Reply Comment of Patricia Burke, MA DPU 20-69, Modernization of Electric Grid, Phase Two

MA DPU 20-69

With MA DPU Order 20-69, the Department of Public Utilities is revisiting the issue of customer-facing investments for grid modernization, including smart meters and time-of-use billing.

While DPU 20-69 considers only electric vehicle users, Massachusetts utilities are directed to also discuss whether or not they should begin installing AMI, or advanced metering functionality, to support time-of-use billing, as meters in service need to be replaced.

In particular, because meters in the territory served by the investor-owned utility Eversource are reaching the end of their service life, and because of the technological and administrative challenges of a piecemeal approach to smart meter deployment (including billing), MA DPU 20-69 leads back to a larger inquiry of all smart meter/ smart grid technology investments.

As the Commonwealth re-visits the question of advanced meter functionality, complaints about the administration, oversight, and results reporting already outlined in previous proceedings regarding the Worcester smart meter pilot , and concerns about MA DPU 12-76B, remain unaddressed.

Background: Section 85 of the Green Communities Act mandated smart meter pilot programs:

SECTION 85. On or before April 1, 2009 , each electric distribution company shall file a proposed plan with the department of public utilities to establish a smart grid pilot program. Each such pilot program shall utilize advanced technology to operate an integrated grid network communication system in a limited geographic area. Each pilot program shall include, but not be limited to advanced (“smart”) meters that provide real time measurement and communication of energy consumption, automated load management systems embedded within current demand-side management programs and remote status detection and operation of distribution system equipment. On or before April 1, 2009 , each electric distribution company shall file a proposal with the department of public utilities to implement a pilot program that requires time of use or hourly pricing for commodity service for a minimum of 0.25 per cent of the company’s customers. **A specific objective of the pilot shall be to reduce, for those customers who actively participate in the pilot, peak and average loads by a minimum of 5 per cent.** The department shall work with the electric distribution companies to identify specific areas of study, and may incorporate and utilize information from past relevant studies or pilot programs. The department shall review and approve or modify such plans on or before August 1, 2010 . **Plans which provide for larger numbers of customers and can show higher bill savings than outlined above shall be eligible to earn incentives as outlined in an approved plan.** The programs filed by the distribution company shall include proposals for rate treatment of incremental program costs; provided, however, that such program costs shall be deemed by the department to be a cost of basic service and recovered in rates charged for basic service. **Following the completion of the pilot programs, the secretary of energy and environmental affairs shall submit a report to the joint committee on telecommunications, utilities and energy not later than September 1, 2012 detailing the operation and results of such programs, including information concerning changes in consumer’s energy use patterns, an assessment of the value of the program to both participants and non-participants and recommendations concerning modification of the programs and further implementation.**

Commentary:

Although the Worcester pilot was delayed beyond 2012, the investor-owned utilities in Massachusetts did eventually conduct smart meter pilot programs.

Ratepayers have reported that the Worcester pilot results, quantified and interpreted by Navigant, are grossly inaccurate.

Testimony filed for MA DPU 14-109; 15-21; 16-28; 17-53; and especially for 18-28, demonstrates that statistics quoted locally, nationally, and internationally concerning the results of the Worcester pilot were inaccurate, for example, the claim that the pilot had a 98% retention rate, when the pilot's participation inexplicably decreased from a targeted 15,000 to closer to 11,000 which included businesses as well as residence accounts where "active participants" were individuals who visited the website, when they were incentivized to do so with prizes.

In addition, because participants were defaulted into a pricing plan that would result in lower bills, and because Navigant apparently compared the bills that would have resulted without the pilot to the savings created for the pilot, the entire supposed cost savings to customers cannot be attributed to behavioral changes, smart meters, or time of use billing, but rather instead to the pilot program design and evaluation strategies.

This news report appeared in the UK, as the result of the results report of the pilot:

National Grid smart energy programme achieves 98% retention rate

National Grid has announced results from its Smart Energy Solutions programme – reported to be the 'most comprehensive' smart grid pilot in the Northeast of the US.
The utility company's Smart Energy Solutions (SES) programme runs over two years, and has just announced the results from the first year of the programme.
National Grid has found that its SES programme has achieved a 98 per cent retention rate, a 72 percent customer satisfaction rate and total customer savings of US$1.25 million on their electric bills. The results were gleaned from findings from approximately 11,000 customers.
National Grid is a British multinational electricity and gas utility company headquartered in London, United Kingdom. Its principal activities are in the United Kingdom and Northeastern United States.
The utility also found that participants in the programme experienced significant energy savings. Collectively, National Grid customers **are reported to have saved 2,300 megawatt-hours – enough to power a local library for a year, says 3BL Media. Customers also reduced their energy usage by almost 4 per cent during peak periods.**
Ed White, vice president, New Energy Solutions, National Grid said: "These reports have provided valuable data and insight that will help influence how we modernize our electricity system in the future.
"As part of the SES programme, we have been piloting advanced automation on the electricity distribution system. This includes special equipment and switches that communicate and operate to automatically isolate power outages, minimizing the impact to customers. During two major events the technology helped us reduce the time customers were interrupted by more than 75 per cent."
Customer savings through engagement
In 2015, National Grid launched two dynamic pricing plans under its Smart Energy Solutions programme. These include a Smart Rewards Pricing and Conservation Day Rebate.
National Grid would notify customers of days when demand for energy was expected to be high, hence "Conservation Days", where customers could plan in advance to reduce energy use on high demand days.
[quote] **During periods of peak demand, customers were encouraged to use o-cost in-home technologies (digital picture frames, smart thermostats, smart plugs and the online energy portal) and were able to reduce energy usage upwards of 30 per cent.**
The utility found that customers made a habit of not using energy-intensive appliances during peak events. **National Grid's pricing plan saved more than US$100 during 2015. Collectively, participants in both plans saved a total of US$1.25 million in 2015.**
White added: "We have learned a great deal, including that many customers are excited about the program and want to proactively manage their energy use. We are continuing to enhance the SES program and hope to gain even more insight in the coming year."
https://www.smart-energy.com/regional-news/north-america/national-grid-smart-energy-programme-achieves-98-retention-rate/

This news report indicates that Ngrid may be able to save 4% on peak acquisition costs:

National Grid and FPL point to IoT for big opex savings By Alex Davies
Two utilities have released the results of their smart grid trial projects, with both reporting significant savings in their opex and a strong incentive to their bottom lines should they rollout the technology to the rest of their customers.
National Grid, a utility operating mainly in the North Eastern US, i**mplemented its two-year Smart Energy Solutions program a little over a year ago, and has announced that in the first year it achieved a 98% customer retention rate, a 72% customer satisfaction rating, and total customer bill savings of around $1.25m – equating to around $113 per customer in a year.**
National Grid, a British multinational electricity and gas utility, found that its participants collectively save around 2,300 megawatt hours (mWh) in energy, which is roughly enough to power the local library in Worcester, MA for a solid year. More importantly for National Grid was the 4% reduction in peak energy usage.
Currently, homes use energy in peaks, with maximum usage happening in the mornings as people prepare for the day ahead, and in the evenings when they return home from work. Those spikes in demand require that the utility holds enough energy generation capacity in reserve, so that there aren't blackouts when its customers all demand energy in unison.
So the 4% reduction in peak usage means that National Grid could save 4% on its peak generation acquisition costs, which could be the difference nationally between building a new coal plant or being able to rely on the more environmentally friendly (and increasingly cheaper) renewable sources of energy like solar and wind that are captured in battery storage – either inside the home or at grid-scale.
https://rethinkresearch.biz/articles/national-grid-and-fpl-point-to-iot-for-big-opex-savings/

If the results that were reported and actively promoted did not accurately portray the results of the Worcester smart meter pilot program, does this not constitute accounting fraud?

Informed ratepayers remain extremely concerned by the lack of responsive action by the larger consortium of groups and individuals promoting smart meter and smart grid plans. If interested parties were not misled by National Grid, but in fact colluded with National Grid to ensure that the results met the objectives of the Green Communities Act to support smart meters, where, how, and when is accountability ensured? If the energy and cost savings attributed to the pilot do not materialize for Massachusetts, where would responsibility and/or liability be assigned?

The Green Communities Act stated, "A specific objective of the pilot shall be to reduce, for those customers who actively participate in the pilot, peak and average loads by a minimum of 5 per cent. '

The unprecedented auto-enrollment design of the large pilot provided National Grid and Navigant with great latitude in the claims it made about the results.

Regarding who "actively participated," active participation was defined as visiting the web portal.

National Grid employees participated in the pilot. At an event at the Sustainability Hub (also referred to as the Propaganda Pub) one employee mentioned that some of her neighbors (in a neighborhood where backyard swimming pools and central air are more common) asked to be in the pilot, and therefore receive lower electricity bills.

It is unknown what percentage of pilot program participants were employees of NGrid or of other pilot community partners. National Grid apparently had fiscal relationships with groups in the Worcester community, including area colleges (WPI, Clark). (NGrid drew on its relationship with WPI when an engineering professional with no health expertise contributed to the smart meter health report created by Worcester's Health Department, a noted in testimony by Dr. William Maykel).

It is important to examine very carefully the energy consumption profiles of the households that contributed the most to cost and energy saving for relevance to a larger deployment of meters. For example, how were the statistics weighted for the homes with the pool pump override switches and central AC, vs. the homes of low income residents in rental units with no swimming pools, AC, EVs, dish washers, vacuum cleaners, or washer and dryers, and whose only electric consumption is a refrigerator provided by the landlord, and cellphone charger. It is crucial to question how Navigant "weighted the averages" for the different customer segments to determine how the reported findings will translate for the Commonwealth.

Testimony for MA DPU 20-69 indicates that there are other options for managing EV charging other than partial or full deployment of wireless meters.

Background: Green Communities Act, Section 85 and HIstory of National Grid Filing

According to a February 8, 2012 filing for MA DPU Docket 11-129 by Patrick Tarmey, "Attorney General's Initial Comments" (for former Attorney General Martha Coakley):

"Section 85 of the Green Communities ("GCA") requires each electric distribution company to file a proposed plan with the Department to establish a smart grid pilot program. In response, on April 1, 2009, the Company filed a plan with the Department. See initial filing in Massachusetts Electric Company and Nantucket Electric Company, each d/b/a National Grid, D.P.U. 09-32, dated April 1, 2009 (the "2009 Pilot"). **After a full adjudicatory proceeding, including extensive evidentiary hearings, the Department deferred approval of the 2009 Pilot pending review of the Company's marketing and evaluation plans.** *Massachusetts Electric Company and Nantucket Electric Company, each d/b/a National Grid, D.P.U. 09-32, July 27, 2010 Order at 72. On February 11, 2011, the Company, for various reasons, moved to withdraw its 2009 Pilot. The Department approved the Motion on March 4, 2011.*
On December 23, 2011, the Company filed a new Pilot which, the Company says, "maintains many of the features of the original pilot proposed by the Company in D.P.U. 09-32."Massachusetts Electric Company and Nantucket Electric Company, each d/b/a National Grid, D.P.U. 11-129, December 22, 2011 filing letter at 1. **The Company states that the estimated cost of the proposed pilot program is cheaper than the 2009 Pilot by over $12 million."**

Commentary:

It is not clear what type of evaluation plan was approved by the MA DPU in the second pilot proposal that was ultimately approved, because much of the financial information is redacted from the docket.

it is unclear how much Navigant was paid to produce the results report for the Worcester pilot program. The Navigant expense is one of the off-books expenses that appears to have not been made available for public scrutiny in the pilot cost accounting.

The multi-day pre-pilot Green2Growth summit hosted by National Grid, that was facilitated to guide participants to say that they desired more information about their electrify usage, but never mentioned smart meters or the pilot that was going to be foisted on the community, was another significant off-books expense.

It is unclear whether or not the actual pilot was, in fact, cheaper than the 2009 pilot by over $12 million, because the actual accounting for the pilot has been obscured from public view, but the pilot ran over-budget and behind schedule due to community opposition.

Despite testimony from the public challenging the administration of the pilot, including but not limited to the cost of rebranding with a new name and new website, and failure to recruit low-income customers for certain customer segment studies despite the unprecedented size and expense of the pilot, the DPU repeatedly provided tremendous latitude to

National Grid, for example with the 2-year extension.

Despite documentation indicating misleading results reporting, the evaluation of the the NGrid pilot results appears to have not been scrutinized by the MA DPU or the larger community promoting smart meter investment.

Ratepayers have questioned whether National Grid was expected to provide evidence to support smart meter investment for the Clean Energy community in the Commonwealth, in collaboration/collusion with a much larger community of interested parties.

Did the DPU and National Grid endeavor to provide an accurate account of the pilot, even if it would challenge the assumption that smart meters are a reasonable investment for Massachusetts ratepayers, or was the pilot designed to justify the investment decision?

Given the misrepresentation of the results in the media, what outcomes were reported to the Legislature? Did the misrepresentation involve accounting fraud? Shouldn't responsible decision-makers seek investigation and clarification before proceeding?

Background MA DPU 12-76-A:

DPU order 12-76 A filed by Chair Berwick, and Commissioners Westbrook and Cash on December 23, 2013 states that: "The Department must ensure that electric distribution companies **provide safe and reliable electric service to customers** and enhance the deployment of clean energy technologies and processes."

Commentary:

The initial order 12-76 investigating smart meters highlighted the MA DPU's responsibility to provide **safe** service to customers. After the DPU issued its initial order on December 23, 2013 (2 days before the Christmas holiday period) about 100 customers raised concerns about the safety of wireless meters.

But since that docket was published, the responsibility for safety has not been emphasized in subsequent dockets.

Is the DPU still responsible to ensure safety? If not the MA DPU, who?

As many individuals have testified in this proceeding for MA-DPU 20-69, the MA DPU held hearings in February of 2014 regarding the health concerns raised about smart meters.

Tobacco scientist Peter Valberg testified on the health panel, the same week that he also filed testified for Phillip Morris cigarettes in a court case in Ohio. He also testified before the Worcester zoning board on behalf of National Grid, and Peter Valberg and/or Gradient have provided testimony on safety for many projects in the Commonwealth and elsewhere.

After Peter Valberg testified, the MA DPU published a smart meter order 12-76-B that made the unprecedented claim that exposure guidelines are adequate to protect against both thermal and non-thermal impacts of radio frequency exposure.

The circumstances surrounding how that gross misrepresentation was incorporated in the MA DPU order, which then could be referenced in other proceedings, have not been investigated.

But they offer a glimpse into the workings of the corruption of science that has been the mark of product defense firms like Gradient and liar-for hire testifiers like Peter Valberg, who also once worked with an unscrupulous lawyer to attempt to blame mesothelioma, (linked with asbestos exposure) on cigarettes, and offered to provide the evidence to back up the claim by publishing articles, as reported by the Center for Public Integrity.

Does the MA DPU and larger energy community not recognize the significance of the wrong-doing inherent in the misrepresentation of the scope of RF guidelines?

If not, what agency in the Commonwealth can be entrusted for protecting the safety of the community?

Was this "misrepresentation" the work of the MA DPU?

Former AG Martha Coakley Opposition, MA DPU 11-129: Petition by Massachusetts Electric Company and Nantucket Electric Company, each d/b/a National Grid for approval of a smart grid pilot program.

In MA DPU 11-129, Attorney General Coakley opposed the Worcester Smart Meter pilot program, noting that, "As will be described in more detail below, the **Company's proposed smart grid pilot is too large and too expensive for the informational value that it is likely to provide.** Furthermore, the pilot design fails to take into account or acknowledge the results of other dynamic pricing and technology pilots, thus exacerbating the potentially adverse impact on ratepayers

from pursuing a pilot of such a large scale and cost **without any new information that is likely to result.** A smart grid pilot of the scope proposed by the Company in this matter is unnecessary and will only serve to burden ratepayers with higher bills with very little value in return."

Commentary

Former Attorney General Martha Coakley noted that the proposed Worcester pilot program was unlikely to provide any new information.

Given that many jurisdictions have already run time of use pilot programs targeting electrical vehicle users, what new information would a pilot program in Massachusetts provide?

For example:

EV Managed Charging: Lessons from Utility Pilot Programs
SEPA's report identified 38 utility-run managed charging pilot and demonstration projects across the U.S., and showed that interest is growing among utilities with 74% of survey respondents reporting interest or participation in utility-run managed charging programs.
Managed charging relies on communication signals from a utility or aggregator to be sent to a vehicle or charging device to control charging events. Managed charging programs fall into two categories: passive and active. **Passive programs focus on altering customer charging behavior. One way to achieve this is using time-varying rates to incentivize customers to charge during less expensive off-peak hours. To dive deeper into the capabilities and efficacy of behavioral demand response programs, SEPA will be releasing an extensive report on time-based rates this fall. Active managed charging programs provide utilities, or a market aggregator working with charging networks, with the capability to determine and/or control charging time, scale, and location, "in order to achieve a variety of outcomes, such as managing peaks, absorbing excess renewable generation or supplying some ancillary services to a structured market." These programs rely on a reliable two-way flow of information that includes 1) a transport layer which relies on a communication signal via Wi-Fi, cellular, vehicle telematics, etc. to send the charging instructions and 2) a messaging protocol or standard that can help the device understand and execute the instructions.**
Southern California Edison
Mauro Dresti, senior advisor, transportation electrification technology strategy at SCE detailed their Charge Ready DR Pilot Program, which initially targeted commercial and multi-unit dwelling customers. Via this pilot, SCE demonstrated the capability to shift and reduce loads by up to 50%. SCE provided equipment rebates and covered the cost to install the equipment. In exchange, customers agree to participate in DR events, offsetting some or all of the installation and equipment costs.
Key Takeaways
The program successfully reduced load by an average of 42% at participating sites during DR events in 2018.
They used an automatic opt-in system, notifying and allowing customers to opt-out. This ensured the opt-in "had absolutely no thinking for the customer" to minimize inconvenience while increasing participation.
Commercial charging was viewed as a better avenue for absorbing renewable overgeneration (to prevent curtailment of excess supply), as residential EV owners would often be at work when overgeneration occurred.
Room for Improvement
The program was insignificant at shifting load to periods of overgeneration (11am – 3pm) during DR events.
Prohibitively expensive networking costs (i.e., monthly cellular fees) paid by customers who own the charging devices.
Avista Utilities
Mike Vervair, engineer at Avista outlined their EVSE pilot program in Washington State. Avista owned, installed and maintained the chargers used in the program for residential and workplace charging applications. During anticipated peak hours, Avista tracked meter data to determine when to curtail charging load via signals sent to networked chargers. Customers were notified a day in advance via a phone app to allow for opting out.
Key Takeaways
Overall, there was an 84% average opt-in rate despite being a completely voluntary program with no incentives for participating in individual DR events.
Decreased average load per EV by 69.2% during curtailment periods.
EV loads are often geographically clustered, with several households having more than one EV. This further incentivizes the need for managed charging to avoid overloading and upgrading transformer infrastructure.
Room for improvement
Reliance on customer Wi-Fi networks proved unreliable, with 30-45% of systems losing connection with charging devices.
Customers preferred a simple way to opt-out of DR events.
It is still difficult to estimate at what level of EV penetration these programs will make fiscal sense.
The next steps will expand the program to test different control groups to determine customer impacts, add additional EVSE models to the testing group, and explore using the utility's AMI network for communications instead of customer Wi-Fi.
6th, 2019)
Pacific Gas and Electric
Karim Farhat, Expert Product Manager, Vehicle Grid Integration at PG&E detailed their ongoing ChargeForward pilot with

BMW. In its first phase, 96 BMW i3 drivers were enrolled with a $1,000 incentive. BMW created its own proprietary aggregation software and app, which could delay charging via cellular telematics on the vehicle. BMW also tested 2nd-life EV batteries for grid services to meet DR requirements. In its second phase, the program expanded to 350 participants, focused on maximizing renewable energy intake, accounting for residential and away-from-home charging, and offering DR grid services.
Key Takeaways
Customers were highly satisfied, with 93% of participants willing to recommend the program to others.
EV charging optimized with renewable energy overgeneration through day-ahead forecasting from PG&E and BMW.
BMW met 90% of load requirements for DR events with an average 20% contribution from EVs and 80% from the 2nd life battery system.
Customers shared that the program educated them about the impacts their EV had on the grid, and expressed enthusiasm in knowing their EVs were charging from excess renewable energy supply.
Room for Improvement
Most participation in EV overgeneration optimization took place during the weekend when more residential EVs were at home.
There was low contribution to demand response events from participating EVs, with a strong reliance on second-life batteries.
https://sepapower.org/knowledge/ev-managed-charging-lessons-from-utility-pilot-programs/

There are many other reports available on-line that outline EV pilot findings, for example;

Baltimore Gas and Electric: 69 participants
http://www.madrionline.org/wp-content/uploads/2017/06/BGE-EV-rate-design-pilot.pdf
Austin:
https://austinenergy.com/wcm/connect/b216f45c-0dea-4184-9e3a-6f5178dd5112/ResourcePlanningStudies-EV-Whitepaper.pdf

Do Smart Meters Embody Environmental Stewardship?

In managed charging programs, customers reported appreciating understanding the impact of EV charging on the grid.

The overwhelming question about the smart grid and smart meters projects is - Why is the environmental impact of the technology not receiving scrutiny?

What will cumulative environmental impact be over the life of the meter deployments, including conflict minerals and e-waste?

For example, rather than asking each utility to provide cost estimates for one cycle of smart meter deployment, how many times will the meters need to be replaced in the next 50 years?

Congressional Testimony: ‘Smart’ meters have a life of 5 to 7 years.
"Testimony was provided last week (October 21, 2015) at a Congressional hearing regarding “cybersecurity for power systems.” Mr. Bennett Gaines testified on behalf of FirstEnergy Service Company. He is a Senior Vice President and the Corporate Services and Chief Information Officer. Although acknowledging some increased cybersecurity risks due to ‘smart’ meters, Mr. Gaines stated, “But I don’t see it as a huge threat.”
Then, however, Mr. Gaines made a surprising statement regarding the life expectancy of ‘smart’ meters as compared to existing traditional meters: “These devices are now computers, and so they have to be maintained. They don’t have the life of an existing meter which is 20 to 30 years. These devices have a life of between 5 to 7 years. And so the challenge that the industry has is making sure they maintain their smart grid environment, not neglect it.”
https://smartgridawareness.org/2015/10/29/smart-meters-have-life-of-5-to-7-years/

High-tech smart cities promise efficiency by monitoring everything from bins to bridges. But what if we ditched the data and embraced ancient technology instead?
https://getpocket.com/explore/item/the-case-for-making-low-tech-dumb-cities-instead-of-smart-ones?utm_source=pocket-newtab

Drunk on Wireless - Environmental Injustice

Bolivia has enormous lithium deposits.
A recent U.S. supported coup d'etat ousted President Evo Morales.
Elon Musk tweeted: "We will coup whoever we want! Deal over it."
Journalist Max Blumenthal's account
https://twitter.com/MaxBlumenthal/status/1286888989832744960/photo/1
An article on the Bolivia situation:
https://medium.com/@rainershea612/we-will-coup-whoever-we-want-u-s-imperialisms-friendly-mask-slips-off-88d1bd0840d9

Evs, Conflict Minerals and E-Waste The EV revolution will take batteries, but are they ethical?
The EV revolution has been racking up a whole supply chain of trouble around the globe related to an onslaught of often-contentious new mines opening to meet surging battery-metal demand, not to mention the coming tide of e-waste from old batteries.
https://www.corporateknights.com/channels/transportation/ev-revolution-needs-batteries-ethical-15795118/

Ewaste and conflict minerals sustain exploitation of poorer nations, which is a form of racism and environmental injustice.

Drunk on Wireless- Risk to the Food Supply

Proponents of wireless smart grid infrastructure have not evaluated how the transmissions impact plants, with implications for the food supply.

For example, Light Reading reports, "In the competitive US wireless market, operators typically use population covered, or POPs, as a measurement to showcase how pervasive their 5G network is across the country. But for a company like John Deere, which is focused on using 5G to improve the global agriculture sector and increase the food supply, building a 5G network that just covers urban corridors and cities isn't enough.
Instead John Deere wants 5G to connect the land, not just the people.
"We want to make sure that every ear of corn and stalk of soybean has the opportunity to succeed," said Dan Leibfried, director of advanced technology at John Deere's Intelligent Solutions Group.
https://www.lightreading.com/5g/john-deere-wants-5g-to-cover-every-ear-of-corn-and-stalk-of-soybean/d/d-id/763279

https://www.saferemr.com/2015/12/cell-tower-radiation-prevents-garden.html

Effects of Wi-Fi Radiation on Germination and Growth of Broccoli, Pea, Red Clover and Garden Cress Seedlings: A Partial Replication Study Magda Havas* and M. Sheena Symington
https://www.eurekaselect.com/node/141391/viewhtml/

Why has smart meter/smart grid deployment proceeded without scrutiny of the impact of RF exposure on pollinators, seeds, and germination?

Drunk on Wireless- Damage to Trees and Foliage

Smart meter proponents have not monitored whether or not wireless transmissions have caused damage to trees, resulting in increased storm damage when damaged trees fall on power lines.

ELECTROMAGNETIC FIELDS, TREE & PLANT GROWTH

"Electromagnetic (EMF) frequencies have been found to alter the growth and development of plants. Studies on wireless EMF frequencies have found physiological and morphological changes, increased micronuclei formation, altered growth as well as adverse cell characteristics such as thinner cell walls and smaller mitochondria. Electromagnetic exposure results in biochemical changes Research shows that plants perceive and respond to electromagnetic fields and are a good model to study the biological effects of exposure.
Documentation of tree damage from base stations is made visible in the Report “Tree Damage Caused by Mobile phone base stations” in which he states, “RF radiation effects on plants have not been considered. In the Explosive Proliferation of the diverse wireless communication technologies across the entire environment and almost all areas of life, this represents an uncovered risk” (Breunig, 2017).
Note: EMFs also have been shown to alter the behavior of bees and birds."
https://ehtrust.org/electromagnetic-fields-impact-tree-plant-growth/

Radiofrequency radiation injures trees around mobile phone base stations
Excerpt:
"The measurements of all trees revealed significant differences between the damaged side facing a phone mast and the opposite side, as well as differences between the exposed side of damaged trees and all other groups of trees in both sides. Thus, we found that side differences in measured values of power flux density corresponded to side differences in damage. The 30 selected trees in low radiation areas (no visual contact to any phone mast and power flux density under 50μW/m2) showed no damage. Statistical analysis demonstrated that electromagnetic radiation from mobile phone masts is harmful for trees. These results are consistent with the fact that damage afflicted on trees by mobile phone towers usually start on one side, extending to the whole tree over time."
https://pubmed.ncbi.nlm.nih.gov/27552133/#

(Note that the smart meters in a mesh network also transmit to antennas, for example, in Worcester, National Gird attempted to install 5 microwave antennas on a pole in a residential neighborhood.)

Drunk on Wireless- Damage to Human Health

The City of Boston Weighed In, Twice, to the FCC, about Inadequacy of Radio Frequency Exposure Limits
"Boston believes that the concerns of the public are real and that the Commission has done a disservice to itself, local government, consumers, and even the wireless industry in failing to understand and respond to the broadly shared mistrust of the safety of RF emissions.”“The City, and many of its constituents, do not believe the cursory way in which the Commission simply reaffirmed its decades old standards in 2019 was based on a robust review of the record and an updating of the science. And until the Commission appreciates the educational component of its role as the nation’s RF monitor, local governments, like Boston, will continue to be stuck in the middle as residents oppose wireless deployments for fear of the emissions, while the FCC and Congress have preempted local government review of RF standards."
https://ecfsapi.fcc.gov/file/1061793938659/COMMENTS_BostonMA.pdf

Utilizing EVs to Balance the Grid?

The DPU docket notes in Footnote 6 the intention to develop standards for EVs to charge during off peak hours and be available to delver energy to the grid during peak hours.
"Many EV advocates champion the idea of ‘Vehicle to Grid’ charging. This involves vehicle owners feeding electricity back into the grid from their vehicle’s battery when electricity demand is high. Travers dismisses the concept, at least for residents. “This is unlikely to happen, not because it cannot be done but because it would be ridiculous to do. Firstly, many EVs will be on charge for 12 hours per day, and thus unavailable for supplying the grid. Secondly, it is hard to imagine why anyone possessed of a fully-charged EV would allow the battery to be drained when they might need the car at any moment, and when there was a shortage of electricity.
“Thirdly, the battery is direct current (DC), but the grid requires alternating current (AC). It is unlikely that any homeowner would be prepared to invest £800 in a DC-to-AC inverter to allow them to sell electricity, particularly since the sales value they will derive from doing so would be small. If your EV has cost £10 to charge at 15p/kWh, would you allow the grid to take half of that charge, if it had a value of only £5? The grid would have to pay an extraordinary premium to get someone to bother to connect their car up.”
https://www.transportxtra.com/publications/local-transport-today/news/66262/mass-ev-charging-is-a-can-of-worms-hiding-under-the-bonnet-

The covid epidemic/toilet paper debacle may be instructive regarding the question of whether individuals will seek to balance the grid, or to charge own their cars, when there is a shortage of electricity.

The Great Leap Forward and the Green Communities Act and the Green New Deal

Like composting, there are many conservation behaviors that individuals enjoy adopting when they understand the value of their actions, and when the actions truly reflect responsible environmental stewardship, without needing to be paid to engage in conservation behaviors, especially when the apparatus required may inflict damage on human health and the environment.

History tells us that 60 years ago, we find the Great Chinese Famine, ostensibly blamed on weather and climate conditions, but in reality, a complete failure of policy.

Hong Kong-based historian Frank Dikötter estimated that, at minimum, 45 million people died from starvation, overwork and state violence during the Great Leap. NPR’s 2012 story on Yang Jisheng’s book Tombstone reports, "The origins of the famine can be traced to Mao Zedong’s decision, supported by the leadership of China’s communist party, to launch the Great Leap Forward."

For those paying attention, the Green Communities Act and the subsequent Green New Deal is looking a lot like the Great Leap Forward, increasingly favoring unproven, unmonitored wireless technological approaches that disregard natural law, the environment, and human health.

Wikipedia explains, "the central government decreed several changes in agricultural techniques that would be based on the ideas of Soviet pseudoscientist Trofim Lysenko. One of these theoretic ideas which the Central government would test was close planting, whereby the density of seedlings was at first tripled and then doubled again. The deep plowing theory stated that the most fertile soil was deep in the earth, and plowing unusually deep would allow extra strong root growth.

Additionally, in the Four Pests Campaign, citizens were called upon to destroy sparrows and other wild birds that ate crop seeds, in order to protect fields.. This system failed and resulted in an explosion of the vermin population, especially crop-eating insects, which consequently had no predators. These radically harmful changes in farming organization coincided with adverse weather patterns, including droughts and floods. Frank Dikötter argues that most floods were not due to unusual weather, but to massive, poorly planned and poorly executed irrigation. works which were part of the Great Leap Forward."

From conflict minerals to e-waste, for example shipping of spent American batteries to Mexico, where illegal waste dumps from plants operated by American, European and Japanese companies have resulted in soaring rates of anencephaly (babies are born without brains); the downsides of humanity's enchantment with all things wireless is already a human

rights disaster.

The U.S. appears to have chosen to pursue a path to economic gains, achieved at the expense of manipulating the core values of individuals desiring to adopt a more conservation-oriented lifestyle, while continuing its sordid history of manifest destiny, entitlement and exploitation.

Technological "progress" that moves society further away from a living literacy with the natural world is on a collision course with botany and biology.

Privacy

The smart grid /smart meter concept of consuming energy and resources and transmitting data 24/7/365, in part from empty businesses and houses, or homes when people are asleep, as a form of sustainability, and the claim the the meters "give people more control over their energy usage" was promoted during a time when the United States and other countries instituted massive domestic spying operations.

This week, "A federal appeals court has ruled that the NSA's historic controversial domestic spying program was illegal, one of the same programs NSA whistleblower Edward Snowden released details on to journalists in 2013. The landmark decision added that the spying program was even potentially unconstitutional. The court's ruling was written by Judge Marsha Berzon, who expressed that the Foreign Intelligence Surveillance Act, or FISA, didn't allow for the bulk collection of phone users' call records, as the U.S. government falsely claimed at the time. The metadata collection exceeded the scope of Congress's authorization," she wrote in her ruling. The main problem, according to Berzon, was that FISA did not allow for bulk collection, only targeted collection of known suspects. The law "required the government to make a showing of relevance to a particular authorized investigation before collecting the records," Berzon wrote. Judge Berzon went on to state that there is no evidence that the spying program actually did anything to prevent a single case of terrorism, and that U.S. officials misled the public about the program's effectiveness. "To the extent the public statements of government officials created a contrary impression, that impression is inconsistent with the contents of the classified record," she wrote. Snowden posted about the ruling, saying that, "I never imagined that I would live to see our courts condemn the NSA's activities as unlawful and in the same ruling credit me for exposing them. And yet that day has arrived." https://www.activistpost.com/2020/09/historic-judge-rules-nsa-domestic-spying-exposed-by-edward-snowden-was-illegal.html

Wired is the Way - Reinventing Wires

Like the NSA ruling, the concept of the (IOT) internet of things, including internet connected appliances, fueled by the 5G network, is also in urgent need of review, not only because of the privacy violations, but because the advantages of hard wired applications are apparent.

The reports: "Re-inventing Wires" and "Getting Smarter About the Smart Grid" illustrate the point.

"A public policy report on the Internet and the future of landlines and wireless re-inventing networks, "Re-Inventing Wires: The Future of Landlines and Networks", was published online today by the National Institute for Science, Law & Public Policy (NISLAPP) in Washington, D.C. Because broadband networks and the Internet have become vital components of our nation's physical, cultural and social structure, the future of these networks, the report says, must be steered towards the fastest, most reliable and future-proof, and secure infrastructure available. Such infrastructure would be wired, not wireless.

"Re-Inventing Wires: The Future of Landlines and Networks" is authored by communications technology expert Dr. Timothy Schoechle, PhD, an international consultant in computer engineering and standardization, former faculty member of the University of Colorado, College of Engineering and Applied Science and Senior Research Fellow at the National Institute for Science, Law & Public Policy.

From a broad analysis of available data, "Re-Inventing Wires: The Future of Landlines and Networks" demonstrates wireless systems cannot provide long-term solutions for universal, reliable and affordable Internet accessibility, nor support the ever-increasing data rates that will be needed in the near future for each American home and business. Investment in wired, not wireless, information infrastructure is needed across the U.S. right now.

The wireless industry is forging full throttle ahead to install millions of new antennas, and dozens of Bills in Congress, and in State legislatures, seek to pre-empt local laws and regulations. A national fiber broadband system deployed as close to the consumer as possible, the report says, is a more intelligent choice, in many respects. A national network of locally controlled fiber networks would far better serve to sustain economic growth and competitiveness, meet projected market demand, overcome access inequality and second-rate connectivity issues, and diminish a range of well-known risks from wireless communication, including safety, security, privacy, public health and environmental risks, while at the same time reducing the extraordinary, and little considered, energy requirements of wireless and cellular networks."

Among the recommendations of Re-inventing Wires, : "Combine fiber access networks with local electric power distribution

grids wherever possible. Community-based and municipal electric utilities are well poised to take advantage of synergy between fiber networks and local electricity distribution grids. They are both basic public utilities. Many of the same facilities can be shared and customer relationships are already in place. Local fiber networks can enhance and speed the transition now underway to renewable, sustainable energy. Publicly-owned utilities are already accustomed to financing their own capital improvements."

Getting Smarter About the Smart Grid:
Smart Grid Funding Misspent On Obsolete Technologies, Says New Report
Billions spent with taxpayer dollars on "smart meters" will not lead to U.S. sustainability; Place citizens and economy at risk
"Getting Smarter About the Smart Grid" states that Congress, state and local governments, as well as ratepayers, have been misled about the potential energy and cost saving benefits of the new "smart" meters, paid for in large part with taxpayer dollars, as well as ratepayer dollars. The report adds that the smart meters are confused with the much broader concept of the smart grid, and that the undue emphasis on meters diverts resources badly needed for key elements of a true smart grid technology.

Dr. Schoechle, who has been engaged in development of electric utility meters, home automation systems, gateways, and energy management systems for over 25 years, and who sits on several international standards setting committees related to the smart grid, calls the smart meter being rolled out across the U.S. "a canard—a story or hoax based on specious claims about energy benefits…"

Schoechle says the present policy approach to electricity infrastructure in the U.S. evidences a "fundamental lack of understanding of the problems associated with the future of electricity and energy".

Conclusion

Responsible decision-makers in the Commonwealth could create an atmosphere that demands truth-telling, integrity, customer response, monitoring of health and environmental impacts to guide decision-making, and respect for emerging science, rather than sustaining industry-fueled mercenary science.

Rather than promoting the idea that each ratepayer should be entitled to a wireless meter and time of use billing, do ratepayers have the right to live safely in their own homes, to participate in society, to experience health and well-being?

Responsible decision-makers in the Commonwealth could declare a pause on further wireless and wireless utility infrastructure, pending an investigation of the FCC and ICNIRP exposure guidelines, and not create another environmental disaster to leave to future generations to address.

A friend's shortest poem ever - "Truth has gravity" - L.M.

Patricia Burke