

NV Energize

Creating an energy-smart future

Myths vs. facts

about smart meters

A Consumer Response to 8 of those myths vs. Fact

By Mike Hazard
Las Vegas, Nevada

February 8, 2012

Myth: NV Energy will use smart meters to turn off appliances in your home without your permission.

Fact: NV Energy simply does not have the capability to operate appliances inside a home or business. Smart meters are not able to be used to turn off appliances. In the future, NV Energy may offer voluntary programs that include Home Area Network Devices for inside the home that give customers the ability to control certain appliances.

Response 1: The “control” aspect of the Smart Meter program is something that rate payers know very little about simply because NVE has said very little about it and given customers very little information to know what the overall scope or ultimate result of the SM program will be. The next quote however, will shed some light on just how fully NVE plans to invade the privacy of our homes. In their Project Plan they again outline how absolute this control will be:

“ASD (Advanced Service Delivery) utilizes HAN (Home Area Network) devices such as in-home displays, programmable controllable thermostats, and load control switches that are remotely controllable via the AMI (Advanced Metering Infrastructure) Technology communications and industry standard communications protocols such as the Zigbee Smart Energy Profile. Use of such protocols allows any other devices capable of such communications to be remotely controlled by NV Energy. HAN devices are also programmable and controllable by the customer. Devices are capable of override by the customer which can be detected by NV Energy.”

Ref: Project Plan DE-FOA-0000058 – Integrated/Crosscutting Systems, Section 5.1 The ASD Under Smart Grid Criteria, Docket 10-02009 Vol. 16 DSM 24-30 p.207

<http://nvenergy.com/company/rates/filings/images/vol16dsm24-32.pdf>

When Nevada Energy says that they “May offer voluntary programs,” One still has to wonder just what the word “voluntary,” actually means. On the NVE web page there are two FAQ sections that relate to smart meters and the Dynamic Pricing Trial. The words “option/choose/choices” appears 13 times. The words volunteer/voluntary appears 9 times and the word trust appears 4 times. Yet in the marketing backdrop of this extensive array of appealing buzzwords their intent comes into question when you once again analyze the project plan submitted to the DOE (Dept. of Energy) because here we see a much different scenario unfolding.

5.3.2 Trial Design: The ARRA (American Reinvestment and Recovery Act) SGIG (Smart Grid Invest Grant) requirements specify that a dynamic pricing trial shall: (1) require all customers in the geographic test area to face dynamic pricing, (2) apply dynamic pricing on a mandatory basis, and (3) apply randomized design. The NV Energy ASD dynamic pricing trial meets these three requirements.

Ref: Project Plan DE-FOA-0000058 – Integrated/Crosscutting Systems, Section 5. The ASD Dynamic Pricing Trial, Docket 10-02009 Vol. 16 DSM 24-30 p.214

<http://nvenergy.com/company/rates/filings/images/vol16dsm24-32.pdf>

For some reason the words, “require,” “apply,” and “mandatory,” don’t quite have the same meaning as “voluntary” or “choice.” What’s even more disturbing in light of all of this is the fact that NVE admitted in the December 6th work shop that there was no federal, vs. state or local mandate for smart meters yet they said that all customers of NVE would be required to have a smart meter installed on their home before the end of 2012. Not only does this violate the premise of the 4th amendment to our Federal Constitution, but it also violates section 18 of the Nevada Constitution as well as the general right to privacy handed down by the Supreme court in *Olmstead v. U.S.*, 277 U.S. 438, 478 (1928) (Brandeis,J., dissenting).

“In the context of preventing government intrusions into personal life, Justice Brandeis of the U.S. Supreme Court declared that the writers of the U.S. Constitution conferred the right to be let alone — the most comprehensive of rights and the right most valued by civilized men. To protect that right, every unjustifiable intrusion by the government upon the privacy of the individual, whatever the means employed, must be deemed a violation of the Fourth Amendment.” [end quote] <http://www.rbs2.com/privacy.htm>

Even more recently on January 23, 2012 The supreme Court ruled again in *US vs. Jones* that

“Installing a GPS device to a vehicle by law enforcement to detect where the vehicle movements constitutes a search under the fourth amendment.” [end quote] Ref. <http://www.scotusblog.com/case-files/cases/united-states-v-jones/>

When the full implications of what data and information the smart meters are capable of gathering from information discussed below, there can be no question it is a huge violation of privacy in our private homes and businesses.

Myth: Smart meters will emit high levels of radio frequency (RF) radiation into my home.

Fact: Smart meters emit extremely low, infrequent signals. RF from smart meters is similar to common every day devices such as radios, cell phones, baby monitors, wireless networks, etc. Also, exposure levels decrease significantly as distance from the transmitter increases. RF also weakens as barriers such as building materials and meter enclosures enter its path.

Response 2: Smart meters emit for the most part, a low RF signal except on 15 minute intervals and those occurrences are just as strong as any cell phone. They are however much stronger than a typical AM/FM radio that produces unreadable signals on the RF-35C RF (radio frequency) monitor. The word infrequent is incorrect because the SM is transmitting some form of signal as often as every 15 seconds. The transmissions other than those high peaks at 15 minute intervals are lower for the most part, however they are regular and frequent as I mentioned, every

15 seconds. When that is added up in a day that means signals are being emitted 5,760 times a day. The RF-35C does not pick up the cell phone at that regularity because the strongest signal comes when a call is received.

The concept of RF exposure levels decreasing commensurate with increasing distance is true and is called the “law of diminishing return.”

Building materials, trees, shrubs or any other material in the smart meter’s path except for copper or aluminum screen does not weaken the signal. To say the wall of a bedroom or house weakens the signal is simply not true. I’ve witnessed meter readings from the SM on the RF35-C inside a room that was less than 10’ from the emitting smart meter and it was a strong signal, definitely not weakened by wall structure or wall covering to the extent suggested by NVE in this publication. There are no “meter enclosures,” otherwise the smart meter could not function properly.

Myth: NV Energy has not researched health effects of radio frequency.

Fact: NV Energy initiated an independent third-part study of its Advance Metering Infrastructure (AMI) network radio frequency (RF) fields by Exponent, a firm with a multi-disciplinary team of scientists, physicians, engineers, and regulatory consultants who perform in-depth scientific research and analysis. Dr. Yakov Shkolnikov, Ph.D. and Dr. William H. Bailey, Ph.D, provided a perspective on public health and safety concerns about RF signals in a report submitted to the Public Utilities Commission of Nevada in December 2011. Based on a scientific explanation, the doctors concluded that the NV Energy AMI network results in a “negligible RF exposure.”

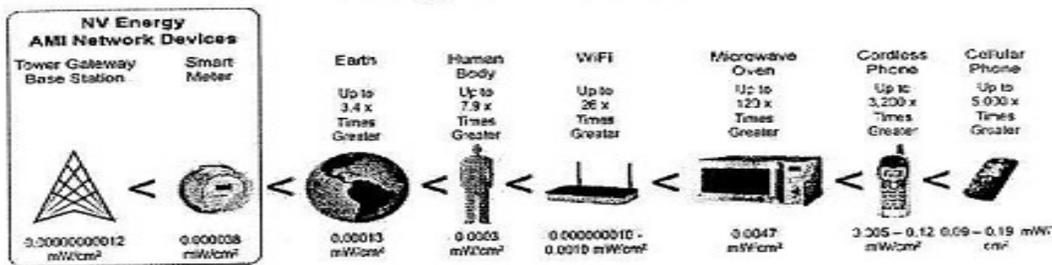
Response 3: I disagree with the NVE presentation that was made on Dec 6th at the PUCN workshop regarding “negligible RF exposure.” Dr. Shkolnikov and Dr. Bailey both work for an organization called “Exponet” that caters to huge corporations who want to sell something and convince their customers that their product is a good thing. NVE is no exception in this case and I disputed the findings of Dr. Scholnikov at the workshop by comparing a spec sheet compiled by ACS Laboratory to his RF comparison graphic.

I wish to refute the graphic exhibit that Dr. Shkolnikov provided showing the level of RF emission being emitted from the smart meter. Please find enclosed a copy of the RF continuum graph provided by Dr. Shkolnikov and a Response specification sheet from ACS Laboratory that disputes the findings of Dr. Shkolnikov as they were presented at the workshop on December 6th.

In the graphic exhibit Dr. Shkolnikov asserts that the smart meter emits 0.000038 mW/cm² and is at the far left side of the RF emission continuum indicating a very low RF emission. However, the ACS Laboratory data sheet indicates the Power Density (RF Emission) at 0.204 mW/cm², which is obviously much higher than the result indicated by Dr. Shkolnikov. With that said, the ACS Laboratory data, would seem to refute Dr. Shkolnikov's data and place the smart meter to the far right of the RF continuum with a value above that of the cell phone that Dr. Shkolnikov places at between 0.09-0.19 mW/cm². In addition to the ACS laboratory findings I personally own an RF 35C meter for testing RF emissions and have used it to test the smart meter RF output. That experience combined with the exhibit of Dr. Shkolnikov throw serious doubt about the validity of his findings. See excerpt from NVE Dec 6th workshop exhibit and the ACS Laboratory spec. sheet:

6 Indeed, people are exposed to very low levels of natural and man-made radio frequency
 7 ("RF) signals every day. Even the earth's surface and the human body produce a constant RF signal. As
 8 explained in more detail in Attachment 2, the exposure to RF associated with NVE's smart meters and
 9 the other elements of the NV Energy AMI Network is less than naturally occurring RF exposure.
 10 In fact, the average exposure to RF signals at 1 foot in front of the radio up to 3.4 times less than the
 11 average exposure to RF signals that naturally emanate from the Earth,⁴ and 7.9 times less than the
 12 exposure to RF signals produced by the human body ⁵ Similarly, the average exposure to RF signals
 13 from a ZigBee module also is many times less than the RF emanating from the Earth. Finally, the
 14 average exposure to a Tower Gateway Base station ("TGB") is many times less than the exposure
 15 RF signals produced by the human body. Smart modules attached to natural gas meters in Sierra's
 16 service territory produce even less RF exposure than NVE's electric smart meters.⁶

Comparison of RF Exposure Sources to NV Energy AMI Network Devices



Limits for General Population/Uncontrolled Exposure

Transmit Frequency (MHz)	Radio Power (dBm)	Power Density Limit (mW/Cm2)	Radio Power (mW)	Antenna Gain (dBi)	Antenna Gain (mW eq.)	Distance (cm)	Power Density (mW/cm^2)
2405	20.76	1.00	119.12	0	1.000	20	0.024
2440	20.37	1.00	108.89	0	1.000	20	0.022
2480	20.03	1.00	100.69	0	1.000	20	0.020

Further research in a book called “Doubt is their product” by David Michaels gives the Exponent company less than exemplary grades while evaluating their operating plan. Here is an excerpt from that book that should cast huge shadows on any representative of Exponet.

“Their business model is straightforward. They profit by helping corporations minimize public health and environmental protection and fight claims of injury and illness. In field after field, year after year, this same handful of individuals and companies comes up again and again.”

“The range of their work is impressive. They have on their payrolls (or can bring in on a moment’s notice) toxicologists, epidemiologists, biostatisticians, risk assessors, and any other professionally trained, media-savvy experts deemed necessary. They and the larger, wealthier industries for which they work go through the motions we expect of the scientific enterprise, salting the literature with their questionable reports and studies. Nevertheless, it is all a charade. The work has one overriding motivation: advocacy for the sponsor’s position in civil court, the court of public opinion, and the regulatory arena. Often tailored to address issues that arise in litigation, they are more like legal pleadings than scientific papers. In the regulatory arena, the studies are useful not because they are good work that the regulatory agencies have to take seriously but because they clog the machinery and slow down the process.”

“Public health interests are beside the point. Follow the science wherever it leads? Not quite. This is science for hire, period, and it is extremely lucrative.”
[end quote pg. 46]

Furthermore if smart meters are so safe why did on January 23, 2012 the American Academy of Environmental Medicine call for a halt to wireless smart meters With this statement:

“The Board of the American Academy of Environmental Medicine opposes the Installation of wireless ”smart meters” In homes and schools based on a scientific assessment of the current medical literature (references available on request). Chronic exposure to wireless radio frequency radiation is a preventable environmental hazard that is sufficiently well documented to warrant immediate preventative public health action.” [end quote]

<http://emfsafetynetwork.org/wp-content/uploads/2009/11/AAEM-Resolution.pdf>

One of the facets of the smart meter installation that I think has been grossly overlooked is the high prevalence of smart meters installed in a very close knit location that is in conjunction to an already existing high concentration of radio frequency discharge. To estimate the rate or incidence of RF radiation in any given area go to <http://antennasearch.com/> Plug in any given address to first determine the number of cell phone towers and then the number of radio transmitting antennas within a 4 mi. radius of the given address. Then using simple mathematical calculations for determining the area of a circle it is quickly noted that for typical

metropolitan housing areas on normal sized city lots there are at 12,434 smart meters installed in addition to the existing cell towers and radio emitting antennas. Is it any wonder that The Board of the American Academy of Environmental Medicine opposes the Installation of wireless "smart meters?"

Myth: Like cell phones, smart meters transmit a signal all the time.

Fact: Unlike cell phones, which are "on" all the time unless powered down, smart meters communicate and then "go to sleep." Smart meters typically communicate using RF signals 48 times per day. Each transmission is only a fraction of a second, which means smart meters transmit about 3 seconds per day on average.

Modules installed on gas meters transmit for less than one second per day on average.

Response 4: The comparison of a cell phone that is "not transmitting" to the smart meter that "goes to sleep" is erroneous for several reasons. If the cell phone is producing RF once it is in the "ON" position, it is a very low rate of emission except when an incoming call is received. It typically will send out a very short signal occasionally depending on the frequency it operates at, to let the nearby cell towers know where you are so it can be ready to receive an incoming call to you. Then when it receives a call, the RF output does spike very similarly to that of a smart meter. However, when the user shuts down the cell phone to the "OFF" position, typically at night or when the phone is being recharged, it completely shuts down any RF transmissions at all. That does not happen with a smart meter.

The statement that the Sensus smart meters "go to sleep" is simply not true. If this were an ITRON meter similar to what is being used by Southwest Gas to collect natural gas consumption data, I would tend to agree that the meter does go to sleep for 30 days until the meter reader probes the meter for a reading. However, the Sensus smart meters actively communicate all the time and as mentioned in item #2 above, as much as 5,760 times a day because they are never shut down. They operate continuously, 24/7, which is not the same at all for cell phones. This is not to mention the fact that as consumers we have a choice to use a cell phone, a hands free telephone, a microwave oven or install a Wi-Fi system in our homes and expose ourselves to whatever RF emission it produces. Whereas, with the smart meter we supposedly do not have a choice according to NVE because they say they are mandatory for every NVE customer. NVE is trying to diminish the appearance of the total transmission amount simply by not counting all the intermediate RF emissions from smart meters that occur every 15 seconds. Total transmission time is far more than 3 seconds by any stretch of the imagination. Again, any reading taken on an RF35-C, a \$400.00 meter, made in Germany will verify this both for the cell phone or the smart meter.

Myth: NV Energy is installing smart meters so it can put time of use rates in place.

Fact: Customers will not be forced into tiered or time of use rates. NV Energy will conduct voluntary research of different rate structures in order to offer customers choices that best suit their lifestyles and budgets. In addition, any changes in rates must be approved by the Public Utilities Commission of Nevada.

Response 5: If NVE is not going to “force” their customers to TOU pricing then why did their Project plan to the DOE say that it would affect all customers, that is was mandatory on a randomized design.

5.3.2 Trial Design

The ARRA SGIG requirements specify that a dynamic pricing trial shall: (1) require all customers in the geographic test area to face dynamic pricing, (2) apply dynamic pricing on a mandatory basis, and (3) apply randomized design. The NV Energy ASD dynamic pricing trial meets these three requirements.¹⁰

Ref: Project Plan DE-FOA-0000058 – Integrated/Crosscutting Systems, Section 5. The ASD Dynamic Pricing Trial, Docket 10-02009 Vol. 16 DSM 24-30 p.214
<http://nvenergy.com/company/rates/filings/images/vol16dsm24-32.pdf>

Why would Nevada Energy, a reputable firm in the Las Vegas Valley, try to force its customers into a situation that places their health at risk, invades their privacy and places price and use restrictions that will only raise utility rates, not lower them. This is simply the act of a huge monopoly trying to extort fees out of lower and fixed income, the infirmed, home businesses, younger families with children and retirees alike who have little flexibility to increased rates much less the ability to go without heating in the cold winter months or cooling in the extreme heat of the summer. What is NVE thinking and how can the administrators of this invasive program sleep at night, considering the inconvenience, the financial burden and the basic lack of general consideration it has for its customers.

Myth: Smart meters track or monitor individual appliances.

Fact: Smart meters do not identify electrical devices in the home or record when they are operated. Smart meters only record total energy usage, as does an older, analog meter.

Response 6: False. The smart meters do this in conjunction with the chips in the appliances required after 2012 in all appliances that send information to the Zigbee Router from the sleek Control4 EC-100 device (including a 4.7" color touch-screen), which communicates, wirelessly to the smart meter and programmable thermostats. (See illustration below.)

http://www.smartgridnews.com/artman/publish/Technologies_Demand_Response/NV-Energy-rolls-out-first-ever-HAN-based-demand-response-program-4275.html



This is absolutely incredible for NVE to say, “smart meters do not identify electrical devices in the home.” Of course they do and NVE knows it or they wouldn’t be pushing so hard for the continued roll out of the smart meters across the state. There is money to be made here and they are not about to miss the opportunity to get part of the action.

The white paper for the Colorado Public Utilities Commission in the spring of 2009 called: **Smart Metering and Privacy: Existing Law and Competing Policies** by Elias Leake Quinn offers this cautionary note about information bundling and its resale to a market hungry to make a profit.

http://www.dora.state.co.us/puc/docketsdecisions/DocketFilings/09I-593EG/09I-593EG_Spring2009Report-SmartGridPrivacy.pdf

“The many things determinable from smart grid information analysis, and the many edge services and other ancillary parties that have a reason to seek it out, suggests that smart grid information has value. This gives rise to the question: could electric utilities turn the new information stream into a source of revenue?” They further caution that “the information market is likely to under-value customer privacy since the individual customers whose information is monetized in such a market are involved in the market in only tangential (peripheral) ways.”

“So why would electrical consumption data be valuable, like how often a customer eats a microwave dinner as opposed to cooking three-pot meals? How many hours of TV does a person watch or what kind of TV is it? When does a resident normally shower and so cue an electricity draw from the electric water heater or even the gas water heater with houses so equipped with gas meter smart technology?” [end quote]

The appliance manufacturing market equipped with smart grid technology is set to explode around the world according to a market analysis by Zpryme Research and consulting. They state, “The **Smart Appliance Market** From 2011 to 2015, the global household smart appliance market is projected to grow from \$3.06 billion to \$15.12 billion. In 2015, the global market size for smart washers and smart refrigerators will reach \$3.54 billion and \$2.69 billion, respectively.”

The report goes on to reveal that this huge market will simply not grow by itself. Zpryme asserts that it will take prodding of consumers; cooperation and collaboration of the power companies in conjunction from a huge influx of money from the government to make this marketing maneuver a successful endeavor. Their analysis seems to leave no stone unturned, no question about success, unanswered.

“Governments must do more to inform their citizens not only about the long term affects of saving the environment, but more notably the money saving opportunities of transitioning to the Smart Grid – and have to talk to consumers repeatedly and get the messages out there by advocating at both a national and grassroots level. Also, get the consumer involved – active participation of consumers is essential for making the Smart Grid successful.”

“Corporations must partner together with their government to better understand and engage consumers. Initiatives like Cash for Appliances’ in the US can stimulate the industry momentarily, though educating consumers about why they are paying a premium for a smart appliance must be addressed to maintain momentum and arouse growth in the long term. Traditional marketing alone can’t assist companies to address these education initiatives’, as decision-makers need practical consumer insights’ for campaigns, not reams of data.” [end quote]

<http://www.smartgridcareers.com/component/content/article/92-smart-grid-insights-smart-appliances-from-zpryme-.html>

Myth: Smart meters are surveillance devices.

Fact: Smart meters do not monitor household activity. They only record total energy usage for the home or business. The truth is older, analog meters also record energy usage. The advantage of a smart meter is that customers will have insights into how they are using energy and make choices that could result in savings on their bill.

Response 7: The first and last sentence of this paragraph contradict each other because you can not do the activity in the last sentence if you don’t do the activity in the first sentence. Of course smart meters monitor your household activities. When NVE record’s individual time of use energy information through the HAN network and collects this data to recreate a pattern of activity within the home without the owner’s permission,

this is surveillance. When NVE wants to charge their customers an initial reinstallation fee for returning their analog meter to replace the current smart meter followed by a monthly charge into perpetuity, this is extortion. Furthermore, if there are going to be “savings on utility bills” how can this happen when NVE keep asking for rate increases or charges extra fees for the standard analog meter. Simply stated, “Customers have a choice,” and the PUCN needs to protect that choice, period.

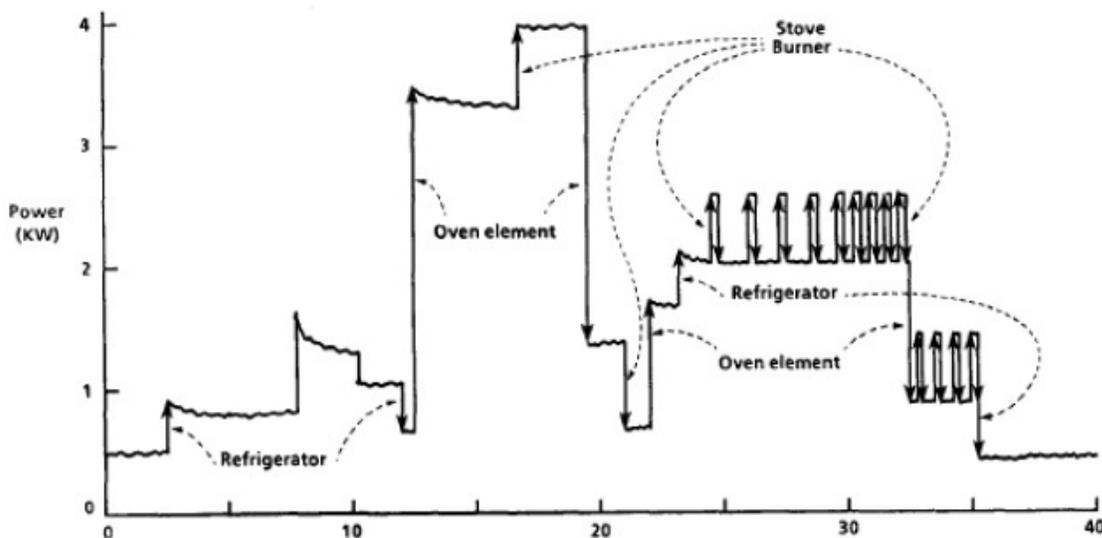
For NVE to say that “smart meters do not monitor household activities,” they would somehow completely and categorically have to refute the entire contents and following excerpts from the white paper for the Colorado Public Utilities Commission called: **Smart Metering and Privacy: Existing Law and Competing Policies** by Elias Leake Quinn mentioned in response 6.

With the paper in hand let’s examine first the issue of consumer electricity usage information and the associated issue of privacy concerning that information. Here is an excerpt:

Executive Summary

Advanced metering infrastructure (AMI or smart metering) is being installed throughout electric networks both in Colorado¹ and across the country.² From these smart meters, detailed information about consumer electricity usage will flow from residences and businesses to electric utilities. Instead of billing customers for their monthly draw, electric utilities will know what customers are using in half-hour, fifteen-minute, or even five-minute intervals.

Proper management of this new information pool could support energy efficiency efforts and demand-side management (DSM) initiatives.³ However, insufficient oversight of this information could also lead to unprecedented invasions of consumer privacy. Many intricate details of household life can be gleaned from information obtained via advanced metering infrastructure.



Example of an individual's load profile constructed using consecutive load measurements taken in small intervals with various appliance events identified⁴

For NVE to say that smart meters “do not monitor household activities” is to deny their description of how Gary Smith, Project Director of Smart Technologies for NVE explains the operation of the AMI (Advanced Metering Infrastructure) to the DOE from a piece written in Smart Grid News.com <http://www.smartgrid.gov/sites/default/files/09-0080-nv-energy-project-description-05-19-11.pdf>

He explains: “**Advanced metering infrastructure** includes smart meters and a radio frequency communications network for all NV Energy customers. All 1,293,450 residential and commercial customer sites will receive new meters, Communication devices in these meters send consumption data, in real-time, to grid operators. The AMI deployment allows for time-based rate programs and electric service options based on time specific consumption metering. NV Energy reduces meter reading and theft costs as a result of the new meters. The new meters feature remote outage and restoration notification, which NV Energy is integrating with its outage management system software to respond to outages and customer requests more rapidly. This contributes to improved electric service reliability and power quality.” [end quote]

There you have the NVE FAQ saying that “smart meters do not monitor household activities,” yet Mr. Gary Smith speaking on behalf of the company to DOE, says that NVE and their smart meters do monitor detailed electrical consumption activities on a time specific basis. There are other glaring facts that Mr. Smith can simply not ignore or deny. It is a well-known fact that NVE is using the Sensus smart meter for their AMI distribution. After all, they even requested that the PUCN consider it the “standard” meter consideration under Rule 16 in their Dec 28th Opt-Out Proposal.

Anyone looking at the U.S. Patent Application Publication No. US 2011/0301894 A1 dated Dec. 8, 2011 assigned to SENSUS USA INC. can easily see why NVE and other electrical companies across the country chose the Sensus meters for their AMI rollouts. Here we see what NVE does not want their customers to know and we find information that further refutes the NVE statement “smart meters do not monitor household activities,” and lend support to the Colorado Public Utilities Commission white paper. In the abstract of the patent document for the smart meter we read this:

“A system and method for use in a non-intrusive load monitoring system to identify specific types of loads and communicate the identified load information to interested parties. The non-intrusive load monitoring system includes an electricity meter that measures load information from a home or facility. The load information is analyzed by comparing the information to a series of load signatures for various known electrical loads to identify the specific type of electric load. Once the type of load is identified, the system utilizes the information to analyze the operation of the load and relay messages to the homeowner regarding such operation. The load information may be used by a utility to better predict and manage peak and average electricity consumption over the year. Upon customer authorization, the load identification information may also be relayed to third parties for use in directed sales campaigns and discount promotions.”

[end quote] <http://appft1.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PG01&p=1&u=/netahtml/PTO/srchnum.html&r=1&f=G&l=50&s1=20110301894>

This information alone should give pause to any NVE customer if they knew the extent and depth of detail to which the smart meter coupled with the HAN (Home Area Network) gave to the utility company. When the customer sees in graphic detail or in a linear view just what capabilities are at the fingertips of the AMI distribution installers, it should leave even a more startling or maybe even disturbing impression one does not easily ignore. However, to understand the graph we need to first understand what the figures in the graph means. For that we go back to the Colorado Public Utilities Commission white paper. Here we read the following assessment of what the *technological capabilities* for the smart meters really are:

“The drive for high-resolution energy usage data from which to forecast load demand or optimize service led naturally to an investigation of individual appliances and their relative contribution—both in time and amount of draw—to the overall load. Traditionally, this meant the installation of cumbersome and rather intrusive monitoring equipment within customer homes, often involving “a monitoring point at each appliance of interest and wires . . . connecting each to a central data-gathering location.” In the early 1980’s, researchers at MIT turned the research on its head with the development of the non-intrusive appliance load monitor (NALM), which “reverses this balance with simple hardware but complex software for signal processing and analysis.” The NALM insight was simple in form, but profound in consequence: If a device could be appended to the existing metering infrastructure that would allow for real time logging of electricity consumption (the simple hardware), the information of appliance use might be able to be reconstructed from the overall load data (through the application of complex software) and thereby remove the need for intruding within the residential space and installing new equipment within the home.”

“In order to separate a customer’s electricity usage profile into its constituent appliance events, researchers began compiling libraries of appliance load signatures that could be matched to signals found within the noise of a customer’s aggregated electricity use. Though initially thought a daunting task to work backwards from an appliance’s demand to the identity of the appliance itself, the load signatures of various appliance categories are surprisingly unique, and an impressive amount of detail concerning customer usage habits could be discerned from NALM-generated information.”

“NALMs were ever research tools, set up to monitor only a small number of customers in order to facilitate load forecasting and management. However, smart meters allow for the collection and communication of highly detailed electricity usage information in much the same way as did the NALM. However, unlike NALMs, smart meters are being deployed throughout entire electricity distribution networks. Indeed, the Federal Energy Regulatory Commission (FERC) recently reported that, all told, 52 million smart meters would be installed throughout the country over the next five to seven years. Smart-metered information, collected at levels as fine as one-minute intervals, can be disaggregated into its constituent appliance events, allowing both consumers and utilities (and anyone else

with access to the information) to see exactly what makes up an individual household's electricity demands. “

“As analytic tools evolve, even information collected at significantly longer intervals—e.g. every fifteen or thirty minutes—can be used to pinpoint the use of most major household appliances. Such detailed information about the in-home activities of electricity customers can thus be used to piece together a fairly detailed picture of an individual's daily life or routine. Furthermore, as plug-in hybrid electric vehicles are deployed and customers engage in electricity sales on the grid outside of their homes, an electricity usage profile may become a one-stop-shop for tracking behaviors even outside the walls of the residence. Cataloging and analytic methods advance, and thus the huge volumes of data about electricity usage soon to be unleashed, rather than seen as overly burdensome and expensive to make use of, are likely to be found treasure troves of information.” [end quote]

To see what this all looks like graphically, review the use profile below:

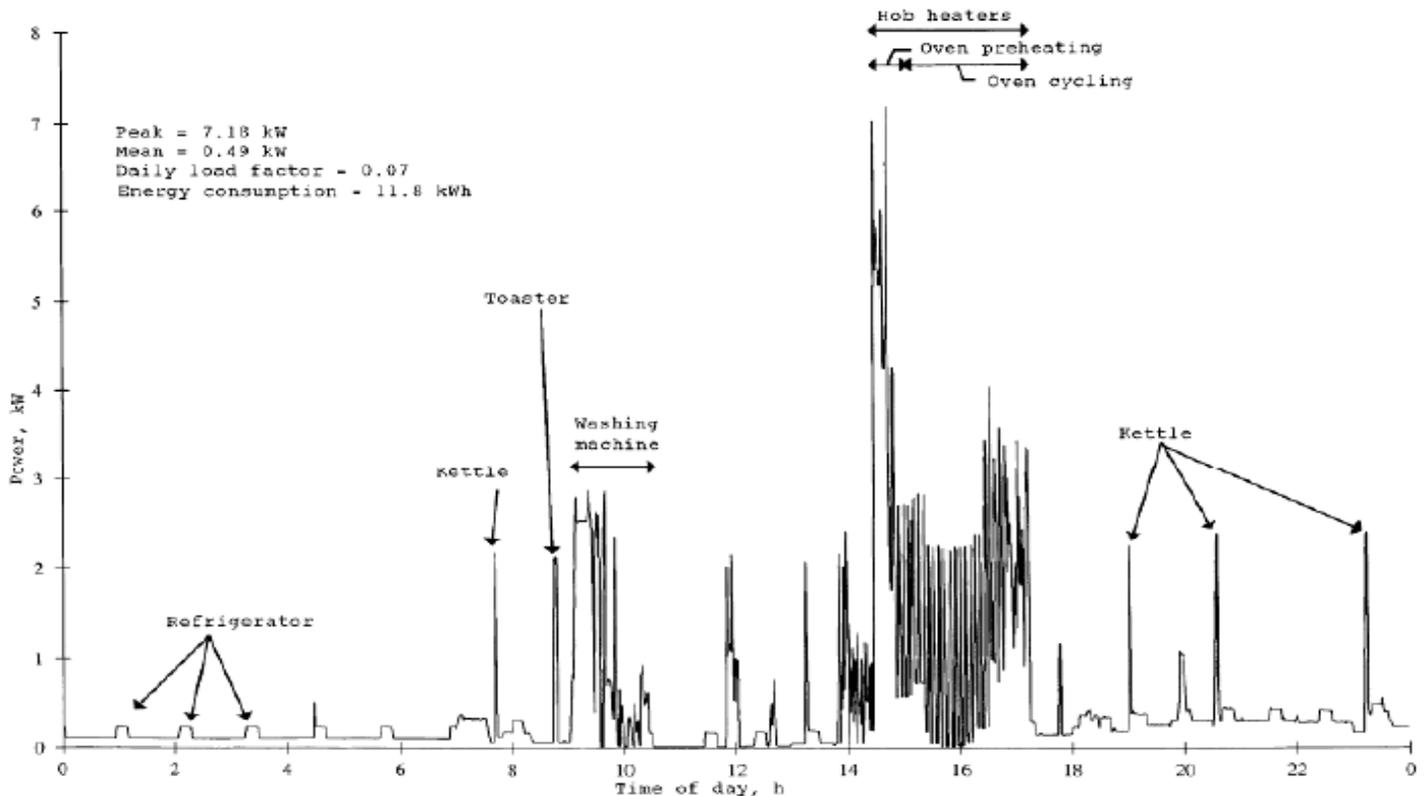


Figure 1: Household Electricity Demand Profile Recorded on a One-minute Time Base⁶

Myth: Installation of a smart meter will automatically cause an increase in customer bills.

Fact: Smart meters have been tested and proven to record energy usage accurately and do not cause higher bills. In most cases, higher bills can be attributed to changes in weather, timing of rates, older equipment malfunctions and human error.

Response 8: I know of at least 5 customers who have utility bills that have increased after the smart meter was installed. I personally saw the bill of one customer that was \$12,000 after his smart meter was installed and it took 9 attempts through NVE customer service reps to get the bill reduced and then it was still higher than what it should have been. Fortunately, the customer had taken a picture of the dials on the analog meter before it was removed and according to that picture, the bill the customer ultimately had to pay was higher than what the dials indicated for those kwph indicated.

Conclusion: The bottom line to the smart meter question is not how much RF do they emit, it is not how often they emit RF and if they produce more RF than a cell phone or not. The bottom line is that research proves that smart meters are an intrusive device that invades the privacy of the American home and indeed violates the very fundamental nature of our federal and state constitutions that were designed to protect that privacy. Furthermore, the very notion of what they are capable of doing ignores the intent of multiple cases, as many as 34 previous US Supreme Court Decisions regarding the preservation of privacy.

Now it is the duty of the PUCN (Public Utilities of Nevada) to do what they have been appointed to do by the Governor of this state and to stop ignoring the Bureau of Consumer Protection; stop ignoring the Constitution and stop ignoring the very basic rights to privacy guaranteed to the citizens of this State. They need to implement an opt-in program for smart meters allowing those who wish to opt in, to do so and likewise for those who don't, allow them an exception with no fees.

If the PUCN is not willing to do this, then government management agencies above them need to act appropriately and in a timely manner.