

legislation for acting to reduce energy consumption and peak electricity demand in Pennsylvania is to allow utilities to pass on the cost of production and energy efficiency investments to customers. The average price for electricity in Pennsylvania has increased by 10% in the last 10 years, with the largest increases needed during peak periods. Smart meters could help reduce peak demand during an hour peak clearing price, not necessarily lower the price paid to all generation facilities for around the clock energy reduction in peak demand. Smart meters can be a highly leveraged efficiency

Smart Meters Make Smart Customers

Unless customers know and are charged prices related to wholesale prices, they will not lower peak demand. Smart meters tell customers the real time price (RTP) and allow them to make informed decisions about usage. However, smart meters are sufficiently expensive that requiring that all meters be replaced will not benefit Pennsylvania customers.

Smart meters could have many benefits in addition to reducing peak load, if the meters are selected carefully and implemented with the right technology. We outline here several suggested changes to the advanced metering portions of HB 2200 and 2201 based on our analysis of the issues [3-5].

Not All Customers Need to Have Smart Meters

Considering the cost of smart meters and the likely reaction of customers, those whose savings exceed the cost of the meters are the ones who demand more than 2 kW in peak load (at the time peak system load occurs). Thus smart meters make sense for commercial, industrial, and large residential customers. Although these big customers above 2 kW comprise only 40% of all customers, they represent 80% of total peak load. For the large numbers of smaller customers, replacing their existing meters is more costly than the savings.

In particular, commercial and industrial users have 10% of the meters but 64% of the load. If only 500,000 meters were installed, we estimate the net savings would be \$350 million annually.

We recommend that the utilities be directed to focus on installing smart meters for 40% of peak load within 4 years, 80% within 6 years, and the remainder only when the current meters have to be replaced¹. This change will not only generate the greatest benefits quickly, it will benefit nearly all customers, including the smallest ones, by lowering the cost of generating electricity and so lowering all bills. Universal installation of smart meters would cost Pennsylvania hundreds of millions of dollars with no appreciable gain for 60% of the expenditure.

¹ The draft bills' provisions are for 40% of peak load in 4 years, 75% in 6 years, and 100% in 10 years.

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Price Reductions Will be Small in the Near Term

Customers will benefit from time varying rates that are high during peak hours and low during off-peak hours because they will be able to shift electricity use that is no

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