

47 Coffin Street Ratepayer Advocates
47 Coffin Street
West Newbury, Massachusetts 01985
January 8, 2015

To: The Massachusetts Energy Efficiency Advisory Council

By email to Maggie McCarey, maggie.mccarey@state.ma.us

Re: December 22, 2014 Notice of Special EEAC Meeting for Public Comment

Pursuant to the procedures set forth in the Energy Efficiency Advisory Council's (EEAC's) Notice of Special EEAC Meeting,¹ 47 Coffin Street Ratepayer Advocates (47 Coffin)² provides the following comments regarding the needs and objectives of the Commonwealth envisioned by the Third Statewide Three-Year Energy Efficiency Investment Plans of electric distribution companies, natural gas distribution companies, and municipal aggregators for the period 2016 through 2018. 47 Coffin commends EEAC's work to date in making Massachusetts first in the country in energy efficiency, and appreciates this opportunity to comment.

Briefly, it is now time for EEAC to move beyond energy efficiency effecting generalized load reductions, and to seize upon opportunities to address urgent problems of out-of-control growth in peak demands, particularly in the electric sector. The Commonwealth's poor load factor is a problem (or energy crisis) that will never be solved with supply-side answers alone. Consistent with statutory mandates of the Green Communities and Global Warming Solutions Acts—and the increasingly dire need to reconcile conflicting energy policy objectives of (1) environmental responsibility, (2) cost-effectiveness and market discipline, and (3) reliability —EEAC should prioritize proven retail electric demand response (DR), specifically including demand side management (DSM) used successfully for decades in jurisdictions other than New England. While 47 Coffin strongly supports the Department of Public Utilities' (DPU's) policy determination to launch time-sensitive retail rate design promoting price signals for economic DR in Massachusetts,³ DSM can⁴ and should be used in conjunction with both price-responsive DR and energy efficiency programs.

¹ Commonwealth of Massachusetts, Energy Efficiency Advisory Council, *Notice of Special EEAC Meeting for Public Comment* (Dec. 22, 2014), available at <http://ma-eeac.org/wordpress/wp-content/uploads/Notice-of-Special-Public-Comment-January-Mtg-for-1-20-15.pdf>.

² 47 Coffin comprises senior citizen, mostly retired, retail National Grid zone NEMA/Boston electric ratepayers residing at 47 Coffin Street, West Newbury, MA, which at the moment is .5 miles from the Merrimack River, about 10 miles from the Atlantic, and roughly 50 feet above sea level.

³ *Investigation by the Department of Public Utilities upon its own Motion into Time Varying Rates*, Mass. D.P.U. Docket No. 14-04, Order Adopting Policy Framework for Time Varying Rates (Nov. 5, 2014), available at http://web1.env.state.ma.us/DPU/FileRoomAPI/api/Attachments/Get/?path=14-04%2fOrder_1404C.pdf, *reb'g denied*, (Dec. 16, 2014), available at http://web1.env.state.ma.us/DPU/FileRoomAPI/api/Attachments/Get/?path=14-04%2forder_motion_recon_121614.pdf.

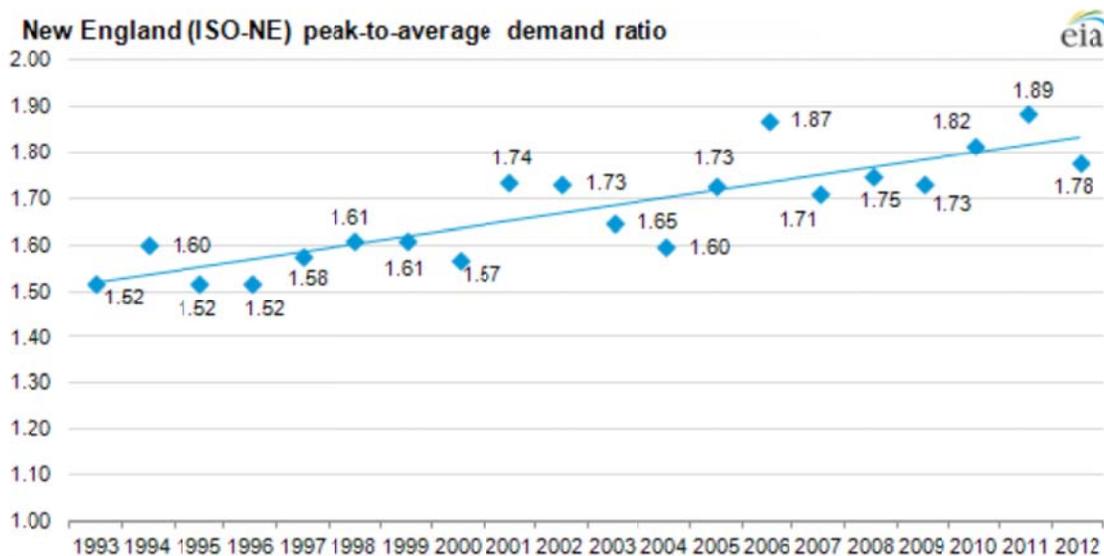
⁴ FERC Staff, *Demand Response and Advanced Metering* at 25 (Oct. 2013), available at <http://www.ferc.gov/legal/staff-reports/2013/oct-demand-response.pdf> (“Utilities in Maryland have a goal of delivering 200 MW of demand response from dynamic pricing programs, in addition to approximately 700 MW from direct load control programs.”)

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1) New England has a serious and growing problem of uncontrolled peak usage and increasingly poor load factors.

Trends of poor load factors in New England's electric grid are the worst in the nation and if not addressed, will only worsen. Because transmission, distribution, and generating capacity are designed to meet anticipated peak loads, infrastructure that is very costly in economic and environmental terms sits unused most of the time. Such a result is the exact opposite of energy efficiency and of the intent of EEAC's governing statutes to reduce peaks.

The following chart⁵ illustrates this phenomenon:



Across the United States, but most pronounced in New England, the ratio of annual peak-hour electric demand to average hourly demand has risen over the past 20 years. In New England, the peak-to-average demand ratio has increased from 1.52 in 1993 to 1.78 in 2012. In other words, the highest peak-hour electric demand for the year in 1993 was 52% above the hourly average level while in 2012 peak-hour demand had risen to 78% above the hourly average level.

These peaks are not only high (78% and climbing) in comparison to average hourly demand. They also occur in strikingly few hours. The New England Independent System Operator's (ISO-NE's) projected "on peak performance hours" for 2012-17—necessarily a conservative forecast intended to cover capacity plus reserve needs to be obtained through the Forward Capacity Market (FCM)—shows that less than 10% of hours over that period were identified as the peak hours of concern.⁶

⁵ US Dept of Energy, Energy Information Admin, *Peak to Average Electricity Demand Ratio Rising in New England and Many Other US Regions* (Feb. 18, 2014), available at http://www.eia.gov/todayinenergy/detail.cfm?id=15051#tabs_SpotPriceSlider-8.

⁶ ISO-NE, *FCM On Peak Hours By Month* (Oct. 23, 2012), available at http://iso-ne.com/static-assets/documents/markets/othrmkts_data/fcm/doc/on_peak_performance_hours.xlsx.

In other words, by conservative measures, over 90% of the time, customers do not need some 44% of the capacity the ISO-NE keeps on hand. And this inefficiency is only growing worse. Those who pay for and experience environmental impacts of the ISO-NE grid, however, bear the risks and costs of all of it, all the time.

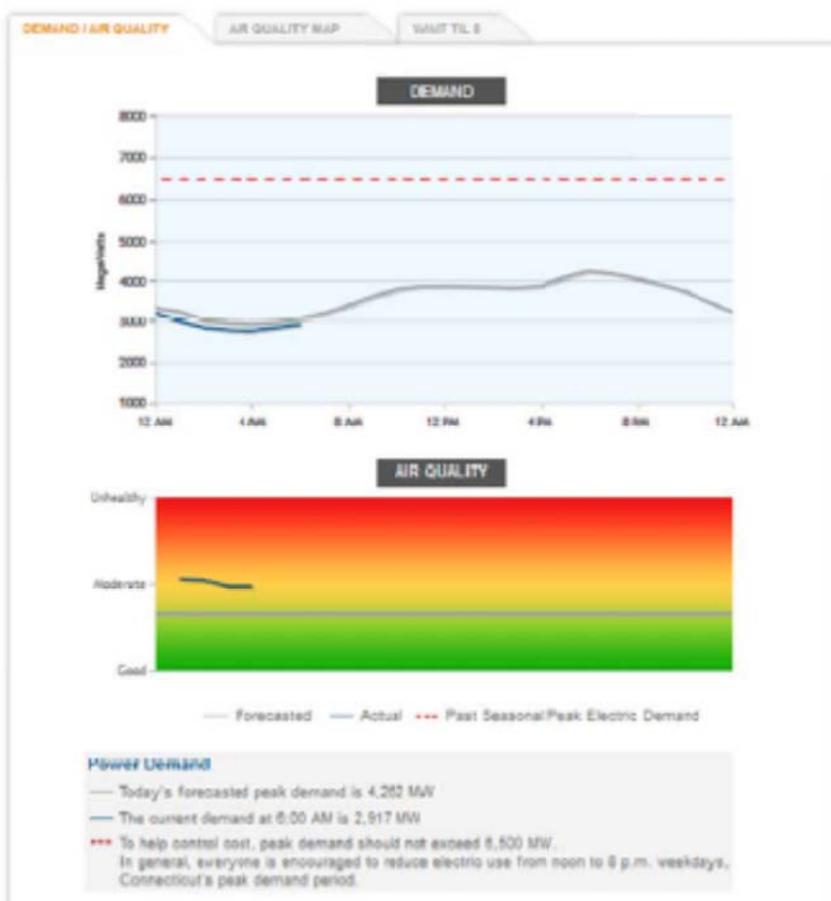
a) Poor load factors contribute to pollution.

Adverse environmental impacts of inefficient energy infrastructure and usage are widely borne as supply-side-only solutions create air and other forms of pollution and disruption. Indeed, as shown at right, Connecticut has begun to educate its consumers with graphic information showing the link among peak electric usage, ISO-NE generator commitments, and poor air quality.⁷

ISO-NE must commit generators in the day-ahead market based on the following day's forecast peak load. Over and above forecast peak, ISO-NE must run additional generators to provide a reserve margin in the event of a contingency such as the forced outage of a powerplant or transmission line. Oftentimes slow-start

fossil-fueled generators operate at minimum load levels the night before—whether actually needed or not—in order to be prepared for real time dispatch as needed in peak hours the next day. That dispatch, however, may never come, so that resources are used, costs are incurred, and pollution is worsened only because of the need to stand ready to meet uncontrolled peak loads.

View Connecticut's real time electric demand and air quality.



⁷ Energize Connecticut, Empowering You to Make Smart Energy Choices, *CT Power Update* (visited Jan. 3, 2015), available at <http://www.energizect.com/smart-energy-resources/ct-power-update>.

b) Poor load factors contribute to wholesale energy market dysfunction and skyrocketing capacity auction outcomes.

The increasingly peaky nature of New England’s load profile exacerbates problems with wholesale electric markets. The Federal Energy Regulatory Commission (FERC) launched competitive power markets on a post-Public Utilities Regulatory Policies Act premise that efficient, competitive generators would readily pop up in response to energy price signals.⁸ New England offers compelling evidence to the contrary. In connection with the peak ratio chart shown above, EIA pointed out that generators intended to serve peak loads experience few hours of run time and thus receive fewer and fewer revenues from energy sales. Renewable resources, whose wind or solar “fuel” is free and whose operation and maintenance costs are very low, further crowd fossil-fuel peakers out of daily and hourly energy markets. FERC’s expectation that energy price signals would produce economically viable and operationally reliable power markets is an increasingly remote vision, notwithstanding continual patchwork fixes.

Consequently, ISO-NE is relying on FCM capacity payments to attract new peaker units to serve infrequent spikes in demand that are projected out over several years. The FCM, however, has become admittedly “non-competitive,”⁹ and so wholesale capacity auction results are escalating sharply and rapidly. ISO-NE’s non-competitive FCM has produced capacity costs for 2017-18 that will almost *triple* 2013 levels, increasing to \$3.05 billion.¹⁰ According to consumer representatives, New England customers look forward to an additional \$180 million costs in the capacity commitment period beginning in June 2017, with customers in the Northeastern MA/Boston zone bearing the greatest burden.¹¹

c) Poor load factors harm grid reliability and have provoked claims of an imminent New England energy crisis.

Dismal electric load factors also contribute to reliability woes. Peaker units that are called upon infrequently have proven unwilling or unable to invest in firm fuel capacity (both the commodity and its transportation), even where natural gas pipeline capacity constraints or other fuel limitations have not been an issue. Moreover,

⁸ E.g., *Promoting Wholesale Competition Through Open Access Non-discriminatory Transmission Services by Public Utilities*, 70 FERC ¶ 61,357 Notice of Proposed Rulemaking, slip op. at 35-44, (Mar. 29, 1995), available at

<http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=8117763> (observing that thanks to the lack of barriers to entry, new, smaller, cheaper, and more efficient power plants could be installed whenever spot energy prices were attractive.)

⁹ *ISO New England Inc.*, FERC Docket No. ER14-1409, Explanatory Statement of FERC Chairman LeFleur (Sept. 16, 2014), available at <http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=13638080> (“FCA 8 results in the NEMA/Boston capacity zone were ‘non-competitive,’ indicating that the level of participation in the auction was inadequate to satisfy the Installed Capacity Requirement. . . .”)

¹⁰ ISO New England Press Release, *Finalized Auction Results Confirm Slight Power System Resource Shortfall in 2017–2018* at 2 (Feb. 28, 2014), available at http://www.iso-ne.com/news/pr/2014/fca8_final_results_final_02282014.pdf.

¹¹ *ISO New England Inc.*, FERC Docket No. ER14-1409, Joint Motion to Intervene, Motion Requesting Waiver, and Objection of Massachusetts Electric Co. *et al.* at 10 (Apr. 14, 2014), available at <http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=13514034>.

generators that are rarely used are prone to forced outages at the very moment they are finally needed to meet peak demand.¹²

New Englanders are now being bombarded with shocking warnings of an electric power crisis.¹³ This is not because overall demand is increasing without adequate supply to meet it, but rather because of market and reliability problems caused by increasing anticipated peak demands. Such purported crises tend to be highly beneficial to arguments of various supply side interests¹⁴—all at a cost to consumers and the environment. Supply-side solutions, however, do nothing to ameliorate the real and growing problem of poor load factors.

d) With DR and DSM, EEAC can empower customers to help reconcile conflicting energy policies, reducing environmental, economic, and reliability problems caused by poor load factors.

EEAC is uniquely positioned to avoid yet another energy-crisis-induced stampede off the cliff. It can, in the Third Statewide Three-Year Energy Efficiency Investment Plans for the period 2016-18, require deployment of proven DR and DSM energy efficiency programs that address the true problem of out-of-control peak electric demand. Unlike any of the supply-side solutions proffered, retail DR and DSM are 1) environmentally benign; 2) cost-effective and by all evidence the only viable means of disciplining wholesale power markets; and 3) reliability-enhancing inasmuch as they provide load shaping to balance the grid. Retail DR and DSM are also proven measures that are fully compliant with jurisdictional and legal requirements.

2) Retail DR and DSM are proven, useful tools to shape load and reduce problematic peaks.

Although no energy solution can be the magic silver bullet, retail DSM programs, in which an end-user receives a reduced rate in exchange for permitting its utility to remotely dispatch load adjustments by, for instance,

¹² See generally PJM, *Problem Statement on PJM Capacity Performance Definition* (Aug. 1, 2014), available at <http://pjm.com/~media/documents/reports/20140801-problem-statement-on-pjm-capacity-performance-definition.ashx> for a discussion of reliability problems associated with generators called upon to meet extreme winter peak demand.

¹³ E.g., Allie Morris, Concord Monitor, *New England energy officials warn of possible power crisis; governors infrastructure initiative could be the solution* (July 2, 2014), available at <http://www.concordmonitor.com/home/12596728-95/new-england-energy-officials-warn-of-possible-power-crisis-governors-infrastructure-initiative-could>; William Pentland, Forbes, *New England's Energy Crisis And The Case Against 'One-Of-The-Above' Energy Policies* (Mar. 5, 2014), available at <http://www.forbes.com/sites/williampentland/2014/03/05/new-englands-energy-crisis-and-the-case-against-one-of-the-above-energy-policies/>.

¹⁴ E.g., Nuclear Energy Institute, *New England's Looming 'Energy Crisis'* (Nov. 18, 2014), available at <http://www.nei.org/News-Media/News/News-Archives/New-England-s-Looming-Energy-Crisis> (“These price and reliability challenges will only be exacerbated by the closure of Vermont Yankee [nuclear power plant]. Noting the large electricity rate hikes that utilities across New England already have announced in anticipation of Vermont Yankee’s closing, author and energy expert [Jim Conca says](#) that the nuclear plant’s presence helped to mask the underlying rise in wholesale gas prices—a natural result of demand outstripping supply.”); Tom Borelli, FreedomWorks, *Blackouts and Worse: Dems Policies Killing New England* (Mar. 6, 2014), available at <http://www.freedomworks.org/content/blackouts-and-worse-dems-policies-killing-new-england-0> (“The progressive elite war against coal energy producers is playing out like a chapter in Ayn Rand’s *Atlas Shrugged*. In a case of delicious irony, the liberal New England region is getting slammed for its lack of energy diversity.”)

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cycling hot water heaters, electric heating and/or air conditioning,¹⁵ provide substantial, measurable, and proven peak shaving and load shaping. At the same time, these retail programs avoid the many problems plaguing DR in wholesale markets, such as continuous legal attack from energy suppliers,¹⁶ the departure of major wholesale demand-side players like Enernoc,¹⁷ and the fact that the critical DR “baseline”¹⁸ is an invitation to overconsume and thus depict a false demand reduction.¹⁹ Such retail DR programs can be integrated into ISO systems by, among other things, including them in the responsible utility’s demand bids, load forecasting, and FCM capacity.

Indeed, in the context of an all-out legal attack to ban wholesale DR in the FCM, the New England Power Generators Association (NEPGA), generally skeptical of DR, has expressed its expectation that “[c]onsistent with the jurisdictional line recognized in the *EPSA* decision [finding wholesale DR beyond FERC’s jurisdiction], . . . States will presumably move forward with their own retail demand response programs and that to the extent that these programs result in legitimate load reductions, such reductions may be reflected in FCM.”²⁰

Other New England states are in fact moving forward with their own retail DR programs. Connecticut Light & Power has recently proven it possible to implement such a DSM program with Walgreen’s Distribution Center, representing over 1.7 MW within the confines of the ISO-NE system.²¹ In 2013, this program was

¹⁵ An example of Baltimore Gas & Electric’s retail tariff for this dispatched load interruption may be found at <https://www.bge.com/myaccount/billsrates/ratestariffs/electricservice/electric%20services%20rates%20and%20tariffs/rdr15.pdf>.

¹⁶ *Electric Power Supply Ass’n v. FERC*, 753 F.3d 216 (D.C. Cir. 2014), *mandate stayed*, No. 11-1486 (D.C. Cir. Oct. 20, 2014) (per curiam); *FirstEnergy Service Co. v. PJM*, FERC Docket No. EL14-55, Formal Complaint of FirstEnergy (May 23, 2014), *available at* <http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=13554068>, *amended*, Amended Complaint (Sept. 22, 2014), *available at* <http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=13641870>. It has been reported that the US Department of Justice intends to appeal the *EPSA* decision to the Supreme Court.

¹⁷ Andrew Price, Competitive Energy Services Sr. VP, CES Energy Blog, *Enernoc Exits ISO New England Demand Response Program* (Mar. 29, 2013), *available at* <http://www.competitive-energy.com/blog/energy-strategy/enernoc-exits-iso-new-england-demand-response-program>

¹⁸ Synapse Energy Economics Inc., *Demand Response as a Power System Resource Program Designs, Performance, and Lessons Learned in the United States*, at 8 (May 2013) http://www.synapse-energy.com/sites/default/files/SynapseReport.2013-03.RAP_US-Demand-Response.12-080.pdf (“Without feasible, trustworthy baselines, demand response will not succeed.”)

¹⁹ E.g., *Competitive Energy Services LLC*, 144 FERC ¶ 61,163 at P 3 (Aug. 2013), *available at* <http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=13340488> (imposing civil penalties relating to “a fraudulent scheme in connection with [ISO-New England’s DR program], so that CES and Rumford would artificially inflate Rumford’s customer baseline to enable Rumford and CES to receive compensation for demand response without Rumford intending to provide the service or actually having to reduce load.”)

²⁰ *New England Power Generators Assn v. ISO-New England*, FERC Docket No. EL15-21, Complaint at 14, n.52 (Nov. 4, 2014), *available at* <http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=13685626>.

²¹ Energize Connecticut, *Automated Demand Response Energy Efficiency Case Study: Walgreens Distribution Center, Windsor, CT* (visited Jan. 6, 2015), *available at* <http://www.cl-p.com/downloads/Walgreens.pdf?id=4294989252&dl=t> (“Working with the Burton Energy Group and Conservation Resource Solutions (CRS), one of the ISO New England permitted data collection vendors . . . , CL&P program administrators developed the Automated Demand Response pilot for the largest per square foot building in Connecticut. . . . When ISO New England calls an event, a signal is sent to the Walgreens Distribution Center by CRS

Footnote continued

recognized for its operational success.²² In Rhode Island, National Grid has begun a pilot program using targeted DR as a potential alternative to distribution capacity upgrades to meet peak demand.²³

a) DSM has long provided verifiable, measurable means of load shaping, and is a logical solution to problems of meeting peak loads in ISO markets.

Across the country, DSM, also known as direct load control or DLC, was by far the most favored new demand response program planned by those responding to the FERC's 2012 DR survey, the most recent collection of these data currently available.²⁴ Florida alone reported over 2,500 MW of direct load potential peak reduction.²⁵ As early as 2004, Florida Power & Light's load management system used over 816,000 load-control transponders connecting more than 712,000 users, permitting sophisticated load shaping/peak management *and* providing a cost-effective alternative to additional gas-fired generation. The utility determined that "that the economic costs of building and operating [new base-load power-generating equipment, such as combined cycle units] are at least 20% to 30% higher than the cost of installing and operating the D[SM] program."²⁶

Costs, controversies, and delays associated with developing a Smart Grid have not impeded successful DSM programs throughout the nation. This is not rocket science, although increasingly sophisticated tools are becoming available.²⁷ The municipal power system in the Town of Apex, NC, provides load management switches on all new and remodeled home construction of \$10,000 or more. It explains, "Load management switch devices allow the Town, via radio control, to temporarily turn off water heaters, electric heat strips, and air conditioning compressors

Footnote continued

through the interface. Energy use at the Walgreens facility is monitored and heating, cooling, lighting systems and more are adjusted according to preprogrammed settings. When the event ends, a second signal is sent restoring the pre-event settings.")

²² Christina Griffin, Windsor, CT, Patch, *Walgreens Distribution Center Wins Award for Energy Efficiency* (May 6, 2013), available at <http://patch.com/connecticut/windsor/walgreens-distribution-center-wins-award-for-energy-efficiency>.

²³ National Grid, *Demand Link Pilot FAQs* (visited Jan. 6, 2015), available at <https://www.myngrid.com/pdf/demandLink2014FAQ.pdf>.

²⁴ 2012 DR Assessment at 32.

²⁵ 2012 DR Assessment at 28.

²⁶ Michael Andreolas, FPL, *Transmission & Distribution World*, *Mega Load Management System Pays Dividends* (Feb. 1, 2004), available at <http://tdworld.com/distribution-management-systems/mega-load-management-system-pays-dividends>.

²⁷ Alex Webb & Stefan Nicola, Bloomberg, *Renewable Energy World*, *Buffett Testig Smart Grid Technology for Home Energy Management* (Dec. 17, 2014), available at <http://www.renewableenergyworld.com/rea/news/article/2014/12/buffett-testing-smart-grid-technology-for-home-energy-management> ("Warren Buffett wants to tell you the best time to wash your clothes. Or at least his energy company in the U.K does. Buffett's Northern Powergrid Holdings Co. is working with Siemens AG to test a so-called smart grid that has the ability to control when consumer appliances will be used in the home. Being able to better manage when electricity flows allows utilities to lower consumer costs by reducing the need for new equipment, and to better handle surges and gaps from intermittent sources such as wind and solar. The pilot program, known as the Customer-Led Network Revolution, involves just 12,000 households in the U.K. and is one of only a few such projects being tested worldwide.")

on an intermittent basis. In doing so, the Town reduces the peak demand all across its service area. The more switches the Town has in place, the greater the impact of this peak-shaving program.”²⁸

Within the past weeks, Pepco Holdings announced that it has met regulatory directives by enrolling some 50% of eligible electric customers in the Energy Wise demand response program that Converge Inc. manages in Maryland.²⁹ Key elements include customer choice in load control devices, multiple curtailment cycling levels, and web-programmability in the thermostats. With this program, 300 MW of demand are now available for utility control.



DTE Electric's demand response programs provide significant economic benefits to customers

- DTE Electric's commitment to demand response began in the 1960's with controlled water heating rates
- The Company began one of the largest and most successful interruptible air conditioning (IAC) programs in the country during the 1980s – currently about 280,000 customers participate
- Demand response offerings enhance the customer experience
 - DTE Electric customers utilizing demand response rates express higher customer satisfaction with their electric service than customers without demand response rates
 - Customers on demand response rates feel more engaged and in control of their energy usage as well as their overall electric costs
- DTE Electric's peak demand reduction capability, of almost 700 MWs, is equivalent to a moderately sized base load electric generating plant
- DTE Electric is able to reduce costs for its customers through demand response
 - Short run – Replaces capacity purchases and lowers Power Supply Cost Recovery costs
 - Long run – Reduces peak loads and delays need for new generation

Similarly, in August of 2014, DTE Energy made a presentation before the National Governors Association, summarizing its DR/DSM programs in the slide to the left. Significantly, DTE says that it could potentially achieve over 850 MW in Midwest ISO demand reduction capacity credits with its current programs. According to DTE, these demand-based solutions are appropriate to address an anticipated shortfall in Midwest ISO

reserve margins.³⁰ A potential energy crisis can in fact be addressed with more than supply-side solutions.

b) Voluntary demand response and education programs of the sort California has achieved with the FlexAlert program and Connecticut has initiated with “Wait Til 8” can also shave peaks.

²⁸ Town of Apex, NC, Load Management Program: *Want to save money on your Electric bill? Try Load Management!* (visited Jan. 6, 2015), available at <http://www.apexnc.org/services/public-works/electric-utilities-division/load-management-program>.

²⁹ Editors of Electric Light & Power/ POWERGRID International, Utility Products, *Pepco Holdings Inc. enrolls 360,000 customers in demand response program* (Dec. 22, 2014), available at <http://www.utilityproducts.com/articles/elp-archives/2014/12/pepco-holdings-inc-enrolls-360-000-customers-in-demand-response-program.html>.

³⁰ Don Stanczak, DTE Energy VP, Regulatory Affairs, *Demand Response Programs* (Aug. 6, 2014), available at http://www.nga.org/files/live/sites/NGA/files/pdf/2014/1408MichRetreatDTEEnergyDemandResponsePrograms_Stanczak.pdf.

Another significant source of potential additional DR is a range of retail voluntary load curtailment programs currently in place throughout the country. ISO-NE's Operating Procedure No. 4 involves some demand-side measures in extreme peak conditions, but provides no public service announcements and "almost no outreach

to increase awareness of these

conservation appeals outside of the appeals themselves."³¹

In contrast, Connecticut has initiated a more expansive customer education program to reduce needle peaks. "Wait 'Til 8," depicted at left, encourages customers to shift discretionary appliance loads to off-peak periods. This informational program emphasizes the connection between peak electric usage and air pollution.³² Recent research indicates even greater potential for this kind of voluntary demand response³³ to shave peak loads.

Another model is California's

FlexAlert program. FlexAlert has been proven, in the nearly decade and a half since its inception during California's energy crisis, to be a highly effective means of managing extreme peak demands, often providing 1,000 MW of peak shaving and at times more.³⁴ California's utilities, in coordination with the ISO and state agencies, operate FlexAlert,

You can have a positive impact on air quality and the cost of electricity in Connecticut simply by waiting until later in the day to run major appliances that don't impact comfort. Controlling electricity use during Connecticut's peak electric demand periods - weekdays, between noon and 8 p.m. - minimizes the use of expensive, fossil fuel, "peaking" power plants.



What is Peak Demand?

- ▶ The peak electric demand is when consumers use the most electricity.
- ▶ Connecticut's peak demand happens on weekdays, between noon and 8 p.m. when homes, offices, businesses, and schools are using electricity.
- ▶ Demand is lower in the morning, later in the day, and on weekends and very low overnight.
- ▶ So to make sure that electricity is available to meet these high demands, additional power plants are needed to stand ready to operate during those few hours that we need them. These are sometimes called "peaking units."

Wait 'Til 8

- ▶ "Wait 'til 8" is Energize Connecticut's message to remind consumers about the importance of controlling peak electric demand.
- ▶ Using appliances that don't impact your comfort before noon or waiting until later in the day will help to control peak demand and have a positive impact on air quality and cost.
- ▶ Using energy efficient products like LED lights and ENERGY STAR® air conditioning for necessary electric use also helps to control peak demand.



³¹ Research into Action, *Final Report: Process Evaluation of the 2013 Statewide Flex Alert Program* at 49 (May 2, 2014), available at [http://www3.sce.com/sscc/law/dis/dbattach5e.nsf/0/74BA2E806FE19D4788257CED005C010C/\\$FILE/A1208007%20et%20al%20Statewide%20MEO%20Apps%20-%20SCE%20Flex%20Alert%20Final%20Report.pdf](http://www3.sce.com/sscc/law/dis/dbattach5e.nsf/0/74BA2E806FE19D4788257CED005C010C/$FILE/A1208007%20et%20al%20Statewide%20MEO%20Apps%20-%20SCE%20Flex%20Alert%20Final%20Report.pdf) [hereinafter 2013 FlexAlert Evaluation].

³² Energize Connecticut, Empowering You to Make Smart Energy Choices, *Wait Til 8* (visited Jan. 3, 2015), available at <http://www.energizect.com/smart-energy-resources/waittill8>.

³³ Robert Walton, Utility Dive, *If you want customers to decrease energy consumption, just ask* (Oct. 27, 2014) available at <http://www.utilitydive.com/news/if-you-want-customers-to-decrease-energy-consumption-just-ask/325736/>.

³⁴ Energy Upgrade California, *See the Impact of Flex Alert* (visited Jan. 6, 2015), available at <https://www.energyupgradeca.org/en/save-energy/home/see-the-impact/see-the-impact-of-flex-alert> ("History has shown that Californians respond when called to action and often generate savings of hundreds of megawatts. In fact, on July 1st and 2nd, 2013, a Flex Alert was called and many businesses, residents, local governments and organizations responded quickly and significantly dropped their energy demand.")

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casting wide public awareness campaigns.³⁵ FlexAlert has mitigated not only summer peaks, but also peaking associated with cold weather winter demand when natural gas becomes constrained, adversely impacting gas-fired generation. In the Southern California Edison service area alone, FlexAlert provided nearly 700 MW in February, 2014.³⁶ Many industrial and commercial users are enthusiastic participants in FlexAlert, including Kinder Morgan Energy Partners.³⁷

c) National Grid has experience with DSM and DR in other jurisdictions.

Massachusetts' own National Grid should be readily able to import its enthusiasm and expertise in DSM from England to New England. National Grid has also long used UK behind the meter standby generation and DSM as grid management resources to address just the kind of "energy crises" confronting New England.³⁸ In September in the UK, National Grid was quoted as "keen to promote and stimulate demand side services and will continue to talk to the industry to make the [winter peak shaving Demand Side Balancing Reserve] DSBR product mutually beneficial."³⁹ This past autumn, National Grid announced a DR program to meet winter peak demands notwithstanding serious contingency events concerning forced outages of key generators in the UK.⁴⁰

Further, National Grid has fostered DR in northeast states aside from Massachusetts. It already has implemented a voluntary, incentive-based load drop program for commercial/industrial entities with behind the

³⁵ See generally 2013 FlexAlert Evaluation.

³⁶ Caroline Aoyagi-Stom, Southern California Edison Co., *SCE Customers Help Save Almost 700 MW During Recent Flex Alert and Warning Triggered by CAISO* (Feb. 14, 2014), available at <http://newsroom.edison.com/stories/sce-customers-help-save-almost-700-mw-during-recent-flex-alert-and-warning-triggered-by-caiso> ("Something happened recently that we don't normally see in Southern California during the colder, winter months: the [California Independent System Operator](http://www.caiso.com) issued a statewide [Flex Alert](http://www.flexalert.com) asking consumers to immediately start conserving energy. . . . The warning . . . during the afternoon of Feb. 6, triggered Southern California Edison (SCE)'s demand response programs and enrolled customers to respond immediately. Their response made a critical contribution, helping to reduce energy usage by almost 700 megawatts, enough power to provide electricity to more than 35,000 homes.")

³⁷ Jonathan Marshall, Pacific Gas & Electric Co. Currents, *PG&E Customers Heed the Call to Conserve* (Aug. 17, 2012), available at <http://www.pgecurrents.com/2012/08/17/pge-customers-heed-the-call-to-conserve/> ("Some 4,100 large business customers also cut back that day, chopping peak demand by 475 MW, equal to the output of a major natural gas-fired generator. One such customer is Kinder Morgan Energy Partners, which transports refined petroleum products over pipelines throughout California. It alone shed more than 10 MW of load on both August 9 and 10, by turning off large electric motors used to drive centrifugal pumps.")

³⁸ David Andrews, Senior Technical Consultant, Biwater Energy, *National Grid's Use of Emergency Diesel Standby Generator's in Dealing with Grid Intermittency and Variability Potential Contribution in Assisting Renewables* at 7-8 (Jan. 24, 2006), available at <http://www.claverton-energy.com/wordpress/wp-content/files/ou-idgte-talk-load-managment-diesels.pdf>

³⁹ Flexitricity News Release, *Companies win contracts for reducing power demand: National Grid has contracted 319 MW of Demand Side Balancing Reserve (DSBR) across 431 individual sites, to be available this winter* (Sept. 23, 2014), available at <http://www.flexitricity.com/news.php?section=10&newsid=126> (quoting National Grid's Peter Bingham).

⁴⁰ Nena Chestney, Reuters, *Fire closes UK power generation unit, squeezing electricity supply* (Oct. 20, 2014), available at <http://uk.reuters.com/article/2014/10/20/uk-britain-fire-idUKKCN0I80VH20141020> ("Grid operator National Grid has announced precautionary measures to keep the lights on, including a scheme to encourage utilities to make idle capacity available and paying offices and factories for reducing electricity use to ensure supply to households.")

meter generation in New York. This program is “used when the NYISO declares a system emergency. Companies enrolled in this program will receive a financial incentive if they can curtail at least 100 kW of electricity one hour after notification. Incentive payments will only be made to program participants if power use is actually curtailed.”⁴¹ In Rhode Island, National Grid estimates that a pilot using DR to shave peaks as an alternative to distribution upgrades will result in lifetime demand savings of more than 2 MW in the Tiverton/Compton area.⁴²

3) Consistent with existing legal mandates, EEAC should ensure that in the next Energy Efficiency Plan, Massachusetts deploys DR/DSM to address New England’s problematic peaky load profile.

EEAC’s authorizing legislation expressly contemplates peak load reductions that will be effected not only through energy efficiency, but also with “demand response and load management.”⁴³ Apparently the current Energy Efficiency Plan dismissed DR and DSM on the grounds that “such efforts are difficult to cost-justify using the current Total Resource Cost test.”⁴⁴

47 Coffin respectfully submits that such efforts can in fact be measured and that inclusion of such measures is essential to mitigate New England’s worst-in-the-nation trend line of peak to average load ratios.

Utility Characteristics		Load Management Incremental			Load Management Annual			Load Management Annual Costs (\$000)	
Data Year	Utility Name	Effects MWh	Actual Peak Reduction MW	Potential Peak Reduction MW	Effects MWh	Actual Peak Reduction MW	Potential Peak Reduction MW	Direct Costs	Customer Incentive Payments
2012	City of Chicopee - (MA)	0	0.0	0.0	0	0.0	0.0	0	0
2012	Town of Concord - (MA)	0	4.1	6.4	0	4.1	6.4	0	32
2012	Fitchburg Gas & Elec Light Co	0	0.0	0.0	0	0.0	0.0	0	0
2012	Town of Groton - (MA)	.	.	.	.	.	.	.	.
2012	City of Holyoke - (MA)	0	0.0	0.0	0	0.0	0.0	0	0
2012	City of Marblehead - (MA)	0	0.0	0.0	0	0.0	0.0	48	0
2012	Massachusetts Electric Co	0	0.0	0.0	0	0.0	0.0	6	0
2012	Town of Middleborough - (MA)	.	.	.	.	.	.	0	0
2012	City of Norwood - (MA)	0	0.0	0.0	0	0.4	0.4	0	0
2012	Town of Sterling - (MA)	1	1.3	1.3	0	0.0	0.0	0	0
2012	City of Taunton	7	0.0	0.0	7	0.0	0.0	0	0
2012	Town of Templeton - (MA)	.	.	.	.	.	.	0	0
2012	TransCanada Power Marketing, Ltd	.	.	.	.	.	.	.	.
2012	Town of Wellesley - (MA)	.	.	.	.	.	.	0	0
2012	Western Massachusetts Elec Co	0	0.0	2.0	0	0.0	2.0	0	0
2012	City of Westfield	0	0.0	0.0	0	0.0	0.0	0	0
2012	Cape Light Compact	0	0.0	0.0	0	0.0	0.0	0	0

EIA data at left show that with the exception of a few municipal systems, no Massachusetts energy efficiency Program Administrator can claim any DR/ DSM potential or results. The Town of Concord reportedly achieved actual peak reductions of 4.1 MW in 2012, at a total cost of \$32,000 in customer incentive payments.⁴⁵

⁴¹ National Grid, *Energy Demand* (visited Jan. 6, 2015), available at

http://www.nationalgridus.com/niagamohawk/business/programs/4_emergency.asp.

⁴² FERC Staff, *Demand Response and Advanced Metering* at 26 (Dec. 2014), available at <http://www.ferc.gov/legal/staff-reports/2014/demand-response.pdf>.

⁴³ M.G.L. Ch. 25 § 21(b)(2).

⁴⁴ *Petition of Bay State Gas Co., et al., for Energy Efficiency Plan Approval*, Mass. D.P.U. Docket Nos. 12-100 to 12-111, Three-Year Energy Efficiency Plan 2013-2015, Ex 1 at 88-89 (Nov. 2, 2012), available at <http://web1.env.state.ma.us/DPU/FileRoomAPI/api/Attachments/Get/?path=12-109%2f3413jntstepln.pdf>.

⁴⁵ US Dept of Energy, Energy Information Adm, *Electric power sales, revenue, and energy efficiency Form EIA-861 detailed data files, 2012*, at DSM File (released Oct. 29, 2013), available at <http://www.eia.gov/electricity/data/eia861/zip/f8612012.zip>.

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47 Coffin respectfully submits that EEAC should revise its cost evaluation methodology so that it is capable of capturing this DR/DSM cost and benefit.

In summary, 47 Coffin commends EEAC for its work to date in making Massachusetts the nationwide leader in energy efficiency. Now, however, it must urgently address the increasingly peaky nature of the Commonwealth's electric loads.⁴⁶ Accordingly, 47 Coffin respectfully requests that in the coming energy efficiency plan, EEAC:

- 1) Continue its outstanding energy efficiency program—with mechanisms to ensure that Program Administrators actually meet their targets;
- 2) Recognize and prioritize the need to use load management to address growing peak loads;
- 3) Require immediate adoption of a voluntary, educational program like Wait Til 8 or FlexAlert; and
- 4) Mandate expedited implementation (without necessarily awaiting Smart Meter adoption) of measurable DR/DSM programs used successfully in other jurisdictions.

47 Coffin appreciates the opportunity to submit these comments and looks forward to participating in EEAC's upcoming January 20, 2015 public meeting.

Respectfully submitted,



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⁴⁶ In addition to programs in Connecticut, 47 Coffin commends consideration of initiatives underway in New York and other states, described in FERC's most recent annual demand response report. FERC Staff, *Demand Response and Advanced Metering* at 25-26 (Dec. 2014), available at <http://www.ferc.gov/legal/staff-reports/2014/demand-response.pdf>.

