AVISTA CORP.
RESPONSE TO REQUEST FOR INFORMATION

JURISDICTION:	WASHINGTON	DATE PREPARED:	04/30/2016
CASE NO.:	UE-160228 & UG-160229	WITNESS:	Heather Rosentrater
REQUESTER:	Public Counsel/Energy Project	RESPONDER:	Dan Burgess/L. La Bolle
TYPE:	Data Request	DEPT:	State & Federal Regulation
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REQUEST:

With regard to the impact of AMI on energy theft and unbilled usage, provide the current experience of Avista for energy theft and unbilled usage expressed as a percentage of total revenue and provide the basis for Avista's assumptions about the impact of AMI on these current trends for each benefit category.

RESPONSE:

Energy Theft

Cases of energy theft have typically been very difficult for utilities to detect using the limited tools available with conventional metering systems. In Avista's experience, we often detect cases of energy theft, not through our processes of analyzing billing anomalies (primary detection analysis), but through questions raised as part of some other investigation that ultimately leads to a theft investigation. Similarly, other cases of energy theft are identified by chance when a servicemen or meter technician discovers the diversion during the course of unrelated work activities (not related to a suspicion of energy theft). For these reasons, a utility's confirmed cases of energy theft diversion represent only a small percentage of the likely actual occurrence. As an example, Avista's known cases of energy theft for the period 2012 through 2015, expressed as a percent of revenue, were: .0065%; .0068%; .0126%; and .0034%, respectively. Being aware of this problem, Avista began its process of estimating the likely incidence of theft on its system, by reviewing industry-reported theft rates and communicating with utility representatives about their experience and rates of electricity theft. While a percent of revenue loss of 1-3% was the most commonly-reported range among these sources, as summarized in the table below, the reported values ranged from 0.4% to 4%. Among the papers we reviewed, several referred to general industry statistics, while others cited the results of summary studies conducted on this topic. Another group of reports cited the results of specific studies or business cases, while several were reports of individual studies. While Avista did not perceive any evidence of a systematic bias among these reports or studies, we did consider how our Company's circumstances might differ from the reporting utilities in our interpretation of the results (e.g. differences in energy prices, geographic region, and economic conditions). The Company believes that within its Washington service territory a rate of electric theft between 0.25% and 0.50% of revenue is reasonable, with half that rate assumed for natural gas diversion. Avista used the mid-point of the respective ranges to estimate electric and natural gas lost revenues at 0.375% and 0.1875%, respectively.

Considering the issue of persistence of the benefit over the project lifecycle, Avista considered several factors in its decision to expect the estimated level of benefit for each year, as noted below:

- In its review of industry reports, Avista did not find any reports that suggested that the expected revenue savings would decline over time. There were reports, however, that noted energy theft as being on the rise in recent years.
- Some cases of reported theft have been determined to have occurred over long periods of time prior to detection. In these cases, the benefit of detecting them early would be sustained over the period of time that was avoided by their earlier detection.
- In the Company's experience, it is not uncommon for diversion cases to involve repeat offenders.
- New diversion cases arise over time, and this is expected to continue as new and more sophisticated methods of diversion are developed and made widely available via the internet.

Source	Reported Theft (% of Revenue)	Notes
Austin Energy	0.30%	Reported an actual rate of theft and meter tampering of 0.3%
SMUD	0.70%	Conversation with Manager of Corporate Performance who stated their documented theft loss as 0.7%
ELP - Electric Light and Power Article	0.5% to 3%	Reported national study documenting 0.5 to 3 percent of services showed evidence of theft
APS	1.70%	Sample study showed 1.7% of all meters showed signs of tampering with a net loss in revenue of 0.51%
DTE Energy	1% to 3%	Between 1-3 percent
Accenture	2% to 4%	Reported revenue losses between 2 and 4% with up to 80% of the losses attributed to theft
Detectant - Deputizing Data: Using AMI for Revenue Protection	> 1%	Greater than 1% (reported from prior literature)
Metering.com	< 1%	~1%
Idaho Power	< 1%	Conversation with Company representative who reported their experience as less than 1%, that the rate can vary greatly by locale, social acceptance, and crime rate, which is generally low (crime) in their service area
MeteringAmerica.com	1%	~1% - Reported return on investment for theft investigation as 4:1 (benefit/cost)
SAP	>1%	>1%
SDG&E	1% to 2%	1-2%
CP&L	0.40%	0.40%
UAI		Recent article noting theft detection is commonly the first data analytics initiative undertaken with AMI deployments
CenterPoint Energy	1%	Conversation with Senior Director of Electricity Market Operations for CenterPoint (5 million electric and gas customers) reporting their rate of theft at approximately 1% of total electric load, and about 2% of the electricity provided to the residential and small commercial sector

Estimates of Unbilled Revenues

With the remote service switch capabilities, meters not assigned to an active account will be disabled, or if unassigned usage does occur, the meter will send an alert to our customer service representatives, who will properly assign the account or disable the service.

Source	2010	2011	2012	2013	2014	Average	Revenues Unbilled
Electric Usage (kWh)	1,043,857	1,033,208	967,187	1,045,757	957,807	1,009,563	$91,497
Unbilled Accts	4,046	4,114	3,613	3,315	3,140	3,646	
Gas Usage (therms)	50,798	63,607	45,886	47,538	46,644	50,895	$45,678
Unbilled Accts	1,963	2,006	1,766	1,698	1,481	1,783	

Excluded all electric accounts with usage over 90,000 and gas accounts with usage greater than 9,000

Percent of revenues for the average unbilled revenue is estimated to be 0.02%.