

Cape Light Compact Executive Committee & Governing Board Meeting

DATE: Wednesday, April 13, 2016
LOCATION: Innovation Room, Open Cape Building
3195 Main Street, Barnstable County Complex
TIME: 11:30 – 4:30 p.m.

AGENDA

- 11:30 – 11:40 Public Comment
11:40 – 11:50 Approval of Minutes: CLC Board and Executive Committee
11:50 – 12:00 Treasurer's Report, Potential Vote to Ratify Treasurers' Approval of Contracts
12:00 – 12:10 Chairman's Report
12:10 – 12:20 Administrator's Report: 1st Draft of FY17 Operating Budget, Update on Administrative Services Agreement, M Downey out-of-state-travel request
12:20 – 12:30 Board Member Update (Reserved for Updates on Member Activities the Chair Did Not Reasonably Anticipate Would be Discussed – No Voting)
- Break for Working Lunch
- 1:00 Discussion and Potential Vote on Proposed Supplemental Budget Request for FY16 Operating Fund
- 1:20 Energy Efficiency Update
1. Discussion and Potential Vote on Clarifying Commercial & Industrial Programs – Policy for Non Profits, Margaret Song
- 1:40 Presentation and Discussion on Grid Modernization and Plans filed by Massachusetts Distribution Companies (DPU 15-120 and 15-122), and Overview of Micro Grids, Austin Brandt and Kevin Galligan
- 2:40 Open Session Vote on entry into Executive Session pursuant to M.G.L. c. 30A §21(a)(3) and Section 21(a)(10) to discuss:
1. Litigation strategy discussion regarding Electric Distribution Companies and Interstate Natural Gas Pipeline Capacity Contracts, DPU 15-181, DPU 16-05 and DPU 16-07, which includes a discussion of confidential, competitively sensitive or other proprietary information that if disclosed during open session will adversely affect the Compact's ability to conduct business in relation to other entities making, selling or distributing electric power and energy; and
 2. Litigation strategies related to Grid Modernization and Plans filed by Massachusetts Distribution Companies (DPU 15-120 and 15-122)
 3. Confidential power supply contracts including trade secrets or confidential, competitively-sensitive or other proprietary information if it is determined that disclosure will adversely affect its ability to conduct business in relation to other entities making, selling or distributing electric power and energy

**Cape Light Compact
Governing Board and Executive Committee
Open Session Meeting Minutes
Wednesday, March 9, 2016**

The Cape Light Compact Governing Board and Executive Committee met on Wednesday, March 9, 2016 in the Innovation Room, Open Cape Building, Barnstable County Complex, 3195 Main Street, Barnstable MA 02630 at 2:00 p.m.

PRESENT WERE:

1. Joyce Flynn, Chairwoman, Yarmouth
2. Robert Schofield, Vice-Chair, Bourne
3. Peter Cocolis, Treasurer, Chatham
4. Jack Yunits, Barnstable County until 3:25 p.m.
5. Richard Toole, Member at Large, Oak Bluffs
6. David Anthony, Barnstable
7. Deane Keuch, Brewster
8. Brad Crowell, Dennis - by phone from 2:00-2:30 p.m.
9. Frederick Fenlon, Eastham – by phone
10. Valerie Bell, Harwich
11. Thomas Mayo, Mashpee
12. Thomas Donegan, Provincetown – by phone
13. Joshua Peters, Sandwich
14. Richard Elkin, Wellfleet
15. Sue Hruby, W. Tisbury

ABSENT WERE:

16. Michael Hebert, Aquinnah
17. Tim Carroll, Chilmark
18. John Ally, Dukes County
19. Paul Pimentel, Edgartown
20. Ronald Zweig, Secretary, Falmouth
21. Raymond Castillo, Orleans
22. Tisbury – vacant
23. Joseph Buteau, Truro

Members physically present: 12
Members participating by phone: 3

LEGAL COUNSEL

Audrey Eidelman, Esq., BCK Law, PC

STAFF PRESENT:

Maggie Downey, Administrator
Meredith Miller, EM&V Manager
Margaret Song, Commercial & Industrial Program Manager
Austin Brandt, Power Supply Planner
Lindsay Henderson, Data Analyst & Marketing Coordinator
Don Mauritz, Commercial & Industrial Program Analyst
Karen Loura, Administrative Assistant

CONSULTANTS

Kevin Galligan, Galligan Energy Consulting, Inc.

Chr. Flynn called the meeting to order at 2:00 p.m. stating the Meeting Notice/Agenda had been duly posted on the Cape Light Compact website in accordance with the Open Meeting Law. The Chair acknowledged remote participation of B. Crowell, F. Fenlon and T. Donegan who were unable to attend due to other obligations.

PUBLIC COMMENT

There were no members of the Public present.

CONSIDERATION OF MEETING MINUTES

The Board considered the February 10, 2016 Meeting Minutes. Several corrections were made. *R. Schofield moved the Board vote to accept the minutes as corrected, seconded by P. Cocolis and voted by roll call as follows:*

- | | | | |
|---------------------------------|-----|------------------------------|-----|
| 1. J. Yunits, Barnstable County | Abs | 9. T. Mayo, Mashpee | Abs |
| 2. D. Anthony, Barnstable | Yes | 10. R. Toole, Oak Bluffs | Yes |
| 3. D. Keuch, Brewster | Yes | 11. T. Donegan, Provincetown | Abs |
| 4. R. Schofield, Bourne | Yes | 12. J. Peters, Sandwich | Yes |
| 5. P. Cocolis, Chatham | Yes | 13. R. Elkin, Wellfleet | Yes |
| 6. B. Crowell, Dennis | Abs | 14. S. Hruby, West Tisbury | Yes |
| 7. F. Fenlon, Eastham | Yes | 15. J. Flynn, Yarmouth | Yes |
| 8. V. Bell, Harwich | Yes | | |

Motion carried in the affirmative (11-0-4).

TREASURER'S REPORT

P. Cocolis reviewed the Contract Summary sheet listing Contracts and Amendments he has approved which have been forwarded to the County Commissioners for execution and requested the Board vote to ratify his actions. There was discussion about Request for Proposals for Home Energy Services and the responses received. M. Downey explained a limited number of bids were received and bid was awarded to most advantageous proposal. Some had listed many "add-ons" which made it difficult to compare. She said there are not many vendors who provide Home Energy Services. *P. Cocolis moved the board vote to ratify the actions of the Compact Treasurer relative to Compact contracts from February 16, 2016 through March 8, 2016. The Compact Administrator is authorized and directed to take all actions necessary or appropriate to implement this vote and to execute and deliver all documents as may be necessary or appropriate to implement this vote, seconded by R. Elkin and voted by roll call as follows:*

- | | | | |
|---------------------------------|-----|------------------------------|-----|
| 1. J. Yunits, Barnstable County | Abs | 9. T. Mayo, Mashpee | Yes |
| 2. D. Anthony, Barnstable | Yes | 10. R. Toole, Oak Bluffs | Yes |
| 3. D. Keuch, Brewster | Yes | 11. T. Donegan, Provincetown | Yes |
| 4. R. Schofield, Bourne | Yes | 12. J. Peters, Sandwich | Yes |
| 5. P. Cocolis, Chatham | Yes | 13. R. Elkin, Wellfleet | Yes |
| 6. B. Crowell, Dennis | Yes | 14. S. Hruby, West Tisbury | Yes |
| 7. F. Fenlon, Eastham | Yes | 15. J. Flynn, Yarmouth | Yes |
| 8. V. Bell, Harwich | Yes | | |

Motion carried in the affirmative (14-0-1).

P. Cocolis distributed and reviewed the Cape Light Compact's FY 16 Operating Budget Report dated 3/9/16. He said a supplemental budget request will be needed to cover overages in Salaries, Marketing and Retirement at a future meeting.

CHAIRMAN'S REPORT

Chr. Flynn introduced Jack Yunits, County Administrator. She said he has served as Mayor for Brockton and is author of *Urban Mayor: Making A City Work* (Acanthus Publishing 2012). J. Yunits said he is fascinated by what Cape Light Compact has done for Cape Cod.

Chr. Flynn introduced Donald Mauritz, newly hired Commercial/Industrial Program Analysis. D. Mauritz said he has 20 year's Energy Efficiency experience and comes from Berkley National Library University of California. He is a native New Englander and is happy to be back.

EXECUTIVE SESSION

At 2:28 p.m. Chr. Flynn requested the Agenda be reordered to take up the Executive Session matters because a quorum of the Governing Board will be lost at 3:00 pm. She said the purpose of the meeting is to discuss litigation strategies and potential vote regarding Electric Distribution Companies and Interstate Natural Gas Pipeline Capacity Contracts, DPU 15-181, DPU 16-05 and DPU 16-07. She announced the Board would return to Open Session at the conclusion of Executive Session. *R. Schofield moved the Board vote to enter into Executive Session pursuant to M.G.L. c. 30A §21(a)(3) to discuss litigation strategies and potential vote regarding Electric Distribution Companies and Interstate Natural Gas Pipeline Capacity Contracts, DPU 15-181, DPU 16-05 and DPU 16-07, seconded by P. Cocolis and voted by roll call as follows:*

- | | | | |
|---------------------------------|-----|------------------------------|-----|
| 1. J. Yunits, Barnstable County | Yes | 9. T. Mayo, Mashpee | Yes |
| 2. D. Anthony, Barnstable | Yes | 10. R. Toole, Oak Bluffs | Yes |
| 3. D. Keuch, Brewster | Yes | 11. T. Donegan, Provincetown | Yes |
| 4. R. Schofield, Bourne | Yes | 12. J. Peters, Sandwich | Yes |
| 5. P. Cocolis, Chatham | Yes | 13. R. Elkin, Wellfleet | Yes |
| 6. B. Crowell, Dennis | Yes | 14. S. Hrubby, West Tisbury | Yes |
| 7. F. Fenlon, Eastham | Yes | 15. J. Flynn, Yarmouth | Yes |
| 8. V. Bell, Harwich | Yes | | |

Motion carried in the affirmative (15-0-0).

At 3:24 p.m. the Board returned to Open Session

At 3:25 p.m. J. Yunits left the meeting

Without a Quorum, the Governing Board Meeting ended and the Executive Committee met.

EXECUTIVE COMMITTEE MEETING

PRESENT WERE:

- | | |
|--|-----------------------------------|
| 1. Joyce Flynn, Chairwoman, Yarmouth | |
| 2. Robert Schofield, Vice-Chair, Bourne | |
| 3. Peter Cocolis, Treasurer, Chatham | |
| 4. Richard Toole, Member at Large, Oak Bluffs - by phone | Members physically present: 3 |
| | Members participating by phone: 1 |

GOVERNING BOARD MEMBERS PRESENT:

- David Anthony, Barnstable
- Deane Keuch, Brewster
- Frederick Fenlon, Eastham – by phone
- Valerie Bell, Harwich
- Thomas Mayo, Mashpee
- Thomas Donegan, Provincetown – by phone

Joshua Peters, Sandwich
Richard Elkin, Wellfleet
Sue Hruby, W. Tisbury

LEGAL COUNSEL

Audrey Eidelman, Esq., BCK Law, PC

CONSULTANTS:

Kevin Galligan, Galligan Energy Consulting, Inc.

STAFF PRESENT:

Maggie Downey, Administrator
Meredith Miller, EM&V Manager
Margaret Song, Commercial & Industrial Program Manager
Austin Brandt, Power Supply Planner
Lindsay Henderson, Data Analyst & Marketing Coordinator
Don Mauritz, Commercial & Industrial Program Analyst
Karen Loura, Administrative Assistant

ADMINISTRATOR'S REPORT

• **Marketing**

M. Downey reviewed the marketing plan and the advertisements and schedule targeted to increase Power Supply Program enrollment. She said a supplemental budget request for additional marketing will be on the April meeting agenda for Board approval. There was discussion about meeting to review the FY 17 Operating Budget and then present to the Board at the May meeting for a vote in June.

• **Administrative Services Agreement**

M. Downey Reported the Administrative Services Agreement is being updated. She will meet with J. Yunits and Counsel to finalize the draft. She said there are many updates made to reflect current procedures and it will be presented at the April meeting.

• **Power Supply**

A. Brandt, Power Supply Planner will be speaking on gas pipelines at Cape Cod Community College on March 24th at 6:30 p.m. M. Downey will forward the announcement to members. V. Bell is the contact.

• **Brewster Finance Committee**

M. Downey reported on an invitation from the Brewster Finance Committee to meet with Cape Light Compact on April 6th. She will send out details once meeting is confirmed.

ENERGY EFFICIENCY UPDATE

• **Review of 2015 Preliminary Savings and Benefits**

M. Miller provided a Power Point presentation entitled 2015 Preliminary EE Results.

• **Bourne Middle School** – tabled

- Clarifying Commercial & Industrial Programs – Policy for Non Profits M. Song provided a Power Point presentation entitled Non-profit Update. There was discussion about the number of other potential non-profit organizations. P. Cocolis suggested the topic be delayed for discussion by the Governing Board. M. Downey suggested the Board have a working lunch meeting April.

GRID MODERNIZATION AND PLANS FILED BY MASSACHUSETTS DISTRIBUTION COMPANIES (DPU 15-120, 15-121 AND 15-122), AND OVERVIEW OF MICRO GRIDS

The Executive Committee agreed it is best to discuss these matters as a Governing Board. Copies of K. Galligan's Report titled Micro-grids An Overview - What, Why & Where and A. Brandt's Power Point Presentation entitled Grid Modernization Overview were distributed. M. Downey to re-distribute white paper. By agreement, the topic was tabled to next meeting.

BOARD MEMBER UPDATE

R. Toole brought up Vineyard Power's Community Empowerment Legislation. M. Downey said Cape Light Compact has reviewed it and said this is a town by town decision. It is not a Cape Light Compact issue. This is legislation sponsored by Rep. Madden to authorize cities and towns to enter into hedging for new renewable energy contracts. There is no harm to Cape Light Compact, but it will be very confusing for ratepayers. The legislation would enable town meetings to finance renewable energy projects.

J. Flynn announced this is Tom Mayo's last meeting as he has accepted a position with the Town of Hingham. T. Mayo said it was not an easy decision to make and encouraged the Compact that their work is important affecting all of the taxpayers. Everyone wished him well.

ADJOURNMENT

At 4:09 p.m. R. Schofield moved the Executive Committee adjourn, seconded by P. Cocolis and voted unanimously in favor.

Respectfully submitted,
Karen E. Loura
Administrative Assistant

LIST OF DOCUMENTS & EXHIBITS

- Meeting Notice/Agenda
- February 10, 2016 Meeting Minutes – draft
- Summary of Contracts - February 16, 2016 - March 8, 2016
- FY17 Operating Budget Report dated 3/9/16
- 2015 Preliminary EE Results
- Non-profit Update
- Micro-grids An Overview What, Why & Where
- Grid Modernization Overview

2016 Budgeted (Based on 2016 Planned)

Program	P&A	Marketing	PA Costs				EHW	TOTAL PA
			Incentives	STAT	EHV	TOTAL PA		
A - Residential	\$ 1,268,568	\$ 477,634	\$ 1,456,274	\$ 4,559,949	\$ 769,948	\$ 21,642,233		
A1 - Residential Whole House	\$ 815,400	\$ 176,447	\$ 10,548,164	\$ 3,801,241	\$ 616,118	\$ 15,957,371		
A1a - Residential New Construction	\$ 23,079	\$ 6,994	\$ 221,481	\$ 83,011	\$ 16,370	\$ 450,955		
A1b - Residential Multi-Family Retrofit	\$ 38,342	\$ 23,932	\$ 427,406	\$ 231,702	\$ 27,174	\$ 748,556		
A1c - Residential Home Energy Services - Measures	\$ 656,565	\$ 92,833	\$ 9,634,746	\$ 1,868,725	\$ 500,378	\$ 12,753,248		
A1d - Residential Home Energy Services - RCS	\$ 86,091	\$ 36,529	\$ -	\$ 1,497,128	\$ 61,014	\$ 1,680,762		
A1e - Residential Behavior/Feedback Program	\$ 11,203	\$ 16,159	\$ 164,531	\$ 120,675	\$ 11,182	\$ 323,880		
A2 - Residential Products	\$ 217,054	\$ 139,010	\$ 3,145,610	\$ 582,061	\$ 153,829	\$ 4,237,564		
A2a - Residential Heating & Cooling Equipment	\$ 88,811	\$ 27,608	\$ 1,364,500	\$ 190,004	\$ 62,942	\$ 1,733,864		
A2b - Residential Consumer Products	\$ 19,365	\$ 23,736	\$ 158,788	\$ 160,454	\$ 13,724	\$ 378,068		
A2c - Residential Lighting	\$ 108,878	\$ 85,666	\$ 1,622,332	\$ 231,603	\$ 77,163	\$ 2,125,632		
A3 - Residential Hard-to-Measure	\$ 236,114	\$ 162,177	\$ 877,500	\$ 176,568	\$ -	\$ 1,447,359		
A3a - Residential Statewide Marketing	\$ -	\$ 112,017	\$ -	\$ -	\$ -	\$ 112,017		
A3b - Residential Statewide Database	\$ 13,233	\$ -	\$ -	\$ -	\$ -	\$ 13,233		
A3c - Residential DOER Assessment	\$ 145,089	\$ -	\$ -	\$ -	\$ -	\$ 145,089		
A3d - Residential EERC Consultants	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
A3e - Residential Sponsorships & Subscriptions	\$ 23,827	\$ 10,127	\$ -	\$ -	\$ -	\$ 33,954		
A3f - Residential HEAT Loan	\$ 53,945	\$ 11,532	\$ 850,000	\$ 99,668	\$ -	\$ 1,014,945		
A3g - Residential Workforce Development	\$ -	\$ -	\$ -	\$ 19,600	\$ -	\$ 19,600		
A3h - Residential R&D and Demonstration	\$ -	\$ 3,500	\$ 22,500	\$ 57,500	\$ -	\$ 83,500		
A3i - Residential Education	\$ -	\$ 23,000	\$ -	\$ -	\$ -	\$ 23,000		
B - Low-Income	\$ 244,783	\$ 53,898	\$ 2,845,870	\$ 718,294	\$ 153,661	\$ 4,040,498		
B1 - Low-Income Whole House	\$ 191,200	\$ 29,155	\$ 2,845,870	\$ 718,294	\$ 153,661	\$ 3,988,279		
B1a - Low-Income Single Family Retrofit	\$ 132,659	\$ 22,670	\$ 1,933,450	\$ 535,201	\$ 106,558	\$ 2,731,037		
B1b - Low-Income Multi-Family Retrofit	\$ 58,641	\$ 6,485	\$ 912,420	\$ 182,993	\$ 47,103	\$ 1,207,242		
B2 - Low-Income Hard-to-Measure	\$ 77,483	\$ 24,736	\$ -	\$ -	\$ -	\$ 102,219		
B2a - Low-Income Statewide Marketing	\$ -	\$ 22,684	\$ -	\$ -	\$ -	\$ 22,684		
B2b - Low-Income Statewide Database	\$ 2,684	\$ -	\$ -	\$ -	\$ -	\$ 2,684		
B2c - Low-Income DOER Assessment	\$ 29,381	\$ -	\$ -	\$ -	\$ -	\$ 29,381		
B2d - Low-Income Energy Affordability Network	\$ 36,070	\$ -	\$ -	\$ -	\$ -	\$ 36,070		
B2e - Low-Income Sponsorships & Subscriptions	\$ 9,348	\$ 2,052	\$ -	\$ -	\$ -	\$ 11,400		
C - Commercial & Industrial	\$ 830,371	\$ 215,539	\$ 9,796,815	\$ 1,776,612	\$ 503,985	\$ 13,162,821		
C1 - CAI New Construction	\$ 90,884	\$ 10,704	\$ 1,217,530	\$ 294,107	\$ 66,048	\$ 1,679,273		
C1a - CAI New Buildings & Major Renovations	\$ 57,873	\$ 5,543	\$ 723,350	\$ 240,510	\$ 42,058	\$ 1,069,334		
C1b - CAI Initial Purchase & End of Useful Life	\$ 33,010	\$ 5,162	\$ 494,180	\$ 53,597	\$ 23,990	\$ 609,938		
C2 - CAI Retrofit	\$ 602,611	\$ 142,714	\$ 8,579,285	\$ 1,412,005	\$ 437,937	\$ 11,134,552		
C2a - CAI Existing Building Retrofit	\$ 174,387	\$ 51,702	\$ 2,504,305	\$ 365,059	\$ 126,733	\$ 3,222,186		
C2b - CAI Small Business	\$ 295,760	\$ 58,326	\$ 4,221,754	\$ 674,040	\$ 214,939	\$ 5,464,819		
C2c - CAI Multifamily Retrofit	\$ 40,776	\$ 23,905	\$ 427,406	\$ 231,700	\$ 29,633	\$ 753,420		
C2d - CAI Upstream Lighting	\$ 91,688	\$ 8,781	\$ 1,385,820	\$ 141,206	\$ 66,632	\$ 1,694,137		
C3 - CAI Hard-to-Measure	\$ 136,877	\$ 102,120	\$ 40,000	\$ 70,000	\$ -	\$ 348,996		
C3a - CAI Statewide Marketing	\$ -	\$ 75,299	\$ -	\$ -	\$ -	\$ 75,299		
C3b - CAI Statewide Database	\$ 8,909	\$ -	\$ -	\$ -	\$ -	\$ 8,909		
C3c - CAI DOER Assessment	\$ 97,530	\$ -	\$ -	\$ -	\$ -	\$ 97,530		
C3d - CAI EERC Consultants	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
C3e - CAI Sponsorships & Subscriptions	\$ 30,438	\$ 6,821	\$ -	\$ -	\$ -	\$ 37,259		
C3f - CAI Workforce Development	\$ -	\$ 20,000	\$ -	\$ 60,000	\$ -	\$ 80,000		
C3g - CAI R&D and Demonstration	\$ -	\$ -	\$ 40,000	\$ 10,000	\$ -	\$ 50,000		
GRAND TOTAL	\$ 2,677,722	\$ 787,063	\$ 27,208,959	\$ 7,054,275	\$ 1,427,594	\$ 38,845,613		

2016 Actuals through Jan 2016

Program	P&A	Marketing	PA Costs				EHW	TOTAL PA	PA Costs
			Incentives	STAT	EHV	TOTAL PA			
A - Residential	\$ 519,010	\$ 8,631	\$ -	\$ 60,473	\$ 19,483	\$ 1,403,988	0.6%		
A1 - Residential Whole House	\$ 38,961	\$ 6,403	\$ -	\$ 45,388	\$ 15,591	\$ 106,344	0.2%		
A1a - Residential New Construction	\$ 1,104	\$ 181	\$ -	\$ 1,286	\$ 414	\$ 2,985	0.7%		
A1b - Residential Multi-Family Retrofit	\$ 1,832	\$ 301	\$ -	\$ 2,134	\$ 688	\$ 4,955	0.7%		
A1c - Residential Home Energy Services - Measures	\$ 31,372	\$ 5,156	\$ -	\$ 36,547	\$ 12,743	\$ 85,817	0.7%		
A1d - Residential Home Energy Services - RCS	\$ 4,114	\$ 676	\$ -	\$ 4,792	\$ 1,544	\$ 11,126	0.7%		
A1e - Residential Behavior/Feedback Program	\$ 540	\$ 89	\$ -	\$ 629	\$ 203	\$ 1,461	0.5%		
A2 - Residential Products	\$ 10,371	\$ 1,704	\$ -	\$ 12,082	\$ 3,893	\$ 28,050	0.2%		
A2a - Residential Heating & Cooling Equipment	\$ 4,244	\$ 697	\$ -	\$ 4,944	\$ 1,593	\$ 11,477	0.2%		
A2b - Residential Consumer Products	\$ 935	\$ 152	\$ -	\$ 1,078	\$ 347	\$ 2,503	0.7%		
A2c - Residential Lighting	\$ 5,202	\$ 855	\$ -	\$ 6,061	\$ 1,953	\$ 14,071	0.7%		
A3 - Residential Hard-to-Measure	\$ 2,578	\$ 424	\$ -	\$ 3,003	\$ -	\$ 6,004	0.4%		
A3a - Residential Statewide Marketing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
A3b - Residential Statewide Database	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
A3c - Residential DOER Assessment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
A3d - Residential EERC Consultants	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
A3e - Residential Sponsorships & Subscriptions	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
A3f - Residential HEAT Loan	\$ 2,578	\$ 424	\$ -	\$ 3,003	\$ -	\$ 6,004	0.6%		
A3g - Residential Workforce Development	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
A3h - Residential R&D and Demonstration	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
A3i - Residential Education	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
B - Low-Income	\$ 8,222	\$ 1,620	\$ -	\$ 2,600	\$ 3,699	\$ 16,141	0.4%		
B1 - Low-Income Whole House	\$ 8,222	\$ 1,620	\$ -	\$ 2,600	\$ 3,699	\$ 16,141	0.4%		
B1a - Low-Income Single Family Retrofit	\$ 5,701	\$ 1,123	\$ -	\$ 1,803	\$ 2,565	\$ 11,193	0.4%		
B1b - Low-Income Multi-Family Retrofit	\$ 2,520	\$ 497	\$ -	\$ 797	\$ 1,134	\$ 4,948	0.4%		
B2 - Low-Income Hard-to-Measure	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
B2a - Low-Income Statewide Marketing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
B2b - Low-Income Statewide Database	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
B2c - Low-Income DOER Assessment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
B2d - Low-Income Energy Affordability Network	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
B2e - Low-Income Sponsorships & Subscriptions	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
C - Commercial & Industrial	\$ 35,949	\$ 5,046	\$ 12,257	\$ 44,664	\$ 11,615	\$ 109,570	0.8%		
C1 - CAI New Construction	\$ 4,711	\$ 667	\$ 6,009	\$ 5,853	\$ 1,522	\$ 18,762	1.3%		
C1a - CAI New Buildings & Major Renovations	\$ 3,000	\$ 424	\$ 6,009	\$ 3,727	\$ 969	\$ 14,130	1.3%		
C1b - CAI Initial Purchase & End of Useful Life	\$ 1,711	\$ 242	\$ -	\$ 2,126	\$ 553	\$ 4,632	0.8%		
C2 - CAI Retrofit	\$ 31,238	\$ 4,419	\$ 6,248	\$ 38,810	\$ 10,093	\$ 90,868	0.8%		
C2a - CAI Existing Building Retrofit	\$ 9,040	\$ 1,279	\$ -	\$ 11,221	\$ 2,921	\$ 24,471	0.8%		
C2b - CAI Small Business	\$ 15,332	\$ 2,169	\$ 6,248	\$ 19,048	\$ 4,953	\$ 47,750	0.9%		
C2c - CAI Multifamily Retrofit	\$ 2,114	\$ 299	\$ -	\$ 2,626	\$ 683	\$ 5,722	0.8%		
C2d - CAI Upstream Lighting	\$ 4,733	\$ 672	\$ -	\$ 5,905	\$ 1,536	\$ 12,966	0.8%		
C3 - CAI Hard-to-Measure	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
C3a - CAI Statewide Marketing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
C3b - CAI Statewide Database	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
C3c - CAI DOER Assessment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
C3d - CAI EERC Consultants	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
C3e - CAI Sponsorships & Subscriptions	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
C3f - CAI Workforce Development	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
C3g - CAI R&D and Demonstration	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%		
GRAND TOTAL	\$ 96,081	\$ 15,237	\$ 12,257	\$ 107,737	\$ 34,798	\$ 246,110	0.7%		

as Percent

FOR 2016 10

	ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED

120 CAPE LIGHT COMPACT							

8074 CAPE LIGHT COMPACT OPERTG FUND							

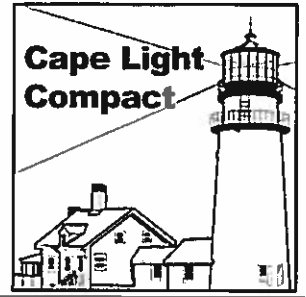
8074 5100	CLC OPERTG FD-SALARIES						
0.00	194,586.00	170,769.13	7,334.71	0.00	23,816.87	87.8%	
8074 5213	CLC OPERTG FD-TELEPHONES						
0.00	3,000.00	51.24	0.00	258.76	2,690.00	10.3%	
8074 5220	CLC OPERTG FD-UTILITIES						
0.00	4,500.00	2,982.18	0.00	0.00	1,517.82	66.3%	
8074 5233	CLC OPERTG FD-AUDIT/ACCTG SVCS						
0.00	32,900.00	11,000.00	0.00	0.00	21,900.00	33.4%	
8074 5235	CLC OPERTG FD-LEGAL SERVICES						
0.00	299,375.00	115,815.09	0.00	0.00	183,559.91	38.7%	
8074 5238	CLC OPERTG FD-IT COUNTY SUPPRT						
0.00	8,750.00	8,098.98	0.00	0.00	651.02	92.6%	
8074 5239	CLC OPERTG FD-CONTRACTUAL						
0.00	65,000.00	35,925.98	0.00	19,889.75	9,184.27	85.9%	
8074 5244	CLC OPERATG FD-PROFESS DEVELOP						
0.00	5,000.00	1,160.00	0.00	0.00	3,840.00	23.2%	
8074 5270	CLC OPERATG FD-CUSTO/MAIN-CNTY						
0.00	9,226.00	9,226.00	0.00	0.00	0.00	100.0%	
8074 5281	CLC OPERTG FD-OUTSTATE TRAVEL						
0.00	6,000.00	2,101.75	0.00	0.00	3,898.25	35.0%	
8074 5282	CLC OPERTG FD-IN STATE TRAVEL						
0.00	16,000.00	14,042.40	45.00	348.75	1,608.85	89.9%	
8074 5291	CLC OPERTG FD-ADVERTISING						
0.00	38,561.00	24,664.70	0.00	643.62	13,252.68	65.6%	
8074 5293	CLC OPER-OUTRCH/MARKETG CONTRC						
0.00	76,520.75	71,612.75	0.00	0.00	4,908.00	93.6%	
8074 5294	CLC OPERTG FD-FREIGHT/SHIPPG						
0.00	250.00	35.14	0.00	0.00	214.86	14.1%	
8074 5295	CLC OPERTG FD-PRINTG/COPYG						
0.00	10,627.30	4,384.71	0.00	6,087.55	155.04	98.5%	
8074 5298	CLC OPERTG-LED ST LIGHTS-CONTR						
0.00	12,944.25	0.00	0.00	0.00	12,944.25	.0%	
8074 5320	CLC OPERTG FD-FOOD SUPPLIES						
0.00	500.00	195.20	0.00	0.00	304.80	39.0%	
8074 5361	CLC OPERTG FD-POSTAGE						
0.00	13,851.52	5,447.21	0.00	6,518.03	1,886.28	86.4%	
8074 5399	CLC OPERTG FD-SUPPLIES						
0.00	2,000.00	486.07	0.00	150.00	1,363.93	31.8%	

FOR 2016 10

	ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
8074 5421							
	0.00	30,000.00	24,041.94	576.94	0.00	5,958.06	80.1%
8074 5429							
	0.00	2,500.00	0.00	0.00	0.00	2,500.00	.0%
8074 5433							
	0.00	8,208.51	7,651.96	0.00	0.00	556.55	93.2%*
8074 5462							
	0.00	17,500.00	14,725.44	0.00	0.00	2,774.56	84.1%*
8074 5463							
	0.00	10,000.00	0.00	0.00	0.00	10,000.00	.0%
8074 5499							
	0.00	200.00	38.44	0.00	0.00	161.56	19.2%
8074 5981							
	0.00	33,080.00	45,481.00	0.00	0.00	-12,401.00	137.5%*
8074 5983							
	0.00	33,557.00	14,222.98	528.13	0.00	19,334.02	42.4%
8074 5984							
	0.00	3,217.00	2,383.20	102.79	0.00	833.80	74.1%
8074 5990							
	0.00	4,791.49	4,791.49	0.00	0.00	0.00	100.0%*
TOTAL EXPENSES							
	0.00	942,645.82	591,334.98	8,587.57	33,896.46	317,414.38	
GRAND TOTAL							
	0.00	942,645.82	591,334.98	8,587.57	33,896.46	317,414.38	66.3%

** END OF REPORT - Generated by Maggie Downey **

**Agenda Action Request
Cape Light Compact
Meeting Date: 4/13/2016**



- Aquinnah*
- Barnstable*
- Barnstable County*
- Bourne*
- Brewster*
- Chatham*
- Chilmark*
- Dennis*
- Dukes County*
- Eastham*
- Edgartown*
- Falmouth*
- Harwich*
- Mashpee*
- Oak Bluffs*
- Orleans*
- Provincetown*
- Sandwich*
- Tisbury*
- Truro*
- Wellfleet*
- West Tisbury*
- Yarmouth*

Ratify Actions of Treasurer

REQUESTED BY: Peter Cocolis

Proposed Motion(s)

I move the Board vote to ratify the actions of the Compact Treasurer relative to Compact contracts from March 9, 2016 through April 13, 2016.

The Compact Administrator is authorized and directed to take all actions necessary or appropriate to implement this vote, and to execute and deliver all documents as may be necessary or appropriate to implement this vote.

Additional Information

- **This motion is consistent with the Board's March 11, 2015 vote to establish a contract review process**

Record of Board Action

Motion by:	Second by:	# Aye	# Nay	# Abstain	Disposition

Vendor Name	Amount of Amendment	Amount of Contract	Term	Purpose	Competitively Procured Y/N	P. Cocolis (A)Approved/(D) Denied	Commissioners Approved
EFI	greater than \$25,000		1/1/16-12/31/16	6th Amendment to C&I Upstream HVAC	Y	3/10/2016	3/16/2016
Rise Engineering	\$1,196,560.00		1/1/16-12/31/16	1st Amendment to Lead Vendor Multi-family Services	Y	3/16/2016	3/30/2016
Rise Engineering	\$110,715.00		1/1/16-12/31/16	2nd Amendment to Mass. Multi-family Integrator Services	No EE Exemption	3/16/2016	3/30/2016
CLEARresult East Operating, LLC	\$20,364.50		1/1/16-12/31/16	2nd Amendment to Codes & Standards Services Budget	Y	3/16/2016	3/24/2016
Navigant Consulting, Inc.		\$350,000.00	1/1/16-6/30/19	Residential Evaluation Retrofit-HVAC	Y	4/5/2016	on 4/13/16 agenda

Cape Light Compact Power Supply Reserve Fund Balance as of 3/31/16
 Projected Cape Light Compact Power Supply Reserve Fund Balance as of 6/30/16
 Projected FY17 Operational Addler Revenue as of 6/30/17

\$ 877,839.26
 \$ 1,087,840.00 (\$70K of Operational Addler)
 \$ 840,000.00

Cape Light Compact Fiscal Year 2017 (July 1, 2016 - June 30, 2017) Proposed Operating Budget

Item	FY 16	Proposed FY17	
Salaries	\$ 218,086.00	\$ 194,500.00	Power Supply 100%, Maggie 70% CLC Admin. Asst. 25%, Lindsay 10%
Salary Reserve	\$ -	\$ 6,000.00	
Auditor	\$ 40,000.00	\$ 40,000.00	
Legal	\$ 317,575.00	\$ 233,019.00	
Contractual	\$ 86,566.00	\$ 65,000.00	
Outreach/Marketing Contractor	\$ 63,365.00	\$ 36,000.00	DPU Proceedings (15-181, 15-122:Grid Mod)
Food	\$ 500.00	\$ 500.00	
Supplies	\$ 2,000.00	\$ 2,000.00	
Telephone	\$ 3,000.00	\$ 3,000.00	
IT County Support	\$ 8,750.00	\$ 8,750.00	25% of County Services (level funded pending County information)
Finance County Support	\$ 4,000.00	\$ 4,000.00	25% of County Services (level funded pending County information)
Rent County	\$ 17,500.00	\$ 17,500.00	25% of County Services (level funded pending County information)
Custodial/Maintenance County	\$ 9,226.00	\$ 9,226.00	25% of County Services (level funded pending County information)
Utilities County	\$ 4,500.00	\$ 4,500.00	25% of County Services (level funded pending County information)
Travel Out-of-state	\$ 6,000.00	\$ 6,000.00	
Travel In-state	\$ 16,000.00	\$ 16,000.00	
Advertising - power supply	\$ 55,561.00	\$ 38,561.00	
Shipping	\$ 250.00	\$ 250.00	
Postage	\$ 13,852.00	\$ 13,852.00	
Sponsorships (formerly Association Dues)	\$ 20,000.00	\$ 30,000.00	Roundtable, Living Local, NECA, PTI, Rotary Show (1/2 events)
Subscriptions	\$ 2,500.00	\$ 4,000.00	
Printing	\$ 10,627.00	\$ 12,000.00	
Public Officials Insurance	\$ 10,000.00	\$ 10,000.00	
Bank Fees	\$ -	\$ 500.00	
Health Insurance	\$ 33,557.00	\$ 36,913.00	
Retirement	\$ 45,481.00	\$ 50,000.00	
Medicare	\$ 3,217.00	\$ 3,800.00	
Equipment Rental	\$ 10,000.00	\$ 10,000.00	
Professional Development	\$ -	\$ 5,000.00	
LED Streetlight Reserve	\$ 15,000.00	\$ -	
Subtotal CLC Operating Budget	\$ 1,017,113.00	\$ 860,871.00	



OUT-OF-STATE TRAVEL AUTHORIZATION



Employee Name & Title: Margaret Downey

Department: Cape Light Compact

Date(s) of Travel: 5/30/16 - 6/2/16

Destination: Palo Alto, CA/Stamford University

Trip Purpose: US Dept of Energy - Women in Energy Symposium

Approximate Cost(s) of:	Conference Registration Fee	<u>n/a</u>
	Hotel	<u>\$500 plus taxes and fees</u>
	Transportation	<u>Approx \$700 air, plus rental car for 3 days</u>
	Meals (\$38/day with receipts)	<u>\$114.00</u>
	Total Cost(s)	<u>Approximatley:\$1,500.00</u>

Department Head Approval: _____

County Commissioners Approval: _____

Employee(s) shall report to the County Commissioners within 30 days of return to brief the Commissioners on the Conference.

**Agenda Action Request
Cape Light Compact
Meeting Date: 4/13/16**



- Aquinnah*
- Barnstable*
- Barnstable
County*
- Bourne*
- Brewster*
- Chatham*
- Chilmark*
- Dennis*
- Dukes
County*
- Eastham*
- Edgartown*
- Falmouth*
- Harwich*
- Mashpee*
- Oak Bluffs*
- Orleans*
- Provincetown*
- Sandwich*
- Tisbury*
- Truro*
- Wellfleet*
- West Tisbury*
- Yarmouth*

**Request for FY16 Supplemental Budget Increase – Compact
Operating Fund**

REQUESTED BY: *Peter Cocolis*

Proposed Motion(s)

1) I move the Board vote to approve the supplemental budget request to the Compact's FY16 operating budget as presented.

The Compact Administrator is authorized and directed to take all actions necessary or appropriate to implement this vote, and to execute and deliver all documents as may be necessary or appropriate to implement this vote.

The supplemental budget request is necessary to cover the Compact's retirement assessment, costs associated with radio and print ads for Compact power supply program, and for a shortfall in salaries resulting from staff turn over.

Record of Board Action

<i>Motion by:</i>	<i>Second by:</i>	<i># Aye</i>	<i># Nay</i>	<i># Abstain</i>	<i>Disposition</i>

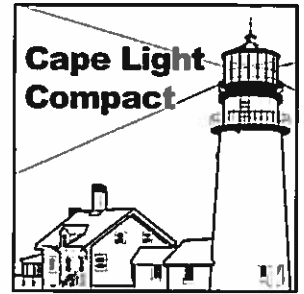
Cape Light Compact Power Supply Reserve Fund Balance as of 3/31/16
 Projected Cape Light Compact Power Supply Reserve Fund Balance as of 6/30/116

\$ 877,839.26
 \$ 1,087,840.00 (\$70K of Operational Addcr)

Cape Light Compact Fiscal Year 2016 (July 1, 2015 - June 30, 2016) Request for Supplemental Appropriation - Operating Budget

Item	Approved FY16	Supplemental Request FY16	
Salaries	\$ 194,586.00	\$ 23,500.00	Power Supply staff overlap and pay out for 2 employees
Auditor	\$ 40,000.00		
Legal	\$ 317,575.00		
Contractual	\$ 65,000.00	\$ 21,566.00	Resource Insight and GEC for DPU dockets (15-181, 16-06, and 15-122)
Outreach/Marketing Contractor	\$ 63,365.00		
Food	\$ 500.00		
Supplies	\$ 2,000.00		
Telephone	\$ 3,000.00		
IT County Support	\$ 8,750.00		
Finance County Support	\$ 4,000.00		
Rent County	\$ 17,500.00		
Custodial/Maintenance County	\$ 9,226.00		
Utilities County	\$ 4,500.00		
Travel Out-of-state	\$ 6,000.00		
Travel In-state	\$ 16,000.00		
Advertising - power supply	\$ 38,561.00	\$ 17,000.00	Radio Ads
Shipping	\$ 250.00		
Postage	\$ 13,852.00		
Sponsorships (formerly Association Dues)	\$ 20,000.00		
Subscriptions	\$ 2,500.00		
Printing	\$ 10,627.00		
Public Officials Insurance	\$ 10,000.00		
Fringes	\$ -		
Health Insurance	\$ 33,557.00		
Retirement	\$ 33,080.00	\$ 12,401.00	Actual FY17 Assessment
Medicare	\$ 3,217.00		
Equipment Rental	\$ 10,000.00		
LED Streetlight Reserve	\$ 15,000.00		
Subtotal CLC Operating Budget	\$ 942,646.00	\$ 74,467.00	
Revised CLC FY 16 Operating Budget		\$ 1,017,113.00	

**Agenda Action Request
Cape Light Compact
Meeting Date: 4/13/2016**



- Aquinnah*
- Barnstable*
- Barnstable County*
- Bourne*
- Brewster*
- Chatham*
- Chilmark*
- Dennis*
- Dukes County*
- Eastham*
- Edgartown*
- Falmouth*
- Harwich*
- Mashpee*
- Oak Bluffs*
- Orleans*
- Provincetown*
- Sandwich*
- Tisbury*
- Truro*
- Wellfleet*
- West Tisbury*
- Yarmouth*

Ratify Actions of Treasurer

REQUESTED BY: Maggie Downey

Proposed Motion(s)

I move the Board vote to approve application of budget criteria to each site rather than the entire organization.

The Compact Administrator is authorized and directed to take all actions necessary or appropriate to implement this vote, and to execute and deliver all documents as may be necessary or appropriate to implement this vote.

Additional Information

- See attached presentation
- Application: for example, if there are multiple sites (not multiple buildings), then the non-profit criteria of the budget would be assigned per site.

Record of Board Action

Motion by:	Second by:	# Aye	# Nay	# Abstain	Disposition

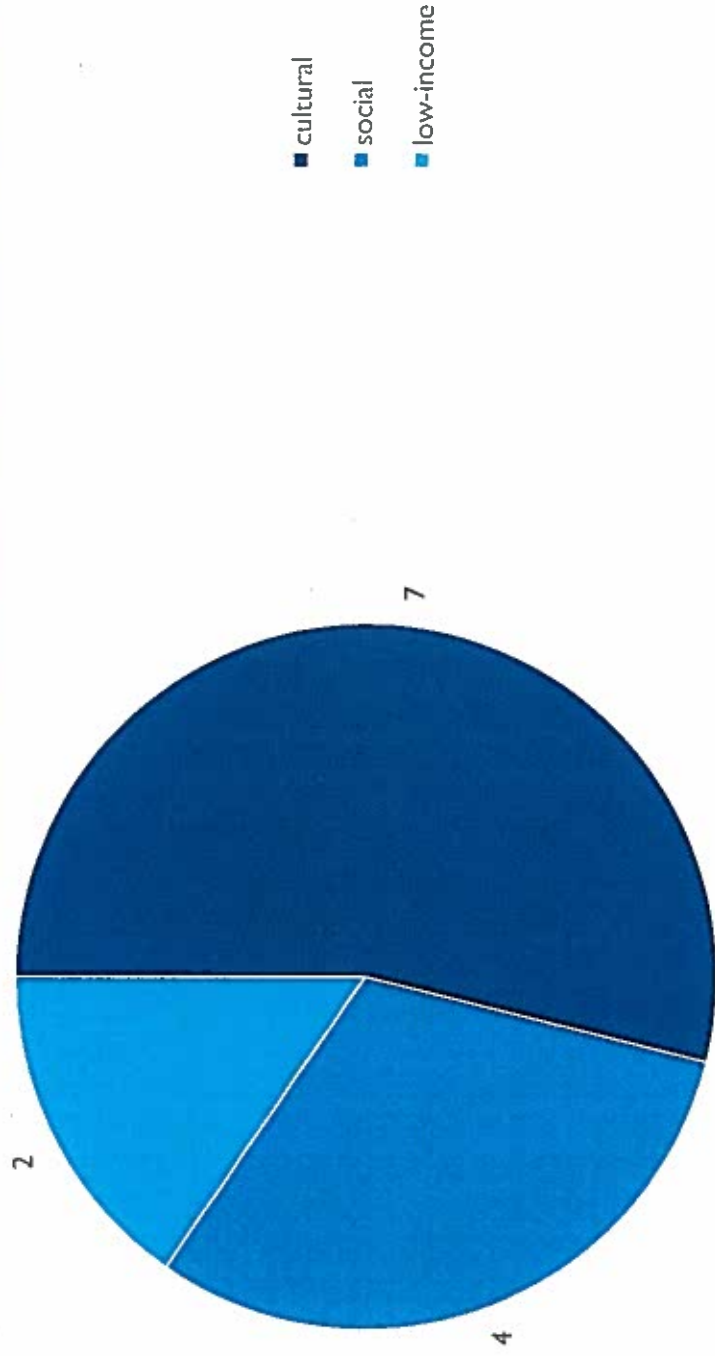


NON-PROFIT UPDATE

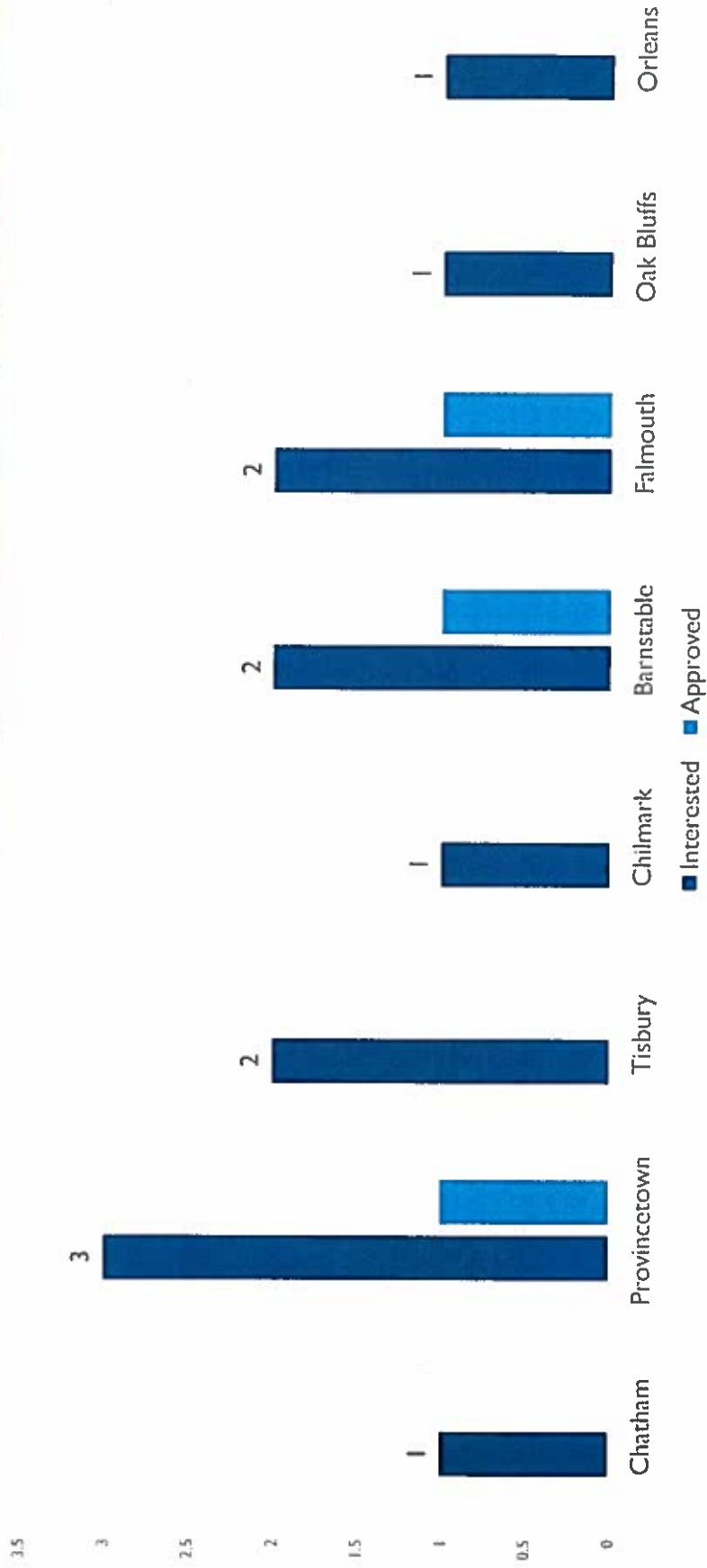
MARGARET SONG – 03.09.16



CATEGORY OF INTERESTED NON-PROFITS



INTERESTED AND APPROVED NON-PROFITS



POLICY DECISION – POTENTIAL VOTE

- Cultural non-profit
- Current language says the following:
 - Unrestricted Annual Operating Revenue of less than \$2 million for:*
 - Organizational purpose to provide one of the following:
 - Promotion and advancement of **economic development**
 - **Social services** that are open to all members of the public
 - **Cultural services** that increase access to arts, science, history and heritage
- \$2.6M budget but 2 different sites
- Other criteria has been met

Policy to reflect budget and multiple sites.

Vote to approve application of budget criteria to each site rather than the entire organization. So, for example, if there are multiple sites (not multiple buildings), then the non-profit criteria of the budget would be assigned as per site.

MASSACHUSETTS DEPARTMENT OF PUBLIC UTILITIES GRID MODERNIZATION
PLAN PROCEEDINGS
AND
CAPE LIGHT COMPACT PARTICIPATION
BY STEPHAN WOLLENBURG

BACKGROUND AND PURPOSE

Starting in 2012, the Commonwealth of Massachusetts began the process of directly addressing how the state would modernize its electrical grid after a century of relative technological stagnation through a series of Department of Public Utilities (DPU or Department) orders. The Department stated that “the Department launches a new energy future for Massachusetts. The modern electric system we envision will be cleaner, more efficient and reliable, and will empower customers to manage and reduce their energy costs.”¹ Order, D.P.U. 12-76-B at 1 (June 12, 2014). Given the extent, cost, and longevity of the proposed investments, decisions made as a part of this process will have significant economic, environmental, and equity impacts that are likely to persist for decades. Furthermore, potential changes in how electric distribution companies (EDCs) are regulated and incentivized and further changes in power supply, energy efficiency, and related services will have comparably enduring effects.

D.P.U. 12-76-B required the EDCs to file grid modernization plans (GMPs) proposing how that EDC intends to make “measurable progress” towards the Department’s grid modernization objectives. This document is intended to address the EDCs’ GMPs filed with the DPU, with a focus on issues most likely to be of particular importance to the Cape Light Compact (Compact) and the residents and businesses on Cape Cod and Martha’s Vineyard. As an organization with interests and responsibilities pertaining to power supply, energy efficiency, and electricity delivery in general, the implementation of GMPs will have an enormous impact on the Compact’s future work. Specifically, this document provides an overview of the DPU-stipulated GMP requirements, a summary of Eversource’s GMP, and possible areas of

¹ That order also stated, “the modern electric system will build on the Patrick Administration’s progress towards our clean energy goals by **maximizing the integration of solar, wind and other local and renewable sources of power**. Because customers will have new tools and information to enable them to use less electricity when prices spike, **the electric system will be appropriately sized and less expensive.**” D.P.U. 12-76-B Order at 1 (emphasis added).

Frequently
used acronyms

- *AMF – advanced metering functionality*
- *AMI - advanced metering infrastructure*
- *DG -- distributed generation*
- *DPU – Department of Public Utilities*
- *EDC – Electric distribution company*
- *EE – energy efficiency*
- *GMP – grid modernization plan*
- *PV – photovoltaic*
- *STIP -- short-term investment plan*
- *TVR – time-varying rate*

focus by the Compact in the proceedings. It also raises specific questions that the Compact is most interested in receiving feedback on from its constituents. While this document focuses on the DPU's grid modernization proceedings that are currently underway, the Compact and its partners on the Cape and Vineyard may pursue issues raised as a part of this process through other venues, which might include legislation or other policy initiatives.

Questions prompted by the GMPs filed by the three EDCs and the grid modernization process in general are ripe for discussion amongst residents and businesses on the Cape and Vineyard. While consensus is unlikely, such discussions will help inform the Compact's positions and potential participation in the grid modernization proceedings. The grid modernization process in the Commonwealth is likely to be an extended one, and positions of the parties, including the Compact, are likely to evolve over time as new information is presented. As such, this document and the ensuing discussions should be considered part of an ongoing dialogue, not a static one.

In addition to deciding upon which grid modernization issues it will focus, the Compact must consider how it will participate in the EDCs' proceedings. The EDCs' GMPs have been docketed, but the Department has not yet issued an Order of Notice and Notice of Filing, Public Hearing and Procedural Conference, which will set forth a deadline for filing to intervene. These dockets are full adjudicatory proceedings, meaning that the parties granted intervenor status may conduct discovery, sponsor testimony, participate in hearings (including witness cross examination), and file briefs. The Compact will need to decide in which EDC dockets it will seek to intervene and how best to participate in the proceeding(s) to accomplish its objectives, especially in light of the novel and precedent-setting issues at stake.

PROCEDURAL BACKGROUND AND REQUIREMENTS

On October 2, 2012, in D.P.U. 12-76-A, the DPU opened on its own motion an Investigation into the Modernization of the Electric Grid (D.P.U. 12-76-A Order). This order was followed by a number of different regulatory proceedings and directives, including:

- An extensive working group process to gather stakeholder feedback on grid modernization
- D.P.U. 12-76-B Order requiring each distribution company to develop a GMP
- An order laying out the specific business case filing requirements to be included in the GMPs (D.P.U. 12-76-C)
- An investigation laying out the Department's framework for time-varying rates (TVR) (D.P.U. 14-04-C Order)
- An investigation of electric vehicles and electric vehicle charging (D.P.U. 13-182)

On August 19, 2015, Eversource, National Grid, and Unitil filed their GMPs, docketed as 15-122, 15-120, and 15-121 respectively.

GMP OBJECTIVES

In its D.P.U. 12-76-B order, the DPU outlined four objectives of grid modernization, all of which must be

addressed in the filed GMPs. Specifically, the four goals were:

1. *Reducing the effects of outages* – namely by achieving the Department’s service quality goals (D.P.U. 12-120), reducing the number and duration of outages, and generally increasing the resilience of the distribution system.
2. *Optimizing demand, including reducing system and customer costs* – the DPU called for a modernized grid that will reduce the system-wide peak, and use price signals and technology to allow customers to shift their consumption to less expensive periods.
3. *Integrating distributed resources* – this goal, which contemplates resources including electric vehicles, renewables, microgrids, and storage, is intended to help increase the resilience of the system and help the Commonwealth achieve its climate goals.
4. *Improving workforce and asset management* – the DPU acknowledged that progress towards this goal, which would increase operational efficiency and, presumably, reduce costs, would likely be a byproduct of working towards the first three.

In addition to the Department’s four stated objectives, it specifically cited advanced metering functionality (AMF) as a critical component of all grid modernization efforts. In fact, the Department made it a requirement that the utilities achieve AMF functionality within five years of the approval of their respective GMPs. Any EDC that proposed a longer timeframe was required to provide a business case that demonstrated that the longer timeframe was a superior approach. The Department referred to AMF, as opposed to advanced metering infrastructure (AMI), as it wanted to emphasize the importance of achieving specific functionalities, instead of specifying a technology, such as AMI.² D.P.U. 12-76-B Order at 14. In other words, the DPU chose to adopt a technology-neutral approach, leaving it to the utilities to determine the most cost-effective way to implement AMF. In D.P.U. 12-76-B, AMF is defined as including four elements:

1. The collection of customers’ interval usage data, in near real time, usable for settlement in the ISO New England (ISO-NE) energy and ancillary services markets;³
2. Automated outage and restoration notification;
3. Two-way communication between customers and the electric distribution company; and
4. With a customer’s permission, communication with and control of household appliances

² AMI is defined by the Department of Energy as “an integrated system of smart meters, communications networks, and data management systems that enables two-way communication between utilities and customers.” (https://www.smartgrid.gov/recovery_act/deployment_status/sdgp_ami_systems.html) While AMI satisfies all of the DPU’s requirements for AMF, the distinction between the two was intended to encourage the EDCs to pursue other technologies that might achieve the same functions. As an example, this might have included using a customer’s internet connection for communications, instead of relying upon a new, dedicated communications infrastructure installed by the utility.

³ ISO-New England is the independent, not-for-profit organization that is responsible for planning and operating New England’s electric transmission system and wholesale electricity markets. In this context, “settlement” refers to the ability of a customer to be billed based on their actual, real-time electricity consumption, as opposed to being billed based on an approximation of when their consumption occurred over the course of a given month.

GMP-REQUIRED ELEMENTS

GMPs, as defined by the DPU, are ten-year strategic planning documents, outlining how the EDC will meet the four objectives and achieve AMF. EDCs, in their GMPs, were required to include a number of elements:

- A five-year short-term investment plan (STIP). The STIP covers all capital investments in the first five years of the company's plan, including a comprehensive business case which must address scope, schedule, unquantifiable and quantifiable costs and benefits, progress towards achieving other legislative and regulatory goals, etc.
- A marketing, education, and outreach (MEO) plan
- A research, development, and deployment (RD&D) plan
- Proposed infrastructure metrics (did the EDC install what it said it would?) and performance metrics (has progress towards objectives such as improved service quality and distributed generation interconnection been made?)
- Proposed procedures that would allow competitive suppliers access to certain customer usage data without compromising customer confidentiality (D.P.U. 12-76-B at 34-36)

In the Department's TVR investigation (D.P.U. 14-04), an interim order (D.P.U. 14-04-B) included a framework for the implementation of TVR which the Department later adopted without any modifications in its D.P.U. 14-04-C Order. This framework required that the EDCs offer two basic service options – one (the default option) with off-peak, on-peak, and critical peak pricing (CPP) periods, and the other a flat rate with the ability of customers to earn a peak time rebate (PTR) by reducing consumption during high demand periods. The framework also addressed issues relating to consumer education⁴ and access of competitive suppliers to data for the purpose of developing and offering their own TVRs. EDCs are required to develop GMPs/STIPs that are consistent with the Department's framework.

PRE-AUTHORIZED SPENDING, TARGETED COST RECOVERY

The Department allowed preferential treatment for certain spending as an incentive for the EDCs to develop and implement their GMPs. D.P.U. 12-76-B Order at 3-5. Specifically, approved STIP capital investments are eligible for pre-authorization, meaning the Department will not revisit whether the investments should have been undertaken, though it may review the prudence of the implementation of those investments. Furthermore, certain investments are eligible for targeted cost-recovery through a capital expenditure tracking mechanism (capex tracker), which allows EDCs to expedite the recovery of these investments. Only incremental capital investments that are made within the five-year STIP are eligible. Furthermore, investments may only be claimed through the capex tracker if the EDC's STIP

⁴ The Department stated, "Because customer education, marketing, and outreach are crucial to enabling the successful implementation of grid modernization, companies' marketing and outreach should begin early in the grid modernization process." (D.P.U. 12-76-B Order at 2)

addresses AMF.⁵

EVERSOURCE GRID MOD PLAN

Eversource takes a very conservative approach to grid modernization, emphasizing incremental investments. Eversource's GMP also focuses on grid-facing investments, consistently downplaying the potential benefits of giving consumers greater access to information and pricing transparency. Eversource references studies that seem to indicate a lack of interest and ability for consumers to meaningfully engage with a more interactive grid. Eversource's conservative approach is also highlighted by its resistance to rolling out AMF on an opt-out basis. Eversource concludes that AMI is the most cost-effective way to achieve AMF as does National Grid, but Eversource fears that opt-out AMF will not produce net benefits. Significantly, Eversource claims that it will be able to achieve 80% of the benefits of TVR at 15% of the cost by using an opt-in approach instead of an opt-out one (Eversource GMP, Exh. Eversource-PMC-1 at 16), although it presents almost no details regarding the supporting analysis. As discussed below, Eversource does not address other potential non-AMF related benefits of AMI that National Grid includes in its business case. Critically, unlike National Grid, Eversource assigns all of its proposed cyber security costs to TVR, as it claims that its current cyber security practices are already sufficient for all of the other grid mod investments (Eversource GMP at 212-13). This claim seems suspect, especially since it conveniently bolsters Eversource's position that TVR is not particularly cost-effective.

Throughout, Eversource states that it has already been piloting most of the contemplated technologies, referencing its involvement in Electric Power Research Institute studies, TVR/AMI pilots in NSTAR and Connecticut Light & Power territory, Department of Energy funding for advanced distribution automation (ADA), etc. Eversource also provides significantly more detail on its planned grid-facing distribution upgrades than does National Grid. The diversity of Eversource's territory (especially Western Massachusetts Electric Company versus Boston Electric Company) makes it particularly challenging to evaluate some of its proposed investments. As an example, it proposes upgrades that will increase the reliability of its secondary network distribution systems, a type of highly-redundant electric distribution design used primarily in urban areas. Eversource acknowledges that these systems are already extremely reliable, but says that outages on these secondary network systems can be catastrophic and difficult to remedy quickly (Eversource GMP at 36). It is challenging to compare this to proposed investments that will reduce the impact of or prevent outages that occur more frequently but affect a smaller number of customers and are easier to rectify.⁶

⁵ The Department's language does not address whether the STIP must achieve universal AMF on an opt-out basis. See D.P.U. 12-76-B Order at 13-15, 20. However, given the Department's adopted TVR framework that requires TVR be the default option for all basic service customers, one could reasonably assume its intent is that AMF be universally implemented, not just universally available.

⁶ In its filing, Eversource uses dollars per customer minute saved (CMS) as one of the metrics for comparing reliability investments. Eversource GMP at 25. This metric compares the cost of an investment to the resulting reduction in the total number of minutes affected customers go without electricity. Still, there are many other metrics for evaluating service quality that may also be considered, such as those currently used to evaluate the

As noted above, possibly the most egregious error in Eversource's GMP is the inclusion of investments in tree-trimming, double-pole removal, stray voltage testing, manhole inspections, and other similar core utility duties. Eversource argues that because these measures increase resiliency and reliability, they will achieve some of the DPU's objectives, and a modern grid does little good if it is not functioning. Still, these activities are clearly not appropriate for inclusion in the GMP and to be recovered through a capex tracker.

Eversource's GMP appears to fail to satisfy the Department's GMP requirements in a number of ways. Namely, Eversource's GMP:

- Does not provide for 100% AMF – as discussed in footnote 2, it is not clear whether the DPU requires universal AMF, or if an opt-in approach is acceptable. However, it would seem that the Department's presumption is that AMF will be universal, given the fact that the TVR framework makes TVR a default option.
- Does not adopt the DPU's TVR framework – Eversource did not make TVR a default option for all consumers, and the design of its opt-in TVRs do not conform to the DPU's framework.
- Does not clearly address providing data to third party suppliers, or the ability of suppliers to develop TVR products (D.P.U. 14-04-C Order).
- Requires consumers to pay additional costs in order to get real-time access data. Thus, it is unclear if Eversource's proposed opt-in AMF meets the Department's definition of AMF.
- Appears to seek recovery of operations and maintenance costs through the capex tracker, although the DPU specifies that *only capital investments are eligible*.
- Incorrectly proposes to recover some costs – tree trimming, double-pole removal, stray voltage testing, manhole inspections, etc. – as incremental grid modernization investments, when they are actually core utility functions.
- Does not mention energy efficiency or how its proposed GMP is consistent with the DPU policy framework that stated it “will benefit all customers by reducing peak energy and capacity market costs; increasing system efficiencies and support the distribution system by reducing peak demand; and providing appropriate incentives for distributed resources such as photovoltaic generation, electricity storage, and electric vehicles, as well as targeted energy efficiency and demand response.” (D.P.U. 14-04-C Order at 3).⁷

DISCUSSION – POTENTIAL AREAS OF FOCUS FOR THE COMPACT

EDCs' service quality (see D.P.U. 12-120 for additional detail). Further complicating the issue, different customers place very different values on electric service quality and reliability.

⁷ Eversource includes in its GMP the cost of a \$7 million investment in a proposed New Bedford Energy Storage project with little explanation of consistency with the framework or allocation of cost to which customers. Eversource GMP at 56-59.

The Eversource GMP includes an enormous amount of information. The DPU's review process will be exhaustive, and will involve a number of other parties, including the Attorney General, environmental advocates, renewable energy interests, low-income ratepayer advocates, and various trade groups. Furthermore, National Grid and Unitil raise issues that, if supported by the DPU, could have significant statewide impacts. This might make it critical for the Compact to participate in the dockets reviewing National Grid's and Unitil's GMPs as well. As such, the Compact's resources will be best and most effectively spent by focusing on a discrete number of issues which the Compact has distinct insight into

or that are likely to have particular impacts on Cape and Vineyard customers. This section serves two purposes: first, it highlights some of the areas that the Compact should address in possible participation in the grid modernization proceedings and other initiatives. Second, it highlights issues on which the Compact is still clarifying its position. The Compact is particularly interested in feedback on these questions.

EVERSOURCE AMI AND TVR PROPOSAL

Eversource's AMI and TVR proposal diverges significantly from the direction provided by the DPU and the ideal of grid modernization in general. Not only does Eversource propose an opt-in approach, its proposal includes specifics that seem designed to discourage customer participation in TVRs. For instance, Eversource's proposal would require those that opt-in to TVR to pay some sort of fee, though details on the structure of these fees are scant. Eversource's TVR structure would also include prohibitively high rates during peak periods, and would require that customers that opt into TVRs to stay with them for at least a year. Eversource claims that these design elements stem from a desire to properly allocate costs and benefits, but they may represent unnecessary impediments that do not properly account for all of the benefits of TVR participation. Taken together, they may result in a sort of self-fulfilling prophecy – unattractive TVRs that will experience low participation levels and be rendered ineffective as a result. If Cape and Vineyard ratepayers want to have the ability to take advantage of TVRs at a reasonable cost, the Compact should plan to question some of these obstructive TVR and AMI elements, and push for changes that would be more likely to result in successful TVRs with high levels of

Key intervention points

- *GMP must include a process for providing data to competitive suppliers and other vendors*
- *TVR should not include fees that will deter customers from participating*
- *TVR design should include pricing during peak periods that increases over time, allowing customers to adjust their consumption behavior, or select alternative supply options*
- *Eversource must consider alternatives to requiring that customers commit to a full year of TVR*
- *Eversource needs to justify allocating all incremental cyber security costs to TVR/AMI implementation*
- *Encourage DPU to require EDCs to estimate transmission and distribution savings associated with demand reductions from TVR, DG, and other grid mod investments*
- *Ensure geographical equity in reliability costs and benefits*
- *Address National Grid's proposal to introduce fees for standalone DG*

participation and significant benefits.

Eversource's failure to address how competitive suppliers and other vendors could access customer data with customer permission is another area of great concern to the Compact. The DPU's vision for TVRs includes a vibrant competitive marketplace with a variety of TVRs designed to benefit different types of customers. Eversource's GMP, on the other hand, seems to envision customers only being able to access AMI meters if they opt into one of Eversource's TVR offerings. National Grid's GMP not only speaks to the process for sharing data with third parties, it also assumes customer participation in TVR's offered by competitive suppliers (National Grid GMP, Attachment 14 at 4). If the Compact's power supply customers want to take advantage of TVR options in the future, it is critical that the Compact secure changes to Eversource's GMP that will allow customers to opt-into AMI and TVRs through competitive suppliers.

The Compact also questions whether it was proper for Eversource to allocate all incremental cyber security costs to its AMI/TVR initiative. This allocation seems indicative of Eversource's tendency to make AMI/TVR seem as unattractive as possible throughout its GMP. The Compact may consider asking the DPU to evaluate whether or not the allocation of other costs was appropriate.

Question 1 – Should the Compact push for universal, opt-out AMI and TVR?

The Compact's position on a more threshold-level issue is still evolving, however. While it may be contrary to the DPU's direction, the Compact is actively considering whether there is merit to Eversource's argument that an opt-in approach to TVR may be most cost effective. It is a complex issue.

In support of its proposed approach, Eversource suggests that most residential and small commercial customers do not have enough discretionary load (electricity use that can be shifted from one time of the day to another) to benefit from a TVR. In fact, Eversource claims that some groups, including low-income and elderly households, may see their bills increase if they participate in TVRs. While studies cited by the DPU contradict this, this concern is shared by the Low-Income Energy Affordability Network (LEAN), an advocate for low-income customers. Eversource also references studies and its own experience to support the idea that customers simply are not interested in participating in TVRs or in electricity bills at all. There are also a number of AMI-related benefits included in National Grid's STIP that Eversource does not include. The costs of AMI meters in the GMP also vary substantially, depending on where in Eversource's territory they are being installed. The Compact plans to request that Eversource share more information that will allow the Compact to better evaluate these concerns.

It's crucial to note that Eversource's position on AMI and TVR is contradicted by National Grid, which advocates for universal AMI and opt-out TVR, as directed by the DPU. Notably, of National Grid's four potential investment scenarios, only its AMI-focused scenario has a 15-year benefit-cost ratio above 1 (National Grid GMP at 11). Throughout its GMP, National Grid cites its success in its grid modernization pilot in Worcester, which included both universal AMI and opt-out TVR. Furthermore, because Grid favors universal AMI, it has a more developed concept of how AMI customers will use AMI and benefit

from TVRs, spending more time discussing interactions with EE programs, integrating appliances, and other opportunities for customers to use and benefit from AMI and TVRs. This may explain, in part, the divergent views National Grid and Eversource have on the costs and benefits of AMI and TVR.

The Compact does not yet take a position on the question of universal AMI and opt-out TVR, as it requires additional information. It will be important for the Compact and its constituents to grapple with whether universal AMI and opt-out TVRs should be a priority. On one hand, there may be merit to Eversource's claims that most customers would not make significant changes in response to universal AMI and opt-out TVR and that implementation costs far outweigh potential benefits. On the other hand, universal AMI and opt-out TVR will spur new technologies and services that will increase the ability of customers to shift their consumption, bringing savings to individual customers and benefits to the system as a whole. Additional information will help better evaluate these competing positions. In the meantime, the Compact and its constituents should begin to consider their positions on universal AMI and opt-out TVR.

MONETIZING TRANSMISSION AND DISTRIBUTION BENEFITS

One of the primary potential benefits from optimizing electricity demand through programs like TVR is a reduction in the need for EDCs to build additional capacity into their distribution system. The idea is simple – as TVRs encourage customers to shift electricity consumption to periods of lower demand, the demand curve on the distribution system becomes smoother, which lower peaks. The result should be reduced capital investments typically associated with increasing system peaks.⁸ Eversource claims that the geographic diversity and inherent unpredictability of its proposed opt-in approach will make it impossible to defer distribution system upgrades based on TVR participation moderating system peaks. National Grid, similarly, does not monetize deferred distribution system investments resulting from TVR. Given that such investment deferrals could represent an enormous source of financial benefits which could translate into lower distribution rates, the Compact should request that the EDCs revise their proposals to increase the likelihood that TVR participation will lead to deferred capital investments and to monetization of these benefits.

Question 2 – What level of electric reliability do Cape and Vineyard residents expect, and how much are they willing to pay for that reliability?

GRID-FACING INVESTMENTS

The Compact will need to consider the importance of electric reliability to its Cape and Vineyard customers in the context of the costs and benefits of reliability investments proposed by the EDCs in

⁸ As an example, Rhode Island, where National Grid is the EDC, has adopted what it refers to as a System Reliability Procurement Plan, which requires utilities to consider alternatives, such as efficiency or DG, to traditional system upgrades. While these alternatives are not the same as TVRs, the concept is similar.

<http://www.energy.ri.gov/reliability/>

their GMPs. Although the Compact's focus is generally more on customer-facing GMP elements than grid-facing investments, electric reliability is a major issue in the GMPs. At minimum, the Compact should plan to verify that there is geographical equity with regard to the benefits and cost allocation associated with reliability investments. Beyond that, the priority of this item for the Compact depends in part on the value that the Cape and Vineyard, as a region, places on electric reliability. While there will always be additional investments that can be made to further increase reliability, there are certainly diminishing returns associated with such investments. The question then becomes one of priorities – how much are customers willing to pay for marginal increases in reliability?

Question 3 – Should the Compact push for policies that will continue to support a robust expansion of distributed generation in Massachusetts, or should it focus more on ensuring DG owners are making payments for grid services?

DISTRIBUTED GENERATION

All three EDCs discussed a need to change current rate design in order to ensure success in achieving the DPU's objective to increase the integration of distributed energy resources. These proposals are of potentially grave concern to the Compact, given the DG installed in its territory in recent years. Specifically, National Grid proposed the introduction of new fees to be assessed on distributed generation (DG), such as solar PV, installed with no significant on-site load. Grid also proposed to decrease volumetric fees (fees charged per kWh) and increase customer (monthly) charges for residential customers, going as far as to suggest that fees based exclusively on demand (kW or kVA) and customer charges would be fairest. Until proposed changes that would have even more detrimental impacts on net-metered DG. While Eversource did not propose any similar changes in its GMP, it calls the issue an important one that "needs to be resolved in order to facilitate increased installation of DER under a fair rate structure." (Eversource GMP at 14). In all cases, the EDCs claim that current rate design, specifically that of net metering, allows DG owners to benefit from the grid without contributing a fair amount to maintaining it.

The issue is a complex one. Certainly, all DG owners without storage backup benefit from access to the grid to provide power when their generator is not producing power (e.g., the sun is not shining). To the extent that such system owners have enough generation to effectively zero out their utility bill, they are not making payments to EDCs to help maintain the grid. On the other end, DG proponents claim that various benefits associated with DG actually make the installation of DG a net benefit to EDCs and their customers. For example, DG produces power when demand is highest, assists in system reliability, produces power closest to load (minimizing losses), reduces the need for capital investments in distribution system, etc. Importantly, some of the proposed changes could also reduce the incentives for customers to invest in energy efficiency (EE), which has myriad benefits, including reducing peak

demand.⁹ EE & DG also assist in job creation, retains energy dollars in the state, and helps the Commonwealth to achieve legislative energy goals, including those set forth in the Global Warming Solutions Act.¹⁰ Because of the complexity of the issue, it becomes a question of priorities – whether DG should be seen as something with enough benefits that it is worth supporting, potentially beyond its true value to the grid, or if equity should always be the overriding concern, even if that yields policies detrimental to DG.

The question of how to compensate DG overlaps with many other issues addressed in the GMPs. Still, the DPU did not specifically require that net metering and DG compensation be addressed in the GMPs. This issue is also complex and controversial. For these reasons, the Compact and other parties may request that this question be removed from the GMP dockets and addressed by the DPU in a separate docket. This procedural approach would allow for more deliberate consideration of net metering and DG compensation that would be consistent across the territories of the three EDCs.

CONCLUSION

The current grid modernization docket and ensuing implementation of a smarter grid will unfold over a period of many years. However, the decisions made today will have impacts that will persist far into the future. For that reason, it is crucial to consider and continue to discuss grid modernization and what it will mean for the Cape and Vineyard today and in the future.

Please keep in mind that this document and the questions it raises are not intended to be comprehensive. The Compact will raise additional questions and challenges in the event that it intervenes, and other issues likely will be addressed by other participants in the proceeding. Instead, this document is intended to spur discussion on some of the most challenging and far-reaching questions prompted by Eversource's GMP.

⁹ In a separate but related docket that involved the expansion of the Mashpee Substation, the DPU order includes the condition that "NSTAR is strongly encouraged, in the future, to discuss with the CLC the potential for targeted and/or incremental EE, well in advance of determining that a transmission or distribution project is needed in the Company's Cape Cod service territory. NSTAR will be required to provide evidence of long-range EE planning efforts in all future zoning exemption and Section 72 applications filed with the DPU." Order, D.P. U. 14-03 at 20 (April 13, 2015).

¹⁰ Some advocates suggest that an approach sometimes referred to a "Value of Solar" tariff is an ideal way to address these concerns. Value of solar tariffs are designed to evaluate the real benefits of solar, and compensate solar owners on that basis. Such an approach is intended to be fairer for both solar owners and other utility customers, basing compensation on value, not on something more arbitrary like retail electricity prices. To date, Minnesota and Austin, Texas have adopted value of solar tariffs. A good summary of value of solar tariffs is available here: http://www.nrel.gov/tech_deployment/state_local_governments/basics_value-of-solar_tariffs.html

Microgrids:

What are they? What is their value? Why and where should they be developed?

What is a microgrid?

The U.S. DOE describes a microgrid as “a group of interconnected loads and distributed energy resources (DER) with clearly defined electrical boundaries that acts as a single controllable entity with respect to the grid [and can] connect and disconnect from the grid to enable it to operate in both grid-connected or island mode”

(definition developed by the Microgrid Exchange Group, comprised of an ad hoc group of individuals working on microgrid research & development)

<http://energy.gov/oe/services/technology-development/smart-grid/role-microgrids-helping-advance-nation-s-energy-system>

What is the value of a microgrid?

The pending review and implementation of the Grid Modernization Plans (GMPs) proposed by the investor owned-utilities in Massachusetts presents significant opportunities and challenges specific to the integration of energy efficiency, demand response and distributed energy resources (DERs) that can support the goals of a modern efficient and resilient power grid.

As a review, the GMP objectives for Massachusetts are:

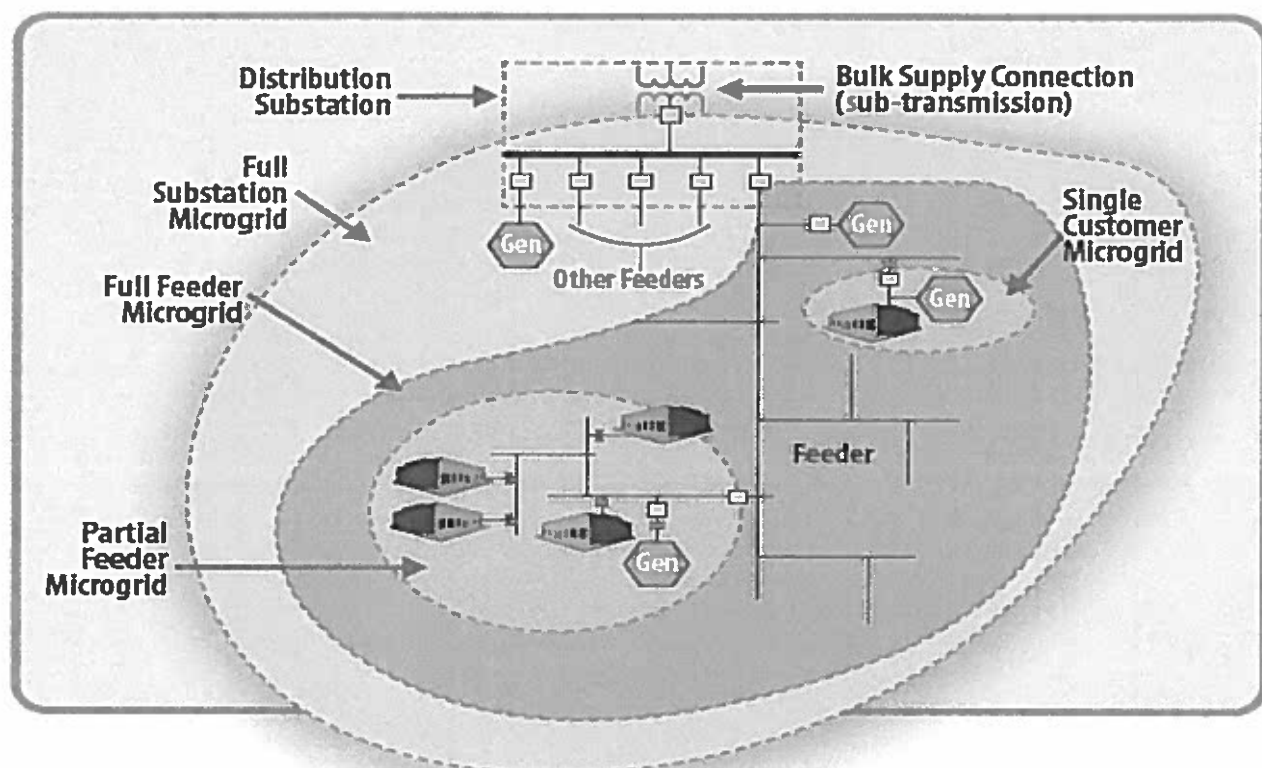
1. reducing the effects of outages;
2. optimizing demand, which includes reducing system and customer costs;
3. integrating distributed resources; and,
4. improving workforce and asset management.

(D.P.U. 12-76-B at 2)

The MA Department of Public Utilities (DPU) stated “Grid modernization is an important means for advancing the statutory requirements and policy goals of further development of energy efficiency, renewable energy resources, demand response, electricity storage, microgrids, and EVs (electric vehicles).” (D.P.U. 12-76-B at 9)

Research and development efforts are underway to advance microgrid demonstration projects across the United States and are designed to meet many of the above GMP objectives. In addition, due to the increasing frequency and intensity of weather-caused grid outages in recent years, the U.S. DOE has placed an added emphasis on R&D to enhance resilience to climate change and extreme weather.

What does a Microgrid look like? (from U.S. DOE Microgrid Initiative)



As shown above, a microgrid may be as small as a **Single Customer Microgrid**, or include a **Partial Feeder Microgrid**, or a **Full Feeder Microgrid** or a **Full Substation Microgrid**. Components of the microgrid include: generating resources (Gen), storage devices and loads including controlled loads.

Generating resources cover all sources possible at the scales and within the context of the microgrid, e.g. fossil or biomass-fired small-scale combined heat and power (CHP), photovoltaic modules (PV), small wind turbines, mini-hydro and micro-turbines, plug-in electric vehicles, for example.

Storage devices includes all of electrical, pressure, gravitational, flywheel and heat storage technologies. While the microgrid concept focuses on a power system, heat storage can be relevant to its operation whenever its existence affects the operation of the microgrid. For example, the availability of heat storage will alter the desirable operating schedule of a CHP system as the electrical and heat loads are decoupled. Similarly, the pre-cooling or heating of buildings will alter the load shape of heating ventilation and air conditioning (HVAC) systems, and therefore the requirement faced by electricity supply resources. Battery storage devices can also manage resource needs in combination with intermittent resources such as PV.

Controlled loads, such as automatically dimmable lighting or delayed pumping, are particularly important to microgrids simply by virtue of their scale. In small power systems, load variability becomes more significant than in large utility-scale systems. The corollary is that load control, load shedding and demand response can make a particularly valuable contribution to the microgrid.

Why Would a Community Choose to Implement a Microgrid?

Depending on the generating resources available, type of load(s) and interconnection location to the local distribution company, a microgrid can provide all requirements or some of the requirements for power by the community. A microgrid not only provides local power but may do so more cost-effectively, more reliably than traditional grid sources. In addition, a microgrid allows communities to be more energy independent and, depending on the mix of renewable sources, can be more environmentally friendly. In short, the benefits can be economic, environmental and reliability/resiliency.

The **City of Boston** convened the Pace University Energy and Climate Center, facilitated by Dr. Jonathan Raab, Raab Associated, Ltd., in a microgrid workshop series held in 2014 included stakeholder representatives from the MA DPU, City of Boston, electric distribution companies (EDCs), distributed generation and microgrid developers and customers. The workshops included legal and economic analysis; identification of benefits, costs, deal-makers and deal-breakers; and the development of a straw proposal for a multi-user microgrid that could be used as a template for pilot projects in Massachusetts.

In addition, as part of energy system planning, Boston undertook a Community Energy Study. This study was commissioned by the Boston Redevelopment Authority in August of 2014, funded by a grant from the Mass Clean Energy Center for microgrid planning with additional funding from the Department of Homeland Security (Science and Technology). Project partners were: MIT Sustainable Design Lab, MIT Lincoln Laboratories and Eversource. This project used advanced modeling and energy data to establish city-wide consumption patterns (see below) and identified localized generation and distribution scenarios to be used as foundational data to explore the viability of advanced energy systems, including microgrids.

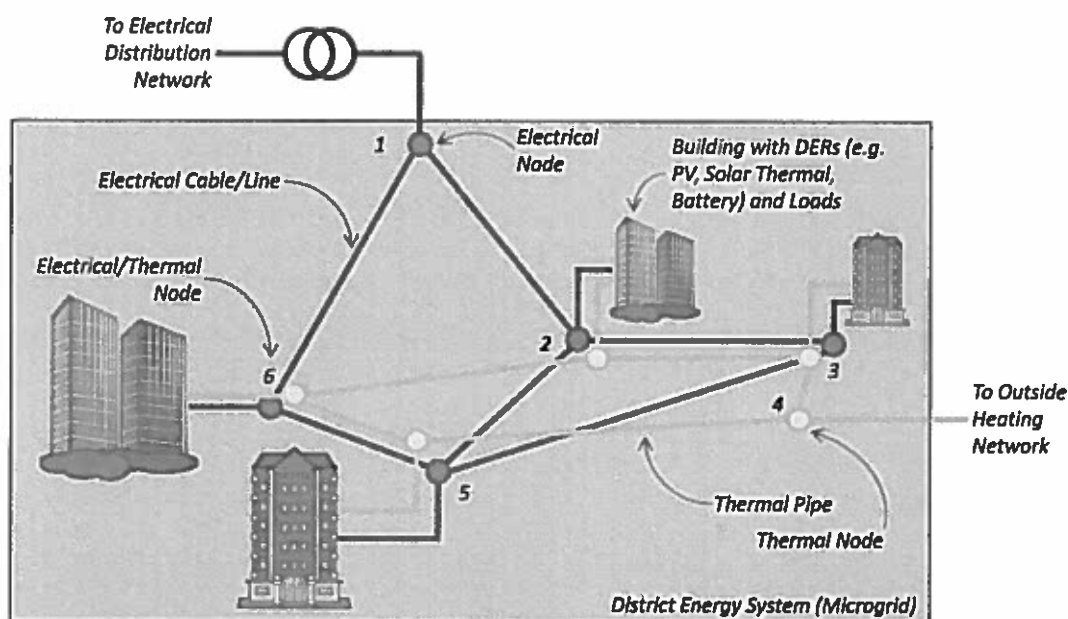


Where Should a Community Choose to Locate a Microgrid?

The location of a microgrid involves a number of factors, mentioned earlier, and communities with funding through DOE/LBNL are, in California (CA), working with the CA Public Utilities Commission, Investor Owned Utilities and other stakeholders to develop an optimization platform, hosted online, to be able to identify meaningful behind-the-meter DER adoption patterns, potential microgrid sites and demand resources. This optimization platform would evaluate the impacts of high renewable penetration feeders on the distribution and transmission grid, all in support of statewide goals in California to integrate 15 GW of distributed energy resources, including 12 GW of renewable energy on distribution systems.

Here on Cape Cod and Martha's Vineyard, the Cape Light Compact and the Cape & Vineyard Electric Cooperative are in the unique position to be able to assemble many of the components (PV resources, energy efficiency/demand reductions, geographic end-use load profiles, electricity pricing and other relevant price information, for example) that would go into the development of a local siting and optimization tool that could, like California, evaluate the the impacts of and best choice for microgrids.

As an example, the Multi-Location DER-CAM (Distributed Energy Resources-Customer Adoption Model, in development since 2000 by Berkeley Lab), enhanced modeling capabilities for microgrids is illustrated below for a District Energy System. The objective of the DER-CAM model is to minimize the cost of operating on-site generation and CHP systems, either for individual customer sites or a microgrid.



Microgrids Enhancing the Resiliency of Distribution Systems

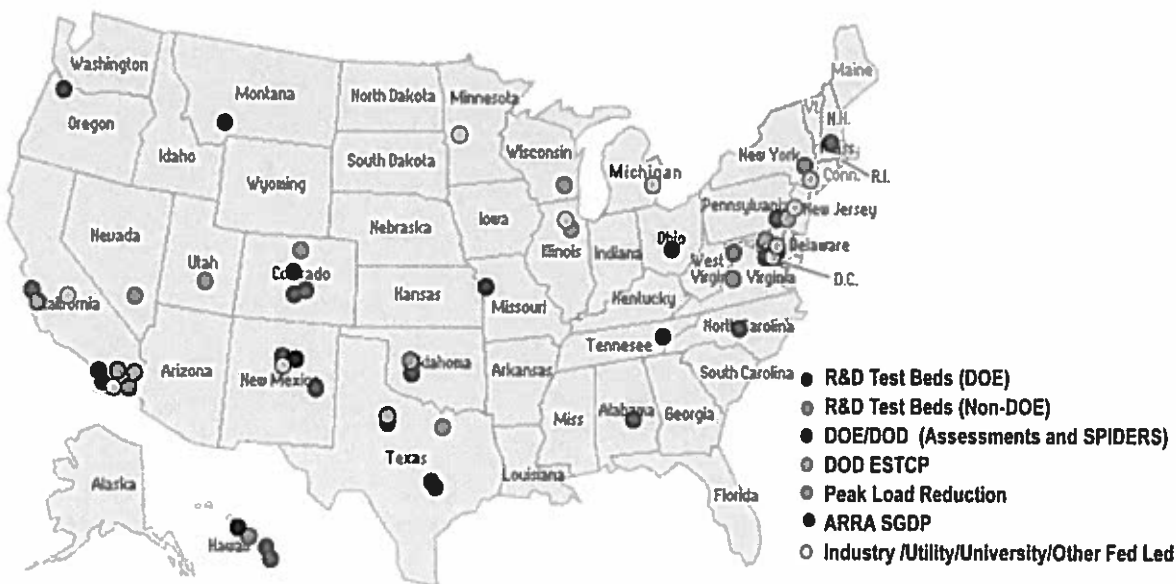
Pacific Northwest National Laboratory and Washington State University are working together to examine the use of microgrids as a resiliency resource. Modeling is being done to examine use of generating resources that may serve loads within, as well as outside, the boundaries of the microgrid. In addition, DOE awarded more than \$8 million to seven microgrid demonstration projects to help communities better prepare for extreme weather events and electric grid disruptions. These projects will bring together communities, technology developers and providers, and utilities to develop advanced microgrid controllers and system designs for microgrids under 10 mW in capacity.

Microgrids are key building block for a Smart Grid

The DOE Smart Grid R&D Program has launched a national effort on electric distribution grid resilience that considers microgrids a key building block. This effort not only responds to the increasing vulnerability of grid outages due to climate change and extreme weather events but also supports Executive Order 12653 “Preparing the United States for the Impacts of Climate Change” and the goal of “building stronger and safer communities and infrastructure” in accordance with “The President’s Climate Action Plan”. The Smart Grid R&D Program resides within the DOE Office of Electricity Delivery and Energy Reliability (OE) and has the program objectives of:

- ✦ modernizing the electric distribution grid through adaptation and integration of advanced technologies (information, communications and automation) and new operational paradigms (microgrids and transactive controls, such as smart meters with two-way communications capability that can allow time-varying prices to trigger load changes at a price-responsive device or overall building/facility level (e.g. signals to programmable communicating thermostats (PCTs)) that turn-up the set point on air-conditioning systems)).
- ✦ supporting the increasing demand for renewable energy integration and grid reliability and resiliency at the state and local levels.

These ongoing microgrid demonstration projects (see map below) consist of renewable and distributed systems integration (RDSI) projects designed for peak load reduction. In 2008, 9 RDSI projects were selected via competitive DOE solicitation with the primary goals to (1) demonstrate at least 15 percent peak demand reduction on the distribution feeder or substation level through integrating DER, and (2) demonstrate microgrids that can operate in both grid parallel and islanded modes. This integrated approach has the potential to allow more power to be delivered through existing infrastructure, thereby deferring transmission and distribution investment, and to increase the reliability of the grid.



Sources and References:

Berkeley Lab. DER Siting And Optimization Tool to Enable Large Scale Deployment of DER In California. [Online]. <https://building-microgrid.lbl.gov/projects/der-siting-and-optimization-tool-enable>

Berkeley Lab. Microgrid Definitions. [Online]. <https://building-microgrid.lbl.gov/microgrid-definitions>

City of Boston Microgrid Workshops. [Online] <http://www.raabassociates.org/main/projects.asp?proj=116&state=Expertise>

K. P. Schneider, F.K. Tuffner, M. A. Elizondo, C.C. Liu and Y. Xu, "Microgrid as a resiliency resource," PNNL-23674, Pacific Northwest Nat. Lab., Richland, Washington, Sept. 2014.

The Role of Microgrids in Helping to Advance the Nation's Energy System [Online] <http://energy.gov/oe/services/technology-development/smart-grid/role-microgrids-helping-advance-nation-s-energy-syst-o>

Swing, Bradford. (2015). City of Boston Energy System Planning. [Online] <http://aceee.org/sites/default/files/pdf/conferences/ie/2015/Session3B-Swing-IE15-12.7.15.pdf>

Ton, D., & Wang, W. (2015). A More Resilient Grid: The U.S. Department of Energy Joins with Stakeholders in an R&D Plan. IEEE Power and Energy Magazine, 13(3), 26-34.

Ton, D., & Smith, M. (2012). The U.S. Department of Energy's Microgrid Initiative. The Electricity Journal, 25(8), 84-94.

U.S. Department of Energy. (June, 2014). 2014 DOE Resilient Electric Distribution Grid R&D Workshop summary report. [Online]. Available: <http://energy.gov/oe/articles/final-report-and-other-materials-2014-resilient-electric-distribution-grid-rd-workshop>



ATTORNEYS AT LAW

The firm has attorneys also admitted
to practice in District of Columbia,
Idaho, New York and Vermont

271 WAVERLEY OAKS ROAD, SUITE 203
WALTHAM, MASSACHUSETTS 02452
617.244.9500

FACSIMILE: 802.419.8283
E-MAIL: bckboston@bck.com
WEBSITE: www.bck.com

March 30, 2016

**VIA ELECTRONIC MAIL
ORIGINAL BY HAND DELIVERY**

Mark D. Marini, Secretary
Department of Public Utilities
One South Station, 5th Floor
Boston, MA 02110

*Re: D.P.U. 15-122
Petition of NSTAR Electric Company and Western Massachusetts Electric
Company, each d/b/a Eversource Energy, for Approval by the DPU of their
Grid Modernization Plan.*

Dear Secretary Marini:

Enclosed for filing please find an original and one copy of the Petition for Leave to Intervene of the Cape Light Compact along with a Notice of Appearance and Certificate of Service in the above-referenced matter.

Please feel free to contact me if you have any questions regarding this filing.

Sincerely,

Rebecca Zachas

RFZ/drb

Enclosures

cc: Tina Chin, Hearing Officer (via email and hand delivery)
Danielle Winter, Esq. (via email and first class mail)
Donald Boecke, Esq. (via email and first class mail)
Margaret T. Downey, Cape Light Compact Administrator (via email and first class mail)

VERMONT OFFICE:
P.O. Box 205
Woodstock, Vermont 05091
Telephone: 802.457.9050
Facsimile: 802.419.8283
E-Mail: bckvt@bck.com

MOUNTAIN STATES OFFICE:
P.O. Box 1527
Ketchum, Idaho 83340
Telephone: 208.727.9734
Facsimile: 802.419.8283
E-Mail: bckidaho@bck.com

supplier. Eversource is the distribution company providing service in the Compact's service territory.

3. Eversource proposed a grid-focused plan with an estimated \$430.7 million in short-term investments in areas including advanced analytics, real-time grid-wide situational awareness, advanced distribution automation, grid resiliency, distributed energy resources integration, communications, and cyber security. Eversource declined to adopt an opt-out advanced metering infrastructure ("AMI") program, even though it acknowledged that it is the "only technology that will satisfy all four of the advanced metering functionalities set out by the Department." GMP at 87. Instead, Eversource proposed two opt-in time-varying rate ("TVR") designs with associated enabling metering. *Id.* at 70. As proposed, the meters would rely on hourly data transmission using cellular technology, with a secondary option of networked meter reading in areas where the communication network for distribution automation has been rolled out. *Id.* at 80.

4. The Compact was a participant throughout the stakeholder process in the Department's grid modernization proceeding in D.P.U. 12-76 and filed comments and reply comments in that proceeding. Cape Light Compact Comments, D.P.U. 12-76 (July 24, 2013); Cape Light Compact Comments, D.P.U. 12-76-A (January 17, 2014); Cape Light Compact Reply Comments, D.P.U. 12-76-A (March 21, 2014).

II. BACKGROUND OF THE COMPACT

5. The Compact is a governmental aggregator under G.L. c. 164, §134 and consists of the twenty-one towns in Barnstable and Dukes Counties, as listed above, as well as the two counties themselves. It was originally formed in 1997 and is organized through a formal Inter-

Governmental Agreement entered into by all of the towns, as well as Barnstable and Dukes counties, pursuant to G.L. c. 40, §4A, as amended from time to time. The Compact's Aggregation Plan was approved by the Department in D.T.E. 00-47 on August 10, 2000 and its Updated and Revised Aggregation Plan was approved by the Department in D.P.U. 14-69 on May 1, 2015. The Compact maintains a business office located at 3195 Main Street, Barnstable, Massachusetts 02630.

6. The purposes of the Compact include, among other things: (1) to provide the basis for aggregation of all consumers on a non-discriminatory basis; (2) to negotiate the best terms and conditions for electricity supply and transparent pricing; (3) to improve quality of service and reliability; (4) to encourage renewable energy development; and (5) to administer energy efficiency and demand response activities. Sixth Amended and Restated Compact Inter-Governmental Agreement at Article I (November 18, 2015).

7. The Compact operates a municipal aggregation competitive supply program, which currently provides electric power supply to roughly 130,000 customers out of the 202,000 eligible customers across all customer classes who are located within the Compact's service territory.

8. As a municipal aggregator, the Compact also operates as the energy efficiency Program Administrator for all ratepayers on Cape Cod and Martha's Vineyard. The Compact has continuously administered award-winning energy efficiency programs since 2001. See D.T.E. 00-47C (April 6, 2001) (approving Phase I of energy efficiency plan); D.T.E. 03-39 (approving Phase II); D.T.E. 05-34 (November 8, 2005) (approving Phase III); D.P.U. 07-47 (December 24, 2007) (approving 2007-2012 plan, subsequently amended by order in D.P.U. 07-47-A (October 1, 2008) and D.P.U. 08-113 (May 29, 2009)); D.P.U. 09-119 (approving first

statewide three-year plan for plan years 2010-2012); D.P.U. 12-107 (approving 2013-2015 statewide three-year plan); and D.P.U. 15-166 (approving 2016-2018 statewide three-year plan).

9. In the most recent three-year 2016-2018 Statewide Energy Efficiency Plan, the Compact provides for a demand response offering that includes enhanced energy efficiency initiatives. See D.P.U. 15-166, Compact Initial Filing at Exhibit Compact-11 (October 30, 2015). Through its demand response initiative, the Compact aims to reduce customer demand through curtailment events and to encourage load-shifting through installation of demand response technologies and behavioral changes. *Id.*

10. The Compact participates in various Department proceedings as an advocate for all the ratepayers on Cape Cod and Martha's Vineyard. In particular, the Compact actively participates in matters involving potential economic impacts and benefits to these ratepayers. See, e.g., D.P.U. 10-170 (intervening in Northeast Utilities merger proceeding); D.P.U. 10-82 (participating in smart grid pilot evaluation working group); D.P.U. 12-76 (participating in grid modernization investigation); D.P.U. 11-75 (distributed generation interconnection); D.P.U. 12-120 (participating in service quality standards investigation); and D.P.U. 09-33 (Eversource Smart Grid Pilot – limited participant). In addition, the Compact has regularly participated in proceedings concerning proper cost recovery to prevent cross subsidization between basic service and distribution customers, as well as other matters that may impact ratepayers on Cape Cod and Martha's Vineyard. See, e.g., D.P.U. 12-126-A, Interlocutory Order, at 13, 16-17 (August 5, 2013); and D.P.U. 11-05/06/07, Order (August 19, 2011).

III. PARTICIPATION BY THE COMPACT IN THIS PROCEEDING

11. In conducting adjudicatory hearings, the Department “may allow any person showing that he may be substantially and specifically affected by the proceeding to intervene as a party in the whole or any portion of the proceeding...” G.L. c. 30A, §10(4); 220 C.M.R. §1.03(1)(b).

12. The Compact seeks to intervene in this proceeding both as a consumer advocate for its consumers and as an energy efficiency program and demand response administrator (G.L. c. 25, §21) because of potential impacts and precedents that may be set on its energy efficiency and other programs. The Compact is particularly concerned about grid modernization investments (e.g., advanced metering and TVR) and principles or policies that could negatively impact the Commonwealth’s competitive markets and customers’ power to choose. Compact Comments, D.P.U. 12-76-A (January 17, 2014).

13. As the Commonwealth’s largest municipal aggregator and as an energy efficiency program administrator for customers in the Compact’s service territory, the Compact can provide unique insights based on its own experiences to this investigation into Eversource’s GMP. The Compact can best serve its members and customers through its active participation in this docket. The Compact’s unique status as the only municipal aggregator Program Administrator complicates its implementation of its ideal demand response offerings. In its recent Three-Year Plan filing in D.P.U. 15-166, the Compact proposed to begin establishing a platform for the “connected home” and to install The Energy Detective (“TED”) devices on up to 600 residential and small commercial electric meters through the Compact’s Home Energy Assessment (“HES”) and Business Energy Assessment (“BEA”) initiatives. See D.P.U. 15-166, Compact Initial Filing, Exhibit Compact-11 at 1 (October 30, 2015) (noting Compact’s ability to fully implement

a demand response program requires advanced metering and time-varying rates). TED will allow electric customers to access their electric usage on a real time basis through a Compact customized application on their mobile device or computer. *Id.* However, this proposal is not ideal, and the Compact would propose the installation of advanced metering instead of TED but cannot do so until implementation of advanced metering in Eversource's service territory. *Id.* at 3.

14. Absent its participation in this docket, the Compact has no ability to choose or even influence the technologies or investment that would support its demand response efforts. Unlike an electric distribution company, the Compact only administers and cannot design or select the infrastructure, which puts the Compact at a distinct disadvantage.

15. Eversource, National Grid, and Unitil each submitted their own, radically different GMPs. The Compact is generally concerned about such different plans being adopted across the service territories in the Commonwealth, especially with the differing impacts on competitive suppliers in those territories. Eversource's GMP takes a conservative approach to grid modernization, emphasizing incremental investments. With regard to Eversource's GMP, the Compact has many concerns, some of which are raised below.

16. Eversource's proposed GMP does not appear to satisfy requirements set forth in the Department's D.P.U. 12-76-B Order in a number of ways. For example, Eversource has not proposed opt-out AMI in its GMP. GMP at 86. Eversource did not make TVR a default option for all consumers, and the design of its opt-in TVRs do not conform to the Department's framework. Eversource also requires consumers to pay additional costs in order to get real-time access to data. GMP at 81. Further analysis is necessary to determine whether Eversource's GMP is consistent with the Department's requirements in D.P.U. 12-76-B.

17. Eversource's GMP must ensure consumer access to smart grid technology in a manner that is consistent with the Department's directives as well as competitive supply. In its Order in D.P.U. 14-04-C, the Department clearly stated that:

our Order will alert competitive suppliers, manufacturers, and others that individual customers, assisted by new technologies (e.g., advanced meters, in-home displays, programmable thermostats, load control devices), will be empowered to respond to the actual varying costs of electricity and save money by altering usage based on price signals that reflect these actual costs. Thus, our Order will provide an opportunity for *competitive suppliers* to develop a variety of time varying rate products and for manufacturers to develop new technologies to help customers to manage their electricity costs.

D.P.U. 14-04-C, Order at 3. Instead, in its GMP, Eversource proposed that anyone wishing to have a smart meter should enroll in Eversource's basic service power supply. Requiring customers to be on basic service to obtain a smart meter is in direct conflict with the Massachusetts Electric Restructuring Act, Chapter 164 of the Acts of 1997, as well as the Department's D.P.U. 14-04-C Order. Eversource wholly failed to take into account independent generation suppliers, such as the Compact, in its service territory. Eversource's GMP does not address the provision of data to third-party suppliers, or the ability of suppliers to develop TVR products. As proposed, Eversource's GMP would severely limit customer choice, and thus raises fundamental legal issues that must be fully examined.

18. The Compact also questions whether some of Eversource's proposed investments are appropriately classified. For example, the GMP allocates investments for "enhanced" tree trimming, double pole removal and manhole inspections as a grid modernization cost. GMP, Exhibit EVERSOURCE-CAH-1 at 15. *Costs related to standard maintenance or core utility functions do not belong in the GMP.* Eversource also assigns all of its proposed cyber-security

costs to TVR, as it claims that its current cyber security practices are already sufficient for all of the other grid modernization investments. GMP at 212-13.

19. This investigation must ensure that investment costs are properly classified and subjected to a cost/benefit analysis. Those costs must also be properly allocated to consumers who will benefit from them. The Compact seeks to ensure that consumers on Cape Cod and Martha's Vineyard do not end up subsidizing improvements in Boston or other areas that provide them with little or no benefit to them.

20. The Compact also wants to ensure continued opportunities for distributed generation development. The Compact has helped sponsor distributed generation and has participated in such distributed generation proceedings as D.P.U. 11-75 where the current interconnection standards were developed. The Compact also purchases renewable energy certificates ("RECs"), and may be interested in purchasing output from distributed generation projects to blend into its competitive supply. The Compact is considering different options as to how distributed generation may contribute to system reliability and energy efficiency goals. The Compact recognizes that Eversource's GMP includes some investment in distributed generation projects (*e.g.*, its New Bedford storage project), but the Compact wants to ensure that Eversource's GMP properly accounts for distributed generation, including the technological capacity needed to accommodate more distributed generation.

21. Finally, the Compact can provide its unique expertise and experience as it relates to energy efficiency and demand response matters relevant to this proceeding. Eversource's GMP does not adequately address how its GMP is consistent with the Department policy framework that required that all investments "benefit all customers by reducing peak energy and capacity market costs; increasing system efficiencies and support the distribution system by

reducing peak demand; and providing appropriate incentives for distributed resources such as photovoltaic generation, electricity storage, and electric vehicles, as well as targeted energy efficiency and demand response.” D.P.U. 14-04-C Order at 3.

22. In addition, the Compact is actively engaged in exploring the targeted delivery of energy efficiency and demand response initiatives for the purpose of reducing demand. See *Petition of NSTAR Electric Company for an Exemption to the Zoning of the Town of Mashpee*, D.P.U. 14-03, Order at 20 (April 13, 2015) (directing the Compact and NSTAR to explore geo-targeting initiatives in an effort to delay infrastructure investment). The Compact is also analyzing geo-targeting of energy efficiency measures, renewable energy, and energy storage as a means to delay potential infrastructure investment to support the increasing load and system constraints on Cape Cod and Martha’s Vineyard.

23. Accordingly, the Compact’s participation in this proceeding will contribute to a full and fair hearing in this proceeding in that the Compact will represent unique interests from its perspective as an energy aggregator and energy efficiency program administrator. The Compact’s participation will also help facilitate an appropriate and informed result in this proceeding. The Compact’s intervention will not unduly burden the Department, Eversource nor any of the other parties that filed to or may intervene in this proceeding in that the Compact will refrain from introducing duplicative or repetitive material and will cooperate in ensuring a speedy and efficient proceeding.

24. Based on the foregoing reasons, the Compact will be substantially and specifically affected by the outcome of this proceeding. The Compact can best serve and protect the interests of its members and customers through its active and full participation herein. No other party can adequately represent the Compact in this proceeding.

IV. CONCLUSION

WHEREFORE, for the above reasons, the Compact respectfully moves that the Department allow this petition to intervene in this proceeding.

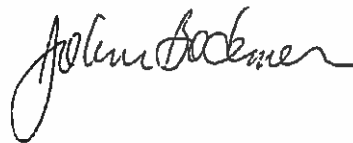
Respectfully submitted,

THE CAPE LIGHT COMPACT

By its attorneys,



Rebecca F. Zachas



Jeffrey M. Bernstein, Esq. (jbernstein@bck.com)
Rebecca F. Zachas, Esq. (rzachas@bck.com)
Jo Ann Bodemer, Esq. (jbodemer@bck.com)
Audrey A. Eidelman, Esq. (aeidelman@bck.com)
BCK LAW, P.C.
271 Waverley Oaks Road, Suite 203
Waltham, MA 02452
(617) 244-9500 (voice)
(802) 419-8283 (fax)

Dated: March 30, 2016

COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF PUBLIC UTILITIES

Petition of NSTAR Electric Company and
Western Massachusetts Electric Company
d/b/a Eversource Energy For Approval of
their Grid Modernization Plan

D.P.U. 15-122

NOTICE OF APPEARANCE

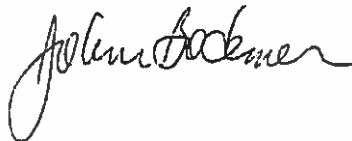
The undersigned attorneys hereby give notice of their appearance as counsel for the Cape Light Compact, in the above-captioned case.

Respectfully Submitted,

THE CAPE LIGHT COMPACT
By its Attorneys,



Rebecca F. Zachas



Jeffrey M. Bernstein, Esq. (jbernstein@bck.com)

Rebecca F. Zachas, Esq. (rzachas@bck.com)

Jo Ann Bodemer, Esq. (jbodemer@bck.com)

Audrey A. Eidelman, Esq. (aeidelman@bck.com)

BCK Law, P.C.

271 Waverley Oaks Road, Suite 203

Waltham, Massachusetts 02452

Telephone: (617) 244-9500

Facsimile: (802) 419-8283

Dated: March 30, 2016

COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF PUBLIC UTILITIES

Petition of NSTAR Electric Company and
Western Massachusetts Electric Company
d/b/a Eversource Energy For Approval of
their Grid Modernization Plan

D.P.U. 15-122

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document(s) upon Secretary Mark D. Marini and Hearing Officers Tina Chin and Sarah Herbert via electronic mail and hand delivery, upon the Service List via electronic mail and first class mail in this matter.

Dated this 30th day of March, 2016.



Rebecca Zachas, Esq. (rzachas@bck.com)
BCK Law, P.C.
271 Waverley Oaks Road, Suite 203
Waltham, MA 02452
617 244-9500 (Phone)
802 419-8283 (Fax)



ATTORNEYS AT LAW

The firm has attorneys also admitted
to practice in District of Columbia,
Idaho, New York and Vermont

271 WAVERLEY OAKS ROAD, SUITE 203
WALTHAM, MASSACHUSETTS 02452
617.244.9500

FACSIMILE: 802.419.8283
E-MAIL: bckboston@bck.com
WEBSITE: www.bck.com

March 30, 2016

**VIA ELECTRONIC MAIL
ORIGINAL BY HAND DELIVERY**

Mark D. Marini, Secretary
Department of Public Utilities
One South Station, 5th Floor
Boston, MA 02110

*Re: D.P.U. 15-120
Petition of Massachusetts Electric Company and Nantucket Electric Company
d/b/a National Grid for Approval by the DPU of its Grid Modernization Plan.*

Dear Secretary Marini:

Enclosed for filing please find an original and one copy of the Petition for Leave to Intervene of the Cape Light Compact along with a Notice of Appearance and Certificate of Service in the above-referenced matter.

Please feel free to contact me if you have any questions regarding this filing.

Sincerely,

Rebecca Zachas

RFZ/drb
Enclosures

cc: Sarah Herbert, Hearing Officer (via email and hand delivery)
Melissa Liazos, Esq. (via email and first class mail)
Donald Boecke, Esq. (via email and first class mail)
Margaret T. Downey, Cape Light Compact Administrator (via email and first class mail)

**COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC UTILITIES**

Petition of Massachusetts Electric Company and)		
Nantucket Electric Company d/b/a National Grid)		D.P.U. 15-120
For Approval of its Grid Modernization Plan)		

**PETITION FOR LEAVE TO INTERVENE OF THE
CAPE LIGHT COMPACT**

Pursuant to 220 C.M.R. §1.03 and the Corrected Notice of Filing, Public Hearing, and Procedural Conference issued by the Department of Public Utilities (“DPU” or “Department”) on March 9, 2016 (the “Notice”), the towns of Aquinnah, Barnstable, Bourne, Brewster, Chatham, Chilmark, Dennis, Edgartown, Eastham, Falmouth, Harwich, Mashpee, Oak Bluffs, Orleans, Provincetown, Sandwich, Tisbury, Truro, West Tisbury, Wellfleet and Yarmouth, and the counties of Barnstable and Dukes County, acting together as the Cape Light Compact (the “Compact”), hereby respectfully petition the Department for leave to intervene as a full party in the above-captioned proceeding. In support of this petition, the Compact states the following:

I. INTRODUCTION

1. As required by the Department’s Order in D.P.U. 12-76-B, on August 19, 2015, Massachusetts Electric Company and Nantucket Electric Company d/b/a National Grid (“National Grid”) filed a proposed Grid Modernization Plan for approval of the Department (the “GMP”).

2. National Grid is a local electric distribution company providing basic service to customers throughout the Commonwealth that would otherwise receive service from a competitive supplier.

3. National Grid's GMP proposed four alternatives for grid modernization in its service territory with different levels of investment in advanced metering infrastructure ("AMI") and grid upgrades. GMP at 9. National Grid described the GMP as beginning "a discussion regarding the scale, scope and timing of grid modernization investments." GMP at 7. National Grid's proposed investments include advanced meter technology, communications, distribution control systems, advanced distribution automation, voltage management and associated infrastructure required to support these capabilities.

4. In addition, National Grid proposed a rate design change away from recovering distribution system costs through variable per-kWh charges, and toward customer charges that reflect customer size. GMP at 199. The proposed charges would be based upon the size of the customer, as determined by metered kWh, and would be applicable to all customers, including those with installed distributed generation. *Id.*

5. The Compact was a participant throughout the stakeholder process in D.P.U. 12-76 and filed comments and reply comments in that proceeding. Cape Light Compact Comments, D.P.U. 12-76 (July 24, 2013); Cape Light Compact Comments, D.P.U. 12-76-A (January 17, 2014); Cape Light Compact Reply Comments, D.P.U. 12-76-A (March 21, 2014).

II. BACKGROUND OF THE COMPACT

6. The Compact is a governmental aggregator under G.L. c. 164, §134 and consists of the twenty-one towns in Barnstable and Dukes Counties, as listed above, as well as the two

counties themselves. It was originally formed in 1997 and is organized through a formal Inter-Governmental Agreement entered into by all of the towns, as well as Barnstable and Dukes counties, pursuant to G.L. c. 40, §4A, as amended from time to time. The Compact's Aggregation Plan was approved by the Department in D.T.E. 00-47 on August 10, 2000 and its Updated and Revised Aggregation Plan was approved by the Department in D.P.U. 14-69 on May 1, 2015. The Compact maintains a business office located at 3195 Main Street, Barnstable, Massachusetts 02630.

7. The purposes of the Compact include, among other things: (1) to provide the basis for aggregation of all consumers on a non-discriminatory basis; (2) to negotiate the best terms and conditions for electricity supply and transparent pricing; (3) to improve quality of service and reliability; (4) to encourage renewable energy development; and (5) to administer energy efficiency and demand response activities. Sixth Amended and Restated Compact Inter-Governmental Agreement at Article I (November 18, 2015).

8. The Compact operates a municipal aggregation competitive supply program, which currently provides electric power supply to roughly 130,000 customers out of the 202,000 eligible customers across all customer classes who are located within the Compact's service territory.

9. As a municipal aggregator, the Compact also operates as the energy efficiency Program Administrator for all ratepayers on Cape Cod and Martha's Vineyard. The Compact has continuously administrated award-winning energy efficiency programs since 2001. See D.T.E. 00-47C (April 6, 2001) (approving Phase I of energy efficiency plan); D.T.E. 03-39 (approving Phase II); D.T.E. 05-34 (November 8, 2005) (approving Phase III); D.P.U. 07-47 (December 24, 2007) (approving 2007-2012 plan, subsequently amended by order in D.P.U. 07-

47-A (October 1, 2008) and D.P.U. 08-113 (May 29, 2009)); D.P.U. 09-119 (approving first statewide three-year plan for plan years 2010-2012); D.P.U. 12-107 (approving 2013-2015 statewide three-year plan); and D.P.U. 15-166 (approving 2016-2018 statewide three-year plan).

10. In the most recent three-year 2016-2018 Statewide Energy Efficiency Plan, the Compact provides for a demand response offering that includes similar enhanced energy efficiency initiatives as proposed by National Grid in D.P.U. 15-161 (Petition of National Grid for Approval of its 2016-18 Three-Year Energy Efficiency Plan) and D.P.U. 16-06 (Petition of National Grid for Approval of a Nantucket Non-Wires Alternative Project). See D.P.U. 15-166, Compact Initial Filing (“Three-Year Plan”), Exhibit Compact-11 (October 30, 2015). Through its demand response initiative, the Compact aims to reduce customer demand through curtailment events and to encourage load-shifting through installation of demand response technologies and behavioral changes. *Id.*

11. The Compact participates in various Department proceedings as an advocate for all the ratepayers on Cape Cod and Martha’s Vineyard. In particular, the Compact actively participates in matters involving potential economic impacts and benefits to these ratepayers. See e.g., D.P.U. 10-170 (intervening in Northeast Utilities merger proceeding); D.P.U. 10-82 (participating in smart grid pilot evaluation working group); D.P.U. 12-76 (participating in grid modernization investigation); D.P.U. 12-120 (participating in service quality standards investigation); and D.P.U. 09-32 (National Grid Smart Grid Pilot - limited participant). In addition, the Compact has regularly participated in proceedings concerning proper cost recovery to prevent cross subsidization between basic service and distribution customers, as well as other matters that may impact ratepayers on Cape Cod and Martha’s Vineyard. See e.g., D.P.U. 12-

126-A, Interlocutory Order, at 13, 16-17 (August 5, 2013); and D.P.U. 11-05/06/07, Order (August 19, 2011).

III. PARTICIPATION BY THE COMPACT IN THIS PROCEEDING

12. In conducting adjudicatory hearings, the Department “may allow any person showing that he may be substantially and specifically affected by the proceeding to intervene as a party in the whole or any portion of the proceeding...” G.L. c. 30A, §10(4); 220 C.M.R. §1.03(1)(b).

13. The Compact seeks to intervene in this proceeding both as a consumer advocate for its consumers and as an energy efficiency program administrator because of potential impacts and precedents that may be set on its own energy efficiency and other programs. The Compact is particularly concerned about grid modernization investments (e.g., advanced metering and TVR) and principles or policies that could negatively impact the Commonwealth’s competitive markets and customers’ power to choose. Compact Comments, D.P.U. 12-76-A (January 17, 2014).

14. The Compact’s unique status as the only municipal aggregator Program Administrator complicates its implementation of its ideal demand response offerings. In its recent Three-Year Plan in D.P.U. 15-166, the Compact proposed to begin establishing a platform for the “connected home” and to install The Energy Detective (“TED”) devices on up to 600 residential and small commercial electric meters through the Compact’s Home Energy Assessment (“HES”) and Business Energy Assessment (“BEA”) initiatives. See D.P.U. 15-166 at Exhibit Compact-11 at 1 (noting Compact’s ability to fully implement a demand response program requires advanced metering and time-varying rates). TED will allow electric customers to access their electric usage on a real time basis through a Compact customized application on

their mobile device or computer. *Id.* However, this proposal is not ideal, and the Compact would propose the installation of advanced metering instead of TED but cannot do so until implementation of advanced metering in the distribution company's service territory. *Id.* at 3.

15. As the Commonwealth's largest municipal aggregator and as an energy efficiency program administrator for customers in the Compact's service territory, the Compact can provide unique insights based on its own experiences in this investigation into National Grid's GMP. The Compact can best serve its members and customers through its active participation in this docket. The Compact has various concerns about how the National Grid GMP could affect its own customers and programs as well as customers, competitive suppliers, and programs on a state-wide basis.

16. If the GMPs are implemented as currently proposed, there would be vast inconsistencies across service territories in grid modernization. The Compact believes that there must be consistency between the offerings of distribution companies regarding the type of TVR (opt-out or opt-in) and customer TVR eligibility (basic service and competitive supply) so a full array of demand response offerings may be available to the maximum number of customers and the full potential benefits of demand response realized. Energy efficiency and competitive supply programs would have a difficult time operating on a state-wide basis with such inconsistencies in place. Competitive suppliers in some service territories could offer more services and programs than competitive suppliers in other service territories. For example, as proposed, a competitive supplier in National Grid's service territory would be able to offer its customers more programs and services if National Grid implements opt-out AMI and TVR, in contrast to the limited programming available to competitive suppliers through Eversource's opt-in TVR proposals.

17. The GMPs are in the early development stages, and National Grid recognized that its GMP is intended to begin “a discussion regarding the scale, scope and timing of grid modernization investments.” GMP at 7. National Grid, Eversource, and Unitil each submitted their own, radically different GMPs. National Grid presented the most ambitious proposal for advanced metering and TVR with its four alternatives. National Grid’s GMP is likely to have significant impacts not just in its own service territory but statewide. Those impacts will be long term in nature. For example, an opt-out AMI program implemented by National Grid as a result of this proceeding could set precedent for a similar program by another distribution company in the future to the extent that other distribution companies are not required to implement a similar program in their respective GMP proceedings.

18. The Compact is also greatly concerned about National Grid’s rate design changes involving stand-alone distributed generation projects. The Compact has helped facilitate many distributed generation projects (directly or indirectly) and has participated in such distributed generation proceedings as D.P.U. 11-75 where the current interconnection standards were developed. The Compact also purchases renewable energy certificates (“RECs”), and may be interested in purchasing output from new distributed generation projects to blend into its competitive supply. The Compact is considering different options as to how distributed generation may contribute to system reliability and energy efficiency goals.

19. However, National Grid’s proposed rate design has the potential to significantly undermine development of distributed generation in the Commonwealth and to negatively impact existing distributed generation projects in the event that any rate design change may apply to them. The economics of existing projects were developed with current rate design and

costs in mind. Rate design changes that may apply to existing distributed generation projects could financially harm those projects.

20. The Compact's participation will also contribute to a full and fair hearing in this proceeding in that the Compact will represent unique interests from its perspective as an energy aggregator and energy efficiency program administrator.

21. The Compact also can provide its unique expertise and experience as it relates to energy efficiency and demand response matters relevant to this proceeding. The Compact and National Grid are the only Program Administrators that have included a demand response offering as part of their 2016-2018 Three-Year Energy Efficiency Plans. In addition, the Compact is actively engaged in exploring the targeted delivery of energy efficiency and demand response initiatives for the purpose of reducing demand. See *Petition of NSTAR Electric Company for an Exemption to the Zoning of the Town of Mashpee*, D.P.U. 14-03, Order at 20 (April 13, 2015) (directing the Compact and NSTAR to explore geo-targeting initiatives in an effort to delay infrastructure investment). The Compact is also analyzing geo-targeting of energy efficiency measures, renewable energy, and energy storage as a means to delay potential infrastructure investment to support the increasing load and system constraints on Cape Cod and Martha's Vineyard.

22. The Compact's participation in this proceeding will help facilitate an appropriate and informed result in this proceeding. The Compact's intervention will not unduly burden the Department, National Grid nor any of the other parties that filed to or may intervene in this proceeding in that the Compact will refrain from introducing duplicative or repetitive material and will cooperate in ensuring a speedy and efficient proceeding.

23. Based on the foregoing reasons, the Compact will be substantially and specifically affected by the outcome of this proceeding. The Compact can best serve and protect the interests of its members and customers through its active and full participation herein. No other party can adequately represent the Compact in this proceeding.

IV. CONCLUSION

WHEREFORE, for the above reasons, the Compact respectfully moves that the Department allow this petition to intervene in this proceeding.

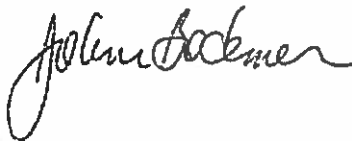
Respectfully submitted,

THE CAPE LIGHT COMPACT

By its attorneys,



Rebecca F. Zachas




Jeffrey M. Bernstein, Esq. (jbernstein@bck.com)

Rebecca F. Zachas, Esq. (rzachas@bck.com)

Jo Ann Bodemer, Esq. (jbodemer@bck.com)

Audrey A. Eidelman, Esq. (aeidelman@bck.com)

BCK LAW, P.C.

271 Waverley Oaks Road, Suite 203

Waltham, MA 02452

(617) 244-9500 (voice)

(802) 419-8283 (fax)

Dated: March 30, 2016

COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF PUBLIC UTILITIES

_____)
Petition of Massachusetts Electric Company and)
Nantucket Electric Company d/b/a National Grid) D.P.U. 15-120
For Approval of its Grid Modernization Plan)
_____)

NOTICE OF APPEARANCE

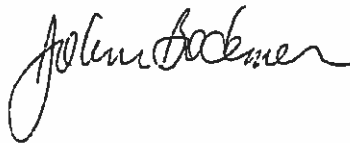
The undersigned attorneys hereby give notice of their appearance as counsel for the Cape Light Compact, in the above-captioned case.

Respectfully Submitted,

THE CAPE LIGHT COMPACT
By its Attorneys,



Rebecca F. Zachas



Jeffrey M. Bernstein, Esq. (jbernstein@bck.com)

Rebecca F. Zachas, Esq. (rzachas@bck.com)

Jo Ann Bodemer, Esq. (jbodemer@bck.com)

Audrey A. Eidelman, Esq. (aeidelman@bck.com)

BCK Law, P.C.

271 Waverley Oaks Road, Suite 203

Waltham, Massachusetts 02452

Telephone: (617) 244-9500

Facsimile: (802) 419-8283

Dated: March 30, 2016

COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF PUBLIC UTILITIES

_____)
Petition of Massachusetts Electric Company and)
Nantucket Electric Company d/b/a National Grid)
For Approval of its Grid Modernization Plan)
_____)

D.P.U. 15-120

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document(s) upon Secretary Mark D. Marini and Hearing Officers Tina Chin and Sarah Herbert via electronic mail and hand delivery, upon the Service List via electronic mail and first class mail in this matter.

Dated this 30th day of March, 2016.

Rebecca F. Zachas

Rebecca Zachas, Esq. (rzachas@bck.com)
BCK Law, P.C.
271 Waverley Oaks Road, Suite 203
Waltham, MA 02452
617 244-9500 (Phone)
802 419-8283 (Fax)

Grid Modernization Overview

Austin Brandt, Power Supply Planner

Cape Light Compact Governing Board Meeting

April 13, 2016

**Cape Light
Compact**



Working Together Toward A Smarter Energy Future

Why modernize the grid?

- Our electric grid was designed to deliver power in one direction: from centralized generating plants to end users
- Increasing integration of distributed energy resources (DERs), need for increased grid stability and resiliency, and prevalence of information networks is causing a shift toward a smarter, modernized grid that empowers consumers to better manage energy use (and production!)





Procedural Setting

- Process began October 2012, docketed as DPU 12-76-A (“Investigation by the Department of Public Utilities on its own Motion into the Modernization of the Electric Grid”)
- DPU issued 12-76-B order requiring each EDC to develop a Grid Modernization Plan (GMP), and 12-76-C order laying out business case filing requirements
- DPU 14-04-C order laid framework for time-varying rates (TVR)

The EDCs filed their GMPs on August 19, 2015. The DPU has not yet issued an Order of Notice and Notice of Filing, Public Hearing and Procedural Conference (which will set forth a deadline for filing to intervene).

Grid Modernization Objectives

The DPU set forth four primary goals in 12-76-B order:

1. Reducing effects of outages
2. Optimizing demand, including reducing system and customer costs
3. Integrating distributed resources
4. Improving workforce and asset management



Advanced Metering Functionality (AMF)



DPU made it a requirement that the EDCs achieve AMF* within 5 years of GMP approval, or else make a business case demonstrating that a longer timeframe is a superior approach.

AMF (smart metering) includes four elements:

1. Collection of customers' interval usage data, in near real time, usable for settlement in the ISO-NE energy and ancillary services markets.
2. Automated outage and restoration notification
3. Two-way communication between customers and the EDC
4. Communication with and control of household appliances (with customers' permission)

*AMF is a specific set of functions. AMI (Advanced Metering Infrastructure) is a specific technology to achieve AMF

Required Elements of GMPs

GMPs are ten-year “strategic planning documents” outlining how the EDC will meet the four GMP objectives and achieve AMF. Elements EDCs must include are:

- A five-year short-term investment plan (STIP)
- A marketing, education, and outreach (MEO) plan
- A research, development, and deployment (RD&D) plan
- Proposed infrastructure and performance metrics
- Proposed procedures that would allow competitive suppliers access to certain customer usage data while protecting confidentiality



Time Varying Rates (TVR)



In addition to the other required GMP elements, EDCs are required to develop GMPs/STIPs that are consistent with the Department's TVR framework (laid out in 14-04-B and adopted without modification in 14-04-C).

- Requires EDCs to offer two basic service options
 - On-peak, off-peak, with critical peak pricing (CPP) as a default option (e.g., price is \$0.07/kWh off-peak, \$0.12/kWh on-peak, \$0.30/kWh for occasional CPP periods)
 - Flat rate with ability to earn peak time rebate (PTR) by reducing demand during high demand periods
- Requires EDCs to allow competitive suppliers access to data in order to develop TVR options

Eversource's GMP: Generalities

- Conservative, grid-facing approach
 - Emphasizes incremental investments
 - Focuses on improving reliability
- Downplays benefits of giving consumers greater access to information and pricing transparency
 - Most apparent through opt-in approach to AMF & TVR
 - Claims most customers are uninterested in TVR



MICROGRIDS

An Overview

What, Why & Where

April 13, 2016

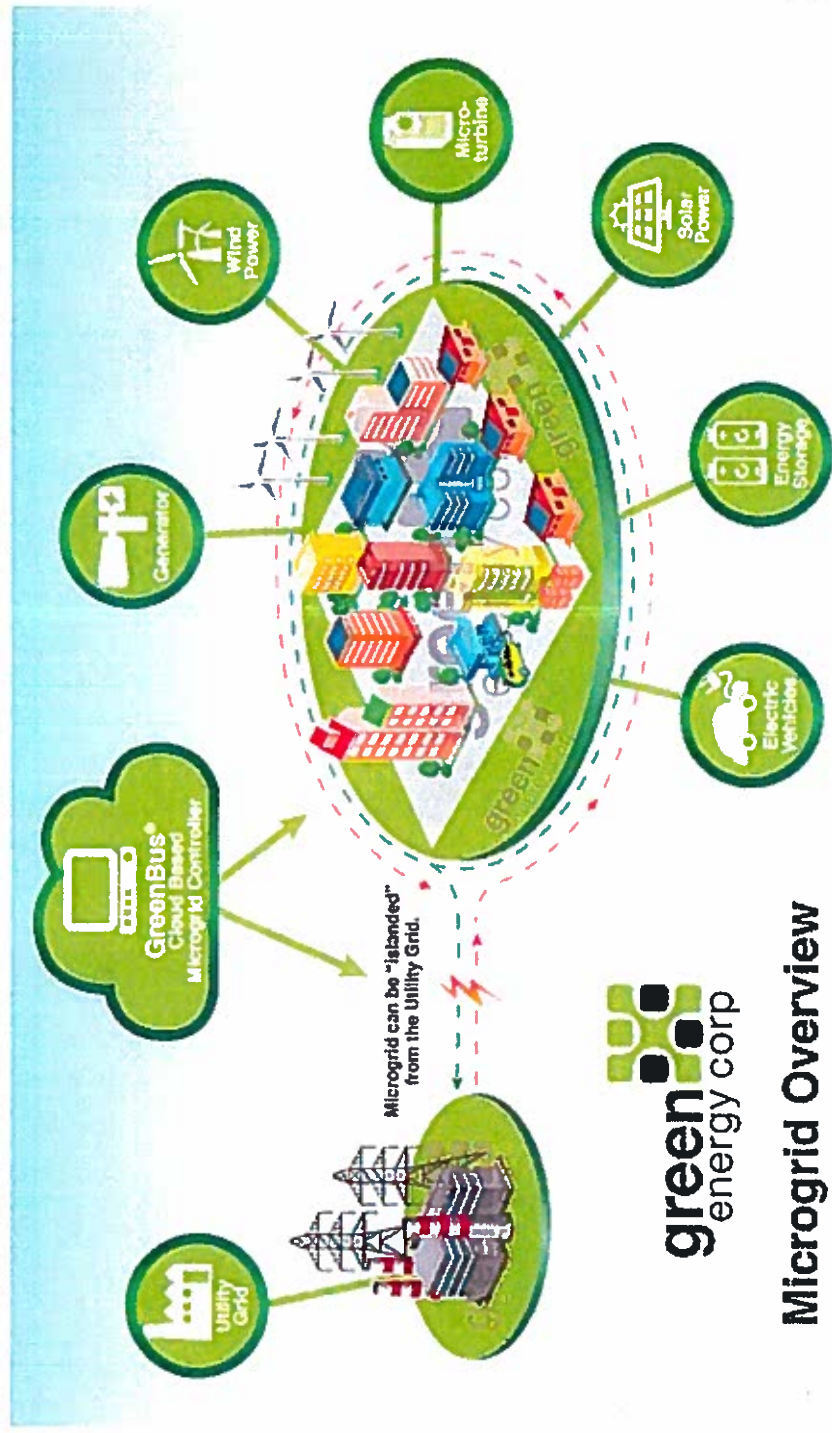
Cape Light Compact – Governing Board

by Kevin F. Galligan, GECl



What is a microgrid?

The U.S. DOE describes a microgrid as “a group of interconnected loads and distributed energy resources (DER) with clearly defined electrical boundaries that acts as a single controllable entity with respect to the grid [and can] connect and disconnect from the grid to enable it to operate in both grid-connected or island mode”



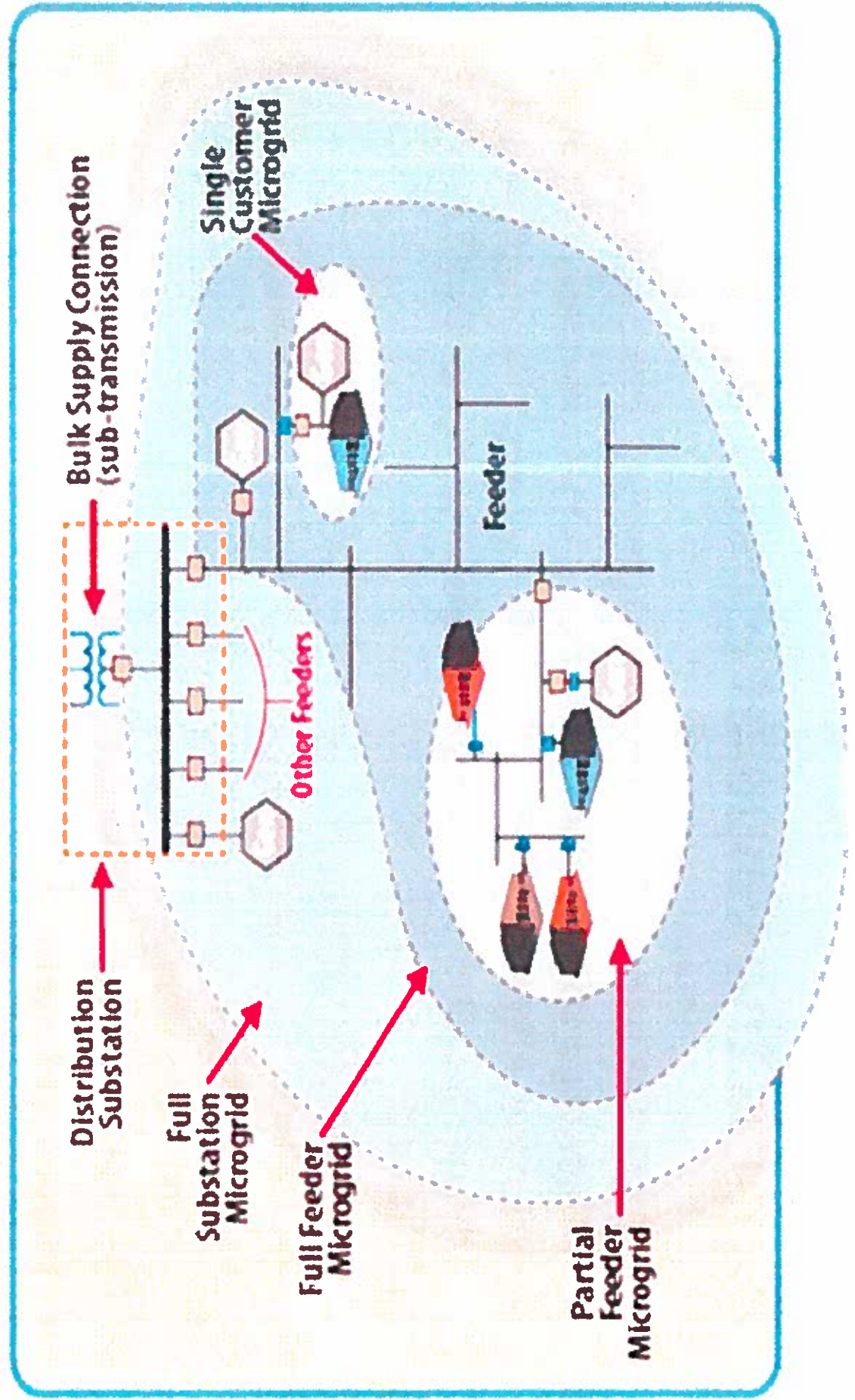
green
energy corp

Microgrid Overview

What is the value of a microgrid?

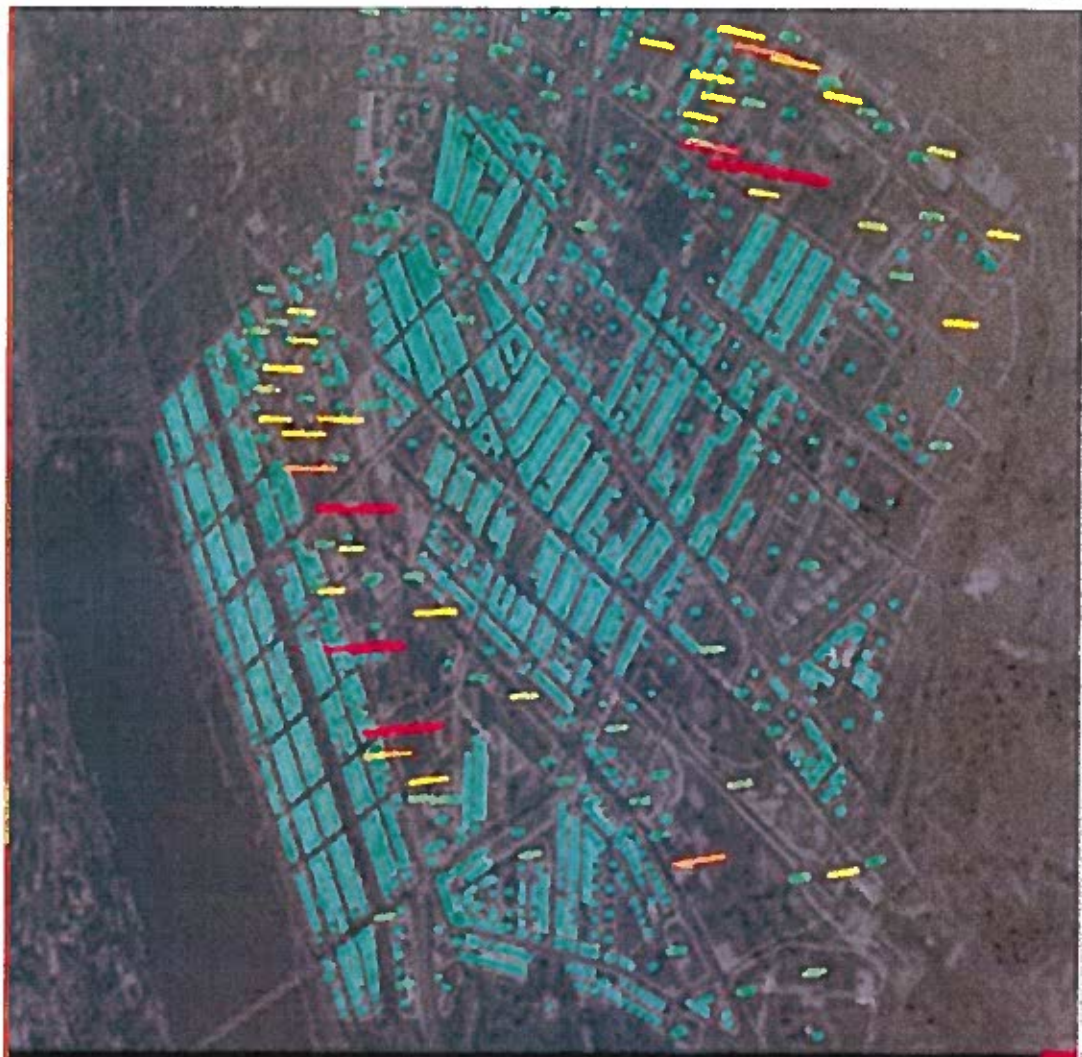
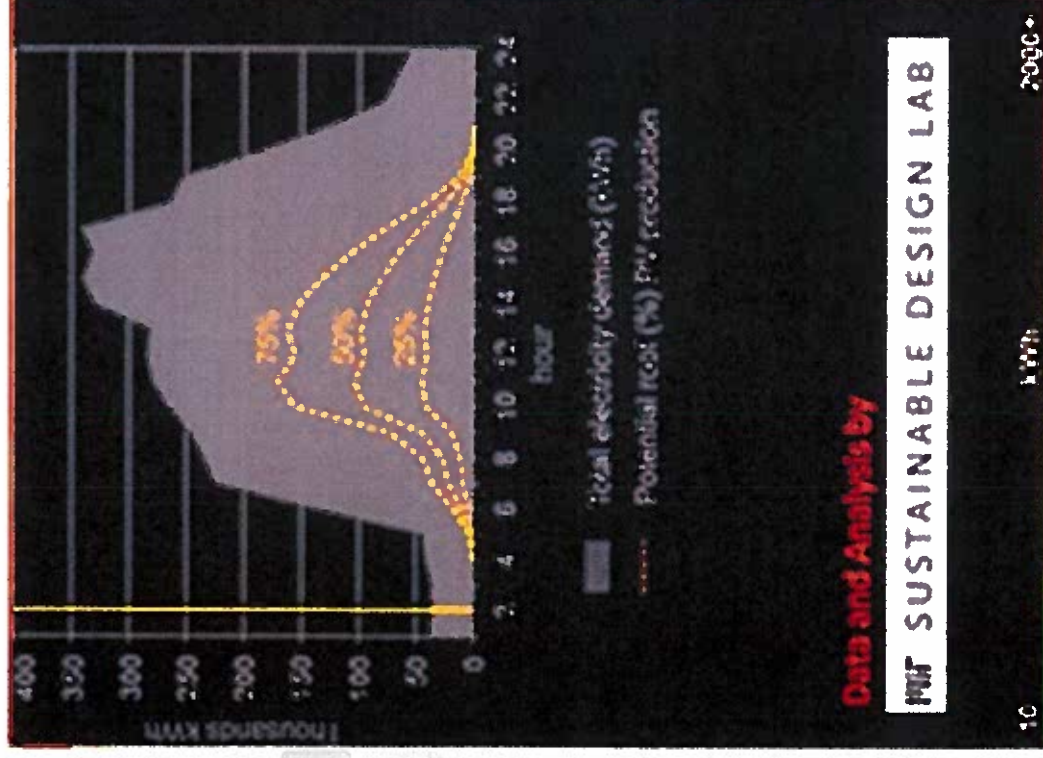
- MA DPU as part of Grid Modernization includes microgrids with energy efficiency, renewable energy resources, demand response, electricity storage and EVs as important means for advancing statutory requirements and policy goals (D.P.U. 12-76-B at 9)
 - Reducing the effects of outages;
 - Optimizing demand, including reducing system and customer costs;
 - Integrating distributed resources; and,
 - Improving workforce and asset management.
 - [Potential environmental benefits, depending on mix of sources]
- Increasing frequency and intensity of weather-caused grid outages has increased R&D emphasis by U.S. DOE to enhance resilience to climate change and extreme weather

What does a microgrid look like?



Why & Where to Implement?

Analyze load(s), resources and interconnects
(City of Boston project underway)



Location of a microgrid – multiple factors

Cape Cod & Martha's Vineyard may be well positioned

- Smart meters with time-sensitive rates (TBD)
- PV resources with potential battery storage to manage intermittency (D-Y project)
- High energy efficiency and demand reduction efforts
- Geographic end-use load profiles
- Electricity supply pricing
- Encourage feasibility and local siting/optimization be pursued to identify potential opportunities
 - Facility or campus-based
 - Community/neighborhood-based

Questions & Discussion

Kevin F. Galligan

kgalligan@galliganenergy.com



Acknowledgements, Sources & References

- Berkeley Lab. DER Siting And Optimization Tool to Enable Large Scale Deployment of DER In California. [Online]. <https://building-microgrid.lbl.gov/projects/der-siting-and-optimization-tool-enable>
- Berkeley Lab. Microgrid Definitions. [Online]. <https://building-microgrid.lbl.gov/microgrid-definitions>
- City of Boston Microgrid Workshops. [Online] <http://www.raabassociates.org/main/projects.asp?proj=116&state=Expertise>
- K. P. Schneider, F.K. Tuffner, M. A. Elizondo, C.C. Liu and Y. Xu, "Microgrid as a resiliency resource," PNNL-23674, Pacific Northwest Nat. Lab., Richland, Washington, Sept. 2014.
- The Role of Microgrids in Helping to Advance the Nation's Energy System [Online] <http://energy.gov/oe/services/technology-development/smart-grid/role-microgrids-helping-advance-nation-s-energy-syst-0>
- Swing, Bradford. (2015). City of Boston Energy System Planning. [Online] <http://aceee.org/sites/default/files/pdf/conferences/ie/2015/Session3B-Swing-IE15-12.7.15.pdf>
- Ton, D., & Wang, W. (2015). A More Resilient Grid: The U.S. Department of Energy Joins with Stakeholders in an R&D Plan. IEEE Power and Energy Magazine, 13(3), 26-34.
- Ton, D., & Smith, M. (2012). The U.S. Department of Energy's Microgrid Initiative. The Electricity Journal, 25(8), 84-94.
- U.S. Department of Energy. (June, 2014). 2014 DOE Resilient Electric Distribution Grid R&D Workshop summary report. [Online]. Available: <http://energy.gov/oe/articles/final-report-and-other-materials-2014-resilient-electric-distribution-grid-rd-workshop>