

ORDER NO. 81637

IN THE MATTER OF THE *
COMMISSION'S INVESTIGATION OF *
ADVANCED METERING TECHNICAL *
STANDARDS, DEMAND SIDE *
MANAGEMENT COST EFFECTIVENESS *
TESTS, DEMAND SIDE MANAGEMENT *
COMPETITIVE NEUTRALITY, AND *
RECOVERY OF COSTS OF ADVANCED *
METERS AND DEMAND SIDE *
MANAGEMENT PROGRAMS *

BEFORE THE
PUBLIC SERVICE COMMISSION
OF MARYLAND

Case No. 9111

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In Order No. 81148, the Public Service Commission of Maryland ("Commission") established a collaborative process (the "AMI/DSM Collaborative") to consider a series of issues bearing on the scope and parameters of advanced metering initiatives ("AMI") and demand side management programs ("DSM").¹ In this Order, the Commission establishes those parameters and directs all electric companies to develop and file comprehensive energy efficiency, conservation and demand reduction plans proposing programs designed to achieve usage reductions goals in total electric consumption for each electric company by calendar year 2015. Order No. 81148 identified four issues, and this Order answers three of them: it establishes standards for AMI programs, assigns to each Maryland electric

¹ See Order No. 81148. The Commission directed Baltimore Gas and Electric Company ("BGE"), Potomac Electric Power Company ("Pepco"), Delmarva Power & Light Company ("Delmarva"), Choptank Electric Cooperative ("Choptank"), Potomac Edison Company d/b/a Allegheny Power ("Allegheny Power"), Southern Maryland Electric Cooperative ("SMECO"), and the Technical Staff of the Commission ("Staff") to participate in the AMI/DSM Collaborative and invited participation in the AMI/DSM Collaborative from the Office of People's Counsel ("OPC"), other interested State agencies, electricity suppliers, providers of advanced metering and DSM equipment and services, environmental and public interest groups, and consumer organizations. The Commission further directed the AMI/DSM Collaborative participants to consider four issues pertaining to advanced metering initiatives and demand side management programs and to submit a report no later than July 6, 2007 that included recommendations on those items. A report was filed with the Commission on July 6, 2007, but because the participants were not able to reach a consensus on all of four items, participants filed individual comments on the report on July 6, 2007 and reply comments on July 20, 2007.

company its proportionate share of the electric usage savings necessary to achieve the statewide reductions objectives of the EmPower Maryland program, and defines the appropriate method of cost recovery for the companies to follow in designing these programs.

The parameters and objectives we define in this Order set aggressive consumption reduction targets. EmPower Maryland, a program announced by Governor Martin O'Malley on July 2, 2007,² envisions a statewide fifteen percent reduction in total electric usage on a per capita basis by 2015. Although this is an ambitious goal, the benefits of conservation and demand reduction – reduced customer bills, improved service reliability and reduced greenhouse gas and other emissions – are undeniable. The record in this proceeding and the Commission's Public Conference Nine³ ("PC9") strongly support the benefits associated with reductions in statewide electric consumption and demand.

Initial estimates suggest that the EmPower Maryland goal may not be achievable solely through implementation of demand side management programs. We anticipate that achieving the EmPower Maryland goal will require programs initiated and overseen by entities other than the Commission, and that the individual actions of customers (particularly larger commercial and industrial customers), such as direct customer participation in PJM interconnection programs or through services offered by retail electric and curtailment service providers will be necessary as well. Nevertheless, a substantial portion of the goals must be obtained from energy efficiency, conservation and demand reduction programs developed by the electric companies. As such, the electric companies must develop programs that are designed to meet specific usage reduction targets to ensure that the programs provide a significant contribution to the statewide reduction goals. We also recognize, however, that the extent of energy savings required to meet the EmPower Maryland goal depends on forecasts for energy usage in 2015, and that consumption forecasts vary.

² Press Release, *Governor O'Malley Announces New Energy Efficiency Goals for State Government (Governor Launches "EmPower Maryland" Initiative)*, July 2, 2007. The goal for the EmPower Maryland initiative seeks to achieve a 15% per capita reduction statewide electric consumption for all uses by 2015 as compared to usage in 2007.

³ *In The Matter Of The Commission's Maryland Electricity Planning Conference*, July 26-27, 2007

Electric Company Plans to Achieve Statewide Reductions in Electric Consumption and Peak Demand

Accordingly, all electric companies are directed to develop and file energy efficiency, conservation and demand reduction plans (“Plans”) proposing programs and initiatives designed to achieve the applicable reductions in total electric consumption for each utility by calendar year 2015 and the demand reductions discussed below. The investor-owned electric companies shall file their Plans on or before October 26, 2007. All other electric companies shall file their Plans on or before January 11, 2008. The Commission welcomes Plans that consolidate the efforts and programs of multiple electric companies and encourages all electric companies to maximize program uniformity statewide.

Electric company Plans shall propose interim usage reduction goals for 2009, 2011 and 2013 that lead to the 2015 goal, which is listed for each company on Attachment 1. To the extent that electric companies propose a planning horizon that extends beyond 2015, zero growth in per-capita consumption should be assumed beyond 2015. To assist the Commission in evaluating the relative cost effectiveness of different magnitudes of conservation and energy efficiency efforts, and recognizing that consumption forecasts vary, Attachment 1 includes targets representing (a) 25% and 50% of the EmPower Maryland goal based on a “Base Case” of growth projections derived from the Power Plant Research Program of the Department of Natural Resources, and (b) 50% of an EmPower Maryland goal based on a “High Case” of growth projections derived from the Commission’s own 10-Year Plan projections. Attachment 1 does not include targets on a customer class-specific basis, but electric company Plans shall address the issue of usage reductions to be achieved from the various customer classes through electric company programs and the company’s assumptions about usage reductions that are likely to be achieved outside of electric company programs.

The record in this proceeding and PC9 highlight the cost savings and reliability benefits of reducing peak electric demand within the state, as compared to current forecasts for growth in peak demand. In particular, PC9 demonstrated the importance of achieving

the maximum cost effective reductions in peak demand on or before June 2011.⁴ Plans shall include aggressive proposals to reduce the electric company's total peak demand to the maximum extent that is cost effective on or before June 2011.⁵ While June 2011 should have a heightened focus, Plans should also propose cost effective demand reduction measures to go into effect as soon as possible prior to 2011, and plans should continue aggressive control of peak demand through at least 2015. The record in PC9 provided a variety of viewpoints on the extent to which customer participation would be optional in various demand side efforts (and the cost recovery for those efforts). The Commission recognizes that some demand side measures (for example, time of use rates) were mandatory prior to electric restructuring and that some demand side measures (for example, time of use or critical peak based pricing for standard offer service) may need to be mandatory again to achieve the usage and demand reduction goals in this Order. Plans should address the relative costs, benefits and other issues related to mandatory participation or cost recovery as appropriate.

Technical standards for, and operational capacities of, advanced meters.

The Commission recognizes that the majority of benefit from AMI, which enables next generation demand response technologies with significant demand and energy saving potential, is likely to be in operational and distribution-related savings for the utilities. Of course, we also recognize that the peak load reductions occasioned by AMI and an appropriate rate structure will provide significant benefits in terms of maintaining reliable service, as well as reductions in capacity and energy costs. The parties that participated in the Collaborative also emphasized the benefits of uniform AMI standards for retail electric and curtailment service suppliers. The Commission agrees that a statewide standard of the minimum technical standards and operational capacity of the advanced meters will

⁴ Based on the record in PC9, the Commission has concerns as to whether approved transmission lines projects that will alleviate projected overload situations in Maryland will meet their current projected construction completion dates in 2011 and/or 2012. In the event that one or all of the projects should be delayed, it appears that in June 2011, the forecasted peak demand for Maryland may exceed the supply of electricity that could be imported over the existing transmission lines into Maryland. Consequently, adequate and reliable supply of electricity to Maryland customer may be at risk as early as 2011 unless other measures are initiated to reduce the demand by Maryland customers prior to 2011.

⁵ For the purposes of this Order, peak demand is the demand imposed by all electric companies on the transmission system and wholesale level supply resources. Consequently, Plans should include cost effective distributed generation/supply resources as well as measures that reduce customer usage at the time of system peak demand.

maximize the benefits AMI could afford both to electric companies and consumers. To the extent that Plans rely on the implementation of AMI to achieve usage and peak demand reductions, then, the following minimum requirements shall be assumed in the electric company's proposals to implement an AMI system:

- A minimum of hourly meter reads delivered one time per day.
- Non-discriminatory access for retail electric suppliers and curtailment service providers to meter data and demand response control functions that is equivalent to the electric company's own access to those functions.
- AMI shall be implemented for all customers of the electric company.
- Metering and meter data management should generally continue to be an electric company function including the implementation of AMI/MDM. Metering and data management options may be considered for larger non-residential customers (this does not exclude any customer from a requirement that their AMI shall at a minimum be fully consistent with all AMI standards). For example, if an industrial or commercial customer (and its retail supplier or CSP) requires more frequent meter reads or downloads, the utility shall work in good faith to accommodate such requirements.
- All AMI meters shall have the ability to monitor voltage at each meter and report the data in a manner that allows the utility to react to the information.
- All meters shall have remote programming capability.
- All meters shall be capable of two-way communications.
- Remote disconnect / reconnect for all meters rated at or below 200 amps.
- Time-stamp capability for all AMI meters.
- All meters shall have a minimum of 14 days of data storage capability on the meter.
- All meters shall communicate outages and restorations.
- All meters shall be net metering and bi-directional metering capable.

In the event that a utility proposes capabilities that go beyond this list, the utility must clearly and adequately support the cost-effectiveness of such capability in its application for approval of the AMI system submitted to the Commission.

Additionally, to the extent that Plans rely on the implementation of AMI to achieve usage and peak demand reductions, Plans shall address the relative cost-effectiveness (and significance in terms of maintaining reliable service) of alternatives to AMI-based measures. Alternatives to be discussed shall include (but are not limited to): programmable

thermostats as an interim conservation measure prior to AMI installation, residential in-home energy use displays as an interim conservation measure prior to AMI installation, and “traditional” direct load for central AC and electric water heating (either similar to the approach used since the 1980’s or updated to use a non-AMI based smart thermostat). To the extent an electric company’s AMI implementation schedule delays AMI enabled benefits beyond June 2011, Plans shall thoroughly discuss any cost and other implementation issues that the electric company believes justifies the delay in AMI enabled benefits beyond June 2011.

Recovery of costs of demand side management programs

The Collaborative Report recommended that the traditional cost recovery mechanism used previously for Maryland demand side programs apply to new programs developed by the electric companies in the context of this docket. Specifically, the Collaborative recommended that:

- Expenses associated with conservation and energy efficiency programs should be amortized over a five-year period.
- Capital investments should be amortized over a period that represents the useful life of the investment.
- Program costs should be appropriately allocated to rate classes based on their eligibility to participate in each program and the benefits they derive from programs.
- Annual carrying costs of any unrecovered expenditures should be equal to the company’s approved rate of return.
- Cost recovery should be in the form of a distribution rate surcharge similar to mechanisms that existed in the 1990s from many utilities in Maryland.
- Plans are not precluded from proposing incentive mechanisms, however parties have the opportunity to take any position they believe is appropriate on proposed incentives.

The Commission accepts the recommendations, and adopts the methodology for calculation of a DSM surcharge. The surcharge amount will be established by an annual DSM surcharge filing by each electric company, subject to Commission approval based on the level of forecasted expenditures for the next program year and

any required “true-up” adjustments for over or under collections from the prior year. The filing will be reviewed by Staff, made available for public review, and considered at an administrative meeting for Commission action on the filing, including the possibility of designating the matter as a case and delegating it to the Hearing Examiner Division for review. The Collaborative Report did not recommend a particular cost recovery mechanism for AMI, and the Commission is not ordering any particular AMI cost recovery mechanism at this time.

The appropriate measure(s) of cost effectiveness of demand side management programs to be employed in the State.

The AMI/DSM Collaborative Report recommended the Societal Test as the primary cost-effectiveness measure for conservation and energy efficiency programs rather than the Total Resource Cost Test (or All Ratepayers Test) the Commission adopted in earlier cases.⁶ The Societal Test, similar to the All Ratepayers Test, measures the total net resource expenditures of a DSM program from the point of view of the utility and its ratepayers, but also accounts for the effects of externalities such as reductions in carbon dioxide, nitrogen oxides, and sulfur dioxide. The Collaborative Report noted that The Rate Impact Measure, Participant and Utility/Program administrator tests should also be considered to minimize potential program equity problems and as program design guides. The Collaborative did not reach agreement on the appropriate cost effectiveness test for AMI programs, although some Parties’ Comments and Reply Comments recommended the use of the same cost effectiveness test for AMI as for other demand side measures.

In order to recognize properly the full range of benefits and costs for all demand side programs, the Commission directs the parties to utilize four cost-effective methodologies – the Societal Test, the All Ratepayers Test, the Rate Impact Measure and the Participant Test – in determining and articulating the cost-effectiveness of their proposals. The Commission will consider and weigh all of these methodologies as it analyzes the companies’ proposed Plans.

The Commission hereby adopts the following procedural schedule for this proceeding:

Any Person, Not Already a Party to the Proceeding, Who Seeks to Intervene in the Proceeding	October 12, 2007
Investor-Owned Utilities' Plans	October 26, 2007
Comments on the Investor-Owned Utilities' Plans	November 2, 2007
Hearings	November 8-9, 2007
All Other Electric Companies' Plans	January 11, 2008

The hearings will be held in the Commission's 16th Floor Hearing Room, William Donald Schaefer Tower, 6 St. Paul Street, Baltimore, Maryland, beginning at 9:30 a.m. "Parties are reminded that the Commission requires an original and 16 copies, and an electronic version, of all filings. The Commission encourages persons to use the Commission's "e-Filing" System, for the electronic filing. Details of the "e-Filing" System are found on the Commission's web site, www.psc.state.md.us.

IT IS, THEREFORE, this 28th day of September, Two Thousand and Seven, by the Public Service Commission of Maryland,

ORDERED: Electric companies shall develop and file comprehensive energy efficiency, conservation and demand reduction Plans consistent with this Order.

By Direction of the Commission,

Donald P. Eveleth
Deputy Executive Secretary

⁶ *Re Potomac Electric Power Company*, 80 MD PSC 544 (1989).

EmPower Maryland Statewide Electric Usage Reduction Goal

	<u>Base Case</u>	<u>High Case</u>
1. Projected Maryland total 2007 retail energy usage ¹ :	69,397 GWH	69,886 GWH
2. Projected Maryland 2007 population ² :	5,722,510	5,722,510
3. Per capita 2007 Maryland retail energy usage (line 1 / line2):	12,127 KWH	12,215 KWH
4. 2007 per capita usage reduced by 15% EmPower MD goal (line3 x 85%):	10,308 KWH	10,381 KWH
5. Projected Maryland 2015 population ³ :	6,208,392	6,208,392
6. EmPower MD 2015 usage goal (line 4 x line 5):	63,996 GWH	64,446 GWH
7. Projected Maryland total 2015 retail energy usage without EmPower MD ⁴ :	72,620 GWH	82,432 GWH
8. EmPower MD 2015 statewide usage reduction goal (line 7 – line 6):	8,624 GWH	17,986 GWH
9. 50% of EmPower MD goal for electric company programs:	4,312 GWH	8,993 GWH
10. 25% of EmPower MD goal to be cost effectiveness evaluated in Plans:	2,156 GWH	N/A

Electric Company Usage Reduction Goals, 50% and 25% of Base Case and 50% of High Case

Electric Company	2005 Retail Sales (GWH) ⁵	Share of MD Total Sales	50% EmPower MD 2015 Goal (GWH)	25% EmPower MD 2015 Goal (GWH)	High Forecast 50% 2015 Goal (GWH)
A&N Electric Cooperative ⁶	3	0.0045%	0.20	0.10	0.41
Town of Berlin	41	0.0621%	2.68	1.34	5.59
Baltimore Gas and Electric	33,312	50.4750%	2,176.48	1,088.24	4,539.22
Choptank Electric Cooperative	871	1.3198%	56.91	28.45	118.69
Delmarva Power and Light	4,701	7.1231%	307.15	153.57	640.58
Easton Utilities Commission	270	0.4091%	17.64	8.82	36.79
Hagerstown Municipal Electric	362	0.5485%	23.65	11.83	49.33
Potomac Edison Company ⁷	7,156	10.8429%	467.55	233.77	975.10
Potomac Electric Power Co.	15,771	23.8965%	1,030.42	515.21	2,149.02
Southern Maryland Electric Coop.	3,396	5.1457%	221.88	110.94	462.75
Sommerset Rural Electric Coop.	7	0.0106%	0.46	0.23	0.95
Thurmont Municipal Light	87	0.1318%	5.68	2.84	11.85
Town of Williamsport	20	0.0303%	1.31	0.65	2.73
Total	65,997	100%	4,312	2,156	8,993

¹ Department of Natural Resources, Power Plant Research Program (“PPRP”) PC-9 Presentation, Slide A-2, extrapolation for 2007

² U.S. Census Bureau, Population Division, Interim State Population Projections, 2005.

³ Ibid.

⁴ Department of Natural Resources, Power Plant Research Program PC-9 Presentation, Slide A-2, extrapolation for 2015

⁵ Ten Year Plan, December 2006, Table A-3.

⁶ Data from December 1999 Ten Year Plan is most recent data provided by A&N.

⁷ Sales reduced to remove Eastalco usage based on estimates in “Forecasted Electric Energy Consumption and Peak Demands for Maryland,” December 2006, Prepared for PPRP, Table 4.3 and Table Appendix B.1