

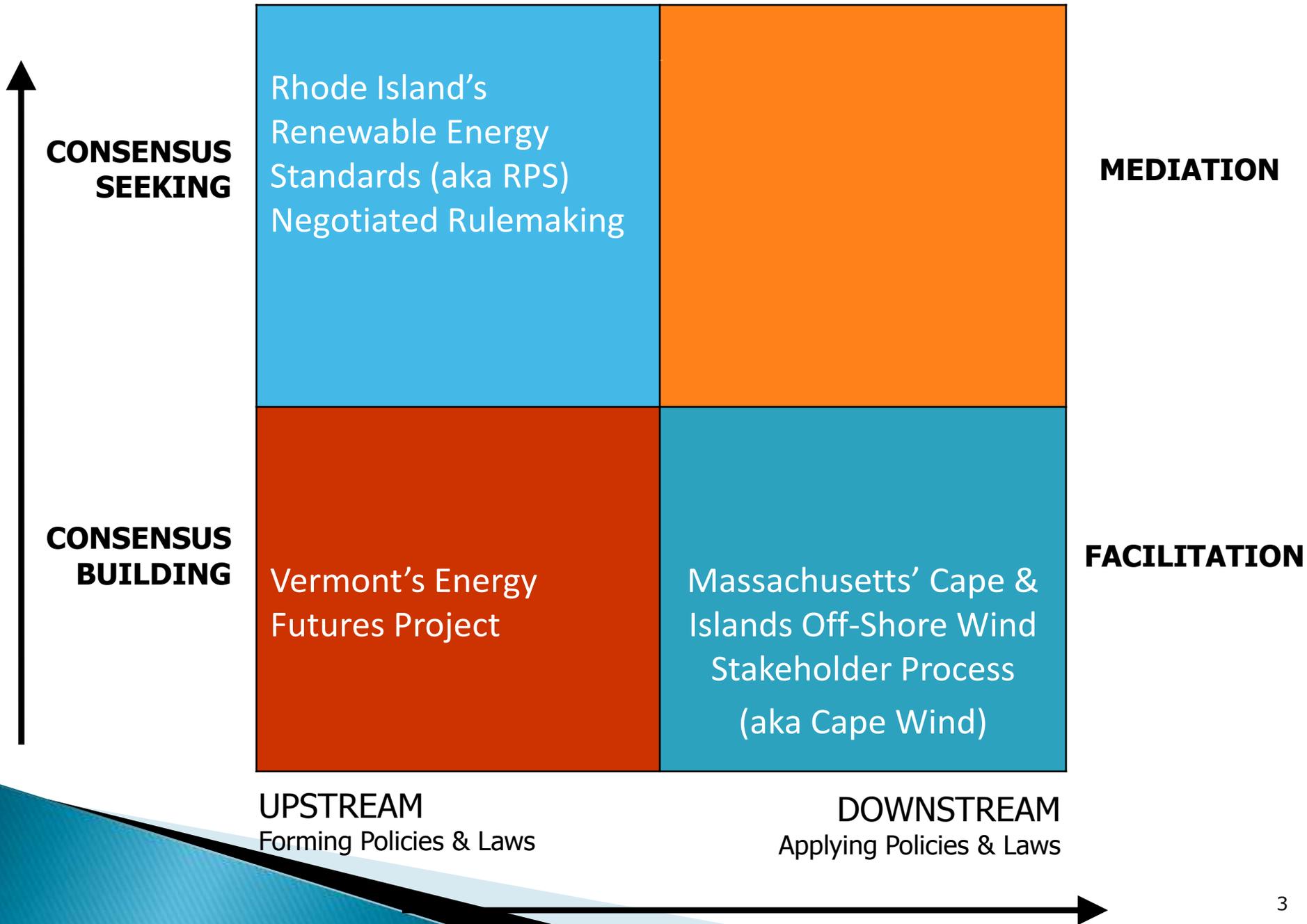
# Improving Stakeholder and Citizen Engagement on Wind Siting and Policymaking

Dr. Jonathan Raab, Raab Associates, MIT, CBI  
Social Challenges of Wind Energy Conference  
Plymouth, Massachusetts  
November 9, 2010

# Outline of My Talk

- ▶ Three case studies
  - RI RPS
  - Cape Wind
  - Vermont's Electricity Future
- ▶ Six Principles of Stakeholder Engagement on Wind/Transmission Issues
- ▶ U.S. DOE Wind Collaboration Training

# New England Wind Related Stakeholder Process Examples



# RI Renewable Energy Standards 2005

# RI Renewable Energy Standards Substance

- ▶ RES (RPS) requires 16% of all electricity sold in Rhode Island to come from renewable energy resources by 2020.
- ▶ RI PUC regulations specify all the details implementing RI Legislation which is one of 52 options from 2002 RI GHG Plan developed by Stakeholders to meet N.E. Governors' / Eastern Canadian Premiers' 2010 and 2020 GHG targets.

# RI Renewable Energy Standards Process

- ▶ RI PUC develops regulations through negotiated rulemaking process.
- ▶ Over 15 parties, Raab Associates mediated
- ▶ Agreed on 41 page report including draft regulations
- ▶ Resolved all but a very few issues, that were decided by PUC before issuing final rules in December 2005.

# Cape Wind Stakeholder Process 2002-2004

# Cape Wind Stakeholder Process

- ❖ Raab Associates hired by the Massachusetts Technology Collaborative to design and facilitate a Stakeholder process
- ❖ Goal of the process was for stakeholders to gain familiarity with the proposed project so they could better participate in formal “notice and comment” process after the draft EIS released by the Army Corp of Engineers, including:
  - ❖ A better understanding of the potential benefits and impacts associated with the proposed project
  - ❖ A better understanding of the interests, hopes, and concerns of a broad cross-section of stakeholders responding to the proposed project
- ❖ Goal was not to reach consensus on the project

# Stakeholder Group Established

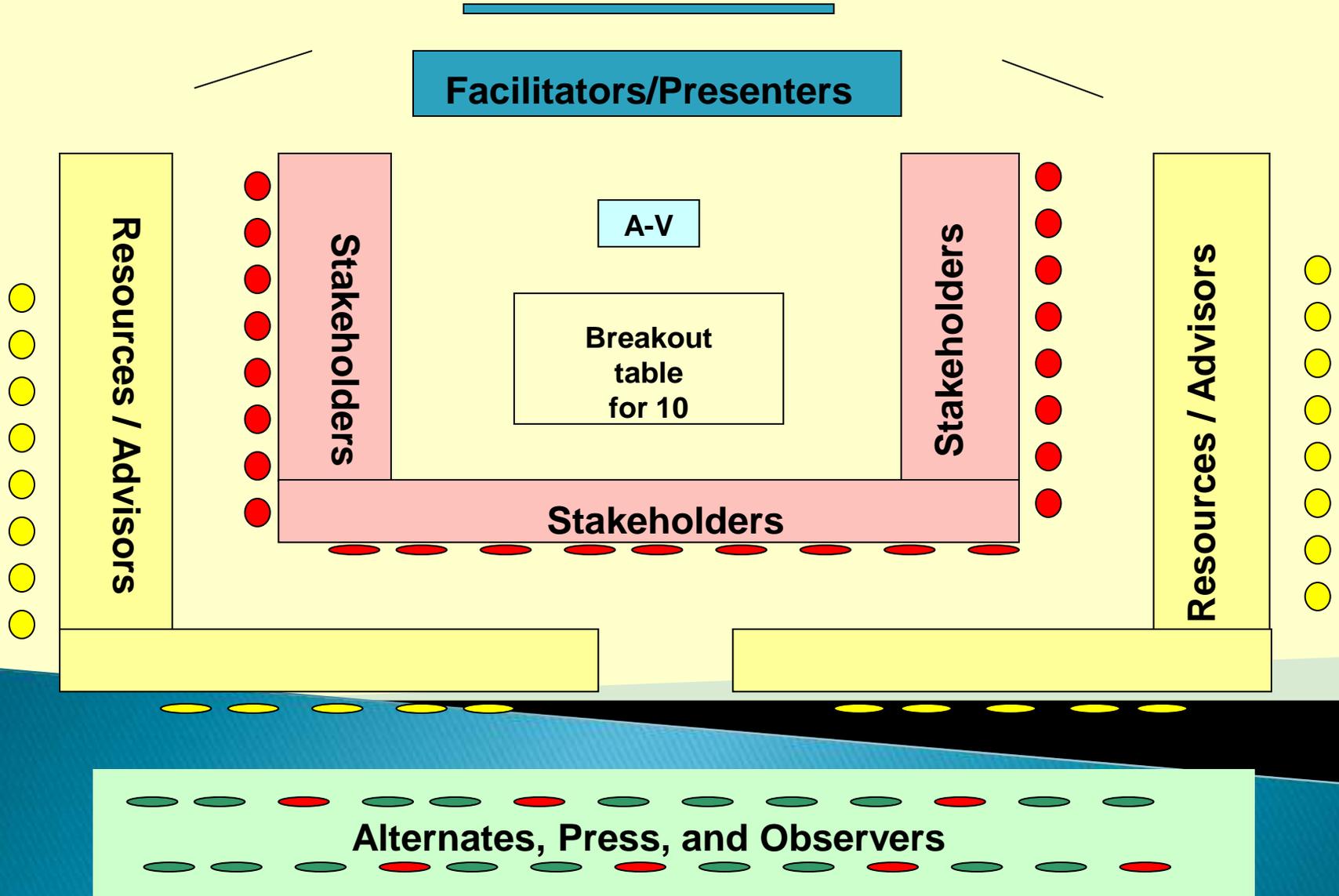
- ❖ Stakeholder Group comprised of 24 local business, environmental, and government organizations
- ❖ Resource/Advisor panel comprised of over 25 State and Federal Agencies, academics, and others
- ❖ Public invited to attend and participate as time permitted

# Stakeholder Members

<u>Organization</u>	<u>Representative</u>
Alliance to Protect Nantucket Sound	Isaac Rosen
Association to Preserve Cape Cod	Margaret Geist
Barnstable Land Trust	Jaci Barton
Barnstable Town Council	Gary Blazis
Cape & Islands Renewable Energy Collaborative	Chris Powicki
Cape & Islands Self-Reliance Corp.	Megan Amsler
Cape Clean Air	Charles Kleecamp
Cape Cod Chamber of Commerce	John O'Brien
Cape Cod Technology Council	Spyro Mitroskostos
Cape Light Compact	Fred Fenlon
Cape Wind	Jim Gordon

<u>Organization</u>	<u>Representative</u>
Center for Coastal Studies	Peter Borrelli
Conservation Law Foundation	Steve Burrington
Hyannis Marina	Wayne Kurker
League of Women Voters	Jean Mangiafico
Martha's Vineyard Planning Commission	Bill Veno
Massachusetts Audubon Society	Jack Clarke
Massachusetts Commercial Fishing Association	Ron Borjeson
Massachusetts Public Interest Research Group	Frank Gorke
Nantucket Planning Commission	John Pagini
Sierra Club of Cape Cod	Chris Neill
Town of Yarmouth	Jack McCormack

# Cape Wind Seating Chart



# Schedule and Structure

- ❖ **7 day-long meetings, from Oct. 2002 to June 2004**
- ❖ **Generally covered 2 topics per meeting with panels of experts—usually with different points of view**
- ❖ **Both the developer and the Corps of Engineers participated in all meetings**



# Cape & Islands Offshore Wind Process

*Meeting #3: November 21, 2002*

## ***November 21***      **Panel 1: Visual Impacts**

***Goal: To better understand what the proposed Cape Wind project might look like.***

### **Agenda:**

- **Cape Wind (visual model)**
- **Alliance to Protect Nantucket Sound (visual model)**
- **Visual Modeling of Other Wind Projects/Proposals**
- **Video on Offshore Wind Development in Europe**

# Divergent Views on The Visual Impacts of Proposed Project

- ❖ **“Industrialization of Nantucket Sound”**
- ❖ **“Elegant Testimonial to Our Technical Ingenuity”**
- ❖ **“One Butterfly is a Beautiful Thing, But If I’m Locked in a Small Closet With 130 of Them, That’s Claustrophobic”**

# EXISTING TURBINES

Middelgrunden wind power plant

20-turbine complex near the coast of Copenhagen, Denmark



## Middelgrunden

Hub height: 210 feet

Rotor diameter: 250 feet

Distance from shore (mi.): 3.7

## Cape Wind

Hub Height: 252 feet

Rotor diameter: 328 feet

Distance from shore (mi.): 4-5

# *Cotuit - 50 mm Simulation of Proposed Wind Farm*



# LOOP BEACH, COTUIT



## *Hyannis – 50 mm Simulation*



# SEA ST. BEACH, HYANNIS



# *Oak Bluff - 50 mm Simulation*



# OAK BLUFFS, MV



# *Edgartown - 50 mm Simulation*



# *Nantucket - 50 mm Simulation*



# Proper Viewing of Slides

- ❖ **Standing the correct distance from the screen story**
- ❖ **Capturing the Woody Allen true thought bubbles (what are stakeholders and citizens really thinking?)**

# Interesting Visual Impacts Questions

#1: Which set of simulations paints the project in a more favorable light?

- ▶ Developers
- ▶ Opponents
- ▶ Both about the same

## *Blade Rotational Alignment*

- **It is very unlikely that 170 wind turbine blades will align at any given time.**



**Earth Tech – Blades all in the same rotational position**



**EDR – Blades are all in random positions**

# Interesting Visual Impacts Questions

#2: How do these visual impacts stack up against your preconceived notions? (worse, better, about the same)

#3: How would you rank the aesthetics of the proposed Cape Wind Project? (1 “Ugly” to 6 “Beautiful”)

# Interesting Visual Impacts Questions

#4: How do you compare the visual impacts to the benefits of the project?

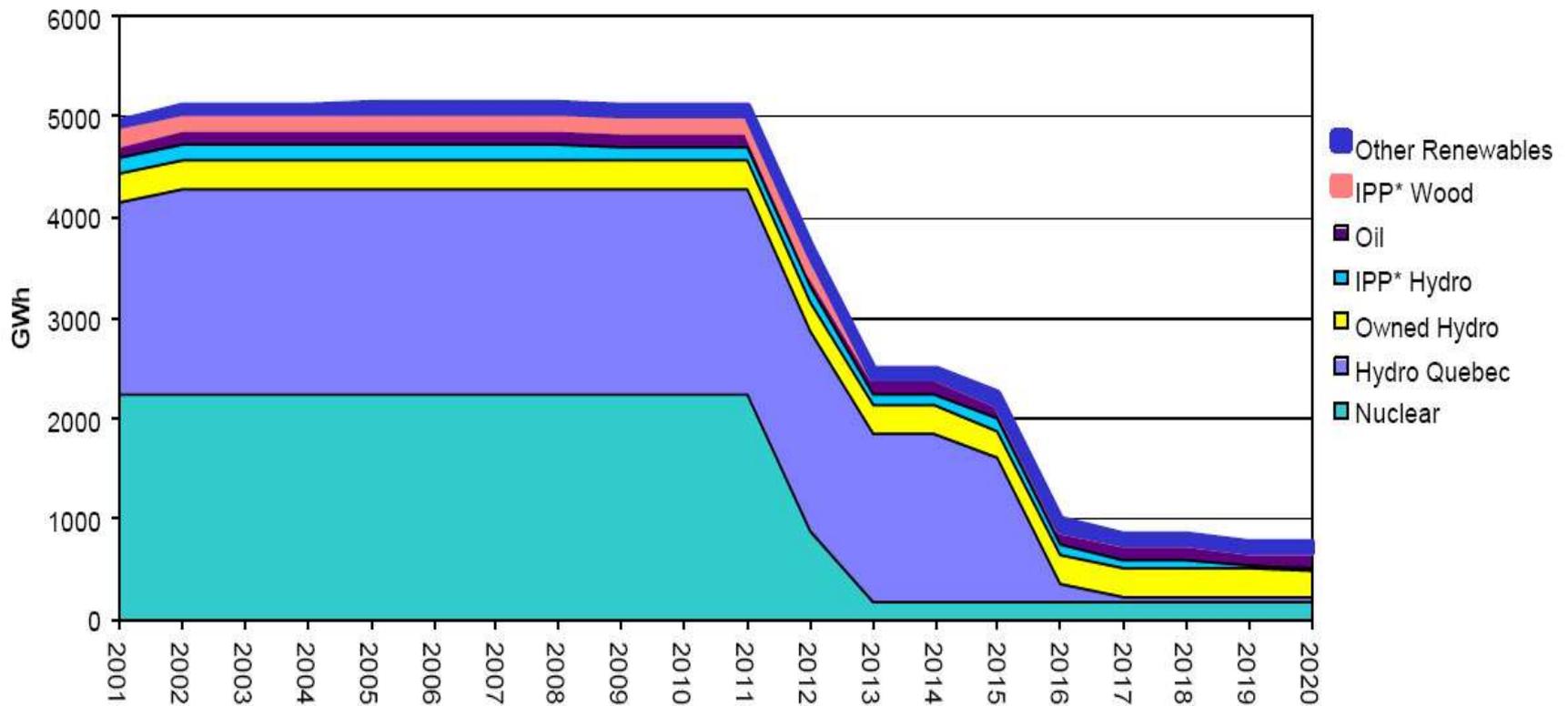
- ▶ Adverse visual impacts outweigh the benefits
- ▶ Benefits trump the visual impacts
- ▶ It's a toss up

# Visual Impacts Discussion

- ❖ **Structuring a difficult, value-based conversation**
  - ❖ **Are the aesthetics of wind farms strictly in the eyes of the beholder?**
  - ❖ **How do we make the trade-offs between localized visual impacts vs. regional energy/reliability benefits and regional (acid rain, smog) and global environmental benefits (climate change)**

# Vermont's Energy Future Project 2006–2007

# Why Consider the Future Now?



# Governor Douglas

- ▶ Governor Douglas wanted to know what Vermont's Citizens (not what its lobbyists and traditional stakeholders) think Vermont and its utilities should do
- ▶ Generally, Governor is
  - Supportive of nuclear power
  - Skeptical of wind

# What was the VT Electricity Futures Process?

- ▶ **Advisory and Resource panels** of diverse interests helped prepare background documents & polling questions (aka traditional stakeholders)
- ▶ **Five regional workshops** across the state hosted to gather public input in October from over 650 Vermonters
- ▶ **A Deliberative Polling©** event of 140+ randomly selected Vermonters in November
- ▶ **On-line** effort to disseminate information and allow for additional input

# The Projects' Advisors

- ▶ Steve Blair, IBM
- ▶ Steve Costello, Central Vermont Power
- ▶ Robert Griffin, Green Mountain Power
- ▶ David Lamont, Dept. Public Service
- ▶ James Matteau, Windham Regional Commission
- ▶ James Moore, VT Public Interest Research Group
- ▶ Patricia Richards, VT Public Power Supply Authority
- ▶ Rich Sedano, Regulatory Assistance Project

# The Project's Resource Panel

- ▶ Patrick Haller, VT Energy Efficiency, Inc.
- ▶ John Irving, Burlington Electric (biomass)
- ▶ Kerrick Johnson, VELCO (transmission)
- ▶ David McElwee, Entergy (nuclear)
- ▶ Andrew Perchlik, Renewable Energy VT
- ▶ Sylvie Racine, Hydro-Québec
- ▶ Eileen Simolardes, Vermont Gas
- ▶ John Zimmerman, VT Environmental Research Assoc. (wind)

# Comparing Environmental Impacts

**Relative Environmental Impacts by Resource Type**  
(per comparable unit of energy)

	Sulfur dioxide (SO <sub>2</sub> )	Nitrogen oxide (NO <sub>x</sub> )	Carbon dioxide (CO <sub>2</sub> )	Particulate matter (PM)	Mercury (Hg)	Water Quality Impacts	Habitat impacts	Solid waste	Nuclear waste
Biomass	○	◐	◐	◐	○	◐	○	○	◐
Coal	●	●	●	●	●	◐	◐	◐	◐
Coal gasification with CO <sub>2</sub> capture	◐	◐	○	○	○	○	◐	◐	◐
Energy efficiency									
Hydro-dam with reservoir			○			●	●		
Hydro-run-of-river						○	○		
Natural gas	○	◐	◐	○		○	○		
Nuclear						○	○		●
Oil	◐	◐	◐	◐	○	○	◐	○	
Solar									
Wind							○		

● High Impact    ◐ Medium Impact    ○ Low Impact    ○ No Significant Impact (blank)

# Regional Workshop Agenda

- 5:00 Registration and light dinner
- 6:00 Welcome (*Commissioner David O'Brien*, VT DPS),  
Overview (*Jonathan Raab*, Raab Associates), and  
Demographic Polling (*Patrick Field*, CBI)
- 6:20 Presentation: Vermont's Current Electricity System,  
Upcoming Challenges, and Future Options (*Dave Lamont*, VT  
Department of Public Service)
- 6:40 Facilitated Discussions: Most Significant Challenges and  
Promising Options for Vermont, and Additional –Questions  
for Panel
- 7:35 Break
- 7:50 Panel Responds to Questions
- 8:45 Polling on Most Significant Challenges and Best Options for  
Vermont (*Patrick Field*, Moderator)
- 9:30 Open Mike for Participants to Make Brief Additional  
Comments
- 10:00 Adjourn (when comments done)

# Deliberative Polling© Process

- ▶ Draw random sample
- ▶ Interview and invite to event
- ▶ Two-day event, alternating between small group discussions (led by trained moderators) and plenary Q & A's with policy experts and policy makers
- ▶ Re-administer same questionnaire

## How Concerned Are You About Each of the Following?

	Regional Workshops	Rank	Deliberative Polling	Rank
Greenhouse Gases	8.5	1	8.6	1
Radioactive Wastes	8.1	2	7.8	3
Other Air Pollution	7.8	3	8.4	2
Damage to River Habitats from Hydro	5.4	4	6.4	4
Visual Impacts of Wind	1.7	5	3.0	5

0 = not at all concerned  
10 = extremely concerned

## How Important is Each of the Following Goals in Meeting Vermont's Future Energy Needs?

	Regional Workshops	Rank	Deliberative Polling	Rank
Minimizing Air Pollution	8.8	1	9.3	1
Reducing GHG Emissions	8.8	2	9.0	3
Electricity from Resources that Will Never Be Used Up	8.6	3	9.3	2
Reducing Dependence on Overseas Energy	8.5	4	8.5	5
Reducing Radioactive Wastes	8.3	5	8.1	7
Reliable Supply of Electricity	8.0	6	8.9	4

0 = not at all important  
10 = critically important

## How Important is Each of the Following Goals in Meeting Vermont's Future Energy Needs (continued)?

	Regional Workshops	Rank	Deliberative Polling	Rank
Creating Jobs in Vermont	7.3	7	8.2	6
Using Power Produced in Vermont	5.8	8	7.6	8
Stable Electricity Rates	5.4	9	6.7	9
Low Electricity Rates	4.9	10	6.5	10
Avoiding Facilities that Detract from Scenic Beauty	4.4	11	4.8	11

0 = not at all important  
10 = critically important

# 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



# How Much of a Threat to Vermont's Scenic Beauty is Each of the Following?

	Regional Workshops	Deliberative Polling
Coal Plant	7.9	8.9
Natural Gas Plant	5.4	5.9
Utility Scale Wind Farm	2.5	2.7
Residential Scale Wind Farm	0.9	1.8

0 = no threat at all  
10 = extremely serious threat

## Response Comparisons

	Regional Workshops	Deliberative Polling
A Wind Farm Visible from Where you Live	1.6	1.4

1 = strongly support  
5 = strongly oppose

## Response Comparisons

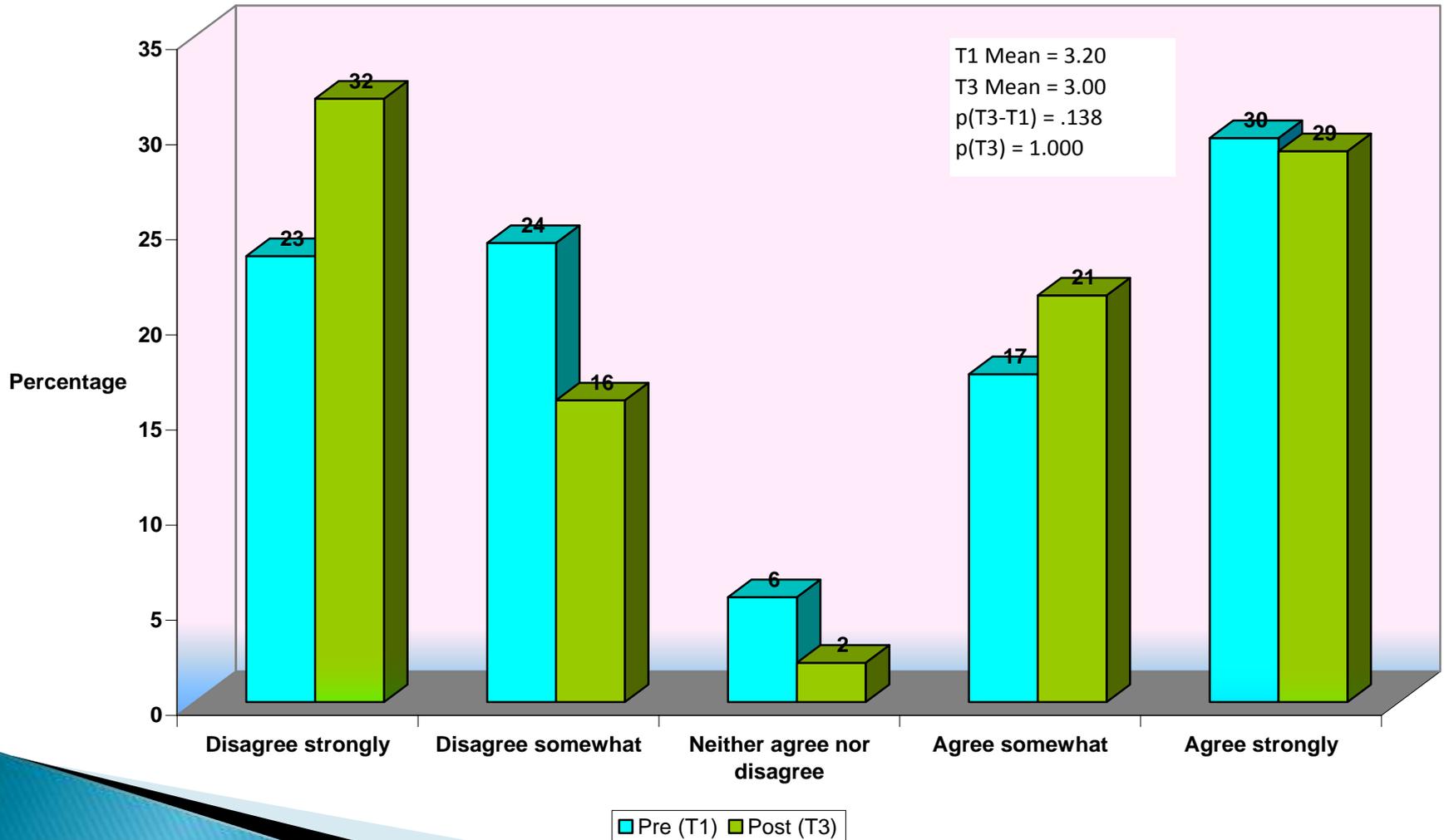
Over the Next 10 Years, Would You Like to See Vermont Increase (1) -- Decrease (3)		
	Regional Workshops	Deliberative Polling
Percentage of Electricity from Renewables	1.1	1.0
Funding for Energy Efficiency Programs	1.2	1.2

# Response Comparisons

How Much Extra Are You Willing to Pay Per Month for Electricity that is,		
	Regional Workshops	Deliberative Polling
Entirely from Renewables	\$29	
Entirely from Non-Polluting Resources Producing no GHG or Nuclear Waste		\$29
Entirely from Smaller Decentralized Plants	\$24	\$19
Entirely from In-State Resources	\$20	\$18

Figure 12: Continue to Buy from VT Yankee?

Vermont should continue to purchase electricity  
from the VT Yankee nuclear power plant



# 6 Principles for Wind Related Consensus Building

Dr. Jonathan Raab / Prof. Larry Susskind

1. Initiate stakeholder involvement process as early as possible and set realistic but firm timetables
2. Include broad representation of legitimate stakeholder groups (including government agencies, and for site-specific projects, citizen groups)
3. Seek consensus, and consider using professional neutrals to facilitate collaborative decision-making

# Raab and Susskind (continued)

4. Do not exclude contentious issues, instead seek ways to address negative aspects of any proposal (including compensation, contingent agreements)
5. Consider incorporating alternative siting processes (such as voluntary processes, pre-approval, competitive solicitations)
6. Structure stakeholder involvement processes to supplement but not supplant formal back-stop process, while modifying formal processes to better accommodate consensus building opportunities

# Training: Advancing Wind Energy Through Collaborative Processes

Consensus Building Institute and Raab Associates  
*Sponsored by the US Department of Energy*

# Training Overview

- ▶ Develop a (repeatable) 3-day interactive training on collaborative problem solving around wind siting and policymaking
- ▶ Target audience: state officials and other stakeholders including local and federal government, wind developers, NGOs, etc.
- ▶ First training at Harvard in March for up to 50 from across U.S.

# Training: Wind Process Problem Areas

1. **Stakeholders:** Many current processes do not adequately identify and engage stakeholders and citizens
2. **Interests:** Many current processes do not adequately surface or address stakeholders' interests
3. **Perceptions:** Different perceptions of aesthetics and noise are difficult to resolve.
4. **Facts:** Many processes use technical data and analysis that are not credible and salient
5. **Forecasting:** Stakeholders argue about different views about the future (*vis à vis* data)
6. **Jurisdiction:** There are multi-jurisdictional conflicts and inconsistencies
7. **Duration:** Timelines are long and parties, issues, and politics may shift
8. **Transmission links:** Integration and interface between wind and electric system are more complex than with traditional generation

# Training: Agenda/Approach

- ▶ Modules by problem statement, examples from case research, and prescriptions
- ▶ Two interactive, tailored negotiation simulations
- ▶ Vignettes, video clips, brief cases
- ▶ Panel of participants on key issues
- ▶ Clinic to share participant challenges and obtain peer advice

# Tools and Techniques Covered During Training

- ▶ Conflict/situation assessments
- ▶ Joint fact finding
- ▶ Using visual simulation tools, overlay techniques, and other tools with stakeholders
- ▶ Citizen engagement techniques and tools—e.g., keypad polling, charrettes
- ▶ Negotiated rulemaking
- ▶ Facilitation/mediation

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