

PUC 9-41

Request:

In National Grid's response to Division 8-12 in Docket No. 4770 (Division 2-12 in Docket No. 4780), National Grid describes the undepreciated costs associated with existing meters that are replaced by AMI meters as "sunk costs and, therefore, should not be factored into the benefit-cost analysis." For simplicity, assume book life is equal to useful life, and meters are replaced when they are fully depreciated.

Regarding costs, in both the case that AMI are installed, and the case they are not installed, customers cannot avoid paying the undepreciated cost for the existing meters, and in that sense the undepreciated cost for the meters appear to be sunk costs, and thus should not be included as a cost category of the benefit-cost analysis.

Turning to benefits, if AMI are installed, customers will lose the value of the remaining metering life of the existing meters. However, if AMI are not installed, customers will get to use the remaining metering life of the existing meters—thus customers can avoid losing the value of the remaining metering life. Please explain why the different outcomes related to this (negative) benefit category (i.e., the remaining value to customers in existing meters) is not considered in National Grid's cost-benefit analysis.

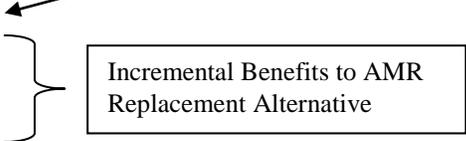
Response:

There is a fundamental conceptual issue embedded in this question. This issue centers on whether the undepreciated plant balances that will exist at the time that a transition is made from an *existing* metering system to a *new* metering system should be accounted for in the cost-benefit analysis supporting the implementation of the new metering system. The question defines the meter-related undepreciated plant balances as a "negative benefit", meaning that the relinquishment of the remaining metering life of existing metering equipment suggests a loss of value to customers. The Company does not agree with this proposition because the value of AMR is accounted for in the Company's analysis.

First, it is important to note that, whether viewed as a "cost" or "negative benefit," the impact to customers of retiring AMR meters prior to being fully depreciated is accounted for within the context of the Company's cost-benefit analysis in the same way. That is, the Company's analysis factors in the cost of the AMI system replacing those AMR meters, plus the incremental benefits of AMI in providing the metering functionality originally provided by AMR. Counting the cost of AMI, as it replaces AMR, captures the "negative" benefit of not utilizing AMR meters for their entire useful life.

A simplified illustration of this approach is provided below. The AMF benefit-cost analysis (BCA) computes the present value of the incremental net benefits of the AMI implementation scenario as compared to the AMR replacement scenario over a 20-year study period beginning in fiscal year 2020. The AMR replacement scenario assumes the electric AMR meters are replaced when they reach the end of their 20-year useful life. Because the AMI alternative provides all of the benefits that the AMR replacement scenario provides over the 20-year term of the analysis, there is no loss of AMR driven benefits between the two scenarios.

Simplified BCA Illustration
Rhode Island Only Implementation with Scenario 4 Benefits (NPV, \$million)

	<u>AMI Alternative</u>		<u>AMR Replacement Alternative</u>
Costs:	\$259.75	Costs:	\$66.49
Benefits:			
Avoided AMR	\$66.49	 <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Incremental Benefits to AMR Replacement Alternative</div>	
Avoided O&M	\$52.64		
Customer	\$162.02		
Societal	<u>\$47.50</u>		
Total Benefits	\$328.65		
Benefits less Costs	\$68.90		<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Incremental Value as Compared to AMR Replacement Scenario</div>

In addition, it cannot be overlooked that costs and benefits attach to the use of *both* metering systems that are completely independent of each other. For example, at the time that AMR was implemented, the equipment was purchased and installed at a cost. Once installed, the equipment had the effect of automating the meter-reading function, replacing field organizations that utilities historically maintained to perform premises-by-premises, manual meter-reading services, which required the hiring, training, and management of a large field staff among other cost components. With the introduction of AMR, *all* utility customers realized significant savings associated with the efficiencies of automation, which eliminated the need for a meter reader to manually read the meters on every customer premises with frequency.

Consequently, there are costs and benefits associated with the AMR equipment that are entirely independent from the AMI metering system. The BCA analysis shows that there would be no “loss in value” to customers inherently created by the transition to AMI. Thus, any undepreciated plant balance remaining on the Company’s books at the time of transition to AMI is accounted for within the BCA and, at the same time, represents the remainder of the prior metering system, which had its own costs and benefits.

With the implementation of new technology, it is necessary to have the expectation that the technology, regardless of how “cutting edge” it may be at the time it is implemented, will be supplanted in the future by newer technology that will have its own costs and benefits in relation to going-forward deployment. A transition to AMI cannot occur without an understanding that, to achieve the goals identified for the implementation of AMI, it is necessary to make a jump from AMR to AMI at a point in time that will not necessarily correlate with the end of the useful life of the entire population of AMR meters. Because it is not physically possible to make a clean cutover to an AMI system, with an AMI meter installed exactly at the point that each AMR meter reaches the end of its useful life, undepreciated balances for the AMR meters will exist.

Undepreciated balances associated with AMR meters represent a “cost” to customers because the Company has paid for those meters and should not lose its recovery simply because a decision is made to change the platform used by the Company to provide service to customers. However, the recovery of these costs from customers is not improper or inequitable because the entire customer base has benefitted over a long period of time from the significant operating cost reductions gained through the implementation of AMR – and will benefit over a long period of time into the future with the functionality added by AMI. Therefore, the need to address these costs should not hinder the transition to new technology that will ultimately transform the way that customers take service from the Company.

(This response is identical to the Company's response to PUC 1-17 in Docket No. 4780.)