topic of "Arizona's Energy Future." The statewide summit took place over a 3-day period at the Grand Canyon, which produced a summary of policy recommendations. Over the next six months, these results were presented in many towns around Arizona in order to be as open and democratic as possible in addition to collecting community feedback. Each community

meeting resulted in an additional consensus statement to refine the recommendations made by the statewide summit. This type of participatory process is useful for framing general, high-level social goals or recommendations and for raising public awareness. The difficulty lies in balancing specific technical knowledge with public feedback, and there is no specific governmental action to which these recommendations become input. Detailed policy choices almost always need to reconcile accountability to the general public with opinions of experts and groups who actually deal with the specifics day in and day out. Ultimately the Town Hall does an excellent job of synthesizing a diverse set of public perspectives, values, and opinions but has no real way to pursue concerns about accountability of decision makers to the outcomes of the Town Hall process.

The Town Hall process resulted in the creation of a set of social goals and objectives that are based upon the deliberation of a diverse set of stakeholders who examined energy in Arizona as a whole. There is a solid base from which to build upon -- a lens through which to examine potential social and economic solutions. Building upon these recommendations as guiding objectives and moving forward toward designing implementable policies for the future requires drilling down on specific subtopics of energy as a whole (such as energy efficiency). This requires a level of knowledge and expertise that is best garnered from consultation of an expert panel. For the reasons already stated, such an advisory panel must be designed to accommodate both the requirements for expert knowledge and public accountability because the goal of such consultation was, in this experiment, to provide more specific and actionable input to policy decisions that might be made at the state level.

The use of Experts:

The Arizona town hall participants represent a wide diversity of backgrounds ranging from professionals with many years of experience to students and everything in between. "The

invitees are considered from among more than 2,000 recommendations for each session. They are chosen to make up a diverse cross-section of perspectives, experiences and backgrounds which offer a variety of insights that truly represent Arizona." (AZtownhall.org). Experts certainly do attend and so do other types of stakeholders. The goal of the event is to create consensus. There must be agreement from experts and non-experts alike to codify any one consensus statement.

Gaining Consensus:

The Arizona Town Hall has a very structured method of gaining consensus. Small-group sessions take place during the summit in up to five different rooms. Each discussion has a moderator and note taker in addition to the participants, who remain together for the entire summit The moderators are highly trained and make sure to allow each person in the room equal opportunity to share ideas. While the moderated discussion is happening the note taker is creating a consensus document. This document is periodically read back to the group by the moderator. There must be a unanimous agreement in the room for the consensus document to be considered finalized. Issues are discussed and reworked until there is group agreement or consensus. This method ensures fairness and allows everyone's voice to be heard equally. A final document, composed of the consensus statements from all five groups, is assembled overnight by the Town Hall staff and returned for review by the small groups. Thereafter, the entire summit assembles for a half-day plenary session in which the entire document is read aloud and amendments from any participant can be recommended from the floor, voted upon by the assembly, and either acted upon or dismissed. The final document resulting from the plenary session forms the basis of the final Town Hall recommendations.

Anonymity between Participants

The Town Hall method requires group discussion and consensus so if somebody disagrees with something being discussed they must voice their concerns to the group. In that respect there is no way to anonymously state your opinion in the Town Hall format.

Policy Delphi Method

The Delphi research method came into prominence in the 1950's as a tool for technological forecasting (Mullen, 2003). The earliest application of the procedure was documented by an Air Force -sponsored Rand corporation study which was concerned with the use of expert opinion (Linstone, 2002). Some researchers view the Delphi as a hybrid of two divergent methodologies, mixing quantitative and qualitative inquiry methods (Hart, 2007). It is not, however, without its detractors who readily debate the validity of the Delphi epistemology, or more specifically its alleged failure to follow accepted scientific procedures (Mullen, 2003; Sackman, 1975).

The Policy Delphi is a method of exploring a complex topic that has little historical context and requires expert opinion to fully understand the underlying issues (Franklin, 2007). The benefit of using the Delphi method over more traditional methods is accessing the knowledge of experts who have more timely information on a topic that is quickly evolving and shifting, than is available in traditional extant literature (Franklin, 2007; Steinert, 2009). The Delphi is used primarily as a tool for forecasting, making recommendations, and integrating knowledge and values across a range of stakeholders (Klenk, 2011). One of the more commonly agreed upon definitions of the Delphi method is the following: "Delphi may be characterized as a method for structuring a group communication process so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem (Linstone, 2002)." There is no one set way to design a Delphi experiment as they each vary based on the needs of the user. However, there some key characteristics that remain consistent throughout most designs.

- Controlled information flow via a project leader or facilitator.
- Feedback loops.
- The equilibrium distribution, e.g. the arithmetic mean in a consensus situation is calculated and presented as a final approximation (Steinert, 2009).

The Use of "Experts"

What constitutes an expert is a contentious issue for study design. Reconciling who and why somebody is selected to the panel is vital to the success of the study (Franklin, 2007). In order to increase reliability and defensibility of data collected, a 'purposeful and judicious selection of experts' (Franklin, 2007) must be undertaken. There are, however, many criticisms of the use of experts, with reviewers of the Delphi method asking 'whether responses from experts will be significantly better than those from non-experts who are 'informed'' (Sackman, 1975; Mullen, 2003). They go further and argue that policy cannot be formulated without the inclusion of the public at large as it will eventually affect them.

In terms of experts and due to the complexity of the energy efficiency topic and the scarcity of people with the requisite knowledge to make highly technical decisions, the general public will not be consulted in this part of the policy implementation process. However, care will be taken to make sure that the opinions of all stakeholders are represented on the expert panel in order to not wholly discount a population that may not necessarily have specific knowledge of the topic yet could be potentially affected by the outcomes.

Gaining Consensus

The goal of the Delphi is not to gain consensus. The objectives are "to ensure that all possible options have been put on the table for consideration, to estimate impact and consequences of any particular option, and to examine and estimate the acceptability of any particular option" (Turoff, 1997, p. 87). In our experiment, participants are given a range of policy options to explore. The process is designed so the discussion will lead to feedback that could identify both preferences for and barriers to implementation for specific policy topics. In terms of actual consensus, the experiment borrowed from the Town Hall process, which utilizes note takers to write real time policy statements based on the agreements of the group. The statement is periodically read back to the participants and ultimately approved by the entire group. In our case, I take a mixture of Delphi and Town Hall approaches. Two lists were created during our event, topics that were seemingly agreed upon and other topics that were more contentious and needed follow up. Due to the short time frame, I would not be able to address the contentious issues in person in order to create true consensus, instead opting to complete a follow up survey in which participants could address these issues.

Anonymity Between Participants

The typical Delphi process is conducted online for a number of reasons such as overcoming geographic obstacles, but primarily to protect the anonymity of participants. Anonymity is the cornerstone of a typical Delphi experiment due to nature of expert opinion: it allows the less confident to participate (Franklin, 2006), and allows 'honest expression of views without the intimidation, inhibition or peer-pressure factors' (Rudy, 1996). Despite participants meeting in the same room, keeping anonymity was a priority to combat the aforementioned issues. To address this, the method combined Town Hall style discussion with World Wide Views style anonymous paper voting. Each discussion was followed by five minutes for the participants to record their vote, based on qualitative criteria (desirability, feasibility, importance,

and confidence). The design goal was that this mix of anonymity and open ended discussion would create a rich dialogue on each policy idea and record authentic preferences.

World Wide Views Forum Method

The World Wide Views method is a hybrid that is based on the continued work of the Danish Board of Technology (DBT) to engage citizens in the political decision making process. The core of the method is to convene a group of 100 citizens in each participant country. The first iteration of the event – the Forum on Global Warming – included 4,000 citizens from 38 countries (wwviews.org). The Forum on Biodiversity observed for this research included 3000 citizens from 25 countries. Two forums were held in the United States – in Washington, DC, and Tempe, Arizona. The latter forum was observed for this research. Citizens apply to participate and are chosen for each forum based on organizers matching participants' backgrounds as closely to the local demography as possible in order to recreate a representative population. At the forum, participants are given background information on a number of subtopics, either global warming or biodiversity, after which they are posed a number of questions to discuss in small, moderated groups. Following the discussion, participants cast anonymous votes which are tallied and uploaded and instantly reported on a website so all sites around the world can compare their responses in real time. The incentive offered to potential participants was the opportunity to become part of a global effort to have their voices heard and influence policy makers.

The Use of "Experts"

The World Wide Views event specifically invites participation from ordinary citizens in order to understand their position on the pros and cons of different technological and political initiatives and to evaluate scientific progress from moral, social and cultural perspectives. The idea is for the event organizers to gain a snapshot of the typical populace in order to convey their

results to decision makers. On the other hand, the information provided to participants is developed and presented by experts.

Anonymity between Participants

This method utilizes two different forms of interaction. There are face to face small group discussions which are facilitated by a moderator. Participants are encouraged to work together to explore and discuss ideas. The second portion following the group discussion is an anonymous multiple choice answer sheet that participants are asked to fill out. Results of each voting round are tallied and reported to the event organizer. The voting structure is kept anonymous in order to ensure participants feel comfortable voicing their true opinions following the discussion.

Chapter 6

METHOD

Introduction

The original goals of the experiment were to 1) increase the policy relevance of the Arizona Town Hall goals that were laid out for energy efficiency, 2) Assist Energize Phoenix with the creation of their energy efficiency idea guide, 3) and test an expert consultation method that was created from other participation methods in response to unique needs that were identified.

Steps

Expert Selection

Since the goal of the study was to refine general energy efficiency goals into more specific, actionable policy recommendations, participants who were to be invited should be classified as experts in their field, and participants' fields should represent as many sides and opinions of the energy efficiency equation as possible. Some organizations and their corresponding departments, such as the local utilities (Arizona Public Service, Salt River Project, Tucson Electric Power) and their demand side management programs, were obvious choices for soliciting expert opinion. In order to identify less obvious choices, a list of names and organizations who gave testimony to the Arizona Corporation Commission (ACC) on the topic of the Energy Efficiency Resource Standard was utilized. The ACC heard testimony form 49 individuals representing a broad scope of stakeholder positions. If the individual giving testimony on behalf of an organization was not specifically active in energy efficiency (such as legal counsel), a search of the organization's employees or affiliates was performed in order to find an individual with specific EE experience who was invited to the event. From the original list, 21 individuals were identified and invited. Of the individuals invited, 8 confirmed their

willingness to participate. On the night before/day of the event, 2 people cancelled and 1 failed to show, leaving 5 participants who actually attended. One of the 5 needed to depart halfway through the day, leaving 4 to complete the in-person session. Of those who attended the in-person session, 3 completed the follow-up online survey.

Event Planning:

The goal of the final method was to create a multi-step process of high-quality policy scenario testing. There were two possible ways to develop those scenarios: 1) have the participants come up with their own policy ideas to test, or 2) have pre-researched policy scenarios on hand for the participants to work from. Option 2 was selected due to the fact that the participants were working from the Town Hall recommendations as baseline scenarios, and the draft EP policy guide was being developed simultaneously. Nevertheless, a significant amount of background research had to be completed prior to the event in order to create the policy scenarios and which contributed substantially to the EP "policy idea guide." The policy idea guide is a compendium of current energy efficiency programs and policies that are being implemented or explored across the U.S. Each idea was identified through researching other programs, attending conferences, and keeping up with the latest EE literature. In addition to simply identifying the policies and programs, each idea was contextualized to Arizona in the form of a scenario of how it may be implemented in the future, or who may be involved in its implementation. The idea guide was created this way in order to better identify implementation barriers of each policy's intrinsic components. The idea guide blossomed into a document that contained 46 specific policies or programs in addition to categories describing the purpose, key enablers, and key stakeholders for each. Each idea was examined and categorized into its best fit under a corresponding Town Hall goal. From this set of possibilities, 2 were selected for deliberation at the EE focus group.

Controlling for Researcher Bias:

It was understood that the creation of the policy idea guide introduced researcher bias, in the respect that focus group participants responded to options presented to them rather than developing ideas on their own. Presenting ideas that were researched beforehand inherently put parameters around the expert discussion. However, seeding discussion with actual policy ideas that had been implemented elsewhere seemed consistent with the goals of the experiment and did not necessarily halt the experts from creating new ideas; it was simply viewed as a starting point. Two design features that were intended to control some of this bias, however, were utilizing multiple rounds of participant voting on which topic the participants would like to discuss and inviting a neutral facilitator to moderate the discussion and ensure that participants felt free to steer discussion to topics of greatest interest to themselves.

Major Design Features of the Focus Group Experiment

The focus group consisted of three "rounds" – two face to face discussions, held one after another in a single morning, and one online follow-up survey. Participants arrived and were given a background presentation that laid out the plan. An overview of the Town Hall process was presented to give context to the 10 social goals they were working from, and the function of the focus group in the FOSI policy development process and goals for the experiment were explained.

In the first round, participants were given a list of the 10 Town Hall goals and invited to vote on the one of most interest to them. Once those votes were tallied, the top issue was identified and "policy idea guide" scenarios related to that issue were presented, discussed and deliberated upon. Following discussion, participants were invited again to vote on the options as candidates for policy implementation (Figure 4). These options were anonymously ranked on the

Delphi criteria of: desirability (effectiveness or benefits), feasibility (practicality), importance (priority or relevance), and confidence (in validity of argument or premise).

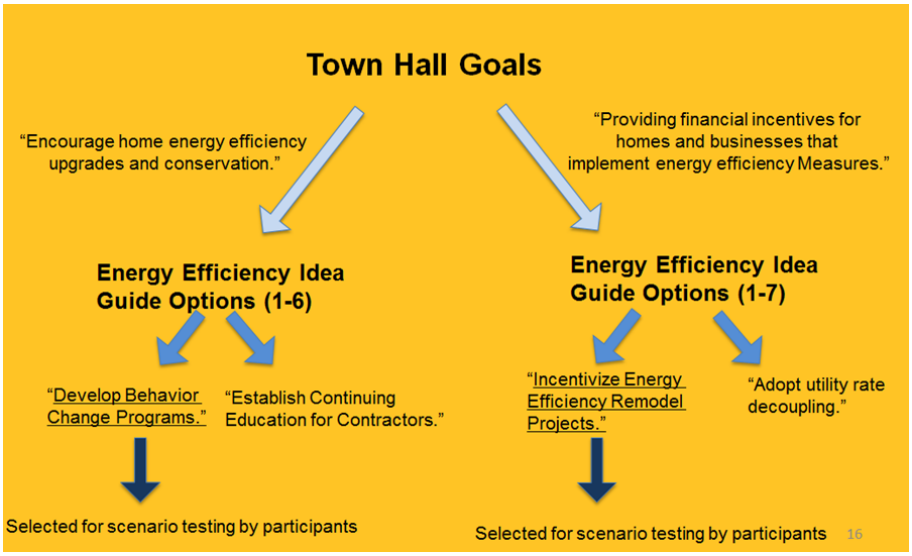

Figure 4. Graphic showing the choices selected by the participants at the in person stakeholder event, leading to the policy options they ultimately discussed.

Arizona Town Hall Recommendations for the Future of Energy Efficiency

#	Policy Recommendation or Statement
1	Uniform building and appliance efficiency standards on local, county, and state levels allowing municipalities to establish higher standards.
2	Encouraging home energy efficiency upgrades and conservation.
3	Developing model energy disclosure ordinances.
4	Providing up-front capital and financing programs, such as PACE, for homeowners to improve residential energy efficiency.
5	Providing financial incentives for homes and businesses that implement energy efficiency measures.

6 Providing financial incentives for research and development of energy efficiency technologies.

7 Developing programs to help low income and vulnerable populations adopt energy efficiency measures.

8 Promoting efficiency-related industries (such as ground-source heat pumps) and job training.

9 The advantages and disadvantages of decoupling utility revenue from consumption and allowing cost recovery for efficiency and conservation investments by electric utilities.

10 Retrofitting existing structures to increase energy efficiency can be more expensive than new construction.

Round three commenced online a few days after the summit. Participants received a unique identification number (ID) at the summit to use to access the online survey. They were asked to review general statements that were agreed upon in the focus group and then re-rank the new statements on the Delphi criteria. This was to see if the second, more refined statements received higher ranking than the initial policies. They were also asked to answer open-ended questions which were deemed contentious or which did not gain the support of the group a whole. These open-ended questions were mostly the granular questions like who should run a program and who should pay for it. Another goal of the Delphi comparison was to look for different combinations of criteria ranking. For example, a specific policy may score the highest in importance but the lowest in feasibility which may indicate a number of things such as, that no matter how much they like the idea, participants feel the current political climate would not be conducive to actually implementing the policy, or there is a perceived lack of resources. This approach was intended to shed light on the perceived roadblocks to implementing good policy in addition to identifying potential intervention points. For example, if PACE financing is ranked

highly important but has a low perceived feasibility, round 3 participants could identify X amount of road blocks to implementing PACE financing. Our results would then show specific intervention points that should be addressed if someone wants to push PACE.

Chapter 7

RESULTS:

The first set of voting was for which Town Hall (TH) goal the participants prioritized to discuss in the first round. The voting resulted in the selection of Town Hall recommendations #2 'Encourage home energy efficiency upgrades and conservation' and #5 'Providing financial incentives for homes and businesses that implement energy efficiency measures.' It is important to remember that these recommendations were kept verbatim from the 99th Town Hall report.

TH Goal	**Participant Votes (5 participants)**					**Total Votes**
	A	B	C	D	E	
1				1		**1**
2	3	3	3		3	**12**
3						**0**
4						**0**
5	2	2	2	3	2	**11**
6						**0**
7			1			**1**
8					1	**1**
9	1	1		2		**4**

Table 1. The respondents ranked their top three selections, 3 = highest priority, 2= mid priority, 1 = lower priority. Results were determined with the highest total score being the first discussion topic.

Top rated Town Hall Goal #2 had 6 policy options/scenarios within it (Table 1) (see appendix for full idea guide):

1. Give utilities EERE credit for heat island measures.
2. Develop behavior change programs.
3. Issue recognition certificates.
4. Educate contractors on energy codes.
5. Establish continuing education.
6. Ensure the right workers are trained.

Participants anonymously selected #2 from the policy idea guide list as their first choice to discuss, #5 as their second, and #4 as their third (Table 2).

Policy #	**Participant Votes**					**Total Votes**
	A	**b**	**c**	**d**	**e**	
1) Give utilities EERE credit for heat island measures						0
2) Develop behavior change programs.	2	3	2	3	3	13
3) Issue recognition certificates.			1			1
4) Educate contractors on energy codes.		2			2	4
5) Establish continuing education.	3	1	3	2	1	10
6) Ensure the right workers are trained.	1			1		2

Table 2. Results of which policy choice were to be discussed in the first session.

The ranking system was the same as before (eg. 3 being highest priority, etc) with the option receiving the highest sum total of votes being first pick. Before discussion began participants

ranked their initial impression of policy idea #2) develop behavior change programs. This is the idea and scenario they were shown:

Develop Behavior Change Programs

A utility provides realtime or periodic energy usage feedback to customers along with comparisons to neighbors, peers and local averages in order to leverage social norms and competitive gaming techniques to savings efforts.

Purpose

Research has shown that providing real time energy usage feedback to households in combination with benchmarks as to how much energy others are using is consistently effective at helping people save. Games, competitions, creating social norms and other techniques have also been shown to be effective.

Key Enablers

Arizona Corporation Commission

Key Stakeholders

Utilities, SWEEP, RUCO, AARP, AZ Community Action Association, AZ for Electric Choice & Competition, AZ Interfaith Power & Light, AZ PIRG, Sierra Club, EE Businesses, Home builders

After ranking their initial reaction, a moderated discussion occurred. As previously mentioned, items were separated and recorded as items that were 'generally agreed' as a group and those that weren't. All answers were recorded anonymously with paper and pen to control a bias of 'group think' or peer pressure that is inherent in any small group collaboration. Additionally, a second policy statement was created by the researcher using the agreed upon statements, and presented to the participants in an anonymous follow up online survey, in an

effort to further eliminate the aforemention biases. It was hoped that having an online follow up would give respondents a chance to give answers that more closely reflected their personal values than what they may have been willing to say out loud in front of their peers.

The recorded notes from the discussion of policy idea #2 are as follows:

Develop Behavior Change Programs

General Statements: policy organizations should support initiatives that reduce energy use. Any behavior change feedback should include geographically specific energy savings tips in order to address local needs (ie: Peak energy load is opposite of the Valley due to heating and cooling differences. Ensure utility customers are input in considered in the behavior change program design.

Specific Suggestions: Some sort of individualized feedback is recommended for end users. The feedback should include energy saving tips in addition to some form of bench-marking. The behavior change program should include gaming and/or incentives), primarily financial or comfort based, in addition there should be some element of special incentives for low income customers. Any utilities that undertake this behavior change program should be assured that they will receive credit towards the Energy Efficiency Resource Standard.

This summary of the in-person discussion was presented to the participants in the online follow up survey. They were again asked to rank the new statements and suggestions on the delphi criteria. The following graphs are a comparison of voting results of the Delphi rankings from the original policy idea to the rankings of the policy idea/statements created through group

discussion. Due to the small sample size, these results are not statistically significant, however seeing the before and after side by side does show some very general trends.

Desirability Rankings of Implementing Behavior Change Programs

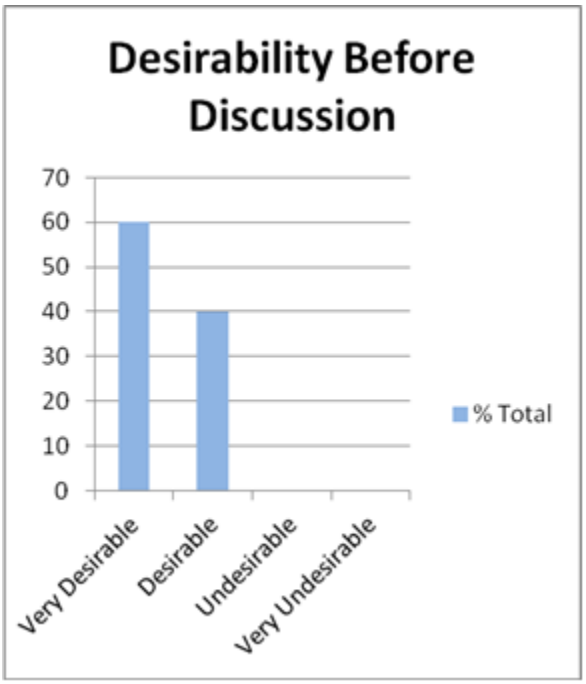

Figure 5. Desirability of 1st policy 'Implementing Behavior Change Programs' option before discussion, N=5.

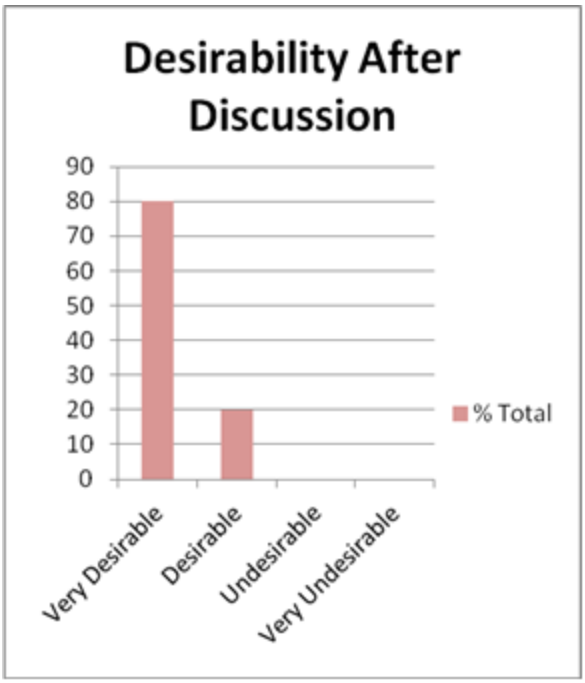

Figure 6. Desirability of 1st policy'Implementing Behavior Change Programs' option after discussion N=5.

Figure 7. Desirability of 1st policy option 'Implementing Behavior Change Programs' after online follow up N=3.

Importance Rankings of Implementing Behavior Change Programs

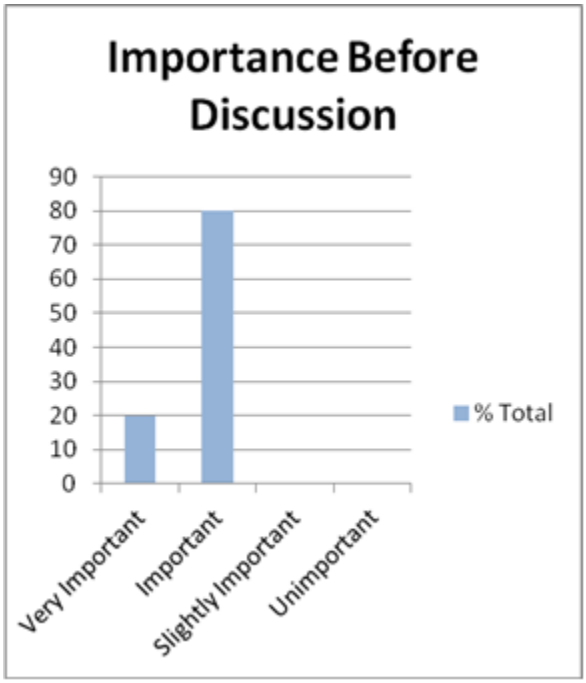

Figure 8. Importance of 1st policy option 'Implementing Behavior Change Programs' before discussion, N=5.

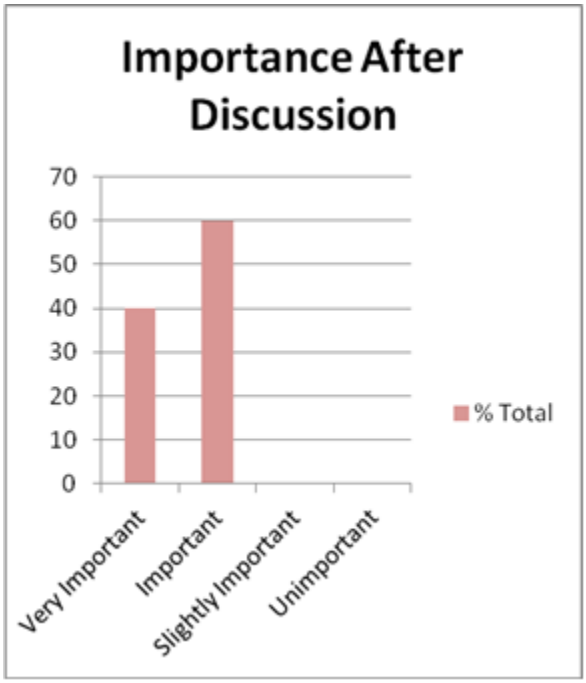

Figure 9. Importance of 1st policy option 'Implementing Behavior Change Programs' after discussion, N=5.

Figure 10. Importance of 1st policy option'Implementing Behavior Change Programs' after online follow up, N=3.

Feasibility Rankings of Implementing Behavior Change Programs

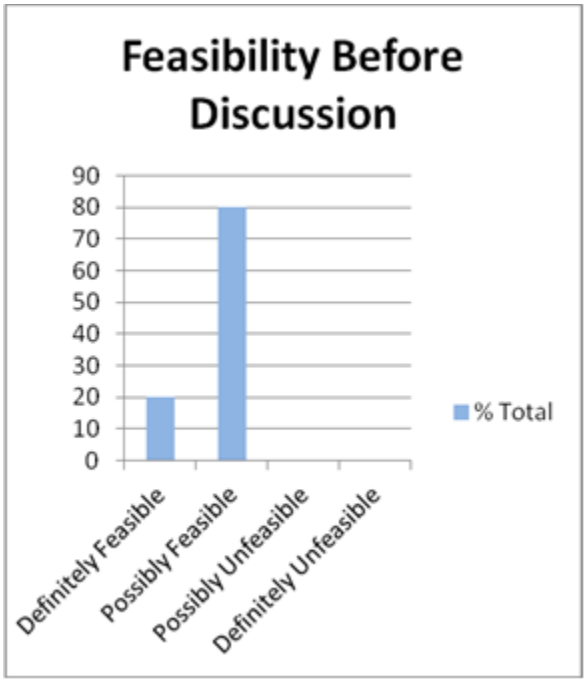

Figure 11. Feasibility of 1st policy option 'Implementing Behavior Change Programs' before discussion, N=5.

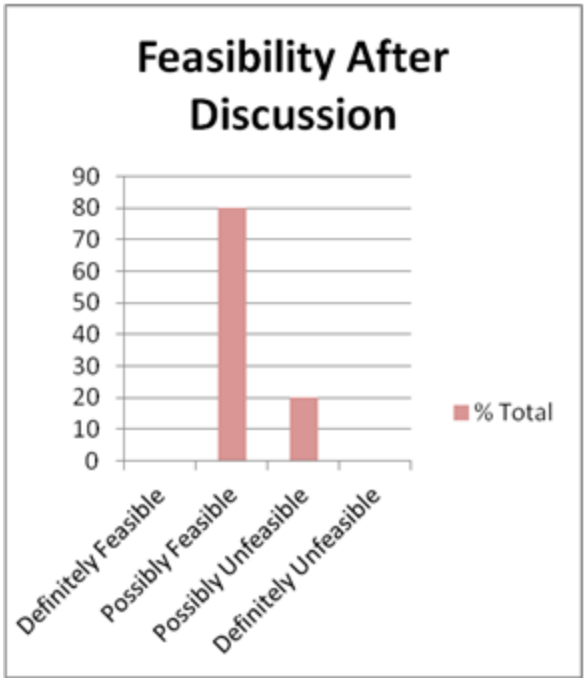

Figure 12. Feasibility of 1st policy option 'Implementing Behavior Change Programs' after discussion, N=5.

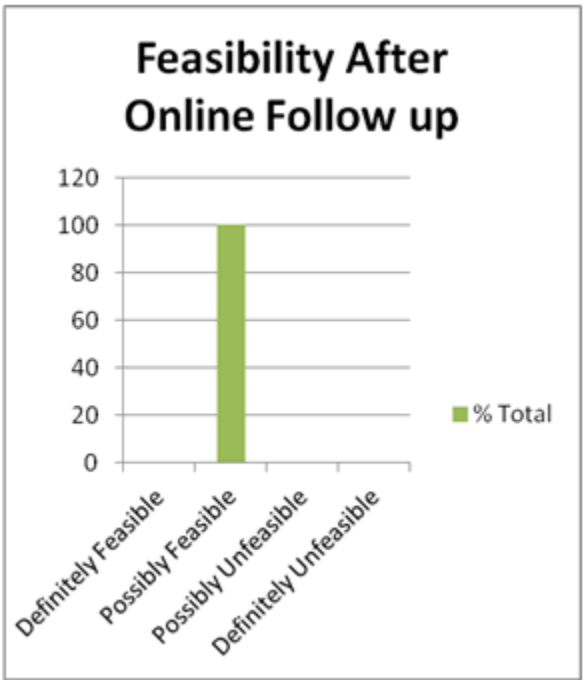

Figure 13. Feasibility of 1st policy option'Implementing Behavior Change Programs' after online follow up, N=3.

Confidence Rankings of Implementing Behavior Change Programs

Figure 14. Confidence of 1st policy option'Implementing Behavior Change Programs' before discussion, N=5.

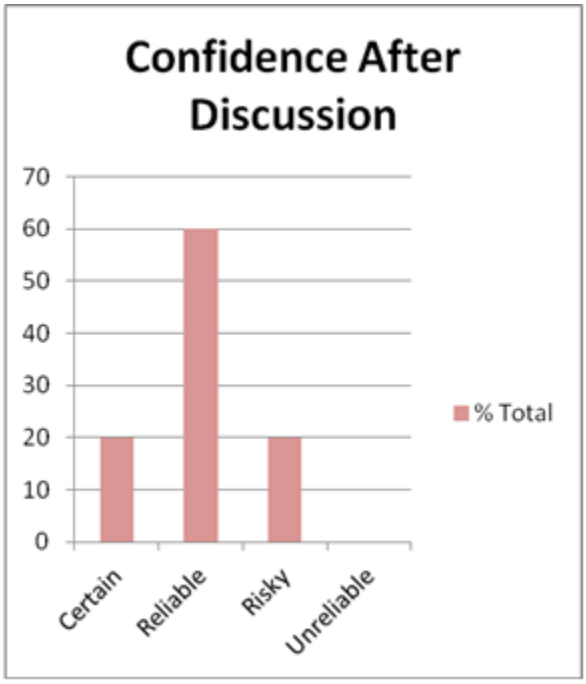

Figure 15. Confidence of 1st policy option 'Implementing Behavior Change Programs' after discussion. N=5.

Figure 16. Confidence of 1st policy option'Implementing Behavior Change Programs' after online follow up, N=3.

Second Discussion Round

The second Town Hall goal that was selected for discussion was #5: Providing financial incentives for homes and businesses that implement energy efficiency measures. There were 7 policy options presented that fell within this Town Hall goal. They were:

1. Adopt utility rate decoupling.
2. Give utilities EERE credit for heat island measures.
3. Provide virtual currency to reward savings.
4. Provide residents with "Green Button" energy data.
5. Incentivize energy efficient new homes.

6. Incentivize energy efficiency remodel projects.

7. Certify energy performance.

Participants ranked option #6: 'Incentivize energy efficiency remodel projects' as the highest priority for discussion with option #1 'adopt utility rate decoupling' being second. During the session the group only had time to discuss option #6.

Policy #	**Participant Vote**				**Total Votes**
	a	**b**	**c**	**d**	**Total**
1) Adopt utility rate decoupling.	3			3	6
2) Give utilities EERE credit for heat island measures.					0
3) Provide virtual currency to reward savings.			2		2
4) Provide residents with "Green Button" energy data.	1	3			4
5) Incentivize energy efficient new homes.					0
6) Incentivize energy efficiency remodel projects.	2	2	3	1	8
7) Certify energy performance.		1	1	2	4

Table 3. Results of second policy scenario vote.

This is the full policy write up which was the basis of the discussion:

Incentivize Energy Efficient Remodel Projects

A local government refunds a certain amount of permit fees for a remodeling permit holder who, through third party verification, concurrently substantially reduces the energy consumption of a home or building during a remodel project.

Purpose

Remodeling projects are an ideal opportunity to improve or seriously degrade the energy performance of a home or building. By placing incentives on increased performance, the marketplace becomes educated on the potential impacts of remodeling.

Key Enablers

Local Government

Key Stakeholders

Remodeling contractors, EE contractors, customers, utilities, energy raters, code officials, EE businesses

This discussion unfolded differently than the first in the sense that there was less disagreement due to one participant being extremely knowledgeable on the topic and taking charge of the discussion. The participant quickly dismissed the supplied policy example and offered up new ideas based off considerable time spent working in this specific area of energy efficiency. It seemed the discussion trended more towards refuting the supplied policy example rather than visioning something more workable, which is interesting in its own right and was most certainly a consequence of the methodological choices that were made. As such it seemed the other participants took his word as authority and were able to create an uncontested statement resultant of the discussion. The statement follows and was also shown to participants during the online survey portion.

The recorded notes from the discussion of policy idea #5 are as follows:

Incentivize Energy Efficient Remodel Projects

General Statements:

Generally speaking permit fees are negligible and the incentive structure should be different. For instance there should be incentives for contractors to undertake training on specific energy efficient building practices. Third party certification needs to be carefully defined (who is certified: contractors, testers, quality assurance people, etc). Foster incentives for performance contractors to reach out to smaller communities in Arizona.

During this round there was a particularly vocal participant who turned the idea on its head as soon as it was open for discussion. The participants spent a lot of the discussion period listening to one participant speak on how he believed this idea would not work. That being said this discussion ended up turning out much differently than the first policy discussion, as this focused more on why things wouldn't or couldn't work, rather than the solutions being offered in the first round.

The following graphs are the Delphi ranking comparisons of the original seed idea and what resulted from the open discussion.

Desirability Rankings of Incentiving Energy Efficient Remodel Projects

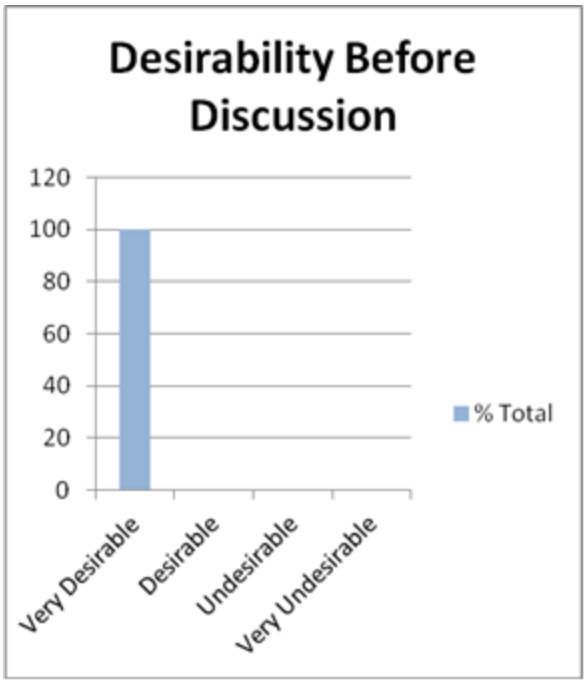

Figure 17. Desirability of 2nd policy option 'Incentivizing Energy Efficient Remodel Projects' before discussion, N=4.

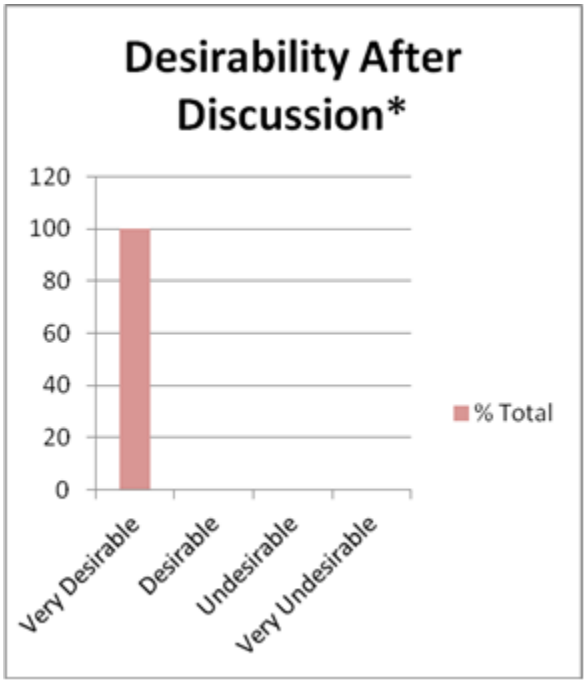

Figure18. Desirability of 2nd policy option'Incentivizing Energy Efficient Remodel Projects' after discussion, N=4. *The discussion of the initial policy topic led the a major change in content for the second round meaning the before/after vote are for very different topic ideas and the results should be judged as so.

Figure 19. Desirability of 2nd policy option'Incentivizing Energy Efficient Remodel Projects' after online follow up, N=3.

Importance Rankings of Incentivizing Energy Efficienct Remodel Projects

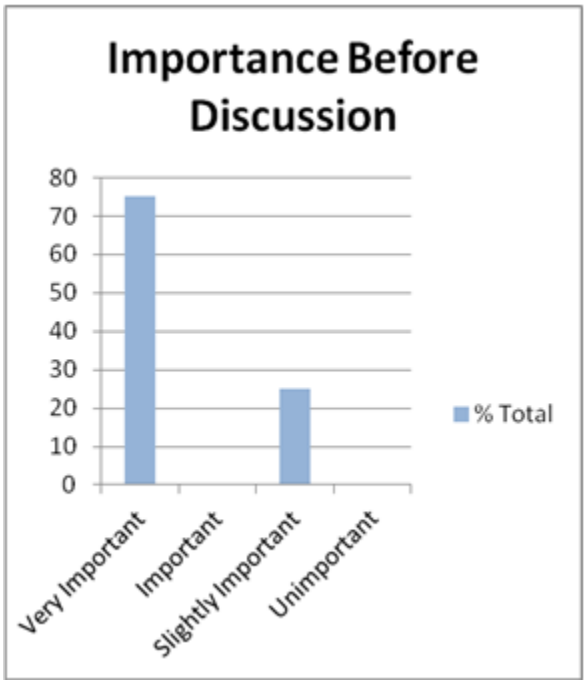

Figure 20. Importance of 2nd policy option'Incentivizing Energy Efficient Remodel Projects' before discussion, N=4.

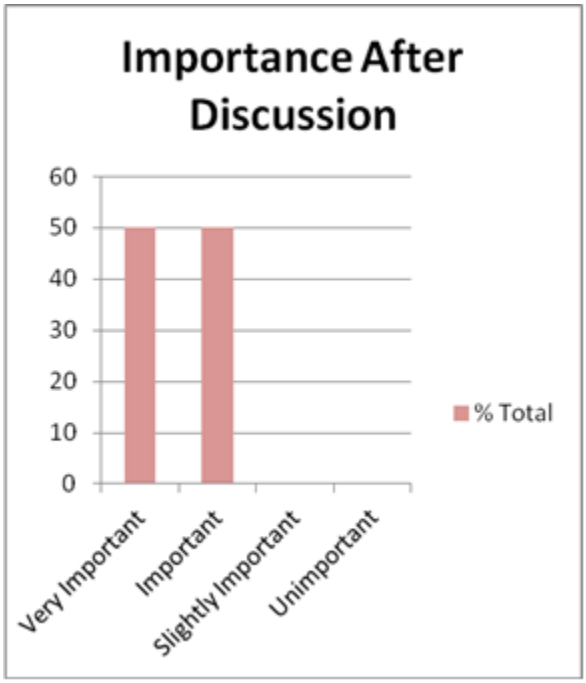

Figure 21: Importance of 2nd policy option after'Incentivizing Energy Efficient Remodel Projects' discussion, N=4. *The discussion of the initial policy topic led the a major change in content for the second round meaning the before/after vote are for very different topic ideas and the results should be judged as so

Figure 22. Importance of 2nd policy option 'Incentivizing Energy Efficient Remodel Projects' after online follow up, N=3.

Feasibility Rankings of Incentivizing Energy Efficient Remodel Projects

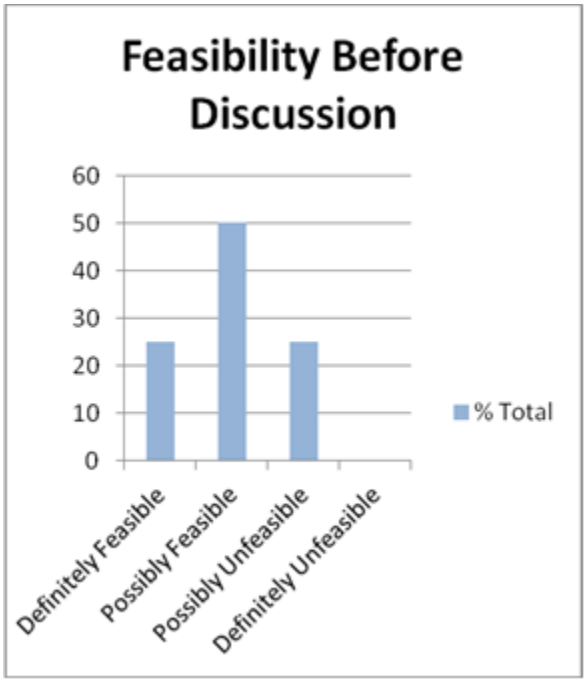

Figure 2. Feasibility of 2nd policy option 'Incentivizing Energy Efficient Remodel Projects' before discussion, N=4.

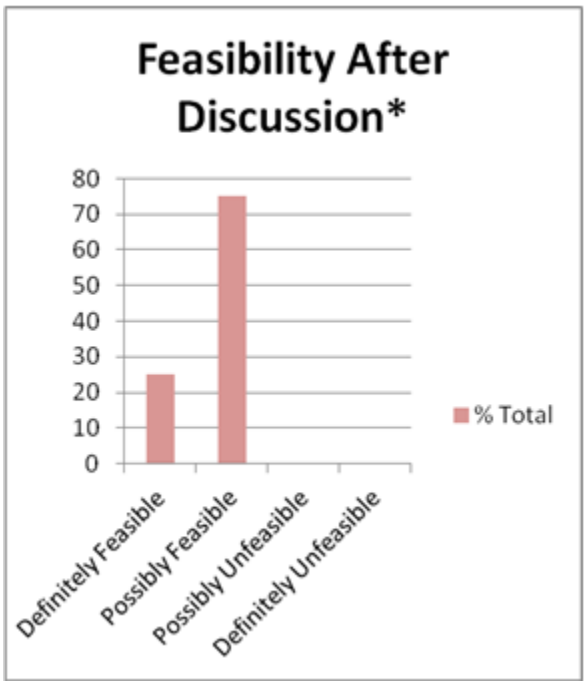

Figure 24. Feasibility of 2nd policy option 'Incentivizing Energy Efficient Remodel Projects' after discussion, N=4. *The discussion of the initial policy topic led the a major change in content for the second round meaning the before/after vote are for very different topic ideas and the results should be judged as so

Figure 25. Feasibility of 2nd policy option'Incentivizing Energy Efficient Remodel Projects' after online follow up N=3.

Confidence Results of Incentivizing Energy Efficient Remodel Projects

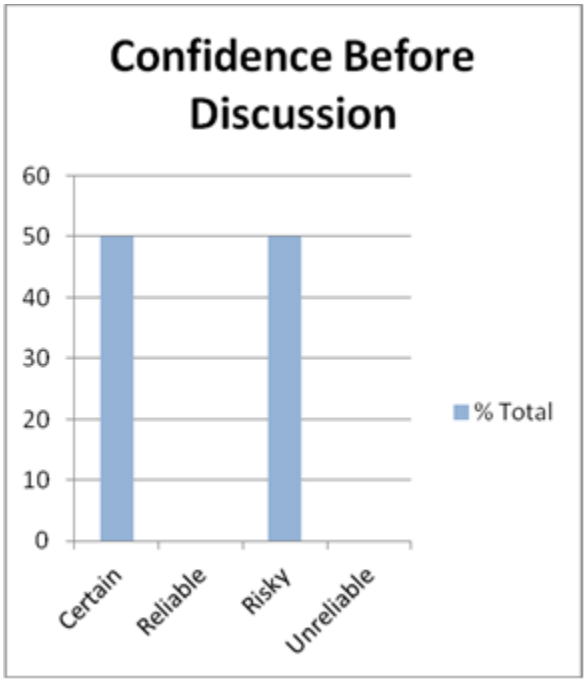

Figure 26. Confidence of 2nd policy option'Incentivizing Energy Efficient Remodel Projects' before discussion, N=4.

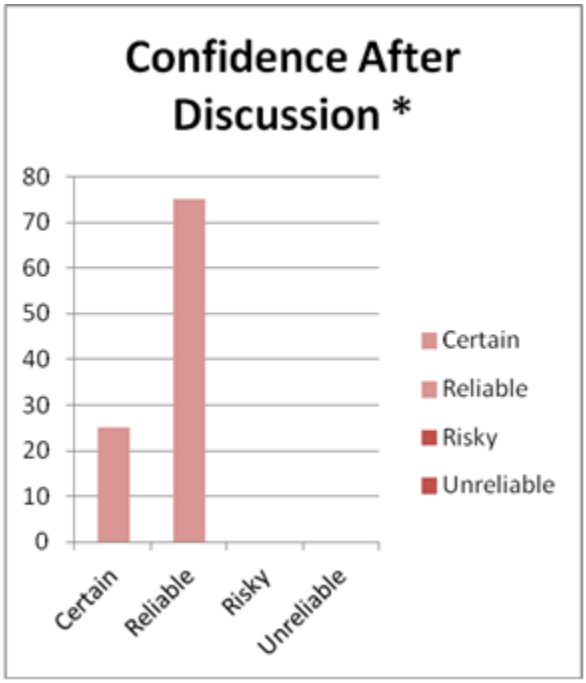

Figure 27. Confidence of 2nd policy option 'Incentivizing Energy Efficient Remodel Projects' after discussion, N=4. *The discussion of the initial policy topic led the a major change in content for the second round meaning the before/after vote are for very different topic ideas and the results should be judged as so

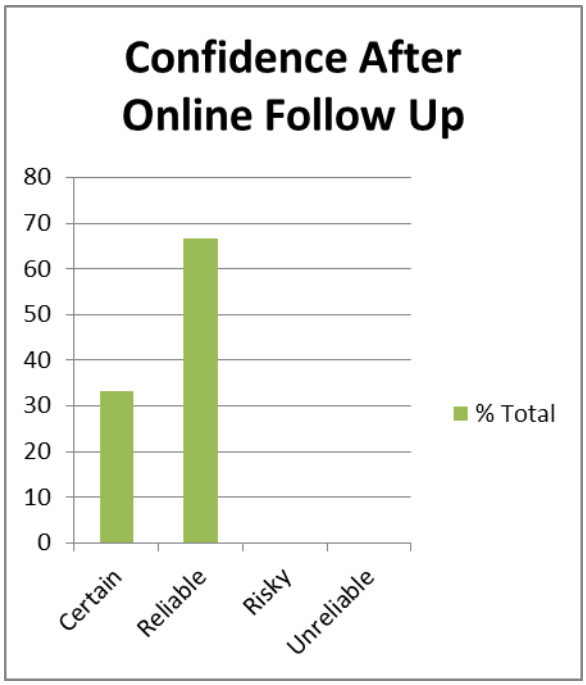

Figure 28. Confidence of 2nd policy option'Incentivizing Energy Efficient Remodel Projects' after online follow up, N=3.

The following chart shows the results of an agreement scale that was utilized on the online survey in order to collect reactions to the list that was considered unresolved from the in-person event.

Provide feedback on the unresolved issues from the focus group.

	I strongly agree	I generally agree	I somewhat disagree	I strongly disagree	I'm not sure/ Not applicable	Rating Count
Contractors should undertake standardized certification in order to market themselves as performance contractors.	**66.7% (2)**	33.3% (1)	0.0% (0)	0.0% (0)	0.0% (0)	3
Incentives should be geared towards contractors in order to grow the industry (training, equipment, travel to smaller towns, etc).	33.3% (1)	**66.7% (2)**	0.0% (0)	0.0% (0)	0.0% (0)	3
Incentives should be geared towards home owners who utilize a performance contractor win order to grow the industry	33.3% (1)	**66.7% (2)**	0.0% (0)	0.0% (0)	0.0% (0)	3
Contractor certification programs should be run by the utility	0.0% (0)	0.0% (0)	**100.0% (3)**	0.0% (0)	0.0% (0)	3
Contractor certification programs should be run by the municipality	0.0% (0)	0.0% (0)	**66.7% (2)**	33.3% (1)	0.0% (0)	3
Contractor certification programs should be run by a third party.	33.3% (1)	**66.7% (2)**	0.0% (0)	0.0% (0)	0.0% (0)	3
Please provide feedback on as many of the questions as you wish. If there is something not included in the list feel free to add.						2
					answered question	**3**

Table 4. Open ended survey results for 2nd policy topic 'Incentivizing Energy Efficient Remodel Projects'.

Chapter 8

DISCUSSION OF RESULTS AND IMPLICATIONS FOR FUTURE ENERGY EFFICIENCY POLICY DEVELOPMENT IN ARIZONA

In the background report prepared by ASU for the 99th Town Hall on Energy, there is no discussion of leadership, or who ought to take charge and own the ideas. While that may have not been the goal of the Town Hall organization, it became one of ours. The FOSI diagram puts (fig 2) emphasis on the high quality scenario testing in step three of the model, the step the method was attempting to move towards through the use of experts. During the event it became readily clear that issues of leadership were real and paramount and that there are many different opinions on who should take charge of Arizona's energy future. The original proposal for this research spoke of "many different actions by disparate actors" and this was apparent in the conversation and in the free form responses to a question that asked if the event appeared to reach its goal of refining policy ideas, comments such as "A lot more discussion is needed with more parties involved to make sure there is a broad spectrum of information to make a good judgment call" and "it is big topic and will take some time to clarify but it is a start." It appears there is still much uncertainty even amongst the experts about how to proceed down the implementation path. This is to be expected as it was known going into this research that implementing energy efficiency is an inexact science with many different angles being currently examined across the board. Both Delphi rankings for the two topics received higher scores for desirability and importance over feasibility. This may indicate there are two topics where "policy invention" (Schneider, 1972) could be most productive, or be the best intervention point to influence decision makers who are able to make things more feasible if they know the policy is important and desirable. This type of result could be used to explore the issue of leadership further. However due to the fact that there was a small sample size, we had participants drop out, and there was no way of tracking how the individual votes changed through each successive voting round, any sort of discussion about what different combinations of Delphi rankings might mean is just speculation. If this experiment was repeated this would be an area to improve upon.

Each of the three initial goals of the project directly fed in to the idea of refining Town Hall recommendations in order to move energy efficiency in Arizona forward in the formal policy making process. In order to attempt to quantify a change in position or the furtherance of a policy topic, a series of three anonymous - paper/pen, voting rounds was introduced in into the expert consultation process. The first round of voting occurred after a pre-written policy idea was given to the participants but before they had a chance to discuss the topic. This first vote was to capture their initial impression of the policy idea on a set of four criteria: desirability, feasibility, importance, and confidence. The second set of voting occurred following a moderated discussion of the policy topic. At the conclusion of the discussion, each of the points that had seemingly achieved consensus or agreement between the participants were used to refine the initial policy idea. The same set of four criteria were used again for the participants to rank the reworked policy idea in the second round of anonymous voting. The goal of the second voting round was to be able to compare the four criteria to the initial impressions of the 1st round vote to see if there was any change in the participant's general feeling toward to policy idea, with the idea being any positive or negative change in the four criteria might offer a quantitative insight into whether or not we were furthering the policy process by refining policy topics. The third and final round of voting occurred as an online follow up to the in person event. The goal of the third round of voting was to collect more data, as well as seeing if the results would vary significantly after the participants had time to think to themselves about the discussion after the event.

The consideration of having the participants vote every round anonymously was an attempt to control for 'group think' or having participants fall victim to blindly agreeing with the most vocal person in the room and not revealing what they might have really felt. On the other hand, having the free form discussion between participants was important for the creation of new ideas and synergies. Combining the elements of multiple methods (anonymous voting and moderated discussion) guided the creation of the unique method that was utilized for this research. The

reason multiple methods were utilized was to address the perceived shortcomings of any singular method as they pertained to the needs of Energize Phoenix.

The reasoning behind the decision to use pieces of multiple methods in order to overcoming shortcomings such as group think is sound. However due to the small amount of participant and their subsequent votes it is difficult to discern what the effect the method used had on the outcome of the consultation session.

The Delphi Design

Using a Delphi design for policy research can be used to generate ideas and present decision makers with the strongest possible arguments for and against a subject (Turoff, 2002). However, the use of the Delphi, on which our method was based heavily, is contentious in the literature. Issues mentioned in detractions of the method involve the difficulty in controlling the reliability and validity of the experiment (Hasson, 2000). Counter-arguments say that the Delphi is simply a way to hear a diverse background of opinions and should not be scrutinized for traditional norms (Franklin, 2006). In this case, data collection methods allowed a variety of opinions on two topics while testing out a new form of public participation. In this case it is difficult to weigh on the debate on the validity of the Delphi method as the number of participants was too low.

The Use of Experts

The initial planning of the project was very linear in the sense that the exercise assumed that the Town Hall exercise had output social goals which meant they had framed the issues and neatly put facts in perspective which would clear the way for the experts to dig into the technical aspects of the problem. This thinking was overly simplified. The experts did discuss technical aspects of the policy issues but were still dealing with issues of problem framing which, the

assumption was that this had already been done. This observation serves to show that at each stage of the FOSI Model there are feedback looks to earlier and later stages depending on the conversation the experts are willing to have. In this case the discussion the experts had showcased the feedback back loops prominently as they combined their technical expertise with framing social issues throughout the session, which helps highlight that the policy implementation process is not linear by any means.

As it turns out, the initial assumptions and goals were slightly unrealistic. There was a feeling that simply getting expert stakeholders in the same location would lead to a clear refinement of the TH goals with the ability to have moved the process firmly into the later stages of the third step of the FOSI model. The stakeholder meeting did in a sense act as a platform for the refinement of the TH recommendations. However in terms of a clearly delineated outcome, the results raised as many questions as were answered, which in hindsight should have been expected. The next step of the FOSI model after where the Town Hall left off is step 3 – test decision options and scenarios, which is the space the method attempted to operate in. The discussion that was had was definitely a form of scenario testing as the nitty gritty of each policy scenario was explored. However, due to the comparatively short amount of time allotted for discussion, the level of specificity needed to move past stage 3 of the FOSI Model was not achieved. The discussion of the policy ideas did indeed result in some very good avenues or questions that could be explored further in the future.

The first discussion on the implementation of behavior change programs led to many ideas on how theoretical programs would look, and the potential barriers and pit falls to implementation. In the follow-up survey, participants were asked to read a general statement that had been created based of the discussion. They were asked to compare the new statement to original one created for the policy idea guide and rank them both on the four Delphi criteria. The second round of Delphi voting showed the desirability, importance, and confidence all increasing.

According to the second round tally, the participants felt the feasibility was lower than the first policy offering. This makes sense in the context of the discussion that the participants had. They generally agreed that behavior change programs are desirable and important. They, however, were also constrained by thinking about the intricacies of actual implementation, asking questions such as who would run the program, or who would pay for it. In that regard, it makes sense that until those questions received a satisfactory answer, the feasibility of ever implementing a behavior change (BC) program is low in their opinion. Fig 10 shows the responses to the questions that were deemed contentious during the focus group. The results show a mix of responses and identify potential avenues of exploration for specific programmatic elements that could be included in future BC programs. For example there was general agreement that benchmarking for homes that compares how much energy they ought to be using would be an important piece for a BC program. There was less agreement about who should administer a BC program with participants reporting a range of answers when asked if a non-profit should be considered to run it. Each of the results represents an opportunity to increase the certainty and knowledge in relation to the typology of problems and creating a more structured dialogue around energy efficiency.

The second discussion was on the topic of incentivizing energy efficiency remodel projects. This discussion provided an excellent example of the flexibility of the method that was created. One of the participants was extremely knowledgeable on the remodel topic and essentially created a new policy idea after hearing the first seed policy idea. Promoting a flexible methodology which allowed for participants to frame the discussion was a goal of the day's event, so in that regard it was a success from a process standpoint. Each of the Delphi ranking criteria increased after the participants reviewed the reworked policy idea, showing the power of the group to reframe the question and still provide answers. Again, the levels of agreement present in vary. These were the questions that were contentious during the event and represent

excellent avenues for exploring the future of the energy efficiency remodel industry. The participants identified real world problems, such as who should run contractor certification programs (generally they were unsure that role should fall on the utility), that must be addressed in order for this policy goal to be implemented.

Despite the potential being there for scrutinizing changes in Delphi criteria, from round to round, in order to make assumptions about what the change infers, it is not realistic for this experiment. A duo of issues caused this to be the case 1) Individual participants dropped out of each round of voting caused different N's each time, and 2) there was no way to track how any one individuals vote change through the 3 round process. That means there is no way to tell if a change in voting results was due to people dropping out or actually changing their opinion on a policy topic, the latter of which was a primary goal of the experiment. In future uses the method would need to account for both those issues in order to observe and meaning from the survey results.

The method promoted a collegiality and open exploration that led to the diverse set of answers that were collected in person. Therefore the author concludes that this method would be useful for future use in in order to map the barriers to implementation of a policy topic and to help provide more knowledge and structure to unstructured problems. It was designed to address perceived shortfalls with public participation methods that had been identified from literature and attending the AZ Town Hall and World Wide Views Forum. The planning and preparation, in addition to the event itself, were successful in identifying shortfalls of the aforementioned two methods and utilizing a third method – the Delphi – to address them. Despite the small sample size, the participants who did attend the event were extremely knowledgeable of the specifics of the energy efficiency topics being discussed. In that regard the original goal of using specificities of knowledge to gain more clarity on the topic was a success. Additionally, another positive was the willingness of participants to reframe the issues provided as needed. The reframing of the

provided policy scenarios (as demonstrated by the second discussion consisting of taking the policy idea in a completely different direction that the original seed idea) demonstrated that the flexible design of the method was successful in creating a new policy goal. In terms of future use, the method could be utilized as part of a longer process in order to get a richer discussion. Perhaps it could be broken up into different sections such as 'barrier identification' and then 'overcoming those barriers.' It seemed as though the participants never strayed too far into the overcoming barriers discussion as the participants were firmly planted in the political realities of today and were not prompted to think of solutions beyond that scope.

There were also drawbacks to the use of this method, some foreseen and others not. The small number of participants meant that there was significantly less diversity present than was originally intended. There was an inability to get the amount of stakeholders represented as was originally hoped. This small amount of participants was likely due to the decision to use experts which lowered the possible participants considerably. The reduced diversity may have had an effect on the results of the discussion. While the discussion was still robust, the process would have benefitted from a greater spectrum of participants and backgrounds. Additionally the smaller group allowed some participants to exert undue influence during the discussion period. There was some built in control for this, however, through the use of anonymous voting. The time frame was purposely kept short (3.5 hours) In order to be more attractive to working professionals on a weekday and maximize the number of people who might attend. The short time frame definitely limited the number of topics that were considered and it was hoped that more ground would have been covered. However in this scenario it would have been unrealistic to ask for more time of the participants. If this method were to be used again in the future, and convened by an organization with more sway, it would be advisable to budget more time.

Conclusion

Any time the decision is made to undertake a public participation event, one can expect to dedicate a lot of time and effort. There is a large amount of background research that is necessary in addition to the actual designing and planning of the event. Deciding to use experts as participants limited the pool of potential applicants. In addition, getting anyone to commit a half day to something is difficult on its own, let alone asking them to attend an event where they might be wary about representing their organizations or themselves at an unproven/untested stakeholder meeting. The first goal of the project were to assist Energize Phoenix with it's energy efficiency policy guide book, which I feel was a success. It was an excellent opportunity to provide a test bed, and diversity of expert opinion before being published.

The second goal was to increase the policy relevance of the Arizona Town Hall Goals. I also feel that was a success. As we were able to utilize expert opinion in order to refine the goals and identify future topics of consideration for anyone attempting to implement a real time energy feed-back program. However I feel like there is a lot more room for more work here. I barely scratched the surface of refining our policy ideas.

The third goal was to create and test a public outreach method. Again, I think the method was successful for my purposes. It was successful in introducing a democratically sourced starting point for the experts to begin their discussion, in essence bridging the general public and expert refinement on the policy triangle. In addition the method was purposely left loose so that the participants could shape the discussion themselves while we observed. That lead to some interesting observations of visionary statements and overcoming barrier that seemed to reflect a general increase in participant scores, while the non- visionary statements lead to an perceived stagnation or decrease in participant scores.

Taking everything into account, the focus group was a success. The goals of the process were to operationalize or at least refine the Town Hall recommendations through the use of an expert focus group in the hope of producing more ready-for-implementation policy proposals in

terms of the later FOSI stages of policy development. This goal was a success due to the fact that we were able to create and discuss specific portions of actual policy recommendations. Additionally, there was a goal of utilizing the process to assist Energize Phoenix in the creation of their Energy Efficiency Idea Guide, the results of which would be enhanced by gaining insights into the levels of support stakeholders expressed toward different policy scenarios and options. This expert consultation process allowed the topics for the energy efficiency idea guide to be tested before the document was published, so in that regard this goal was a success. The final goal was to experiment with participatory methods that suited the specific needs of our program goals and the needs of our participants that might increase the likelihood of arriving at these outcomes. I think this has the most room for improvement but was still a success. The method that was created allowed for exploration of the social processes that occur in a policy implementation process, in addition to satisfying the unique needs of Energize Phoenix. Further progress on the method could be achieved by working through each of the issues individually and getting more into the "who" and "how" questions. Overall, the combination of participation methods was successful in creating new ideas for specific energy efficiency policies, and presents opportunities for future research.

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APPENDIX A

SETTING THE SCENE FOR ENERGY EFFICIENCY IN ARIZONA

Arizona Policy and Program Inventory

Arizona's Energy Future:

Policy affecting energy efficiency can be enacted on the Federal, State, or local level. For example, the Federal government attempted to set a nationwide 5 percent efficiency target with the American Clean Energy and Security Act of 2009 (did not pass senate) (ACEEE 2009). On the other end of the spectrum, for example, local municipalities can enact stringent 'green' building codes to be adhered to by their own citizens. Energy policy in Arizona is influenced by a diverse set of stakeholders such as governing bodies on all levels, private industries, and other organizations and actors (Town Hall 2011). While this partnership has worked effectively to serve Arizona in the past, the somewhat informal or reactionary nature of the policy process has left the state without a comprehensive energy plan. Understanding a number of factors that exist currently in addition to emerging trends will be key to creating and implementing a state wide energy plan.

Arizona is currently ranked 17th in the U.S. in the American Council for an Energy Efficient Economies' (ACEEE) 'Energy Efficiency Scorecard. In their 2011 report, the independent non-profit Arizona Town Hall organization examined Arizona's Energy Future. It identified six major factors that should be factored into the creation of a statewide comprehensive energy policy: cost and affordability, reliability, sustainability, energy security, climate change, and green jobs (Town Hall 2011). The passage of regulation by the ACC enacting the RES and EERS (explained in greater detail in the following section) is proof that Arizona is not lagging in the energy policy arena. There is, however, potential to enact further legislation that would continue to support renewables and efficiency and help transform Arizona into a national leader of innovative energy policy. In order to make recommendations for future policies that foster greater energy efficiency in Arizona, as the author intends, it is important to understand the current regulatory and programmatic landscape within the state so as to not reinvent the wheel.

Arizona Corporation Commission

Due to the monopolistic nature of utilities in Arizona, the state constitution tasks the Arizona Corporation Commission (ACC) with utility regulation. Arizona is one of only 7 states with a constitutionally formed commission, and one of only 13 states that elects their commissioners as opposed to appointments, which are practiced in the majority of other states (ACC 2012). The Utilities division of the commission has jurisdiction over the quality of service and rates charged by public utilities as regulated monopolies. As part of their duties in this regard, the Commission hears rate cases brought forth by utilities and it is its duty to 'balance the customers' interest in affordable reliable utility service with the utility's interest in earning a fair profit' (ACC 2012). In one such recent rate case, the Commission enacted the Energy Efficiency Resource Standard (EERS), a form of demand side management (DSM), which will have statewide implications for utilities' mixes of fuel generation for years to come.

Energy Efficiency Resource Standards and Demand Side Management

Energy Efficiency Resource Standards are a form of Demand Side Management which are critical for supporting utility investments in energy efficiency. There are many benefits to investing in efficiency; however business models must be tweaked by regulators in order for them to be realized. There are many different types of utilities such as investor owned utilities (IOU), public power utilities, cooperatives or coops, and federal utilities (DOE 2012). The problem lies within the fact that utilities create capital through the generation and sale of electricity. It so

follows that it is paradoxical when regulators ask utilities to begin reducing demand for kWh through efficiency, as they are asking them to spend their own money running programs to convince consumers to consume less of their product. The solution to this issue is the implementation of supportive regulatory frameworks which in theory can provide a win-win-win situation between regulators, utilities, and consumers. The three most common regulatory frameworks were outlined in a recent publication by the Institute for Electric Efficiency and are presented here.

- 'Direct Cost Recovery: refers to regulator-approved mechanisms for the recovery of costs related to the administration of the efficiency program by the administrator, implementation costs such as marketing, and the actual cost of product rebates and mid-stream product buy-downs. Such costs are recovered through rate cases, system benefits charges, and tariff rider/surcharges.

- Fixed Cost Recovery: refers to decoupling (separating utility profit from electricity sales) and lost revenue adjustment mechanisms that assist the utility in recovering the marginal revenue associated with fixed operating costs. Rate making practices tie the recovery of fixed costs to volumetric consumption charges with rates set upon an assumed level of energy sales. The purpose of efficiency programs is to reduce the consumption of electricity; decoupling and lost revenue mechanisms allow for timely recovery of fixed costs.

- Performance Incentives: are mechanisms that reward utilities for reaching certain energy efficiency program goals, and, in some cases, impose a penalty for performance below the agreed-upon goals. Performance incentives allow for utilities to earn a return on their investment in energy efficiency, typically similar to the return on supply side investments (IEE 2012).'

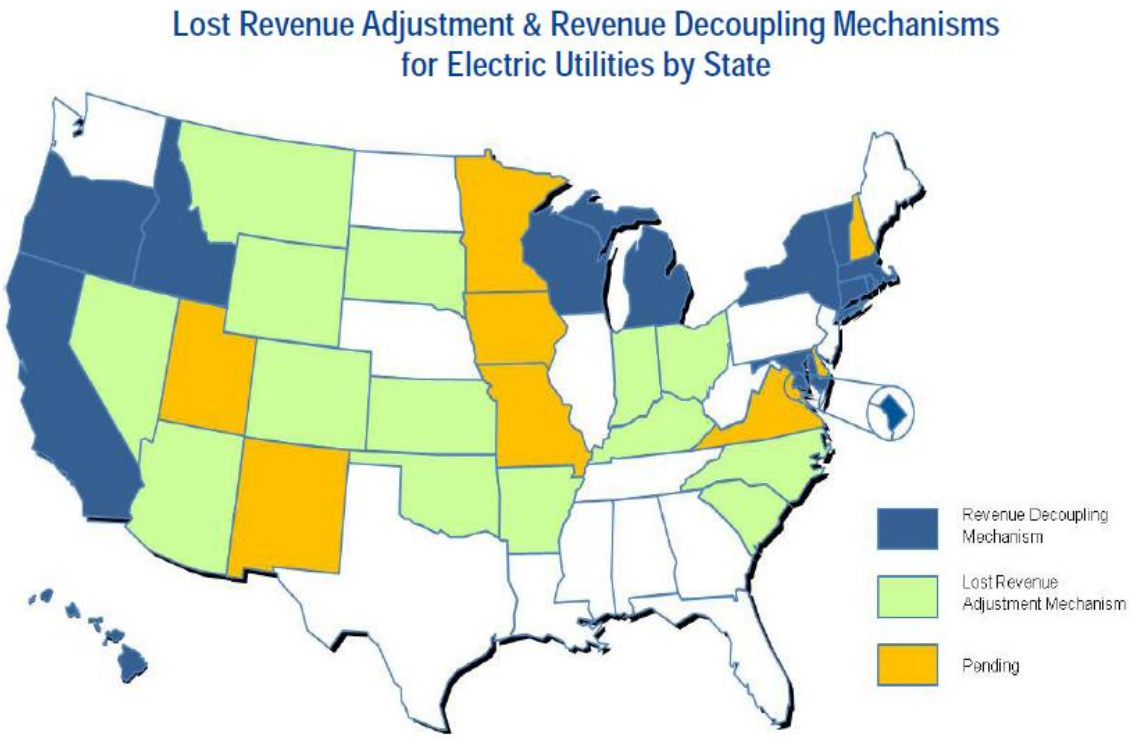

Fig 1. Utility Decoupling Strategies by State. (IEE 2012). Pg. 7

According to the same report from the IEE, 'over two thirds of the states have or are pursuing some type of fixed cost recovery approach.' In addition '13 states have lost revenue adjustment mechanisms,' which is the approach the ACC, major utilities, and other interested parties agreed upon in May 2012, when implementing Arizona's own EERS.

Calendar Year	Energy Efficiency Standard
2011	1.25%
2012	3.00%
2013	5.00%
2014	7.25%
2015	9.50%
2016	12.00%
2017	14.50%
2018	17.00%
2019	19.50%
2020	22.00%

Fig 2. Arizona EERS Targets (Bryck 2012).

A lost-fixed-cost recovery mechanism (LFCR) was approved in May 2012 during a rate case put to the commission by Arizona's largest utility, Arizona Public Service (APS). According to the agreement, 'Arizona's public utilities will be required to achieve annual energy savings of at least 22%-measured in kWh-by 2020, with the savings to increase incrementally as a percent of retail energy sales in each prior calendar year to reach that goal (ACC 2012).' In return for agreeing to meet that goal, APS and other public utilities are entitled, starting June 1st 2012, to 'recover a portion of transmission and distribution costs related to sales reduced by efficiency or distributed generation. Recovered revenue can be adjusted annually. The LFCR can be modified by the Commission up to the next APS rate case in 2012. And there is a residential opt-out clause to the LFCR, if residents choose the optional Basic Service Charge (BSC) instead (IEE 2012 pg.7).' The reason for explaining the Arizona EERS in such detail is the fact that these state-wide policies are becoming the national norm, and will arguably do the most to promote utility sponsored energy efficiency programs. There are, however, other policies and programs active in promoting energy efficiency in Arizona.

Energize Phoenix

In 2009, the American Recovery and Reinvestment Act (ARRA) awarded the Department of Energy's Office of Energy Efficiency (EERE) $16.8 Billion for its programs and initiatives (DOE, 2009). This influx of capital has led to an explosion in clean energy programs with the ARRA stimulus alone accounting for 2,000 new clean energy projects (Fuller, 2010), Energize Phoenix being one. These projects are funded through the Better Buildings Neighborhood Program (BBNP), Low Income Weatherization Program, Energy Efficiency and Conservation Block Grant Program (EECGB) and State Energy Program (SEP).

Energize Phoenix is a three year energy efficiency program managed by the City of Phoenix and in partnership with Arizona State University and Arizona Public Service (APS). The program is funded by the Department of Energy's Better Buildings Neighborhood Program. The ultimate goals of the program are to:

- Shrink residential participant energy consumption by up to 30%
- Reduce commercial participant energy use by up to 18%
- Eliminate carbon emissions by as much as 50,000 metric tons per year
- Upgrade approximately 1,700 homes and 30 million square feet of office and industrial space for greater energy efficiency. (Phoenix, 2010)

Programs funded through the BBNP are integral in creatively testing energy efficiency program design in order to learn what works and what doesn't when scaling up programs to the community level. Research done by ASU will provide valuable insight into measurement and verification of kWh savings, behavioral components of creating lasting change, and addressing the '*energy efficiency gap'* which will be discussed in greater detail later on.

Qualified Energy Conservation Bonds (QECB's)

The Qualified Energy Conservation Bond is a qualified tax credit bond which is allocated by the Treasury Department to all 50 states (EPIC 2012). The purpose of the bond is to raise capital for large local governments from private investors in order to undertake qualified conservation purposes. Arizona was allocated $67.5 million which was dispersed by the Arizona Commerce Authority to local municipalities with populations greater than 100,000 (NASEO 2012). According to the Energy Policy Innovation Council at ASU, it is uncertain how much of

that funding has been put into play and the only municipalities that have issued funds are Tempe, and Tucson to the tune of $14.3 million, which is only 21% of funds allocated to Arizona (EPIC 2012). For example, in 2010 the city of Tempe undertook multiple projects on municipal buildings utilizing $7.3 million in QECB funds. APS estimates that the building upgrade projects alone will account for an annual savings of $440,000 in addition to a 9 million pound reduction in carbon dioxide emissions (Framel 2012). The city of Tempe's use of the Treasury bonds is categorically seen as a success and as an example of innovative financing being used to foster energy efficiency.

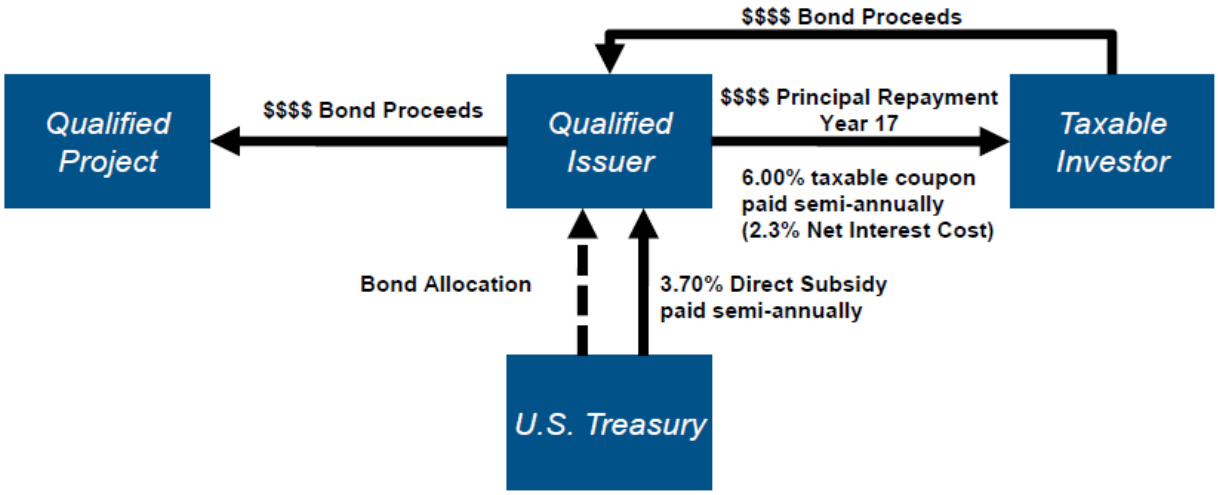

Fig 3. Understanding QECB's (DOE 2012)

Building Energy Codes

There are no mandatory statewide energy codes in Arizona due home rule state status. However, some cities have taken it upon themselves to implement different versions of the International Energy Conservation Codes (IECC) (Mesa, Phoenix, Tucson), International Green Construction Code (IgCC), U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) building rating system or, in some instances, municipalities such as Scottsdale created their own green building program (Scottsdale 2012). Municipalities taking a leadership role on green building policy are instrumental in fostering energy efficiency in the state.

Arizona Appliance Standards

In 2005, Arizona adopted minimum efficiency standards for 12 products that were not covered by federal standards. Since that time, all of those twelve products were preempted by federal regulation. In 2009 the House Bill 2332 (HB2332) established efficiency standards for three additional products: Portable electric spas, residential pool pumps, residential pool pump motors, which went into effect January 1, 2012 (DSIRE 2012)(SWEEP 2011)(House Bill 2009).

Arizona Climate Change Initiatives

'In 2006, former Governor Janet Napolitano established a statewide goal to reduce Arizona's future greenhouse gas (GHG) emissions to year 2000 levels by 2020, and to 50% below 2000 levels by 2040. Key strategies include improving energy efficiency for buildings and appliances and reducing energy demand by consumers and businesses (SWEEP 2011)(ADEQ 2006).'