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July 25, 2014

VIA E-Filing and U.S. Mail

Dr. Burl Haar
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101-2147

RE: In the Matter of SMMPA's 2014-2028 Integrated Resource Plan
Docket No. ET9/RP-13-1104

Dear Dr. Haar:

Enclosed for filing is SMMPA's reply comments to the Comments of the Minnesota Department of Commerce, Division of Energy Resources, in regard to the above referenced docket.

This reply is being submitted electronically and copies are being served to the attached service list. Please contact me at 507.292.6440 or by email at lw.johnston@smmpa.org if you have any questions regarding this filing.

Regards,

Larry W. Johnston
Dir. of Corporate Development, Agency Relations and
Officer of Legislative & Regulatory Affairs

LWJ:nw:2k14013
enclosures
cc: Service List

STATE OF MINNESOTA
BEFORE THE PUBLIC UTILITIES COMMISSION

Beverly Jones Heydinger	Chair
David C. Boyd	Commissioner
Nancy Lange	Commissioner
Betsy Wergin	Commissioner
Dan Lipschultz	Commissioner

In the Matter of SMMPA's
2014 – 2028 Integrated Resource Plan

Docket No. ET9/RP-13-1104

A. OVERVIEW OF THE FILING

This filing represents Southern Minnesota Municipal Power Agency's (SMMPA) reply comments to the comments of the Minnesota Department of Commerce, Division of Energy Services with respect to the above referenced docket – SMMPA's 2014 – 2028 Integrated Resource Plan (IRP).

B. BACKGROUND

The primary goal of the Department's review of SMMPA's current filing, as stated by the Department, was to ensure that the Agency plans to procure enough resources to ensure that its [SMMPA's] system remains reliable. The Department states that maintaining reliability is important not just for SMMPA's customers, but for all of the region.

The Department reviewed and reached a conclusion that SMMPA's overall approach in developing its IRP was analytically sound and presented logically. Specifically the Department reviewed and concluded:

a. SMMPA's forecast – The Department notes, *"The statistical model, input data, and the econometric models used are all reasonable."*

b. SMMPA's estimate of its future needs – The Department notes, *"SMMPA [has] updated the capacity accreditation for all generation resources to reflect [the] MISO UCAP process... [and] SMMPA assumed a reserve requirement of 9.3% to allow for unforeseen changes in the MISO reserve requirement...over time. The Department agrees that this approach is reasonable, given current risks and uncertainty."*

c. Whether SMMPA's proposed plan would provide a reliable system, the Department notes, *"The Department agrees that this approach is reasonable, given current risks and uncertainty."*

d. SMMPA's DSM planning - The Department notes, *"The Department believes that the DSM Market potential study is reasonable."* The Department notes, *"SMMPA should be commended for its historical DSM achievements and the DSM potential study it undertook to inform this IRP."* The Department also notes that, *"...the Department has often seen that utilities can save higher amounts than DSM potential studies indicated."* The Department supports a DSM energy savings goal of at least 1.5% and suggests SMMPA adjust its IRP to reflect the 1.5% or "full DSM" scenario.

e. SMMPA's compliance with the Minnesota Renewable Energy Standard (RES) - The Department notes that, "SMMPA has registered its renewable generation facilities in M-RETS..." and *"With the unretired REC balance, SMMPA has sufficient renewable generation to meet its RES requirements through 2022"*, and *"The Department concludes that with its proposed wind additions, SMMPA will have sufficient renewable resources to meet its RES obligations through the planning period."*

f. SMMPA's progress in meeting Minnesota's greenhouse gas reduction goal - The Department references SMMPA's willingness to work on methodologies to best reflect greenhouse gas reductions. While how to best assess achievement of utility greenhouse gas reductions has not been finalized, the Department notes *"the Agency will not be meeting the State's CO2 reduction goal of 15 percent in 2015 and 30 percent in 2030."*

C. SMMPA ASSESSMENT

While the Department recommends acceptance of the Agency's Integrated Resource Plan, it has made the following observations, requests and recommendations regarding the plan.

- Utility System Peak vs. MISO Peak
  The Department has been assessing what peak Minnesota utilities should utilize in their system planning – the utility's system peak or system requirements at the time of the MISO Peak. To assist with that assessment the Department has requested that SMMPA provide two additional calculations illustrating annual capacity requirements with a lower reserve requirement using the MISO-coincident peak and a calculation of annual capacity requirements at the time of SMMPA's system peak. After further consultation with Department staff, the Department and SMMPA have concluded that no additional analysis is required. A discussion of the issues and resolution can be found in Section D, SMMPA CAPACITY REQUIREMENTS - MISO ALTERNATIVES, of this reply.

- Demand Side Management
  The Department stated that it believes that SMMPA's "...DSM market potential study is reasonable." However, they also commented that "...the Department has often seen that utilities can save higher amounts than DSM potential studies indicate." As a consequence, the Department recommends the Commission accept SMMPA's 2014-2028 IRP, but that SMMPA adjust its IRP so that it shows annual energy savings of approximately 1.5% of retail sales. Throughout the Department's review of the Technical Potential Study, while they commend SMMPA for their technical potential study, there seems to be a theme that the chosen base case (savings averaging 1.29% over

the 15 year study period) should not be the accepted base case because SMMPA would be "setting its sights or targets too low." SMMPA respectfully submits the following for the Department's and Commission's consideration.

- The new technical potential study was not developed to set a target or goal for SMMPA member CIP programming. That goal is established as a part of the CIP statute. The technical potential study was completed to provide and inform regarding what were to be likely outcomes of continued aggressive efforts. The technical potential study is not intended to seek a lower statutory goal for SMMPA members.

- SMMPA's strong performance beyond the 1.5% goal from 2010 to present is

SMMPA Member Recent CIP Performance			
2010	**2011**	**2012**	**2013**
1.70%	1.64%	1.70%	2.08%

  viewed by many as an indicator of future performance. But strong historic performance is not necessarily an indicator of future performance or success. In fact, it may mean just the opposite. Continued strong performance does not create technical potential, and may simply be an indicator of higher adoption rates and "eat-into" or reduce future potential. For example, there are only so many high-efficiency clothes washers that can be installed in our member service territories. Replacing one today simply means it will be many years into the future before there is the potential to replace it again.

- SMMPA remains committed to efficiency as a least cost resource. SMMPA has developed a comprehensive array of efficiency options for which it has been recognized by the U.S. Environmental Protection Agency (EPA) and Department of Energy (DOE) with three Energy Star® Awards. SMMPA has also been recognized by the EPA as one of a handful of utilities in the U.S. for its Commercial Food Service Efficiency Program.

- SMMPA does concur that utility initiatives may achieve more savings than a technical potential study might indicate. SMMPA has never curtailed program year offerings if the savings goal of 1.5% is reached, as is demonstrated by the program performance listed above. In evaluating our past program performance, the Department only has four years of program data to evaluate. Whether or not levels at or above the statutory goal of 1.5% are sustainable, (over a long planning horizon like the 15 years in the IRP), remains to be seen. Some years are likely to exceed the goal while other years may fall shy. A procedure for crediting savings during those years where the goal is exceeded, to those years where the goal is not met, remains to be developed. SMMPA looks forward to working with the Department on this process.

- How savings are accounted for also has a significant impact on whether or not goals are achieved. SMMPA's base case forecasts average savings over the planning horizon of 1.29%. Currently the Department limits behavioral program savings by prescribing a three year useful life and requiring that only one-third of the annual savings are counted. SMMPA has three member utilities which operate the OPower program and 14 members which operate a similar behavioral program developed by Enerlyte. SMMPA is required to complete measurement and evaluation on Enerlyte program savings, but then *only one third of measured savings can be claimed.* In table VII-17 of the IRP, we illustrate forecasted annual incremental savings over the planning horizon. *If the full annual incremental savings were to be counted over the planning horizon from our forecasted behavioral programs, savings in the base case would average 1.49%.* SMMPA recognizes that behavioral programs are a relatively new program offering across the country and that both regulators and utilities are engaged in developing the most appropriate ways to account for those program savings as part of an overall portfolio. SMMPA has been following the research in this area and would welcome the opportunity to work with the Department on measurement and crediting approaches and solutions.

- Both the base case and the 1.5% "full CIP" scenario includes forecasted savings attributable to known/planned codes and standard improvements. SMMPA is part of the SB 2030 Advisory Team and is supportive of efforts to improve codes and standards. While improving codes and standards is positive, it does often "crowd out" the ability of utilities to utilize rebate programs to drive increased savings. As a result, savings will accrue in the utility service territory, but as they are no longer a function of rebates, there will be no mechanism to report and credit these savings to the utility. However, identifying such savings is critical to the planning process. If such changes are not recognized, forecasted loads will be higher and utilities would plan to serve that load by building redundant generation. While the savings would accrue to customers and Minnesota would receive the environmental benefits, a methodology needs to be developed so utilities would receive appropriate attribution. SMMPA would welcome the opportunity to participate with the Department in developing procedures for that attribution.

- In the Department's recommendation that SMMPA should adjust its savings from the base case to the 1.5% scenario case, the Department additionally points out that the 1.5% scenario is actually a lower cost plan than the base case. SMMPA does not dispute those figures, and as stated previously, SMMPA recognizes that the more cost-effective DSM its members are able to obtain, the lower overall cost of that alternative. By illustrating the costs associated with the forecast scenario, we intended to raise several points:
    - To simulate the 1.5% savings scenario, we increased the upper bounds of the coefficients for customer awareness and willingness, recalibrated the model to higher savings in all market segments than we have experienced in recent periods and increased the incentive levels.

- Almost anything can be assumed in a model. The pragmatic question becomes can we conduct programing that will push our savings even higher than the base case results of our technical potential study over a 15 year period? We can increase incentives, but can we create a marketing program that significantly increases awareness and willingness to participate? What if our high historic savings are already the result of our existing sophisticated database marketing efforts?

- Spending more money provides a possibility for more savings, but it provides no guarantee the savings will be realized. We point out that if this even more aggressive scenario could be realized, the net present value between the two plans at the end of 15 years is 2.8% less expensive than the base case, a very small difference over 15 years. The real question is whether or not such aggressive savings levels can be sustained for 15 years into the future. If the savings do not materialize, the plan would not be at a lower cost. More importantly, reliability could suffer.

Again, perhaps to remove any confusion, SMMPA recognizes the statutory goal of its member utilities of 1.5%, as reported annually in CIP filings. The objective of the technical potential study was not an effort to lower our goal, but rather to determine our likely achievable savings and ensure reliability. We have been recognized in the past for our leadership in program design, and we will continue to strive in meeting or exceeding the goal as we have in the past.

As the Department indicates, the primary purpose of the IRP is not only to assist in the reliability of the specific utility, but the reliability of the region. Ensuring that reliability is done amidst a backdrop of allied objectives – meeting renewable energy standards, achieving efficiency goals, diversifying our resource mix, reducing greenhouse gas emissions, and ensuring transmission deliverability at minimum cost. In long term planning, the best estimates of integrating these objectives are considered. Most difficult amongst those is estimating DSM impacts. While conservation resources are the most cost effective, it is difficult to predict when they will actually occur. They are subject to much greater variability than constructing wind turbines, transmission, natural gas or solar generation, because efficiency resources require the additional willingness and commitment of the retail customer base.

Since 2010, Minnesota has embarked on one of the most aggressive conservation initiatives in the country. As described, SMMPA and its members have aggressively designed and implemented programming that have, thus far, exceeded state goals. The Department and Commission recommended that SMMPA conduct a new technical potential study to help guide our decision making. The results of that study are a base case that suggest achievable savings shy of the 1.5% goal and a higher simulation that attempts to push adoptions higher than our current aggressive programs. Ultimately, the question is, can the

retail customer's appetite sustain such aggressive utility efforts over a 15 year horizon?

The IRP provides SMMPA a generalized road map to follow in an effort to provide a least cost combination of reliable resources. When evaluating specific project opportunities; whether that be new wind, solar, natural gas, or DSM technologies, each of the projects needs to be evaluated in terms of the impact on reliably and cost-effectively meeting SMMPA's long term needs.

- The Department asked if there was any additional explanation for the decline in savings between 2013 and approximately 2020. In essence, there are four things that are ongoing simultaneously in Navigant's Energy Efficiency Resource Assessment Model (EERAM) that impact on that decrease.
  - SMMPA had significant penetrations in recent program years. As measures that pass the Total Resource Cost (TRC) test are implemented, the available stocks for those measures are declining. (This relates to the concept of higher than anticipated adoption impacts on future potential).
  - The Codes and Standards impact is particularly pronounced in the early years of the forecast.
  - The EERAM model estimates re-engagement at the end of measure life. The assumption is that 85% would re-engage and so they continue with their savings. However, 15% drop out at the end of measure life, and return to the pool of potential future participants. These non-re-engagers start to appear in the mid to later periods of the forecast.
  - The TRC screen is recalculated for each year of the forecast and measures which did not pass in earlier years may pass in later years, increasing in the later part of the forecast.

- The Department found the assessment of Levelized Costs for the various technologies analyzed by Navigant in the EERAM model to be an interesting way of visualizing the data and asked that SMMPA provide that data for 2028 for the base case and full DSM scenarios.

  - Navigant utilizes this data as an interim step in the EERAM model. The methodology is essentially another way of looking at program costs by looking at only incremental cost and savings. This analysis is used by Navigant for comparative purposes only, and does not determine what programs pass or are included in the set of available technologies. Decisions over what technologies are included in the set of measures are determined by the TRC test. The model data has been provided to the Department electronically, under separate cover.

- <u>Green House Gas</u>
  In 2013, the Minnesota Legislature amended Minnesota Statutes §216B.2422 requiring that resource plans identify how the plan helps the utility achieve the greenhouse gas (GHG) reduction goals under §216H.02. SMMPA provided a discussion of how the plan

would help achieve the goal. The Department pointed out that the discussion did not provide a quantitative analysis. As a result, the Department sent SMMPA an information request (DOC IR No. 8) asking SMMPA to provide a quantitative assessment. The Department sent similar requests to Otter Tail Power Company and Minnesota Municipal Power Agency in their respective dockets. For the purposes of this initial GHG investigation, the utilities used a prescribed methodology which made assumptions for the emissions rate for purchases from MISO. That emissions rate, based upon a 2009 study for the Midwest Reliability Organization (MRO) West region, was determined to be 1,822 lbs of CO_2 per MWh. That emissions rate was to be utilized in assessing not only the 2005 emission levels, but the 2015 and 2025 emissions levels. SMMPA pointed out that holding the emission rates constant was a significant limitation in the methodology. SMMPA mentioned that absent purchases, its own estimated emissions rate declines significantly over the period (see table below). While there was no available data to suggest an updated MISO emissions rate, it stands to reason that if SMMPA's rates change because of a different generation mix, that it is likely also the case across the MISO region.

Year	SMMPA Emissions Rate (lbs/MWh)	% Reduction from 2005 Level
2005	2,071	100%
2015	1,705	18%
2025	1,228	41%

SMMPA provided two additional assumptions regarding a declining MISO emission rate - one based upon a 1% decrease annually and another declining at the same rate as agency resources; the later estimating an overall decrease of 13% by 2015 (compared to a 15% target under 216H.02) and 19% by 2025 (compared to a 30% target under 216H.02). The Department commented that even using the SMMPA resource mix reduction in re-estimating the MISO emission rate for 2015 and 2025, SMMPA did not meet the respective 15% and 30% reduction targets. The Department added that this was an additional reason why SMMPA needed to meet or exceed the 1.5% CIP goals.

The Department commended SMMPA for working on a methodology and invited other utilities to provide comments on how best to conduct such an analysis. Subsequent to the Department invitation, Xcel Energy has responded in the SMMPA docket also pointing out the significant limitations of the MRO West CO_2 rates. Xcel points out that with each release of eGRID (which lists the MRO West emission rates) the emission rates are revised downward – the latest released in 2014 shows an emissions rate of 1,536 lbs/MWh for 2010. This most current estimate of the 2010 emissions rate is approximately 16% less than the 2005 rate of 1,822 lbs/MWh and it is reasonable to expect that these levels will continue to decline when data reflecting 2015 is released. With the limitations in the methodology pointed out by us and others, it seems premature to conclude that SMMPA is not forecasted to meet its 2015 emission reduction targets.

SMMPA welcomes the opportunity to continue to work with the Department and peer utilities to refine a methodology which more accurately reflects utility GHG reductions.

In addition to the concerns regarding the MISO emission rates to be used to reflect purchases, SMMPA believes that the current methodology being used to estimate CO_2 impacts from CIP investments significantly understates the environmental impacts of those investments. (See Section E. CIP GHG IMPACTS).

D. SMMPA CAPACITY REQUIREMENTS – MISO ALTERNATIVES

In section D. - Resource Needs Assessment - of the Department's comments, the Department expresses concern that planning for MISO's peak rather than SMMPA's own system peak could pose reliability issues in the event that regional MISO resources or transmission were not available at critical times. SMMPA shares that concern. For that reason, SMMPA prepared its IRP using its system peak forecast, not its peak at the time of the MISO peak. Because SMMPA already plans using its system peak, we were unsure how to address concerns raised by the Department. SMMPA consulted with Department staff to discuss the concerns. SMMPA was able to clarify that the IRP was developed using the SMMPA system peak forecast, which satisfied the Department concerns and both parties concluded that no additional analysis or further reply is required.

Because some utilities develop IRPs based on their peak load coincident with the MISO peak, we understand why the Department raised the concerns it did, and we believe that the use of the terms "coincident" and "non-coincident" in two different contexts may have caused some confusion. In the context of the Department's review of IRPs based on a MISO-coincident peak, the term "coincident" refers to a utility's peak at the time of, or coincident with, the MISO system peak. In that same context, the term "non-coincident" refers to that utility's individual system peak, without regard to when the MISO system peak occurs.

In the SMMPA IRP, we also use the term "coincident" when referring to our forecast, but in the SMMPA context that means the coincident peak load of SMMPA's members that results in SMMPA's system peak. The use of the term "non-coincident" in the SMMPA context refers to the individual peak loads of each of the SMMPA members, without regard to when the SMMPA system peak occurs. It is easy to understand how questions and confusion can arise when the context is not completely clear.

As stated above, once we were able to clarify for the Department what forecast was used for the SMMPA IRP, the supplemental question became moot and both parties concurred no further action is needed to satisfy the Department's request on this issue. Subsequent to providing the subject comments being addressed in this reply, the Department has issued additional Information Requests seeking information about MISO-coincident and non-coincident forecasts. SMMPA recognizes the Department's concerns over which load forecast is appropriate for use in planning by Minnesota utilities and will submit information responsive to the new information requests to help address these concerns.

E. CIP GHG IMPACTS

The Department uses the useful life of a DSM technology in cost-effectiveness screenings, and measure lives of technologies are incorporated in most of the technologies included in

Minnesota's Technical Reference Manual. However, when it comes to accounting for CIP program savings and CO_2 impacts, the Department considers first-year energy savings only. As a result, the savings and associated CO_2 reductions are dramatically understated.

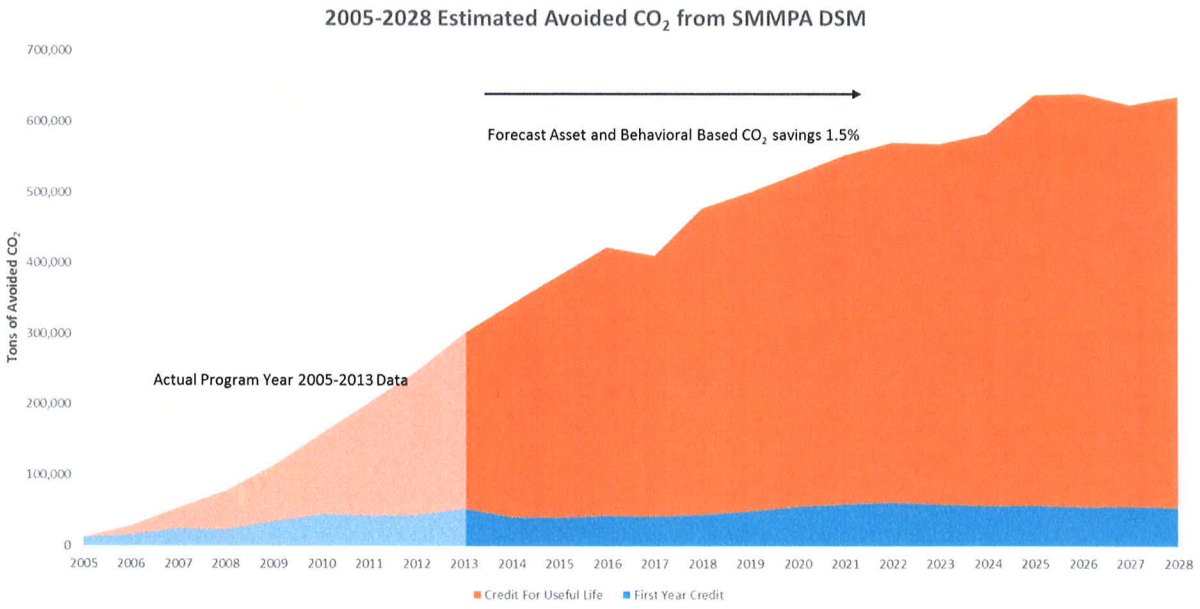
For example, in their 2011 CIP filings, SMMPA members reported annual savings of 47,944 MWh. To determine the CO_2 savings, the Department would apply a CO_2 rate per MWh to calculate the avoided CO_2 attributable to that CIP program year. For discussion purposes, assume those incremental 2011 CIP MWh savings were equivalent to 43,701 tons of avoided CO_2. If in 2012, the CIP filing reported energy savings of 48,748 MWh, then the avoided CO_2 (assuming the emissions rate had not changed) would be reported as 44,434 tons. Using the Department's current procedures, the avoided CO_2 savings for the two year (2011 and 2012) period would be reported as approximately 88,000 tons of CO_2. The problem with that assessment is that the CIP investment, the associated energy savings, and the subsequent CO_2 avoidance does not stop in the first year but continues over each and every year of the useful life of the installed technology. For example, a newly installed commercial high-efficiency chiller has a deemed measure life of 20 years, a residential Energy Star® clothes washer has a measure life of 11 years, residential high-efficiency central air-conditioning units have a measure life of 18 years, and so on. As mentioned, the Department uses these measure lives to assess the cost-effectiveness of efficient technologies and programs, but does not do so in accounting for program savings. CIP Program Savings and avoided CO_2 occur not just in the first year, but each and every year over the life of the equipment.

CIP tracking is designed to record annual savings measure by measure and program by program. Year to year, the measures installed in the CIP programs will vary, but there will be an average useful life for each year program bundle. Table 1 on page 11 illustrates this concept using actual CIP filed data for SMMPA members from 2005-2013, and a forecast (in blue) from the 2013 SMMPA IRP using the 1.5% savings scenario. Program useful life for SMMPA's asset-based programs ranges from a low of 11.9 years to a high of over 13.6 years. In the table, SMMPA separated out the behavioral programs (OPower and Enerlyte) beginning in 2013 because of the nuances of behavioral vs. asset-based programs and ongoing discussions regarding behavioral program useful life at the Department.

A CO_2 rate (lbs per MWh) is applied to the MWh savings, and the avoided annual CO_2 is shown in the last row of Table 1. The differences in the methodologies of simply adding the first-year avoided CO_2 and accounting for the CO_2 over the savings lifetime is dramatic. Table 3 on page 12 shows the CO_2 impacts from "aging" the CIP programs over the useful life of each CIP program year.

The dramatic results of the different methodologies are shown in Table 4 on page 12. The first row of Table 4 shows the results of the first-year avoided CO_2 which are summed in the far right column with a total over the analysis period of approximately 1.1 million tons of avoided CO_2. The bottom row shows the annual results of the avoided CO_2 (the first year and each subsequent year) over the useful life of the CIP program year investment. The column at the right shows that over the analysis period, approximately 9.1 million tons of CO2 will have been avoided by the CIP investment – a factor of over 8 times more.

The graph below provides a visual representation of the different approaches, with the blue area representing the first year only accounting, and the orange area showing the CO_2 impact over the useful life of the installed technologies.



The actual impacts in both methodologies are overstated due to the emissions rate used in the analysis. As mentioned earlier in the section on Green House Gas, we believe that the emissions rates are currently decreasing and will continue to decrease over time. As there has not been a consensus as to what emissions rate to use for analysis, and for how long into the future, we held the rate constant for this analysis. However, it is important to recognize that the emission rate will impact the results for both methodologies and does not impact the magnitude difference between the two accounting procedures.

While there remains much to learn about the newly proposed EPA Section 111d regulations, there have been indications that EPA has incorporated useful life calculations into the efficiency program budgets proposed for states. SMMPA believes accounting for the savings impacts over the useful life of the technologies most accurately reflects what is actually being accomplished. Additionally and importantly, for Minnesota utilities to be given fair recognition and credit

Table 1 Actual (2005-2013) and Forecast (2014-2028 1.5% Scenario) SMMPA Incremental Program Year Efficiency Program Data

		SMMPA CIP Savings Data Reported to the DER (2005-2013)									Forecast Asset and Behavioral Savings from 2013 IRP (2014-2028)[3]														
Program Year		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
First Year MWh Savings[2]	Asset Based[1]	14,157	17,769	27,966	26,226	38,923	49,674	47,944	48,748	54,696	42,090	41,338	44,420	43,198	45,724	51,134	58,556	62,318	64,647	62,080	59,529	60,104	57,936	58,436	57,115
	Behavioral[1]									4,288	3,457	3,457	3,457	3,457	3,457	3,457	3,457	3,457	3,457	3,457	3,457	3,457	3,457	3,457	3,457
	Total	14,157	17,769	27,966	26,226	38,923	49,674	47,944	48,748	58,984	45,547	44,795	47,877	46,655	49,181	54,591	62,013	65,775	68,104	65,537	62,986	63,561	61,393	61,893	60,572
% of Retail Sales		0.48%	0.61%	0.95%	0.89%	1.33%	1.70%	1.64%	1.70%	2.08%															
CIP Program Useful Life[4]	Asset Based Programs	12.2	12.2	12.2	12.1	12.2	12.3	11.9	11.9	13.6	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2
	Behavioral									3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
CO_2 Rate Per MWh (lbs/MWh)[5]		1,823	1,823	1,823	1,823	1,823	1,823	1,823	1,823	1,823	1,823	1,823	1,823	1,823	1,823	1,823	1,823	1,823	1,823	1,823	1,823	1,823	1,823	1,823	1,823
Estimated "First Year" CIP CO2 Reduction (Tons)[6]	Asset Based Programs	12,904	16,196	25,490	23,904	35,478	45,277	43,701	44,434	49,855	38,365	37,679	40,488	39,374	41,677	46,608	53,373	56,802	58,925	56,585	54,260	54,784	52,808	53,264	52,060
	Behavioral	0	0	0	0	0	0	0	0	3,908	3,151	3,151	3,151	3,151	3,151	3,151	3,151	3,151	3,151	3,151	3,151	3,151	3,151	3,151	3,151
	Total	12,904	16,196	25,490	23,904	35,478	45,277	43,701	44,434	53,763	41,516	40,830	43,639	42,525	44,828	49,759	56,524	59,953	62,076	59,736	57,411	57,935	55,959	56,415	55,211

1 Beginning with their 2013 CIP filings, MN utilities (including SMMPA) were required to use a discounted value for behavioral savings (1/3 of actual experienced and subject to Measurement and Evaluation [M&V]). The DER has stated that behavioral programs such as OPower and Enerlyte have a 3 year deemed measure life. Given that these programs may change, we accounted for the asset based savings separately from the behavioral savings starting in 2013 and use that same approach in the forecast.

2 The reported 2005-2013 MWH savings shown include 7-8% T&D losses to determine the savings @ the generator (determined by the Energy Savings Platform [ESP]). The forecast savings were adjusted to reflect an estimated (SMMPA system) 7% T&D loss.

3 The forecasted 2014-2028 MWH savings data is taken from SMMPA's 2013 SMMPA IRP.

4 The measure lives of the 2008-2013 reported Asset Based Programs represents the weighted average deemed measure life of the program savings for the respective CIP year (from ESP). For example, commercial high-efficiency chillers have a deemed measure life of 20 years. Residential ENERGY STAR® clothes washers have a measure life of 11 years. Residential high-efficiency Central AC units have a measure life of 18 years, and so on. The deemed measure lives of efficient technologies is a function of industry experience and is prescribed in the State of Minnesota's Technical Reference Manual. Measure life is critical to assisting utilities and regulators in determining the cost effectiveness of DSM measures. However, measure life analysis is equally critical in measuring and evaluating the savings from energy efficient equipment and the wise use of energy, and CO_2 savings as the measure does not only save in its initial year of installation, but continues to save each and every year over its life. As outlined in footnote 1, Behavioral savings uses the stipulated 3 year measure life as required by the DER. The average measure lifetime from 2008-2013 was used for the forecast period.

5 CO_2 emission rates used are the rates the DER utilized in its CIP and Carbon Dioxide Savings Report for 2010-2011 to the Legislature. Since the formula for determining CO_2 impact is currently being discussed as a part of the SMMPA IRP docket, the CO_2 rates were held constant for this analysis. As the generation mix changes and the amount of DSM savings and renewable resources continues to increase, the CO2 rates will actually decrease. The issue is complicated by the MISO market and limited data regarding overall emissions rates. Since there has not been consensus on the proper method for estimating future CO_2 rates, the rates remain static in this analysis.

6 Estimates of "Frist Year" CIP CO_2 reductions appy the CO_2 Rate Per MWh to the MWh savings in the first section of the chart.

Table 3

SMMPA Actual CO_2 CIP Savings Impact (2005-2013) Forecast Impact (2014-2028) 1.5% Scenario

Savings Stream From Useful Life Crediting

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
2005	12904	12904	12904	12904	12904	12904	12904	12904	12904	12904	12904	12904	2044	0	0	0	0	0	0	0				
2006		16196	16196	16196	16196	16196	16196	16196	16196	16196	16196	16196	16196	2967	0	0	0	0	0	0	0			
2007			25490	25490	25490	25490	25490	25490	25490	25490	25490	25490	25490	25490	4390	0	0	0	0	0	0	0		
2008				23904	23904	23904	23904	23904	23904	23904	23904	23904	23904	23904	23904	1204	0	0	0	0	0	0	0	
2009					35478	35478	35478	35478	35478	35478	35478	35478	35478	35478	35478	35478	6309	0	0	0	0	0	0	0
2010						45277	45277	45277	45277	45277	45277	45277	45277	45277	45277	45277	45277	12527	0	0	0	0	0	0
2011							43701	43701	43701	43701	43701	43701	43701	43701	43701	43701	43701	41285	0	0	0	0	0	0
2012								44434	44434	44434	44434	44434	44434	44434	44434	44434	44434	44434	39815	0	0	0	0	0
2103 Asset									49855	49855	49855	49855	49855	49855	49855	49855	49855	49855	49855	49855	49855	31071	0	0
2013 Behavior									3908	3908	3908	0	0	0	0	0	0	0	0	0	0	0	0	0
2014 Asset										38365	38365	38365	38365	38365	38365	38365	38365	38365	38365	38365	38365	6138	0	0
2014 Behavior										3151	3151	3151	0	0	0	0	0	0	0	0	0	0	0	0
2015 Asset											37679	37679	37679	37679	37679	37679	37679	37679	37679	37679	37679	37679	6028	0
2015 Behavior											3151	3151	3151	0	0	0	0	0	0	0	0	0	0	0
2016 Asset												40488	40488	40488	40488	40488	40488	40488	40488	40488	40488	40488	40488	6478
2016 Behavior												3151	3151	3151	0	0	0	0	0	0	0	0	0	0
2017 Asset													39374	39374	39374	39374	39374	39374	39374	39374	39374	39374	39374	39374
2017 Behavior													3151	3151	3151	0	0	0	0	0	0	0	0	0
2018 Asset														41677	41677	41677	41677	41677	41677	41677	41677	41677	41677	41677
2018 Behavior														3151	3151	3151	0	0	0	0	0	0	0	0
2019 Asset															46608	46608	46608	46608	46608	46608	46608	46608	46608	46608
2019 Behavior															3151	3151	3151	0	0	0	0	0	0	0
2020 Asset																53373	53373	53373	53373	53373	53373	53373	53373	53373
2020 Behavior																3151	3151	3151	0	0	0	0	0	0
2021 Asset																	56802	56802	56802	56802	56802	56802	56802	56802
2021 Behavior																	3151	3151	3151	0	0	0	0	0
2022 Asset																		58925	58925	58925	58925	58925	58925	58925
2022 Behavior																		3151	3151	3151	0	0	0	0
2023 Asset																			56585	56585	56585	56585	56585	56585
2023 Behavior																			3151	3151	3151	0	0	0
2024 Asset																				54260	54260	54260	54260	54260
2024 Behavior																				3151	3151	3151	0	0
2025 Asset																					54784	54784	54784	54784
2025 Behavior																					3151	3151	3151	0
2026 Asset																						52808	52808	52808
2026 Behavior																						3151	3151	3151
2027 Asset																							53264	53264
2027 Behavior																							3151	3151
2028 Asset																								52060
2028 Behavior																								3151

TABLE 4

CUMULATIVE CO_2 SAVINGS BASED UPON INCREMENTAL FIRST YEAR SAVINGS AND USEFUL LIFE OF THE TECHNOLOGY (Actual 2005-2013, Forecast 2014-2028 1.5% Scenario)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total Cumulative
Incremental	12,904	16,196	25,490	23,904	35,478	45,277	43,701	44,434	53,763	41,516	40,830	43,639	42,525	44,828	49,759	56,524	59,953	62,076	59,736	57,411	57,935	55,959	56,415	55,211	1,085,464
Useful Life	12,904	29,100	54,590	78,494	113,972	159,249	202,950	247,384	301,147	342,663	383,493	423,224	411,250	478,142	500,683	526,966	553,395	570,845	568,999	583,444	638,228	640,025	624,429	636,451	9,082,027

for their early and aggressive CIP programing, CO_2 avoidance needs to be tracked and accounted for over the useful life of the CIP investment. Anything less will disadvantage Minnesota compared to other states.

F. CONCLUSION

SMMPA thanks the Department and Commission for the opportunity to provide comments. As shown by our historic performance and reiterated in these reply comments, SMMPA is committed to our DSM programming, recognizing that it is a key part of our road map for making least-cost planning decisions. Our efforts and success in our DSM programs not only improve our least-cost resource mix, but also provide us an important tool for mitigating CO_2 impacts and responding to proposed CO2 reduction requirements.

In closing, we reiterate that the objective of our recent technical potential study was not to establish, re-establish, or lower a savings goal, but rather to objectively inform our planning process. Based on our historical efforts, it should be clear that we have aggressively pursued CIP programming and we are committed to continuing to do so. We simply have concerns about whether we can sustain the high level of customer commitment and investment over the 15 year planning horizon. With that in mind, we believe that our base case represents the most realistic forecast. We concur with the Department that the primary goal of the IRP is to ensure reliability for our customers and the region. We want to ensure that the basis for our forecast is both sustainable and reliable.

Should you have any questions regarding these reply comments, please let us know.

Regards.

Larry W. Johnston
Director of Corporate Dev., Agency Relations and
Officer of Legislative & Regulatory Affairs

STATE OF MINNESOTA
BEFORE THE PUBLIC UTILITIES COMMISSION

Beverly Jones Heydinger	Chair
David C. Boyd	Commissioner
Nancy Lange	Commissioner
Betsy Wergin	Commissioner
Dan Lipschultz	Commissioner

In the Matter of SMMPA's
2014 – 2028 Integrated Resource Plan

Docket No. ET9/RP-13-1104

AFFIDAVIT OF SERVICE

STATE OF MINNESOTA)
) SS.
COUNTY OF OLMSTED)

I, Larry W. Johnston, being first duly sworn, depose and state that on the 25th day of July, 2014, I filed the attached Reply Comments of Southern Minnesota Municipal Power Agency, by electronic filing with the Minnesota Public Utilities Commission, 121 7th Place East, Suite 350, Saint Paul, MN 55101-2147, and served the attached service list of the filing by United States first class mail at the City of Rochester, MN.

Larry W. Johnston

Subscribed and sworn to before me this
25th day of July, 2014

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Notary Public

NAOMI A. GOLL
Notary Public-Minnesota
My Commission Expires Jan 31, 2019

My Commission Expires: 1-31-2019

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