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Date: December 21, 2015

VIA ELECTRONIC MAIL

Hon. Kathleen H. Burgess
New York Public Service Commission
Three Empire State Plaza
Albany, New York 12223-1350

Regarding:

**Case 14-M-0101 – Reply Comments for the Proceeding on Motion of the
Commission in Regard to Reforming the Energy Vision (REV)**

Dear Secretary Burgess:

SkyVision Solutions, a consumer protection advocate, hereby submits reply comments pertaining to the Staff Proposal regarding the Distributed System Implementation Plan Guidance (“DSIP Guidance Proposal”).

Respectfully submitted,

/s/ K T Weaver
K.T. Weaver
SkyVision Solutions

Attachment

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Case 14-M-0101 – Proceeding on Motion of the Commission in Regard to
Reforming the Energy Vision

Reply Comments by SkyVision Solutions in Response to Comments Pertaining
to the Staff Proposal regarding the Distributed System Implementation Plan
Guidance (“DSIP Guidance Proposal”)

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Reply Comments by SkyVision Solutions in Response to Comments Pertaining to the Staff Proposal regarding the Distributed System Implementation Plan Guidance (“DSIP Guidance Proposal”)

1. Introduction

SkyVision Solutions, as a consumer protection advocate, provides awareness information, analysis, and commentary on the benefits versus costs and risks related to smart grid technology. SkyVision Solutions operates the [Smart Grid Awareness](#) website and utilizes this technology-oriented platform as its primary mechanism to document and convey smart grid awareness information to the public and other interested parties.

SkyVision Solutions opposes the deployment of current smart meter technology as proponents do not properly balance purported benefits against the risks and threats of that technology.

Smart meter proponents tout dubious benefits as if they were indisputable facts and publicly dismiss the very real risks as conspiracy theories. Until this disingenuous and dangerous mindset changes, the public good will not be served, and public resistance to smart grid technology is fully justified.

These comments contain numerous embedded hyperlinks to provide additional information beyond the actual content of this document. Therefore, this document is best viewed in its original PDF form with access to the Internet. Each embedded hyperlink was verified as valid on December 20, 2015.

2. Smart Meters May Be Unnecessary as Part of the New York REV (per the New York REV and PSC)

To this point in time, SkyVision Solutions has held a generally favorable viewpoint regarding the methodical and thorough approach that the state of New York has taken in outlining its Reforming the Energy Vision (REV) initiative. This viewpoint was expressed in an article posted this past June by SkyVision Solutions, [Smart Meters May Not Be Part of New York’s Electric Grid Vision](#). This article quoted Jim Gallagher, New York State Smart Grid Consortium Executive Director, and his remarks regarding smart meters:

“I think the hesitation is primarily the price tag,” and whether it is true that “in five years, there may be alternatives,” Gallagher said. An investment today, he added, might support “technology that may not be optimal in the long run.”

In addition, SkyVision Solutions posted another article in October, [Universal Deployment of Smart Meters May Be Unnecessary in New York to Support REV Mandates](#). This article summarized some of the conclusions of the August report of the Market Design and Platform Technology Working Group (MDPT)

which included the perspective that the broad-based deployment of smart meters may not be considered necessary as part of existing REV mandates. Specifically:

“Universal deployment of advanced metering may be unnecessary to support the REV mandates covered under the [PSC] Order.”

Additionally, at a [public hearing](#) on November 12, 2015, Anthony Belisto of the New York PSC stated the following:

"REV itself is not promoting or discouraging smart meters," and that "REV is not pushing that."

Although REV may not be “pushing” smart meters, it is apparent that smart grid industry interests clearly **are pushing** an agenda for universal deployment of smart meters, and this fact forms the basis of critical comments provided by SkyVision Solutions.

3. Growing Industry Narrative Promoting Smart Meters (Despite the Tempered Comments by the New York REV Regarding Whether Smart Meters Are Needed)

Despite the conclusions of the Market Design and Platform Technology Working Group (MDPT) that “universal deployment of advanced metering may be unnecessary” and the “Working Group did not reach consensus regarding the level of deployment of advanced meters,” we have started to see industry-related blog posts such as the following from *Greentech Media* on October 29th:

- [New York Prepares for Millions of Smart Meters Under REV](#) and where it states that:

“One of the items that utilities will have to address is the need for advanced metering infrastructure to meet the goals of New York’s Reforming the Energy Vision.”

“We don’t think REV can happen without this [AMI] project. These are the technology and tools to enable REV.”

A utility company may be able to prepare a business case that **attempts** to justify smart meter deployments in its service territory, but there is currently no basis to conflate such justification attempts as directly related to the New York REV initiative.

In fact, such attempts to tie the need for smart meters with the REV initiative may just be a ploy to more easily “sell” these devices in an environment where they will receive less scrutiny than would otherwise occur. After all, we wouldn’t want to do anything that might slow down or negatively impact the REV, would we? Consequently, if smart meters were deployed without proper scrutiny, billions of dollars might have been best spent elsewhere.

As we delve into the [comments](#) provided by utilities and other parties on the REV initiative, a growing narrative becomes clear as highlighted by *Smart Grid Today* in an article from December 8th entitled, [NEW YORK IOUs: Full AMI necessary for DSP success](#).

Note the emphasis on “Full AMI” deployment being necessary as articulated by a biased *Smart Grid Today* source of information. *Smart Grid Today* was claiming to be summarizing the comments provided to the New York Public Service Commission (PSC) on behalf of Investor Owned Utilities (IOUs) providing service in New York.

It is crucial that officials at the New York PSC not be bamboozled by such all encompassing industry-oriented declarations on the need for “Full AMI.”

4. Comments from Smart Meter Proponents on the New York REV and SkyVision Solutions Reply Comments

In light of the growing narrative among some parties promoting broad-based deployments of smart meters in New York, SkyVision Solutions will provide excerpts of some of those comments followed by reply commentary and analysis:

4.1. Excerpt of Comments by the “Joint Utilities”, December 7, 2015:

“AMI has known technical capabilities that can support grid modernization on both the customer and grid side of the meter. Smart meters have been widely deployed in the United States with proven capabilities. **Extensive lessons learned on AMI should be leveraged** to ensure that AMI is deployed and fully optimized to the benefit of customers and the grid.” [emphasis added]

“While the [AMI] business case for various implementations will vary widely across geographical areas, what is expected is a significant increase in the availability of interval data depicting customer power use. **Innovation will follow** as the industry seeks to find new and improved ways of using this available data.” [emphasis added]

SkyVision Solutions Reply Comments:

The “extensive lesson learned” from prior AMI deployments should be that widespread AMI deployments are a bad idea. Prominent broad-based smart meter deployments have been an unmitigated disaster in terms of providing any net benefits. Examples:

- For Ontario, Canada, please take note that in 2015 [the Ontario Smart Meter Fiasco Wins Government “Waste Award”](#). More specifically, Ontario’s Auditor General in Canada reported that [people in Ontario are paying billions of dollars extra for electricity thanks to a flawed smart meter program](#). It was reported that [Ontario’s \\$1.9-billion smart meter program for hydro utilities has delivered few benefits for the hefty cost](#). For a press release summarizing the Ontario Auditor General report, refer to the

following link: [Auditor General News Release – Smart Metering Initiative Had Serious Shortcomings – Benefits Not Yet Realized.](#)

- For Australia, [Smart meters giving Victorian consumers ‘no benefit’ on electricity bills, auditor-general says.](#) The majority of benefits that have been claimed since the deployment of smart meters in Victoria relate to the costs avoided for maintaining and manually reading the old “accumulation meters,” but these costs have been replaced by *higher* costs for smart meters and “does not represent any additional value generated by the AMI program.”
- In the U.K. where the smart meter program is just getting off the ground, the Institute of Directors (IoD) has warned that the smart meter scheme [could be an “IT disaster”](#) saying that the risks involved with “the largest government-run IT project in history” were “staggering.” Furthermore, as an indication of the probable effects of technological obsolescence that accompanies smart meters that are electronic in nature (as opposed to electromechanical meters), news reports this past week indicate that millions of currently purchased or installed smart meters may need to be already replaced. Refer to the article, [£11bn UK smart meter plan thrown into doubt by EU reforms.](#)
- In the United States, a number of smart meter deployments were made as a result of grant funds being dispersed through the [American Recovery and Reinvestment Act of 2009 \(ARRA\)](#). These funds were made available primarily to create “shovel ready jobs” in the aftermath of the 2008 financial crisis. The funds were spent without serious analysis of cost/benefit considerations. Moving forward, it will become more difficult to justify smart meter deployments as shown in Indiana where, [Indiana Regulators Reject Smart Meters for Duke Energy.](#)

Regarding the prediction for “innovation” following AMI deployments, the “Joint Utilities” comments demonstrate indifference and ignorance with regard to customer privacy and data protection rights. The implication here is that significant interval data should be collected from customers, and at some time in the future, utilities and others will “find new and improved ways of using this available data.”

Quoting a recently published book entitled [For Sale: Protecting Your Personal Data and Privacy Online](#), which includes a section devoted to smart meters:

“Organizations must be legally obligated to collect only the minimum data necessary for each specific task. That data must be held for the minimum duration necessary for that task, and the transfer of that data between different systems must also be kept to a minimum. Furthermore, access to that data should be restricted to as few parties as possible.” [emphasis added]

As will more fully be explained in a subsequent section, due to privacy considerations, it is totally unacceptable for organizations (e.g., utility companies) to collect detailed granular interval usage data with the hope that they can later make use of that data.

4.2. Excerpt of Comments by the Environmental Defense Fund (EDF), December 7, 2015:

“We would like to take the opportunity to emphasize that to our knowledge, AMI is the best alternative to meet the objectives of REV. AMI can fulfill multiple REV specific goals, such as market animation, customer engagement, and carbon reduction. It provides the granular customer data to third party DER providers and consumers, which helps DER providers make investment decisions and develop more sophisticated pricing mechanisms and enables customers to better manage their energy usage. Most importantly, the **smart pricing** function of AMI can help reduce carbon emissions in the near term, insofar as specific price signals can induce customers to cut demand during the period of highest emissions.” [emphasis added]

SkyVision Solutions Reply Comments:

Late last year, EDF acknowledged that smart meters have not delivered the promised benefits. Quoting its December 2014 [blog article](#):

“In Matthew Wald’s recent [New York Times article](#), entitled “Power Savings of Smart Meters Prove Slow to Materialize,” he argues that smart meters have failed to produce measurable savings. And we agree – but not because smart meters *themselves* have failed. Rather, most customers with smart meters don’t have access to people-powered, or time-variant, electricity pricing, which creates opportunities to save money. This is a missed opportunity for customers, utilities, and the environment.”

Thus, although EDF continues to promote smart meters, it is done only to the extent that “smart pricing” can now purportedly save the day in terms of the billions of dollars already spent (and wasted) on smart meters. This “smart pricing” theory is naïve with regard to residential customers. Unlike commercial customers, most individuals and families have little ability to shift load to so-called off-peak periods. Many vulnerable members of our society have effectively **no** ability to shift load, and the overall impact of time-of-use (TOE) rates would actually be negative, both in terms of utility bills and quality of life. Just review the Ontario auditor general report mentioned above to gain additional insight on this subject.

4.3. Excerpt of Comments by Exelon, December 7, 2015:

“The DSIP process highlights the importance of investments in Advanced Metering Infrastructure (‘AMI’) and advanced grid technologies as tools for

enabling REV objectives. The deployment of **universal AMI systems** is essential to achieving the REV vision; **utilities should be assured of cost recovery** to encourage them to move forward with these investments.” [emphasis added]

“AMI is a necessary prerequisite for the innovative business models that are part of the REV initiative.”

SkyVision Solutions Reply Comments:

The comments by Exelon are nothing more than platitudes of unsubstantiated, biased support for a technology that has not yet proven itself. Of course, the important point raised by Exelon is that “utilities should be assured of cost recovery to encourage them to move forward with these investments.”

If, in reality, Exelon and other utilities think that smart meters are so great and will pay for themselves in terms of reduced operational costs, then they should be willing to assume the full risks related to such investments and not place that burden on the backs of the consumer. Let us then see how many companies move forward with deployments.

For the consumer, if the “benefits” are supposedly so great, then let the consumer decide to request a smart meter installation on an “opt-in” basis. Leave it up to the utility company to convince the consumer that the benefits outweigh the risks.

4.4. Excerpt of Comments from the Advanced Energy Management Alliance (AEMA), December 7, 2015:

“AMI promises a long list of benefits for the more efficient and resilient operation of a distribution utility, and for improved customer experience. AEMA asserts that **access to relatively small intervals of energy consumption data (at least 15 minute increments) is absolutely critical for many emerging information-driven products and services**, such as home energy management and demand response.” [emphasis added]

“Not only do the economics of AMI deployment benefit from the scale of the technology rollout, but the market also benefits from the creation of an undifferentiated critical mass of potential customers for a quickly growing range of information services that promise real benefits and savings to customers.”

SkyVision Solutions Reply Comments:

The AEMA, similar to the “Joint Utilities,” is justifying significant privacy invasions through smart meter data collections in order to provide for “emerging information-driven products and services.” **These products and services have nothing to do with the regulated service of providing electricity to the consumer.** If consumers desire such services, then they should request a smart

meter where they then accept the associated privacy invasions and other risks on an “opt-in” basis.

4.5. Excerpt of Comments by the City of New York, December 7, 2015:

“In the City’s view, AMI should become a part of basic utility service and available to all consumers. If it is not, inequities could arise in that all consumers would not be able to access the same products and services. The failure to provide AMI to some consumers also would prevent them from being able to manage their energy use and costs. Inequitable access of AMI could raise concerns or claims about discrimination – claims that easily could be avoided.”

SkyVision Solutions Reply Comments:

The above sentiment by the City of New York reflects that of a “central planner” who believes they know better than everyone else what is best for each consumer. **The concept that “inequitable access of AMI” will cause claims of “discrimination” is just the opposite from what is expected with a consumer-oriented approach.** It is more likely that forced deployment of smart meters will cause claims that people’s rights are being violated for a number of reasons, including increased financial burden, health issues, and privacy invasions.

5. One Large Utility’s (Northeast Utilities/ Eversource Energy) Opposing Viewpoint on Smart Meters

To help balance the propaganda of smart meter proponents, it should be instructive for the New York PSC to review comments submitted by Northeast Utilities/ Eversource Energy over the past couple of years related to government proposed smart meter deployment initiatives.

5.1. Major U.S. Utility Says “No Rational Basis” for Mandating Smart Meters

In a written [submittal](#) filed in 2014 with the Massachusetts Department of Public Utilities, Northeast Utilities was highly critical of a proposed state plan that would require utilization of “advanced metering” or smart meters within the state of Massachusetts as part of an electrical grid modernization plan.

Overall Perspective – No Rational Basis for Smart Meter Mandate

“There is no rational basis for ...mandated implementation of [smart meters].”

Mandating smart meters “comes without due consideration of key issues such as:

- the immense cost attached to the technology choice;
- whether customers are willing and able to pay the price of this technology choice;

- whether the functionality provided by the technology choice will be utilized by customers or is even sought by customers;
- whether the imposition of significant costs ... for this technology conflicts with other policies encouraging ... increased penetration of distributed resources [like wind and solar];
- whether investment in distribution upgrades needed to accommodate distributed energy resources [would be] a better investment of customer dollars given the relatively small incremental benefit afforded by [smart meters]; and
- whether other issues such as market alternatives, time-varying rates, and cyber-security should be resolved *before* there can be any rational determination that this technology is a good choice for customers.”

5.2. [Smart Meters Not Necessary to Modernize the Electric Grid Says a Major U.S. Utility](#); now as Eversource Energy, formerly Northeast Utilities

On July 30, 2015, the New Hampshire Public Utilities Commission issued an ‘order of notice’ commencing an investigation into grid modernization in New Hampshire. Eversource Energy filed comments in September; as [summarized](#) by [intelligentutility.com](#):

“While smart meters or AMI meters are often equated with grid modernization, Eversource does not see them as necessary. In fact, the company says that it has found customers are not very interested in moderating energy use based on time-varying or dynamic rates.”

The comments filed by Eversource Energy reflect nearly the same perspective voiced by SkyVision Solutions over the past couple of years:

- a. The broad-based deployment of smart meters is not cost effective, especially when one considers the costs associated with the additional required communications infrastructure, data storage and other IT systems, cybersecurity, and data management controls.
- b. The vast majority of residential customers do not have sufficient load available to shift to off-peak periods to benefit from time-of-use rates. This is different from large commercial customers which typically have industrial equipment-type loads and which can likely significantly alter work and product line schedules to take advantage of time varying rates.
- c. For those residential customers who want time varying rates, let them take advantage of so-called smart metering as outlined by the Energy Policy Act of 2005 on an opt-in basis. There is no need (or net benefit) for smart meters being provided to anyone else.

6. Highlighting REV Comments by Parties Critical of Smart Meters

Although consumers are not well represented within the New York REV initiative as compared to industry interests, SkyVision Solutions did take note of two organizations that filed comments critical of broad-based smart meter deployments. **SkyVision Solutions by quoting portions of those comments, endorses the following selected comments by others:**

6.1. Endorsement of Selected Comments of the Public Utility Law Project of New York (“Utility Project”), November 23, 2015:

“In these Reply Comments, the Project first reiterates that concern and observes the broad consensus of other parties that there has been insufficient public process necessary to achieve the public good in an endeavor of this magnitude.”

“Finally, despite the unprecedented speed and scale of the REV proceedings, there is little or no intervenor funding or other resources available to organizations that represent residential consumers, either associated with the State of New York or private, non-profit organizations, to pursue realistically the interests of residential customers in these proceedings.”

“Of significant concern to the Utility Project is the repeated assumption or recommendation that AMI will be ubiquitously installed and paid for by ratepayers in order to implement REV and the customer engagement and rate design programs implicated in this proceeding. AMI is a high cost infrastructure investment whose actual costs, benefits, and customer bill impacts have not been the subject of formal hearings and evidence in REV or in rate cases in New York.”

“EDF's proposals to shift utility costs to higher fixed or demand based charges have been routinely opposed by consumer and low income advocates. Furthermore, EDF's Comments also appear to support the deployment of AMI without any identification of the costs and bill impacts associated with this investment.”

“The Utility Project continues to raise concerns about the cavalier manner in which some stakeholders make policy recommendations to the Commission concerning residential rate design. ... Any rate design proposal that would rely on the widespread deployment of AMI must include the costs of AMI in its analysis of costs and benefits, an analysis that has yet to be included in any comments or publicly available documents issued by the parties or this Commission.”

6.2. Endorsement of Selected Comments by Multiple Intervenors, December 7, 2015:

“Multiple Intervenors is very concerned that the Guidance Proposal assumes investments – potentially very-large investments – in advanced meter infrastructure (‘AMI’) (see, e.g., Guidance Proposal at 19, 22-27) that have yet to be justified in this proceeding or any other Commission proceeding. Prior to taking any action on AMI investments, the Commission should insist upon, *inter alia*, (i) detailed proposals, (ii) detailed cost estimates of what is being proposed, along with associated delivery rate impact analyses, and (iii) detailed quantifications of the purported benefits to customers, including tangible cost savings, associated with the proposals advanced. The Commission must ensure that AMI investments do not contribute unnecessarily to cost and rate increases that utility customers are unable to afford.”

7. Business Case Analysis Issues for Smart Meter Deployments

The MDPT Working Group final report mentions that broad-based smart meter deployments would require a business case analysis, i.e.,

“Any other broad-based advanced metering deployment beyond the scope of the recommendations included in this report will necessitate a business case analysis by the utility and subsequent Commission review and approval.”

The implication is that smart meter deployments that are not broad-based would not require a business case analysis when included as being necessary to meet REV mandates. What is “broad-based”? Everything here smells of possible abuse by utilities being able to spend large amounts of ratepayer money under the guise of being required to meet REV mandates, thereby escaping the scrutiny of a business case needing to be presented to the Commission for review and approval.

The PSC needs to assure that business case analyses use reasonable assumptions that consider all stakeholder issues and be prepared for all proposed smart meter deployments. SkyVision Solutions identifies two additional issues below that need to be considered for smart meter deployments and inclusion within associated cost/benefit analyses.

7.1. Assuming Reasonable Expected Lifetimes for Smart Meters

SkyVision Solutions has observed that utility companies normally utilize smart meter expected lifetimes of 15 to 20 years in performing business case analyses, not much different than for traditional electromechanical meters. This is inappropriate for a number of reasons as outlined in the article, [Congressional Testimony: ‘Smart’ meters have a life of 5 to 7 years.](#) Due to issues such as

accelerated technological obsolescence and cybersecurity threats, one should not assume that smart meters will be able to last more than 10 years.

It is appropriate to again quote the comments from 2014 by Northeast Utilities filed in Massachusetts mentioned earlier:

“Given that the grid modernization technology sphere is a dynamic, rapidly evolving marketplace, it is also unclear whether the incremental benefits, if any, would begin accruing to customers prior to the implemented AMI platform being rendered obsolete.”

In summary, the already speculative benefits to be derived from smart meters are unlikely to materialize given that the technology will become “**obsolete**” much faster than the assumptions most utilities are allowed to make within the context of business case analyses and expected useful lifetimes.

7.2. Smart Meter Business Case Analyses Should Address Privacy Invasions, Health Impacts, Safety Hazards, and Cybersecurity Threats

As indicated by Presiding Judge Peter D. O’Connell in an [Opinion](#) for the state of Michigan Court of Appeals in July 2015:

“Some citizens are alarmed over the potential health, safety, privacy, and cost issues associated with the smart meter program.”

“I would caution the PSC that these issues are of great concern, not just locally, but also nationally and internationally.”

“I conclude that a cost-benefit analysis should include health, safety, and privacy issues.” [emphasis added]

Considerations for privacy, health, safety, and cybersecurity risks are generally ignored by utility organizations when they prepare their smart meter deployment plans. Somehow this must change. One way would be to require utility companies and distributors to formally address those risks and threats within the context of a business case analysis.

The risk areas of privacy, health, safety, and cybersecurity will now be briefly discussed and highlighted in the sections that follow.

8. Smart Meter Privacy Invasions Ignored by Utilities

Due to the significant privacy risks imposed upon the consumer by utility smart meters (as compared with traditional usage meters), smart meters should only be provided to consumers “at request.” For example, if a consumer desires TOU rates that require granular data collection, the customer could be provided with a so-called smart meter to the extent additional data collection is required for billing purposes.

Regulators and utility companies should otherwise expect increasing resistance to smart grid technology as consumer privacy rights and interests are violated. Support for this assertion includes the following:

8.1. [Consumer Organizations' Grave Concerns on Smart Meters Ignored.](#)

The United States government and utility operators did not heed warnings provided from the [Transatlantic Consumer Dialogue \(TACD\)](#) which in 2011 issued a [resolution](#) expressing “grave concerns” with smart meters. The TACD issued formal guidance to the US government as part of the TACD resolution:

“Forbid utilities from installing smart meters without consumers’ informed consent.” [emphasis added]

Also from the issued document:

“TACD members ... have grave concerns related to the privacy, data protection and security implications of smart meters. The dramatic increase in the granularity of data available and frequency of collection of household energy consumption means that the smallest detail of household life can be revealed, with potential risks for consumers including identity theft, augmenting private and data broker consumer profiles (US), real-time surveillance, and unwanted publicity. In addition to these smart meter privacy risks there may also be security risks — e.g., software or firmware, programming or installation, interoperability conflicts with other smart-grid-enabled technologies, and the threat of cyber attack.”

8.2. [Smart Meter Privacy Risks ‘Likely to Provoke Opposition,’ Reveals Latest Research Study](#)

Recent sociological research confirms that increased privacy risks created by utility smart meters are likely to provoke opposition to the devices (if and when consumers become aware of the associated risks).

From the 2015 published paper, **“Privacy, Technology, and Norms: The Case of Smart Meters”**:

“As a practical matter, our results suggest that as consumers become more informed about the potential uses of Smart Meter data for analysis and control, negative reactions are likely to increase.”

“Older participants expressed more demand for and expectations of norms against Smart Meters. But, age did not interact with any of the experimental conditions. This lack of an interaction effect shows that older adults and younger adults were affected by threats

to privacy in the same way. We interpret these findings as suggesting that while older people may be more suspicious of new technology than younger people, people of all ages are equally concerned about privacy.”

“Thus our results suggest that policy makers and utility companies need to be aware of consumer concerns with privacy threats that are created by Smart Grid technologies and develop strategies for addressing those concerns.”
[emphasis added]

8.3. [Smart Meter ‘opt out mechanisms should be offered to consumers’ so they can ‘exercise their privacy and data protection rights’](#)

From the 2014 published paper, **“For privacy’s sake: Consumer ‘opt outs’ for smart meters”**:

“The EU/U.S. comparative law analysis provided in this paper aims to help energy suppliers and regulators craft opt out mechanisms to protect individual privacy and data protection rights while also achieving important societal benefits from smart meters.”

“Smart metering systems enable massive collection of personal information from European and U.S. households with the potential intrusiveness increased by the ability to infer information from the data about what members of a household do within the privacy of their own homes.”

“Significant consumer privacy and data protection concerns are associated with implementation of smart metering systems that relate to a traditionally highly private arena, the home.”

“The right to be free of unnecessary and intrusive surveillance in the home and of one’s personal communications is recognized under both EU and U.S. law, and energy consumers have significant concerns related to this traditionally private arena that are implicated by installation and operation of smart meters in their homes.”

“[W]e conclude that an opt out mechanism is necessary to give consumers the opportunity to object to smart meters in order to protect their privacy and personal data.” [emphasis added]

“Accordingly, consumers should be allowed to opt out of privacy intrusive smart metering implementation programs, which should include having the choice of smart meters that have been modified to limit collection and sharing of energy use data except for data

that is necessary to deliver energy to them and to enable the energy supplier to properly manage the energy grid.”

“Further, when exercising their right to opt out, consumers should not be charged unreasonable fees and the reasonableness of opt out fees must be examined in light of the nature of consumers’ privacy rights under EU and U.S. laws.” [emphasis added]

On the subject of “privacy,” some governmental groups and utility companies have made symbolic or token efforts at protecting what they call smart meter “data privacy.” This is a misnomer as they are generally talking about restricting the release of personal data to 3rd parties, which involves the confidentiality of the data. **Privacy invasions occur at the point of unnecessary data collection.** From a privacy rights perspective, this is the primary reason why consumers need the option to refuse installation of smart meters. Until the smart grid industry accepts that smart meters invade privacy based upon the massive amount of personal data they typically collect, there can be little intelligent discussion on solving the problem.

9. Health Risks and Adverse Health Effects Related to Wireless Technology Ignored by Utilities and the Wireless Industry

Although the information in the 2015 paper discussed above deals with the privacy invasion aspects of smart meters, the general principles can be extended and applied to health risks as well. Again quoting the paper, **“Privacy, Technology, and Norms: The Case of Smart Meters”**:

“[R]esearch would suggest that if people believe that the installation of Smart Meters will have negative consequences for themselves and other community members, they will oppose installation of Smart Meters. Similarly, they will expect others to also oppose it.”

“Negative consequences” can, of course, not only consist of privacy invasions but adverse health effects as well.

People partially perceive risks based upon the benefit they receive from engaging in an activity. If wireless smart meters are forced upon people or they must pay a high fee in order to avoid the technology; if they perceive little or no benefit from it (or in fact perceive it to be harmful); then they are more likely to strongly reject that technology.

Quoting the World Health Organization [WHO Fact Sheet N-184](#), “Electromagnetic Fields and Public Health: Public Perception of EMF Risks”:

“Under certain circumstances, EMF can be potentially hazardous, and the risk to a person's health depends on the level of exposure. ... A number of factors influence a person's decision to take a risk

or reject it. People usually perceive risks as negligible, acceptable, tolerable, or unacceptable, and compare them with the benefits, which should outweigh the risk by a significant margin.”

The characteristics that affect risk perception as mentioned in WHO Fact Sheet N-184 are as follows:

- Involuntary vs. voluntary exposure.
- Lack of personal control vs. feeling of control over a situation.
- Unfamiliar vs. familiar.
- Dreaded vs. not dreaded health effects, e.g., cancer being dreaded.
- Unfairness vs. fairness.

The more that the first member in the paired characteristics listed above increases, the more the perceived risk. Although utility companies and governments can help to increase the “familiarity” of the public to smart meters, they cannot alleviate most of the other characteristics if they mandate the installation of the devices which contributes to the sense that they are involuntary, unfair, and where a person has a lack of personal control over their lives.

In addition, science is evolving in a manner which supports people perceiving wireless radiofrequency (RF) emissions produced by wireless smart meters as more “dreaded” in their environment.

Take, for example, the [“International EMF Scientist Appeal”](#) made in May 2015 where 190 scientists from 39 nations submitted an appeal to the United Nations, UN member states and the World Health Organization (WHO) requesting they adopt more protective exposure guidelines for electromagnetic fields (EMF) and wireless technology in the face of increasing evidence of risk. **The International EMF Scientist Appeal specifically mentioned smart meters** where it states:

“We are scientists engaged in the study of biological and health effects of non-ionizing electromagnetic fields (EMF). Based upon peer-reviewed, published research, we have serious concerns regarding the ubiquitous and increasing exposure to EMF generated by electric and wireless devices. These include—but are not limited to—radiofrequency radiation (RFR) emitting devices, such as cellular and cordless phones and their base stations, Wi-Fi, broadcast antennas, **smart meters**, and baby monitors as well as electric devices and infra-structures used in the delivery of electricity that generate extremely-low frequency electromagnetic field (ELF EMF).”

“Address the emerging public health crisis related to cell phones, wireless devices, **wireless utility meters** and wireless infrastructure in neighborhoods.”

Based upon the above information and considerable additional technical resources which could be quoted, regulators and utility companies can expect the opposition to wireless smart meters and other wireless technologies to further increase with the passage of time.

The opposition to smart meters is further exacerbated by reports that adverse health effects have already been reported. In the absence of health impact studies conducted prior to smart meter deployment by utility companies, equipment manufacturers, or health agencies, there have been myriads of anecdotal reports of adverse effects caused by smart meter emissions. In addition, there have been at least limited studies (as listed below) subsequent to smart meter deployments indicating ill-effects:

- [Symptoms Resulting from Exposure to Radiofrequency/Microwave Radiation from Smart Meters](#), an article written by Ronald M. Powell, Ph.D. summarizing the results of a [health effects survey](#) conducted by Richard H. Conrad, Ph.D.;
- [Wireless Utility Meter Safety Impacts Survey](#), by Ed Halteman, Ph.D., dated September 13, 2011;
- [Self-Reporting of Symptom Development from Exposure to Radiofrequency Fields of Wireless Smart Meters in Victoria, Australia: A Case Series](#), by Dr. Federica Lamech, [MBBS](#). For more information, refer to the article at SkyVision Solutions, [Published Article: Symptom Development from Exposure to Wireless Smart Meters](#).

Unfortunately, the agency in charge of protecting the public in the United States from the harmful effects of RF emissions, the Federal Communications Commission (FCC), has lost all credibility as it is an institutionally corrupt organization totally controlled by interests sympathetic to the wireless industry. For more information on this read, [FCC: 'Prime Example of Institutional Corruption'](#).

It should also be noted that there is increasing concern regarding the effects of RF emissions on fauna and flora. As an example, the U.S. Department of Interior (DOI) wrote a [letter](#) in 2014 expressing concern that emissions from cell towers were having negative impacts on the health of migratory birds, their offspring, and other wildlife species. The DOI further declared that exposure guidelines used by the FCC are “out of date and inapplicable today.”

10. [Safety Issues and 'Catastrophic' Failures Expected with 'Smart' Meters](#)

Another hazard and risk aspect to smart meters is that utility smart electric meters are subject to voltage transient susceptibility and have a catastrophic failure mode that was not present with traditional analog meters.

One unique hazard for solid state meters (e.g., smart meters) as compared to analog meters is “voltage transient susceptibility.” As explained in a [document](#) published by the Electric Power Research Institute (EPRI) in 2010:

“The electronic circuits of solid state meters connect to the AC line to draw operating power and to perform voltage measurement. ... A range of electronic clamping and filtering components are used to protect the electronics from these voltage surges, but these components have limitations. The ANSI C12.1 metering standard specifies the magnitude and number of surges that meters must tolerate. ... In any case, surges that exceed the tested limits, either in quantity or magnitude, could cause meter damage or failure.”

“Electromechanical meters had no digital circuitry. They utilized spark-gaps to control the location of arc-over and to dissipate the energy of typical voltage events. As a result, they were generally immune to standard surge events.”

Additionally, as [explained](#) by an industry representative from [TESCO – The Eastern Specialty Company](#), utility smart meters are subject to a new “catastrophic” failure mode as compared to electromechanical meters. When you have a catastrophic meter failure, you have a meter which has burnt, melted, blackened, caught fire, arced, sparked, or exploded. Obviously when this happens, a household fire, injury, or death could occur.

In response to the increased the risks related to smart meters and in a probable attempt to help mitigate those risks, Underwriters Laboratories in 2013 [published](#) a standard entitled, “UL 2735, Standard for Safety for Electric Utility Meters.” In a [document](#) prepared by UL describing the new standard, words are used which confirm the inherent risks and problems associated with smart meters as compared with traditional meters:

“The introduction of smart meters raises new concerns about functional safety, performance and product safety, data security, and interoperability, which are not fully addressed by the [current] standards. ...

This [new] standard was developed to address **problems that have been reported from field installations of smart meters, including fires, meters ejecting from meter socket bases and exposed live parts. When electronic components are overstressed, there is a potential for the components to explode.** Among other things, UL 2735 addresses the potential flammability of plastic enclosure materials under fault conditions. ... For meters utilizing batteries, the batteries are evaluated to determine that they will not cause an explosion or produce a risk of

fire as a result of either excessive charge or discharge, or if a battery is installed with incorrect polarity.” [emphasis added]

Possibly the new UL standard will help mitigate some of the safety hazards related to newly deployed smart meters. However, compliance to the standard is voluntary on the part of manufacturers, and it does not eliminate the inherent vulnerability problems that exist with smart meters as compared to electromechanical meters.

Selected articles by SkyVision Solutions that more comprehensively address the fire and safety aspects of smart meters include the following:

- [‘Catastrophic’ Failures Expected with ‘Smart’ Meters](#)
- [Utility Industry Aware of Safety and Accuracy Issues with Digital Meters for Years](#)
- [NLRB Case Files and Judge’s Decision Confirm Smart Meter Fires](#)
- [Analog Meters Withstand “Hot Sockets” Better Than Smart Meters;](#) and
- [Smart Meters Increase the Risk of Fires!](#)

Few people can ever remember their traditional electromechanical utility meters exploding or catching fire, yet this occurs with some regularity with smart meters despite denials by utility companies and meter manufacturers. If one reads the articles prepared by SkyVision Solutions, one will understand why these fires can and do occur.

11. Societal Implications of Smart Grid and Smart Meter Cyber Threats

Although infrequently raised as an issue by either industry or consumers, the implications of widespread smart meter deployments can be catastrophic to our society. The cyber threat aspect of smart meters is not viewed as personal in nature to the consumer as immediate health effects or privacy invasions, but it must be acknowledged that hacks into smart meters or other smart grid systems could bring down the entire electric grid under certain circumstances. More generally it must be acknowledged that modernization of the electric grid using the current “smart” technology being deployed **increases** the likelihood of successful attacks occurring. This increased vulnerability defeats the objectives that planners had originally envisioned for the so-called “smart grid” and thus should be reason enough to stop smart meter deployments.

As just one reference for this, one can read GAO Report # GAO-11-117, [“Electricity Grid Modernization,”](#) where it states:

“There is a lack of security features being built into smart grid systems. ... Without securely designed smart grid systems, utilities will be at risk of not having the capacity to detect and analyze attacks, which increases the risk that attacks will succeed and utilities will be unable to prevent them from recurring.”

More recent Congressional testimony by the GAO is summarized in the following article, [GAO: Hacking 'smart' meters can disrupt the electricity grid and FERC not monitoring compliance with 'voluntary' standards.](#)

The most dangerous “feature” included in the majority of smart meters deployed today is the remote disconnect option. As documented in the book, [Smart Grid Security: An End-to-End View of Security in the New Electrical Grid:](#)

“What if [smart] meters are told to disconnect by a worm or virus? Among all the services AMI [Advanced Metering Infrastructure] offers, **the disconnect function is the most controversial in information security circles** as it is the only one that directly controls the flow of power to the home or business. While DR [Demand Response] and ALC [Automatic Load Control] involve sending a signal to a meter that could result in switching off an appliance, the consumer is usually able to easily override such action. However, absent some rewiring, there is no equivalent override for the disconnect switch.” [emphasis added]

“The greatest concern is that a successful attack could allow someone to gain control of customers all at once. In addition to causing widespread blackouts, repeatedly switching the power off and on could create frequency imbalances and surges in the grid that could damage loads and destabilize the entire grid, potentially causing damage to generators, transformers, and other equipment in the path [including the smart meters themselves and major appliances in homes and other buildings]. Such a consequence would be much more severe than a simple power outage, resulting in damage to expensive equipment with replacement times of more than a year in some cases. **Effectively taking temporary control of a meter network could lead to widespread power outages lasting weeks or perhaps longer.**” [emphasis added]

“Cyber security as related to the utility field is currently a place where ‘information can now be used to control physics,’ as Joe Weiss of Applied Control Solutions puts it. The manipulation of data can be used to turn off electricity or to steal energy. There will be multiple impacts that can be realized as a result of cyber security risks and smart metering. **But the paradigm change is that the hackers can actually harm human life.**” [emphasis added]

As quoted in a [book by Kim Zetter](#) (and based upon an author interview, August 2012), here is what [Mike Davis](#) of IOActive says about smart meters:

“In my opinion, if it’s got the remote disconnect relay in it, whether it’s enabled or not ... it’s a real big, ugly issue.” [emphasis added]

For more information, refer to [Smart Meters Are Not Secured](#) and [Cyber Hackers Can Now “Harm Human Life” Through Smart Meters](#). As stated by an expert respondent highlighted in a recent Pew Research Center [report](#):

“The ‘smart grid’ is the most substantial danger. Cyber attacks that target a ‘smart grid’ will result in loss of power to large numbers of places simultaneously, causing infrastructure damages. ... No single instance will be ‘widespread harm,’ but all of these together will add up to that in only a short period of time. **Unless there is some unforeseen major new technological development ..., the only way to prevent this will be to refrain from adopting ‘smart grid’ technologies.**” [emphasis added]

12. False (or Inflated) Claims Regarding Purported Consumer Benefits from Smart Meters

As an attempt to convince consumers that smart meters are “good” for them, they are fed propaganda-like messages regarding “consumer empowerment.” In short, and as [stated](#) by the Attorney General for the state of Illinois:

“The pitch is that smart meters will allow consumers to monitor their electrical usage, helping them to reduce consumption and save money. ... Consumers don’t need to be forced to pay billions for so-called smart technology to know how to reduce their utility bills. We know to turn down the heat or air conditioning and shut off the lights.”

We certainly don’t need to spend billions and billions of dollars on smart meters for the consumer to know that if you start shutting off switches or changing the thermostat setting that you can save energy. The whole concept is actually quite absurd. For those consumers who want more detailed usage information, there are a number of products available [online](#) or at your [home improvement store](#) that can provide the same or better information than with a smart meter.

To help counter some of the claims, ridiculous as they may be as to how smart meters are needed to help consumers save money, let us review a few additional facts and published results to put these claims in perspective. It has been already mentioned how the auditor general reports for Ontario, Canada, and Victoria, Australia, found no net benefit for consumers from smart meters. In addition:

- A report [released](#) in July 2014 by the by the South-central Partnership for Energy Efficiency as a Resource (SPEER) in Texas revealed that:

“Texas has nearly seven million smart meters deployed, but according to the most recently available published data:”

“Only 60,000 customers (0.8 percent) have ever logged into the state’s innovative Smart Meter Texas portal, only 30,000 log in per month (less than ½ of one percent) and less than 0.2 percent of the smart meters in the state have been connected to a device designed to manage energy usage. Perhaps of greater concern, the report reveals, that these miniscule numbers are reportedly declining in recent years.”

- In the article, [Smart Meter Rollout a Waste of Money Says New Study](#), we saw how a study in the UK showed that:

“We found that initially households enjoyed **the novelty factor** of the meters, comparing how much electricity different appliances used,” explained Kathryn Buchanan, “but **the interest in the meters wore off after a time.**”

“The problem is some behavior won’t change, such as putting on the kettle when you get home from work,” added Kathryn, “**People do not use energy for the sake of it – it is a by-product of people’s everyday lives.**”

- In another article by SkyVision Solutions, [President Obama Touts ‘Smart Meters’ at Clean Energy Summit](#), we revealed the results of another study that showed:

“Even though the existing literature has found that real-time information feedback at the household level has the **potential** to decrease electricity use, our RCT [randomized Control trial] does **not** support this hypothesis. Instead we find that the possible reductions in electricity use achieved by study participants in our treatment group might be due to other factors, such as **salience and a Hawthorne effect.**” [emphasis added]

“Thus, our significant effects of treatment do not appear to be a result of the near-real-time information provided by the Modlets themselves. We postulate other explanations for our results, which cannot be disentangled in our current study. These include (a) the [Hawthorne effect](#), where participants who know they are in a study may change their behavior based on the additional attention; and (b) that the extensive outreach to the study participants ... by the experimenters ... and the building management office made electricity use salient (for example, see Pallak, Cook, and Sullivan (1980)) which resulted in behavior changes for these participants.”

Thus if people are motivated to conserve energy, they will do so, whether it be due to a personal commitment or knowing they are part of some sort of experiment, but it has little or nothing to do with whether smart meters or some other granular data collection devices are installed for homes across America.

- It is often claimed by proponents that smart meters will help households to reduce energy consumption by up to 15%. However, a [report](#) from BEUC, the European Consumer Organization, found these claims not to be true.

An analysis of 6 scientific studies on “the use of meters reveals that the actual energy savings average between 2-4% in the best cases where consumers have clearly opted for their use.” More specifically, the findings were as follows:

“From the six scientific studies, we see that **in best cases a consumption reduction of 2-4%** can be expected in the short term. ... The best cases include a smart meter that is linked to an IHD (direct feedback) or to accurate billing, with energy efficiency advice.”

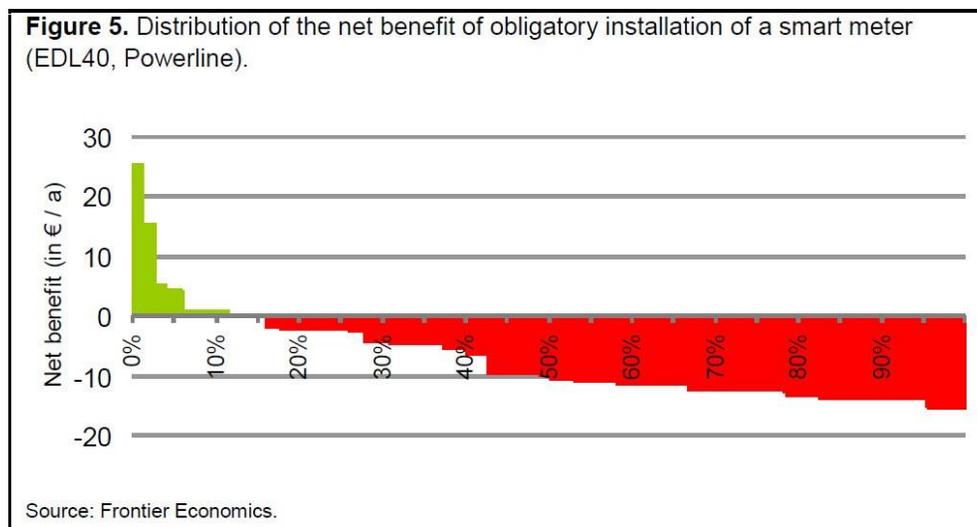
“Moreover, the E.ON study has analysed the energy reduction during the second year for different consumer groups. The study shows that **this reduction fades away in 2 or 3 years, except for 2 classes of users: fuel poor with an IHD and high use dual fuel:** (i.e. gas and electricity come from the same supplier) for all combinations of instruments with a smart meter. This is known as the **drawback effect:** ‘the phenomenon in which newness of a change causes people to react, but then that reaction diminishes as the newness wears off’ (Wilhite and Ling 1995).”

“Another effect has been observed in some of the 6 studies: the **Hawthorne effect.** This phenomenon describes the situation in which the results of an experiment are not due to experimental factors, but to the fact that subjects are aware of participating in an experiment in which they are tested. When people think they are observed they have an increased motivation to achieve the task under examination. This is the case when consumers know that they participate in an experiment with new tools as a smart meter or an IHD. The consequence is that usually experiments about behaviour change yield to more optimistic results than what will be observed further at a larger scale (when this feeling of being observed is non-existent).”

“To our knowledge there is almost no study that considers the diversity of consumers when assessing the energy saving potential.

Fortunately, Frontier Economics has developed a model based on 200 different types of households in order to assess for which consumers smart meters would be financially beneficial (Frontier Economics 2011). The differentiation is made according to the expected energy saving potential through different characteristics of the households: size of the dwelling, number of persons, electricity consumption, affinity for technologies, readiness to use a smart meter. The big interest of this model is to take into account the diversity of consumers, not only regarding consumption but also regarding motivation and skillfulness.”

“One of the main results of this study is presented in [the figure below] that shows the net benefits (i.e. benefits after deducting installations and operational costs) per household in the case of a **mandatory rollout** of smart meters in German households. **About 15% of households would benefit from this measure (green zone) whereas it would be detrimental for the others (red zone).**”



Quoting the actual language from the Frontier Economics 2011 [report](#) describing the areas in red: “The red areas in **Figure 5** represent the **net loss in those households that are obliged to have a smart meter installed even though the expected advantages do not justify installation costs.**” [emphasis added]

“The total benefit of the operation is negative, despite the economies of scale resulting from a nationwide installation.”

In conclusion, this study supports the recommendation to deploy smart meters on a voluntary basis (or in targeting ‘extravagant’ consumers).” [emphasis added]

So rather than disseminating propaganda on how the consumer will be empowered by smart meters to save money, consumers should more realistically be told that the great majority of consumers will experience a “net loss” and lose money. A few consumers who respond to an IHD feedback device and other advice on how to conserve energy may initially save some money, but this effect likely wears off with time. The lesson here, in any case, supports the possibility that it may make sense to offer smart meter-type devices to **some** interested consumers on an “opt-in” basis. **There is absolutely no basis for a universal smart meter deployment. i.e., “the expected advantages do not justify installation costs.”**

13. Summary and Conclusions

SkyVision Solutions has provided a consumer protection perspective on issues related to utility company smart meter deployments. This is a perspective which is not clouded by special interests or the desire for financial profit.

Credit is given to the New York PSC and the Market Design and Platform Technology Working Group (MDPT) that they have not rushed to judgment that the widespread deployment of an Advanced Metering Infrastructure (AMI) is a necessary component to modernize the electric grid.

However, smart grid industry-related interests will present pseudo-persuasive arguments that smart meters are “critical” to the REV. This is already evident in comments provided so far. In addition, there is a growing narrative on the part of industry-related media to create the impression that the REV mandates will require deployment of millions of smart meters, all to the delight of business interests.

These business interests have no relation to the real world in terms of what is a prudent use of resources or what is in the consumer’s best interests. It is clear that utilities do not realistically balance the possible purported benefits of smart meters against the risks. They don’t even openly acknowledge that the technology risks exist, so no meaningful cost benefit analysis has yet been performed for smart meter deployments. It is apparent that, in some instances, utilities desire to escape the scrutiny of a business case analysis completely.

As indicated in these comments, a thorough review of all potential benefits and costs related to smart meter deployments is required. This review needs to thoroughly address privacy, health, safety, and cybersecurity risks. The review also needs to include realistic and reasonable assumptions on such parameters as the expected useful lifetimes of smart meter devices in light of the technological obsolescence characteristics that affect all electronic devices.

Since these comments provided by SkyVision Solutions have already demonstrated with a high level of confidence that broad-based smart meter deployment installation costs cannot be justified and that they expose the consumer to a number of significant threats and risks, one must look at the motives of those who irrationally insist that universal deployments are critical to meet REV mandates.

SkyVision Solutions, in an attempt to explain the inexplicable wasting of resources on smart meters, discerns the existence of a triad-like arrangement among three separate colluding parties:

1. Utility companies see the opportunity to deploy additional capital investments for which a guaranteed rate of return will be promised from regulators and public utility commissions. They also see the opportunity to sell the vast amounts of personal data collected by smart meters as an additional source of revenue. Utility companies are furthermore taking advantage of the political atmosphere created by the other parties of the triad which allows smart meter deployments to escape the full business case scrutiny that they deserve.
2. Smart grid industry businesses see tremendous opportunities for profit, including meter manufacturers, wireless infrastructure providers, data mining and storage services, and 3rd party organizations which hope to benefit from the “gold mine” of personal data collected through smart meters. As [stated](#) by EYGM Limited in 2015:

“Smart energy meters provide ‘gateway’ to the home.”

“[T]he home is the last space where there is a battle for control; once people get used to the smart meter, they will add more and more devices and want to control them remotely from their phone or tablet -- **generating a gold mine of data.**” [emphasis added]

3. Misguided, “[greenwashed](#)” environmental organizations, ideologically motivated government officials (supported by industry aligned lobbyists), and technocrats envision smart meters as a mechanism for exerting behavioral control over consumers. The progressive strategy first involves the deceptive marketing of smart meters to consumers so they can feel in control of their energy bills as if the consumer really has such control. Next they introduce more misleading mechanisms such as “smart pricing” and promote a psychological technique call “nudging” that is discussed in the SkyVision Solutions article, [‘Smart’ Meters are ‘Guilt Meters’ and an Example of a ‘Fraudulent, Bogus Innovation’](#). Eventually, one may expect these members of the triad to recommend more draconian measures such the “fair” rationing of electricity or the public disclosure of consumers who they view as using “too much” energy as measured by their smart meters.

The members of the above triad in the pursuit of their objectives fully disregard the risks and threats of smart meter technology which we have shown to be:

- The financial burden imposed by smart meters where most consumers will suffer a “net loss.”
- Privacy invasions due to granular collection of energy usage data which represents a “gold mine” to others.

- Potential health risks and actual adverse health effects caused by the additional electrosmog created by the smart meters and their associated infrastructure.
- The increased risk of household fires due to smart meter safety issues and “catastrophic failures” that are expected with smart meters as opposed to traditional usage meters.
- Societal implications of smart grid and smart meter cybersecurity threats which can result in catastrophic events affecting widespread areas of the electric grid.

So one must ask, how can one justify continued smart meter deployments with the significant risks that are involved with no net benefits to the consumer? In the opinion of SkyVision Solutions, continued investment in the currently available smart meter technology cannot be justified. The risks are too great. Alternative strategies need to be considered as more viable options to help modernize the electric grid.

Hypothetically, stakeholders may be able to design a “smart meter” that addresses the above issues and risks. For example, a network of smart meters linked through fiber optic communication lines and where the meters are locally controlled by each consumer in terms of how much data is collected, based upon the desired rate plan, would be a start. Additionally we would need each meter to be properly grounded (as analog meters were) along with a UL certification that consumer stakeholders would accept as being adequate. The remote disconnect relay feature needs to be removed as an available smart meter option since the risks are too great in case a hacker gets into the system.

However, the first step to realistically address what might be needed in terms of potential smart meter deployments is for the members of the above described triad to acknowledge that they have not yet properly accounted for the benefits versus the risks. They currently tout the dubious benefits as if they were indisputable facts and publicly dismiss the very real risks as conspiracy theories. Until this disingenuous and dangerous mindset changes, the public good will not be served, and public resistance to smart grid technology is fully justified.

Meanwhile, if utilities are allowed to move forward with the current deployment strategy and technology, **consumers most certainly deserve the right to refuse installation of smart meters and to do so without fees being imposed of any kind.** Many of us do not want to be part of such a misguided experiment where our fiscal and physical health, privacy, and safety are so negatively impacted. In fact, please follow the [guidance](#) provided to the United States government by the Transatlantic Consumer Dialogue (TACD) in 2011:

“Forbid utilities from installing smart meters without consumers’ informed consent.” [emphasis added]