Taking it to the Streets: Innovative Public Engagement Process on Vermont's Electricity Future

Dr. Jonathan Raab, Raab Associates, Ltd. and MIT

Richard Sedano, Regulatory Assistance Project

ABSTRACT

In 2007, Vermont embarked on a statewide process to gain citizen input on the state's future electricity choices. The process was sparked by the governor and legislature because contracts for 2/3 of Vermont's relatively cheap and clean electricity supply expire over the course of a few years beginning in 2012.

The process included a diverse, stakeholder-based advisory and resource panel assisting the Vermont Department of Public Service and its consultants in the preparation of background documents and over 100 polling questions. There were five, half-day regional workshops using keypad polling and small group facilitated discussions that attracted over 800 Vermonters. There was also a two-day Deliberative Polling ™ event for another 150 randomly selected Vermonters. Finally, there was an on-line component.

This paper will discuss the innovative public engagement process choices made by Vermont and its tell-tale polling results. The paper will specifically address how energy efficiency fared in the public's responses, and discuss the merits and costs of public engagement on utility matters at a time when resource choices are presenting challenging dilemmas to everyone charged with making and reviewing investments on behalf of utility consumers.

Background

Vermont remains regulated in the traditional way, with its utilities still vertically integrated and responsible for providing all customer requirements. There are 21 electric utilities, most of which are small and municipally-owned. The utilities purchase most of the power they deliver, and most own only a minor share of their requirements.

For over a decade, power resources serving Vermont have generally been stable. Roughly one third of Vermont's power comes from the Vermont Yankee nuclear power plant in operation since 1972, and currently up for relicensing. Another third comes from Hydro-Quebec which is over 90% hydro. These long-term contracts have been controversial in the past, but have largely insulated Vermont electric consumers from the effects of high fossil fuel prices in the last five years. Vermont has the least expensive electricity in New England, and is among the lowest ranked states in terms of carbon content per unit of electricity in the US.

Two other background points: one about energy efficiency, the other about the attention of the public to energy issues in Vermont. Presently, Vermont spends the highest amount of ratepayer money on a per capita basis in the US (roughly 5.5 mills/kWh) on energy efficiency, and programs are delivered not by the utilities but VEIC, a non-profit corporation, under a contract with the state. These programs effectively neutralize all electric load growth. Other Vermont electric system data appears in a table, below.

Secondly, energy issues merit front page attention in Vermont, and also garner routine attention in the state legislature. As a result, there is a fundamental awareness in the public of

basic electricity facts and an apparent receptiveness to more information. In addition, the legislature passed significant energy legislation in each year starting in 2003, indicating that they are active and interested in continuously improving the energy statutes.

Some Vermont Electric System Data

Vermont Average Cost per kWh 2007, all classes	11.99 cents per kWh
Total Electric Revenues 2007	$703 million
Total Electric Sales 2007	5,862 GWh
Peak Demand, Historic	1,081 MW (Summer 2006)

U.S. DOE EIA, Vermont Department of Public Service

With these background points in mind, it is not surprising that the relatively imminent end to the existing Vermont Yankee and Hydro-Quebec contracts are attracting the attention of both the Vermont government and its citizens.

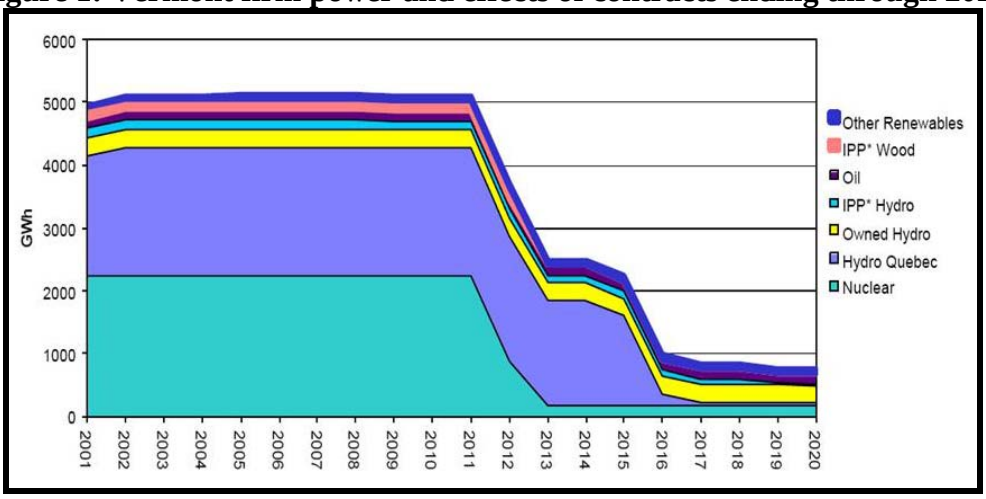
Impetus for a Public Engagement Process

Act 208 from Vermont's 2005-06 legislative session included the language in the text box.

> Sec. 2. PUBLIC ENGAGEMENT IN POWER PLANNING
> (a) The state shall conduct a comprehensive statewide public engagement process on energy planning, focused on electric energy supply choices facing the state beginning in 2012. The commissioner of public service and the joint energy committee shall develop and implement a public engagement process through a request for proposal (RFP) process that meets the following requirements:
> (1) to provide a strong information dissemination component, in order to develop a shared foundation of credible information that may serve as a basis for engaging in a meaningful dialogue;
> (2) to be conducted in a manner that recognizes that potential choices for Vermont's electric energy supply may be precluded by the passage of time;
> (3) to engage a broad base of Vermonters, including those who are currently engaged in energy issues as well as those who have not yet been engaged;
> (4) to reach throughout the state, as all Vermonters are stakeholders in this issue; and to establish a model for educating the public about the electric energy supply challenges facing the state.

According to Rep. Robert Dostis, chair of the House Committee on Natural Resources and Energy, *"The process had two primary goals. One was to educate Vermonters about the challenges we have about where we are going to get our energy from in the future. Once they understood the challenges before us, the second (goal) was to understand what the tradeoffs are. The results will inform our work as a legislature and an administration."* (Bodin)

Figure 1: Vermont firm power and effects of contracts ending through 2020



Vermont's Energy Future: A Deliberative Polling™ Event, Vermont Department of Public Service, November 2008 (http://www.vermontsenergyfuture.info/Vermont's%20Energy%20Future.pdf)

There were several reasons that the Vermont legislature went out of its way to commission a public engagement process – some of these are listed below. These reasons flow from the size of the imminent power supply choices—potentially losing contracts for 2/3 of its electricity supply over the next decade as well as the nature of dilemmas facing Vermont decision-makers inside and outside government. The situation is clear in Figure 1.

- The economic stakes are high. Future choices could cost or save hundreds of millions of dollars over the next 20 year planning horizon.

- The environmental stakes are high. Vermont's electric supply is low in emissions and carbon now, but what if current contracts are replaced with fossil fuel?

- The way resource decisions are made can be insular. Utilities are still responsible, but are ill-suited to apply judgments on such policy matters as the environmental impacts of the power supply, or the degree to which certain attributes, such as in-state job-producing resources should be prioritized.

- Vermont's small size and town meeting tradition provide a starting point for a deep discussion with a cross-section of citizens about energy choices.

- At the time of the legislation's passage, mid-2006, significant energy choices were on the horizon, but not yet at hand. A public engagement process could vet the concerns of the public without the bias of a specific proposal drawing supporters and opponents in time to influence decisions.

Challenges for a Public Engagement Process

An effort to engage the public in the dilemmas of the power system is attractive, yet it is rarely done. Why might that be?

Utilities and their regulators might decide that:

- The issues and dilemmas involved with long term resource choices are too complex for the average person to appreciate. Some have characterized this as paternalism – the authorities decide what is best for everyone.

- A public engagement process will just bring out the "usual suspects" so the exercise will not make a difference.

- A public engagement process will be just a way for the establishment to get buy in for plans that are pre-determined, and will be insincere.

- A public engagement process that actually addressed these concerns would be too difficult and expensive to organize and maintain.

- There is no entity capable of managing a public engagement process, since the utilities would not be seen as objective, and the state government would lack the resources and imagination to conduct a process that goes beyond the conventional public hearing.

- Sustaining a culture of public engagement over time is even more challenging than doing a good job once, yet the challenges in power sector show no signs of all being resolved soon.

The Process

Vermont's Energy Future process employed primarily two important means to enlist the public's help.1 The first were five regional half-day workshops held across the state over the month of October 2007. The second was a Deliberative Polling™ event held in Burlington Vermont over a weekend in early November 2007. The Regional Workshops were open to all Vermonters while the Deliberative Polling™ event was focused on drawing a random sampling of Vermonters. Both used numerous innovative process techniques to differentiate the processes from traditional public involvement processes and from standard polling. A key concept was to provide information to citizens in various ways and allow them to deliberate with other citizens before taking their pulse on energy issues (or retaking their pulse in Deliberative Polling™).2

Both event types included many similarities and some key differences:

<u>Key Similarities</u>:

1. Development and distribution of a background document on Vermont electricity related challenges and opportunities to participants to review ahead of the event.
2. Small group facilitated discussions to deliberate with other Vermonters on the greatest energy related challenges and opportunities.
3. Opportunity to ask energy experts questions, prior to polling.
4. Polling questions to gauge participants perspectives on a wide range of energy and environmental issues and choices.

[1] There was also an on-line option developed and administered by the VT DPS but although this showed promise as a future tool to engage the public, it was not fully developed in this process, and is not covered in this paper.

[2] A website was created by the Department of Public Service. This website allowed the project team and the advisory and resource panels to stay abreast of development in the process. It was, however, primarily built for the public to access information about the workshops and relevant documents. See http://www.vermontsenergyfuture.info/

Key Differences:

1. The Regional Workshops were open to all Vermonters and over 800 attended, while the Deliberative Polling™ was a random sample of Vermonters attended by 150.
2. The Regional Workshops were half day events with one round of small group facilitated discussions and one opportunity to ask questions of a panel of experts, while the Deliberative Polling™ event took place over a weekend and had multiple rounds of discussions and questioning (each on different topics).
3. Polling at the Regional Workshops were done using key pad polling technology and participants at each event could see the results of the polling essentially in real-time. The Deliberative Polling™ event used paper surveys, and the results were not immediately available.
4. The Deliberative Polling™ process also administers a nearly identical survey during the telephone recruitment process so it has a pre- and post-event comparison. Only the post survey was administered during the Regional Workshop process.

Vermont retained Raab Associates, Ltd. with assistance from the Consensus Building Institute to design and run the five Regional Workshops, and another team led by the Center for Deliberative Opinion Research at the University of Texas to design and run the Deliberative Polling™ event. Both consulting teams met jointly with the same Advisory Committee and Resource Panel made up of individuals representing diverse points of view (including local utilities, Entergy, VPIRG, VEIC, IBM, RAP and others). This group spent many hours together to help develop background documents distributed to registrants before the event.

The goal was to prepare materials to expose Vermonters to the full range of views concerning planning for Vermont's electricity future and the many issues involved. Given the diversity of views, not all of the advisors or panel members would agree about what Vermont's electricity future should be, but all concur that Vermonters should have the benefit of hearing from a variety of perspectives.

Two pieces of work that were essentially "negotiated" by this group were tables on the relative cost of various options and the range of environmental attributes of each resource. These were not meant to be the final word on these costs and impacts, but a starting place for citizen deliberation. These are shown as Figures 2 and 3.

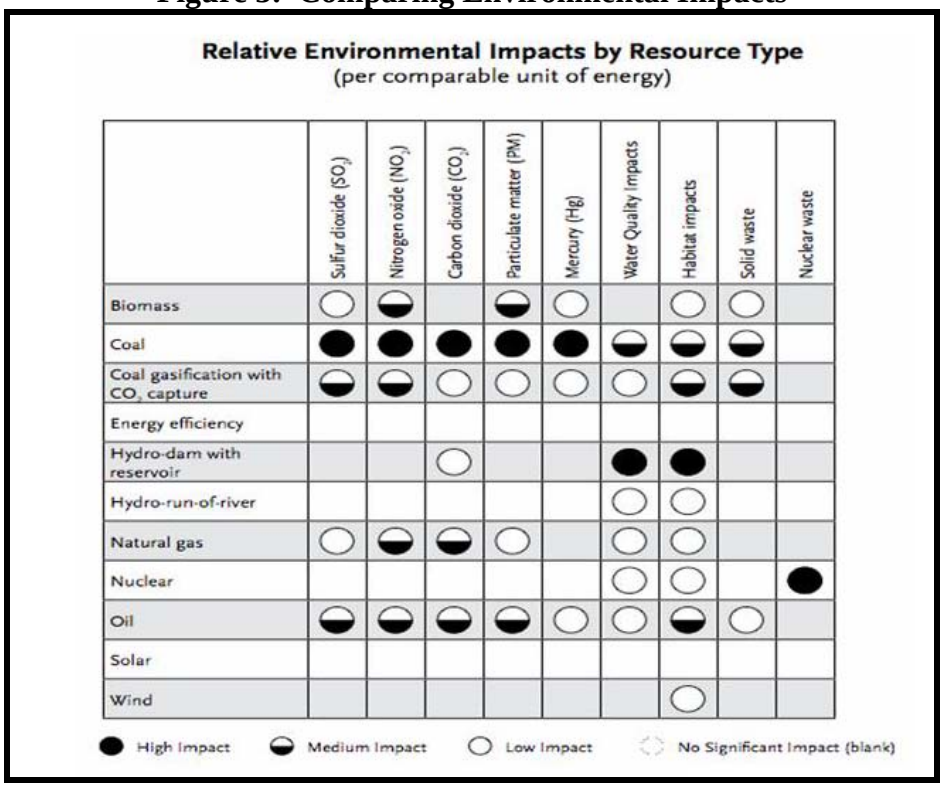
Figure 2: Comparing Relative Costs by Source

Relative Costs for New Electricity Options in Vermont
(in 2007 cents/kwh)

	Capital Costs cents/kwh	Operating Costs cents/kwh	Total Cost cents/kwh
Coal: Pulverized/Circulating Fluidized Bed	3	4	7
Coal: Gasification with CO_2 Sequestration	5	6	11
Energy Efficiency: With Non-Electric Saving	3	0	3
Energy Efficiency: Without Non-Electric Savings	7	0	7
Hydro	6-10	2	8-12
Natural Gas / Oil: Combustion Turbine	7	8	15
Natural Gas / Oil: Combined Cycle	1	6	7
Nuclear	4	2	6
Solar	30	0	30
Wind	9	0	9
Wood	4	5	9

Source: Vermont's Energy Future: Regional Workshops. Vermont Department of Public Service, October 2007. (http://www.vermontsenergyfuture.info/vteng%20appendicies%2011-27-07%20(2).pdf)

Figure 3: Comparing Environmental Impacts



Source: Vermont's Energy Future: Regional Workshops. Vermont Department of Public Service, October 2007. (http://www.vermontsenergyfuture.info/vteng%20appendicies%2011-27-07%20(2).pdf)

The Advisory Committee and Resource Panel also assisted in developing the polling questions used at both the Regional Workshops and Deliberative Polling™ event. Questions covered a wide range of topics about facts, values, preferences, willingness-to-pay and policy choices. The group came up with over 100 questions it was interested in putting before the citizenry. These questions were then pared down and massaged a bit for the two-day Deliberative Polling™ event, and further still for the half-day regional workshops. Most of the questions asked at the Regional Workshops, with some exceptions, were also asked at the Deliberative Polling™ event; however, the Deliberative Polling™ event--having more time--was able to ask more questions.

Participation

Over 800 people attended the five Regional Workshops, with approximately 650 citizens participating in the actual polling, and another 150 either supporting the meetings (presenters, facilitators) or observing. The meetings were well advertised through utility bill stuffers, a wide range of organizational list serves, and both print and radio media spots. Although our Resource and Advisory Committee projected that we wouldn't have over 100 participants at any of the workshops, except possibly at Burlington and the workshop we held near the controversial Vermont Yankee nuclear plant, the regional workshops averaged over 150 participants and two

of the workshops had to be capped when they hit the 200 person room carrying capacity.

The Deliberative Polling™ event ended up with around 150 people for the weekend event. These participants were selected randomly by landline phone numbers, to represent the "typical" Vermonters. It's extremely rare to actually assemble a random sample of any population in one place. These participants were paid a $150 stipend, put up in a nice hotel (accompanied by family members if they wanted), and provided with meals for the weekend.

Prior to the events, there was speculation that the self-selected Regional Workshop attendees would be "greener" and more pro-renewable and pro-energy efficiency while being more anti-nuclear than the random sample of Vermonters. Demographically, the Regional Workshop attendees were a bit more male, well-educated, and younger than the Deliberative Polling™ group -- but not by much. Meanwhile there were both a higher percentage of democrats and republicans in the Regional Workshops than at the Deliberative Polling™ event which had more independents. See Figure 4.

Figure 4: Demographic comparisons between regional workshop and Deliberative Polling™ participants

	Regional Workshops	Deliberative Polling
Number of Participants	652	146
Gender (Male/Female)	60% / 40%	54% / 46%
Average Age	52	54
College Graduate	82%	70%
Political Affiliation: Democrat	46%	23%
Republican	13%	10%
Other*	41%	66%

* Independent, Progressive, other, none

Source: Presentation on Regional Workshops and Deliberative Polling™, Drs. Raab and Luskin 1/25/08

http://www.raabassociates.org/Articles/E-23Presentation.ppt.

As you will see in the next section, the substantive results were very similar on energy efficiency issues and renewable issues between the two public involvement processes, but while the Deliberative Polling™ crowd was completely split on nuclear power related issues, the Regional Workshop participants, on average, were a bit more anti-nuclear.

Substantive Results

One of the last polling questions we asked at the Regional Workshops was *"**Which resource options do you think should be the highest or lowest priorities to meet Vermont's future electricity needs considering all factors (cost, environmental attributes, reliability, etc.)?**"* As you can see from the results, energy efficiency came out at the very top of the list. This was followed by a series of renewable resources (wind, hydro, solar). At the bottom of the list was coal and oil, with nuclear faring a little better. See Figure 5. Although the Deliberative Polling™ event didn't ask for a similar ranking including energy efficiency with the list of other resources, the supply side resources had a very similar ranking except that nuclear was more in

the middle of the pack.

Figure 5: Resource Priorities of Regional Workshops Participants

REGIONAL WORKSHOPS

Which resource options do you think should be the highest or lowest priorities to meet Vermont's future electricity needs considering all factors (cost, environmental attributes, reliability, etc.)?

Resource	High %	Low %	Difference	Rank
Energy Efficiency	25%	1%	24%	1
Wind	22%	2%	20%	2
Hydro	15%	0%	15%	3
Solar	16%	2%	14%	4
Wood	8%	2%	6%	5
Methane from farms or landfill	7%	2%	5%	6
Natural gas	1%	8%	-6%	7
Nuclear	6%	24%	-19%	8
Oil	0%	27%	-27%	9
Coal	1%	32%	-32%	10

mean n = 507

Source: Presentation on Regional Workshops and Deliberative Polling™, Drs. Raab and Luskin 1/25/08.

http://www.raabassociates.org/Articles/E-23Presentation.ppt.

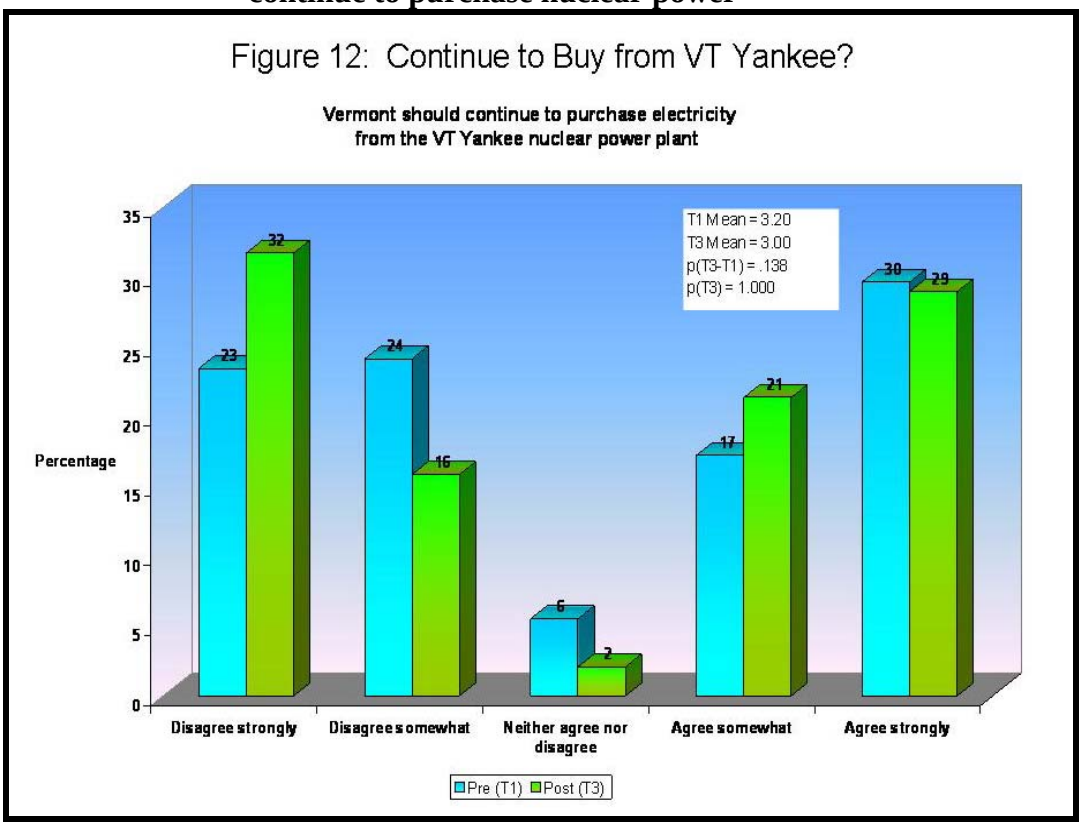
Both events did ask whether Vermonters would prefer to "***Meet as much of its electricity needs as possible by increasing how efficiently consumers use electricity* (1)" or "*Meet its electricity needs entirely by generating or buying more electricity* (7)**" on a scale of 1-7, the mean was 1.8 for the Regional Workshops and 2.5 for the Deliberative Polling™ event, indicating a strong preference for energy efficiency.[3]

When citizens in both processes were asked, "***Over the Next 10 Years, Would You Like to See Vermont Increase (1) -- Decrease (3) Funding for Energy Efficiency Programs***", the mean of both the Regional Workshops and Deliberative Polling™ were identical at 1.2. This very strong support for increased funding came on the heels of both the background document and presentations/discussions at the events underscoring the fact that Vermont already spent the most money on energy efficiency on a per capita basis in the US--not including the soon-to-take-effect increases recently approved by the Vermont Public Service Board.

On the concept of dynamic pricing, when asked "***The rate Vermonters pay for electricity should be higher when the cost of generating it is higher and lower when the cost of generating it is lower. Do strongly agree (1) to strongly disagree (5),***" the Regional Workshop mean was 1.9 and the Deliberative Polling™ mean 2.2.

[3] In this paper we primarily report the means for each question; however, the distributions are often quite informative—some clustering tightly around the mean and others much more distributed, if not polarized. The distributions are available in the final reports for the process. See website above

Figure 6: Respondents were strongly divided in their opinion on whether to continue to purchase nuclear power



Source: Vermont's Energy Future: A Deliberative Polling™ Event, Vermont Department of Public Service, November 2008 (http://www.vermontsenergyfuture.info/Vermont's%20Energy%20Future.pdf

Some of the highlights from the polling results from both events on some of the other issues less directly related to energy efficiency, but fascinating nonetheless include the following (Regional Workshop means followed by Deliberative Polling™ means):

1. Strong willingness to require minimum annual percentages of renewables (like through an RPS which Vermont does not currently have) (1.6/1.6, scale 1-7);
2. Expressed willingness to pay $29/month extra for electricity "entirely from renewables" at the Regional Workshops, and also $29/month extra for electricity "entirely from non-polluting resources" at the Deliberative Polling™ event;
3. Strong support for wind farms that are visible from "where you live" (1.6/1.4, scale 1-5);
4. Strong inclination to include indirect costs like those associated with environmental externalities instead of just the direct costs of building and operating power plants (mean 6.3/6.3, scale 1-7);
5. Strong desire for small, decentralized power plants over large, centralized ones (5.2/5.6, scale 1-7);
6. Strong willingness to continue to contract for power with Hydro Quebec (1.8/1.7, scale 1-7);
7. Strong split on whether to continue to contracting for power with Vermont (nuclear)

Yankee (3.7/3.0, scale 1-7--See Figure 6) for Deliberative Polling™ results.

Probably underlying most of the answers to the resource specific questions above are Vermonters' fundamental values. When asked to rank how important each of eleven different goals should be in meeting Vermont's future energy needs, the Regional Workshop and Deliberative Polling™ participants were identical in the top and bottom three.

Highest Priorities:

Minimizing air pollution
Reducing GHG emissions
Electricity from resources that will never be used up

Lowest Priorities:[4]

Stable electricity rates
Low electricity rates
Avoiding facilities that detract from scenic beauty

The fact that Vermont ratepayers placed electricity prices and scenic beauty issues on the bottom of their goals list surprised some observers, but is consistent with how they answered most of the other policy choice questions.

The Deliberative Polling™ questionnaires captured responses both pre-and post-event which in theory attempts to capture what an informed population might think, rather than traditional polling which simply captures citizen opinion at the moment, generally absent any education. For some questions there was no statistically significant change before and after, but for other questions there was substantial movement. For instance, when they asked citizens before the process what percentage of Vermont's supply should ideally come from wood the mean was 8.6%, while after the event the percentage rose to 13.5%. See the Deliberative Polling™ final report for more details on the changes that can be attributed to the process. (Luskin)

Process Cost and Value

It's worth noting that the entire process, including working with the Advisory Group and Resource panel, producing the background document and developing the polling questions, running the Regional Workshops and Deliberative Polling™ event, and producing a final report cost around $0.5 million--approximately $350k for the Deliberative Polling™ portion and $150k for the Regional Workshops. It's further worth noting that the citizen participants enjoyed participating in the processes. The mean on the various evaluation questions, with 1 being "not valuable" and 5 being "very high value", ranged from 3.5 to 4.1. Similarly, about 90% of the citizens found the Deliberative Polling™ event extremely valuable.

The Regional Workshops and Deliberative Polling™ event received a lot of press in Vermont. Vermont's Commissioner of the Department of Public Service participated in all of the Regional Workshops (each of which ended with an open mike to provide the opportunity for citizens to address the Commissioner directly) as well as the Deliberative Polling™ event.

[4] Although these 4 were relatively lower priority they were not unimportant to Vermonters still scoring in the range of 4-6 for the Regional Workshops and 4-7 in the Deliberative Polling™ on a scale of 0-10.

About a month after the event, after compiling and analyzing all the data, the consultants met separately with the Advisory Committee/Resource Panel to debrief, as well as with the energy-related committees of the legislature, and all of the Vermont utilities that expect to incorporate the information in their on-going least cost planning processes.

CONCLUSIONS

All indications are that the future will present more significant choices and difficult dilemmas concerning electric power than most states have seen recently.

- To what degree will the volatile price of natural gas be acceptable in a power resource portfolio?
- Will nuclear power plants be useful, and if so, will they be acceptable?
- Will the incremental cost of carbon capture and sequestration be necessary and worthwhile to maintain coal as an option for a new generation?
- To what extent should the landscape be used for wind machines?
- How should energy efficiency and customer sited generation be evaluated?
- To what extent will these answers change under a national carbon policy that, for example, reduces the current rate of carbon emissions by 80% over 40 years?

Utilities and regulators can gain valuable insight from the public. Even in retail competition states, there is a movement to restore some public control over future resources. Elected officials are responsible for incorporating the public interest into the statutes, yet changes in global and national energy imperatives may sweep through the population before policymakers realize it.

We expect that the public will take increasing interest in these matters as the scale of the investments increase, such as when consumers are asked to take risks in the form of 500 – 1,200 MW coal and nuclear units, as the carbon challenge becomes more obvious. An important lesson from the 1970s and 1980s is that the public can become very involved in energy choices that they do not like. The public can be easily frustrated and jaded by a system in which laypeople have no real place. While the average person may not become a power resource expert, it is reasonable to expect some level of literacy about the various options if assistance is provided. Engaging the public involves maximizing the opportunities for two-way communication before billions of dollars of commitments are made on its behalf, improving the prospect of public consent.

Energy efficiency fared well in the Vermont public responses. This is consistent with the overall message of sustainability and minimizing environmental impacts from electric use, and also indicates that the public has an appreciation of the value of energy efficiency.

The Vermont process was, in our view, a sincere and meaningful process Given Vermont's scale, on first blush it may appear to have been a costly process—but relative to the hundreds of millions of dollars Vermonters will spend on electricity over the next decade or two, it may well have been a bargain.

The goodwill that was developed during the process will likely dissipate unless some

continuing effort is established to maintain two-way communication with the public. In this, the utilities and the state each have a role. Utilities can identify specific electric resource concerns early, and engage their customers in open-ended ways to discuss possible responses. Central Vermont Public Service, in a separate paper in these proceedings, is dealing with transmission system issues with this approach. (Plunkett 2006, Plunkett, 2008) The state can stage public engagement opportunities on a periodic basis, seeking ever-more streamlined and cost effective approaches. An expectation that the state is maintaining this public engagement priority can improve its credibility and processes when difficult and controversial siting and investment proposals emerge, as they will. The state's role would also have to be supported in the annual state budget process.

In our view, this approach to public engagement can be applied in any state or utility service area. The Vermont process took time at the beginning to determine what would be most useful to its stakeholders, and any other state or utility undertaking a similar effort should commit adequate time to this stage to maximize the overall value of the process.

The key elements of a public engagement:

- give unbiased and balanced information;
- promote discussion in an open environment, welcoming of all views;
- get responses to policy questions of the moment;
- publicize, value and reflect the responses received;
- sustain process over time, even in the absence of pressing matters.

REFERENCES

Bodin, Madeline. "The Power of Public Opinion." Champlain Business Journal, March 2008

Luskin, Robert C., D. B Crow, J. S. Fishkin, W. Guild, D. Thomas. 2008, "Report on the Deliberative Poll on Vermont's Energy Future," Center for Deliberative Opinion Research, University of Texas at Austin,. A copy of this report is available at http://www.vermontsenergyfuture.info/Results%20and%20reports.html

Plunkett, John, F. Wyatt, J. Kleinman, B. Bentley. 2006. "Walking the Walk" of Distributed Utility Planning: Deploying Demand-Side Transmission and Distribution Resources in Vermont's "Southern Loop," In Proceedings of the ACEEE 2006 Summer Study on Energy Efficiency in Buildings, panel 5. Washington, D.C.: American Council for an Energy-Efficient Economy.

Plunkett, John, B. Bentley. 2008. "Walking the Walk: Considering Non-Transmission Alternatives in Utility Planning, Part Deux," ACEEE Summer Study on Energy Efficiency in Buildings, forthcoming.