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November 6, 2013

**BC HYDRO SMART METER**  
**CHOICES PROGRAM EXHIBIT A2-2**

Ms. Janet Fraser  
Chief Regulatory Officer  
British Columbia Hydro and Power Authority  
16<sup>th</sup> Floor, 333 Dunsmuir Street  
Vancouver, BC V6B 5R3

Dear Ms. Fraser:

Re: British Columbia Hydro and Power Authority  
Application for Approval of Charges Related to Meter Choices Program

Commission staff submit the following document for the record in the above noted proceeding: Intelligentutility January/February 2013 - "Making dumb European rollouts SMART".

Yours truly,

Erica Hamilton

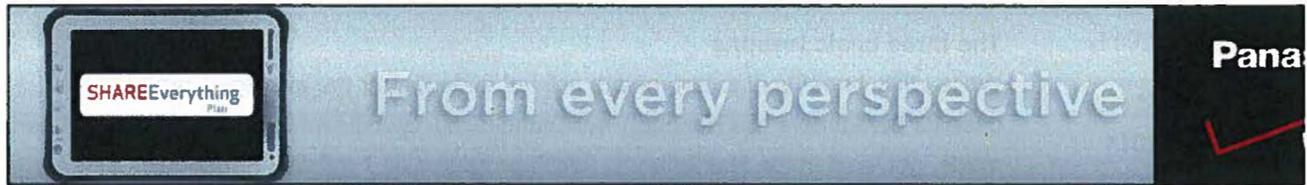
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Enclosure

cc: Registered Interveners  
(BCH-MeterChoice-RI)

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## Making dumb European rollouts SMART

Sept/Oct 2013

Three golden rules of consumer engagement: Tim Probert

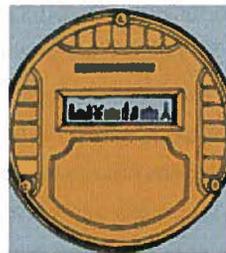
Jul/Aug 2013

Published In: Intelligent Utility January/February 2013

May/June 2013



March/April 2013



**THE EUROPEAN UNION'S (EU's) AMBITIOUS** plan to rollout smart meters to 80 percent of its 500 million population by 2020 is not going as well as hoped.

Europe has enjoyed notable success with smart meters. In 2006, Italy became the first country in Europe to complete a national smart meter program after utility Enel conducted a five-year, \$2.6 billion (US) scheme-mainly to reduce non-technical losses-for its 30 million customers.

Jan/Feb 2013

Nov/Dec 2012

Elsewhere, Scandinavia leads the way. Sweden also achieved full-scale penetration in 2010, while Finland, Norway, and Denmark are likely to achieve their targets by 2016. Yet for many EU nations who did not take it upon themselves to be early adopters, smart meter programs have struggled.

Sep/Oct 2012

Jul/Aug 2012

The European Union's 2009 Third Energy Package, which sets out measures to liberalize Europe's power sector, required each of the 27 member states to publish a cost-benefit analysis by end-September 2012. If the analysis found a positive business case, member states are compelled to install smart meters to 80 percent of consumers by 2020.

May/June 2012

March/April 2012

Most nations have reported a positive cost-benefit analysis, although there were some exceptions. The Czech Republic's analysis was negative and has recommended its

Jan/Feb 2012	rollout start in 2018, while Germany has delayed the publication of its report until February 2013.
Nov/Dec 2011	<b>The three basic lessons</b>
Sep/Oct 2011	While utility benefits of smart meters are not in doubt, for the average European the case for consumers has not been well established. Significant tactical errors have been made, not least in the Netherlands, which proposed all 7 million households of the country should have a smart meter by 2013.
Jul/Aug 2011	Faced with a growing moral panic over data privacy concerns, the Dutch government pushed for compulsory installation of smart meters, with refusal punished by a fine or six months in prison. After vigorous campaigning by consumer organizations it eventually relented and the Dutch Parliament moved to make installation voluntary.
May/June 2011	The Dutch example is a salutary lesson in the dangers of putting the cart before the horse. Dr Philip Lewis, CEO of Finland-based utility analyst Vaasa ETT, says rollouts cannot be successful without consumer trust.
Mar/Apr 2011	"There are three basic stages of consumer motivation," said Dr. Lewis, a psychologist who now specializes in utility customer behavior. "First, there are reasons to be positive about overall smart meter developments at a national level. The second is to be positive about reasons to get involved with smart meters. The third is eliminating reasons not to get involved."
Jan/Feb 2011	
Nov/Dec 2010	
Sep/Oct 2010	<b>Preaching the first lesson</b>
Jul/Aug 2010	Promoting them at a national level in Britain is the job of Maxine Frerk, deputy director and head of consumer engagement of the UK Department of Energy's smart meter program.
May/June 2010	Engaging consumers is proving tough in Britain, which is very much its own beast. Rather than regulated distribution network operators, deregulated energy retailers have the responsibility to procure and install 53 million gas and electricity meters, involving visits to 30 million homes and small businesses, by 2019.
Mar/Apr 2010	It is an interesting policy choice and, in that respect, Britain is in a minority of one worldwide. The rationale is simple: Energy retailers have a relationship with their customers, and customer behavior change is a major element of their business case.
Jan/Feb 2010	So it was decided that it made sense for suppliers to be the primary interface for the rollout.
Nov/Dec 2009	After years of inflation-busting price increases, tariff mis-selling and poor customer service at a time of stagnant wages and rising unemployment, however, British energy retailers are among the least popular organizations in the nation, barely more popular than banks, estate agents and even parking attendants.
Sep/Oct 2009	So the energy companies will have assistance from the UK Department of Energy's new smart meter 'Central Delivery Body' that will conduct a public awareness campaign about the benefits, which are estimated at a total £16 billion (\$26 billion) in return for £11 billion in costs. Frerk believes a strong push from the center is needed because smart meter awareness and public trust in utilities is very low.
Jul/Aug 2009	
May/June 2009	"Our latest survey of consumer awareness showed only 49 percent of respondents had heard of smart meters and from some of the other questions we asked, it's not clear
Mar/Apr 2009	

Jan/Feb 2009

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that even all of those did," she said. "Getting consumers to just open their front door is the first challenge. If suppliers are faced with a lot of apathy, and find it hard to get access, it will increase costs."

**Putting the second lesson into practice**

The British division of German utility E.ON aims to install 1 million smart meters by the third quarter of 2014, around the time the national rollout officially begins. The program started in 2011 and the company is close to 300,000 installations. By the designated end of the national rollout in 2019 it expects to install 8 million electricity and gas meters to 5 million homes.

The stakes are high for E.ON UK. Up for grabs are hundreds of millions of pounds in efficiency savings, the potential to offer critical peak period and other time-of-use tariffs and even the possibility of harnessing data for third-party marketing purposes.

"We're investing £1 billion in this," said Chris Lovatt, head of field operations, E.ON UK. "Our head office in Germany regularly asks me why they should spend it on smart meters when we could invest that money in, say, Brazil and see a much greater return. So we owe it to our customers and shareholders that this is done efficiently."

E.ON has created two "centres of excellence," essentially customer service contact centres to hold their customers' hands through the end-to-end experience of smart meters. "We're also creating a field centre of excellence to ensure all our meter technicians are technically skilled," said Lovatt. "They will also go through comprehensive customer service training so they're able to have softer conversations with our customers to explain how the smart meter benefits them."

E.ON is working with charities such as Age UK to ensure smart meters do not leave elderly consumers out on a limb. "Age UK was particularly concerned about the support that customers got post-installation, so we're actually training some of their staff in five different regions across the UK to handle queries."

Initial feedback shows that E.ON's efforts are paying off. "The levels of NPS (Net Promoter Score) are in the high 20s, higher than anywhere else across our portfolio," said Lovatt. "We're feeding some of the knowledge gained from smart meters into our classic environment."



**Lessons learned the hard way**

The message is clear: Consumer engagement should be done prior to the rollout with the technology coming at a later stage, and not the other way round. This was a lesson learned the hard way by Californian utility Pacific Gas and Electric (PG&E), which since 2007 has installed 9.5 million power and gas meters in 6 million households, taking 90 billion meter reading intervals per year.

At peak, it installed 18,700 meters a day with contractors and its internal workforce, equivalent to one every 2.5 seconds. Yet the path of smart metering did not run smoothly. "If we were to start again we would have done things differently," said Jim Meadows, director of PG&E's smart meter program.

"The more you separate out the installation from customer engagement, the more customers are suspicious about the motives behind smart meters. You need to make customers feel part of the bargain from the start. And in order to use the data efficiently

you also need to have your operations center completely functional from the day the first meter is installed," Meadows said.

Ogi Kavazovic, vice-president of marketing and strategy at Opower, says utilities should be thinking about their customer strategy at least a year before the smart meters are installed.

"The cost is probably less than 1 percent of the overall smart grid program costs yet many utilities don't do it because they think consumers will change anyway," he said.

### **The third lesson: Don't be afraid of opt-outs**

Despite their mandatory nature, European law may mean roll-outs are subject to opt-outs.

PG&E believes opt-outs are to be welcomed. "If we learned one thing it's that customers don't like strictly mandatory programs," said Meadows. "They like to know there's an opt-out. In hindsight, we would have offered an opt-out from the start."

E.ON UK says the carrot of energy savings should be sufficient to gain public acceptance, but U.S. utilities also know that wielding a big stick is useful. PG&E has an opt-out rate of just 0.5 percent, helped in part by the imposition of a \$75 up-front fee and a further monthly charge of \$10 per month to cover the expense of manual meter reading.

Opt-out rates in Europe are so far reassuringly small, said Lonneke Driessen-Mutters, head of smart meter operations at Dutch firm Enexis. "We have installed 220,000 smart meters and less than 1 percent has refused. It seems that just having the option to opt out is enough, but we are very vigilant that things will stay that way."

### **The endgame: smart pricing**

Post-installation, some European utilities may not be able to offer smart pricing but even without it there is much to be done with smart meter data, said Opower's Kavazovic. "Home energy reports give insights on consumption data and when customers call they can be given new insights, targeted discounts and coupons based on their data. As well as giving insight into their consumption, we also show the potential savings that could be made on the report," he added.

Opower says its monthly mail energy report is the most effective method to engage consumers, but it also uses e-mail and web portals.

"Engage customers where they are not where you wish they are," said Kavazovic. "In Europe, mobile phone channels look very promising."

For most utilities, the endgame of smart metering is smart pricing. VaasaETT's Lewis says consumers must feel part of the deal for time-of-use tariffs to be successful.

"Customers need to feel they are in control. When they introduced time-of-use pricing in Australia without consumer permission the backlash was so bad they had to stop it. There was a perception that some people were suffering from smart meters. We don't want that to happen in Europe," he said.

PG&E has a peak summer load of 16 GW. Its SmartRate tariff dictates that for 15 days a year a surcharge of \$0.50/kWh is imposed between 14:00-19:00. In exchange, participants get credit for off-peak hours.

"You have some unintended consequences such as at 19:00 demand for air

1:00 PM EST

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conditioning is higher than usual because the higher heat of homes," said Meadows, "But 80 percent of the customers find a way to save money. And we've had a 13 percent critical peak period load reduction."

Dr. Lewis warns that customers must become accustomed to smart pricing. "You can't suddenly shove it upon them and sit on them. There needs to be a fair and transparent link between the sacrifice and the reward, and customers have to explore what those benefits are for themselves directly."

The psychologist sees best practice in Scandinavia where the Finnish utility Fortum has launched a product whereby customers can automatically control their hot water heating linked to the spot power market, Nordic. The heating system is timed throughout the day and is switched on or turned off depending on market prices.

"From the customer point of view it's a profit-sharing scheme", said Lewis. "The utility benefits by getting the customer engaged in sharing market volatility and the customers save by taking advantage of that volatility, rather than suffering from it."

The EU is a big place and there can be no one-size-fits-all solution for a continent of 27 nations and 500 million people but, says Lewis, follow the three golden rules and progress will be less problematic, and less costly.

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