

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF COLORADO

PROCEEDING NO. 13A-0686EG

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF
COLORADO FOR APPROVAL OF A NUMBER OF STRATEGIC ISSUES RELATING TO
ITS DEMAND SIDE MANAGEMENT PLAN.

**DECISION GRANTING APPLICATION
WITH MODIFICATIONS AND ESTABLISHING
ENERGY SAVINGS AND DEMAND
REDUCTION GOALS FOR 2015-2020**

Mailed Date: July 1, 2014
Adopted Date: May 28, 2014

TABLE OF CONTENTS

I. BY THE COMMISSION	2
A. Procedural History	2
B. Electric Energy Savings Goals	4
1. Public Service Proposal	4
2. Intervenor Positions	5
3. Conclusions and Findings	7
C. Electric DSM Financial Incentive	8
1. Public Service Proposal	9
2. Intervenor Positions	10
3. Conclusions and Findings	11
D. Distribution Voltage Optimization (DVO)	13
1. Proposed Project	13
2. Intervenor Positions	14
3. Conclusions and Findings	16
E. Demand Reduction Goals	21
F. Interruptible Service Option Credit (ISOC)	23
G. Natural Gas DSM	23

H. Low-Income Programs and Non-Energy Benefits	26
I. Behavioral Change Programs	27
J. LED Street Lighting Program	29
K. Avoided Capacity and Energy Costs	31
L. Avoided Emissions	33
M. Non-Energy Benefits Adder	36
N. Cost Effectiveness Tests	37
O. DSM Participation Rates	38
P. Updated Market Potential Study	39
Q. Next DSM Strategic Issues Filing	39
R. Issues Not Addressed	39
II. ORDER	40
A. The Commission Orders That:	40
B. ADOPTED IN COMMISSIONERS’ DELIBERATIONS MEETING May 28, 2014. ...	41

I. BY THE COMMISSION

A. Procedural History

1. This matter comes before the Commission for consideration of the application filed on June 17, 2013, by Public Service Company of Colorado (Public Service or Company), seeking Commission approval of several strategic issues related to its demand side management (DSM) plan pursuant to §§ 40-3.2-103 and -104, C.R.S.

2. The Commission deemed the application complete and determined it will hear the matter *en banc*.¹ Public Service waived the statutory deadline for the issuance of a Commission decision on November 20, 2013.

¹ Decision No. C13-0938-I, mailed August 1, 2013.

3. The following parties intervened in this proceeding: Staff of the Colorado Public Utilities Commission (Staff); Colorado Office of Consumer Counsel (OCC); Colorado Energy Office (CEO); Western Resource Advocates (WRA); City of Boulder, Boulder County; City and County of Denver (Denver); Colorado Renewable Energy Society (CRES); Colorado Energy Consumers (CEC); Colorado Solar Energy Industries Association (CoSEIA); Energy Efficiency Business Coalition (EEBC); EnerNOC, Inc.; Energy Outreach Colorado (EOC); Climax Molybdenum Company and CF&I Steel, L.P. (Climax and CF&I); Southwest Energy Efficiency Project (SWEEP); and OPOWER, Inc. (OPOWER).

4. The Commission scheduled evidentiary hearings for April 22 through 24, 2014.² The Commission also extended the deadline for Public Service to file its 2015 through 2016 DSM Biennial Plan to October 30, 2014.³ To avoid potential disruption of DSM programs, the Commission authorized continuation of the 2014 DSM Biennial Plan until the 2015 through 2016 DSM Biennial Plan becomes effective upon approval by the Commission.⁴

5. During the hearing, the Commission admitted Hearing Exhibits 1-67, 71-74, 96-98, 104, 110, and 122-126 into the evidentiary record.⁵ The Commission also established May 6, 2014, as the deadline for filing Statements of Position (SOPs) and legal briefs discussing whether the Direct Voltage Optimization (DVO) project meets the legal definition of DSM.

² Decision No. C13-1493-I, mailed December 3, 2013, ¶ 14.

³ *Id.*, ¶ 15.

⁴ *Id.*

⁵ The Commission denied a motion by Climax and CF&I to strike certain exhibits to pre-filed testimony (Exhibits TW3, TW5-8, TW10-27, and TW-28-32 attached to the answer testimony of Sierra Club witness Tim Woolf; Exhibit GF-1, attached to cross-answer testimony of WRA witness Gwen Farnsworth; Exhibit KBC-1 attached to answer testimony of City of Boulder witness Kelly Crandall; Exhibit JG-2 attached to answer testimony of EOC witness Jennifer Gremmert; and Exhibits JDB2, JDB9, and JDB10 attached to answer testimony of EEBC witness James Bradford). Hearing Transcript, April 22, 2014, p. 195, line 9 to p. 203, line 13; April 23, 2014, p. 5, line 1 to 6, line 2.

6. Based on the record established in this proceeding, we grant the Application with modifications and establish energy savings and demand reduction goals for 2015 through 2020.

B. Electric Energy Savings Goals

7. Section 40-3.2-104(2), C.R.S., directs the Commission to establish energy savings and peak demand reduction goals for Public Service and other investor-owned utilities, taking into account the utility's cost-effective DSM potential, its need for electricity resources, benefits of DSM investments, and other factors determined by the Commission. Section 40-3.2-104(4), C.R.S., also directs the Commission to give due consideration to the impact of electric DSM programs on non-participants and low-income customers.

1. Public Service Proposal

8. Public Service proposes the Commission decrease the Company's electric energy savings goals by approximately 19 percent from the goals established for the 2015 through 2020 period in Proceeding No. 10A-554EG. The Company bases its proposal, in part, on a market potential study the Company commissioned in accordance with § 40-3.2-104(2), C.R.S.⁶ The Company estimates its proposed goal of 2,349 GWh in savings during 2015 through 2020 would cost ratepayers approximately \$488 million.⁷ In the course of this proceeding, the Company reexamined the avoided costs of DSM, which resulted in a 40 percent reduction in cost estimates to achieve various levels of proposed savings. The Company updated the results of the market potential study to account for the reduction in the avoided costs of DSM.

9. Public Service argues for lower energy savings goals primarily based upon changes in building codes and standards, and naturally occurring energy efficiency.

⁶ Hearing Exhibit 4, Direct Testimony of Jeremy Petersen, Exhibit No. JAP-1.

⁷ Public Service's total savings goal comprises 1,843 GWh of savings from energy efficiency measures and programs and 506 GWh of savings from its proposed DVO project.

Public Service projects the change in federal lighting standards will reduce the savings the Company can claim for its business and residential lighting programs by approximately 28 percent. The Company further argues the costs to achieve these lower levels of savings will increase as higher rebates will be required to encourage customers to install DSM measures. Public Service's proposed program costs assume the Company will pay customers 75 percent of the incremental cost of installing a DSM measure.⁸

10. In response to criticisms that the costs of achieving these proposed goals are too high, Public Service presented its "moderate goals" proposal. The "moderate goals" total 2,176 GWh at a cost of \$445 million.⁹ According to the Company, this alternative is the middle ground among the goals suggested by the other parties. Public Service argues this moderate scenario will result in lower rate impacts, as measured by the Rate Impact Measure (RIM) test.

2. Intervenor Positions

11. SWEEP and Sierra Club each recommend the Commission adopt energy savings goals higher than those established in Proceeding No. 10A-554EG. SWEEP's proposed goals for traditional DSM programs start at 445 GWh per year in 2015 and increase to 529 GWh per year by 2020. SWEEP argues that Public Service's market potential study is overly conservative and that the Company's goals do not sufficiently address savings from behavioral conservation measures, DVO, or LED street lighting. SWEEP recommends the Commission adopt a goal of 3,410 GWh in total savings for 2015 through 2020.¹⁰

⁸ Hearing Exhibit 2, Rebuttal Testimony of Debra L. Sundin, p. 22 lines 8-10.

⁹ The moderate goal consists of energy efficiency savings of 1,669 GWh and DVO savings of 506 GWh.

¹⁰ SWEEP's total goal includes 506 GWh of savings for DVO.

12. Sierra Club proposes a goal of 2,954 GWh in savings during 2015 through 2020.¹¹ This goal would reduce the Company's electric sales by approximately 2 percent per year. Sierra Club contends the economic potential for savings from the Company's DSM programs may be 2.6 percent higher than what the Company presented.

13. EEBC recommends the Commission maintain the Company's existing energy savings goals of 2,914 GWh through 2020. EEBC contends it is premature to lower the goals approved in 2011 and objects to Public Service's use of the RIM test, arguing this test ignores the costs avoided by DSM participants.

14. Staff proposes an energy savings goal of 400 GWh per year, or 2,400 GWh over the six-year period. Staff explains its proposal considers the effects of reduced avoided costs, the rate impact on non-participants, the possibility of future increases in costs per kWh saved, and the excess generation capacity on Public Service's system. Staff also cites the Company's success with DSM programs, emphasizing the Company has exceeded its goals every year from 2009 to 2012. Given this level of past performance, Staff argues it is not necessary to decrease the goals at this time. Staff warns that, if the goals are set too low, Public Service could earn an unduly high performance incentive. Further, Staff argues that an abrupt reduction in energy savings goals may harm Public Service's relationships with its trade partners and ratepayers who rely on DSM products to lower their energy bills.

15. The OCC urges the Commission to adopt its Low Avoided Cost scenario, because of its lower anticipated rate impacts. This scenario contemplates annual electric energy savings ranging from 263 to 302 GWh. The OCC argues Colorado statutes require consideration of the rate impacts on non-participants and suggests Public Service's goals could result in

¹¹ Sierra Club's total goal also includes 506 GWh of savings for DVO.

approximately \$1.3 billion in rate increases over the six-year period. The OCC argues Public Service should justify its budget in each DSM Biennial Plan proceeding. The OCC argues an annual budget of approximately \$205,000 per GWh appears reasonable based on the historical costs of DSM savings.

16. CEC supports Public Service's proposed reduction in savings goals. To balance energy efficiency objectives with cost impacts, CEC requests the Commission consider capping the sum of program expenditures, performance incentives, and disincentive offset at 4 percent of overall retail rates, or approximately the current level, and reduce the cap to 3 percent of overall retail rates in the future.

3. Conclusions and Findings

17. We view Public Service's electric energy savings goals as part of a larger effort to diversify Colorado's fuel mix. DSM, acquisition of renewable resources, and implementation of the Clean Air-Clean Jobs Act will reduce carbon dioxide and other emissions significantly. We also encourage the Company to pursue truly-cost effective energy efficiency measures. Because Public Service currently has surplus generation capacity, the primary purpose of DSM in the early years of the 2015 through 2020 planning period is to reduce fossil fuel use and help ratepayers lower their energy bills.

18. Public Service has been very successful and has consistently exceeded its electric DSM goals. We seek to establish goals that will lead to continued success of these programs and continuity for customers, particularly low-income ratepayers. While Public Service recommends lower goals premised on changed lighting standards and projected reductions in achievable market potential, we agree with the parties that foresee new opportunities for DSM savings. For example, LED lighting is becoming more cost-effective and will replace some of the

lost savings in residential lighting products. We believe an abrupt reduction in the goals will negatively affect ratepayers who rely on the Company's programs. However, we cannot agree to the increased goals proposed by other parties, which could result in unacceptable costs and unduly affect ratepayers, especially low-income customers.

19. We find that an annual electric energy savings goal of 400 GWh proposed by Staff strikes the best balance between maintaining continuity of the Company's DSM programs and managing the impact on ratepayers, both participants and non-participants. While we do not establish annual budgets for DSM plans in this proceeding, we will impose a spending cap of \$98 million per year to achieve the 400 GWh in savings. This is based on the budget approved in 2014, adjusted by the percentage equal to the increase in goals with respect to the prior years' goals.¹² The cap shall not include any financial incentives or the costs of the Company's load management and demand response programs. This cap will ensure the 400 GWh per year goal for 2015 through 2020 can be achieved at a reasonable cost and rate impact, commensurate with the expected benefits, or net dollar savings produced.¹³

C. Electric DSM Financial Incentive

20. In the last DSM strategic issues proceeding, the Commission determined Public Service's electric DSM incentive should consist of three components: (1) current recovery of DSM expenses on a prospective basis through the Demand Side Management Cost Adjustment (DSMCA) and current rate of return on rate-based components; (2) a bonus that addresses the fact that DSM, as a business venture, runs counter to the Company's

¹² This 400 GWh is approximately 4 percent higher than the 384 GWh energy efficiency goal established for 2014 in Proceeding No. 13A-0773EG. The budget cap also reflects an adjustment to recognize that Public Service may increase its 2014 budget by 7.5 percent without additional Commission approval.

¹³ Net dollar savings is the same as the term "net economic benefits" as generally used by Public Service and the other parties in this proceeding.

business practices;¹⁴ and (3) a performance incentive that permits the Company to retain a percentage of the net energy savings earned through DSM activities.¹⁵ The Commission also established a \$30 million annual cap on the combination of the bonus and the performance incentive, to prevent Public Service from earning excessive margins on DSM.¹⁶

21. Pursuant to the current incentive structure, if Public Service meets or exceeds 100 percent of its electric energy savings goals, it receives a pre-tax bonus of \$5 million. The Company receives a pre-tax bonus of \$3.2 million for performance in the range from 80 percent to 99 percent.

22. With respect to the financial incentive, Public Service receives: 1 percent of the dollar savings for achieving 80 percent of the savings goal; 2 percent for achieving 85 percent; 3 percent for achieving 90 percent; 4 percent for achieving 95 percent; and 5 percent for achieving 100 percent. This performance incentive pattern continues and each 5 percent increase in the energy savings achieved results in a 1 percent addition to Public Service's share of net dollar savings, up to a maximum of 15 percent at 150 percent of goal.

1. Public Service Proposal

23. Public Service argues that, consistent with § 40-3.2-104(5), C.R.S., DSM will be profitable only if the total financial incentive offsets the financial disincentives associated with DSM.¹⁷ Public Service further states that, to maintain the same level of reward associated with

¹⁴ The term "bonus" refers to the "disincentive offset" as generally used by Public Service and other parties in this proceeding.

¹⁵ Decision No. C11-0442, issued in Proceeding No. 10A-554EG, ¶¶ 29-30 on April 26, 2011.

¹⁶ *Id.*, ¶ 50.

¹⁷ Public Service SOP, p. 26.

the same level of effort, the existing performance incentive must be recalibrated because the potential for net dollar savings has declined.¹⁸

24. Thus, Public Service proposes to earn a bonus of \$7.5 million beginning at the 80 percent level of achievement of savings goals. The bonus would not increase and would stay at \$7.5 million even with higher levels of achievement. In addition, Public Service proposes a performance incentive beginning at the 75 percent level of achievement.¹⁹ The Company would retain 3 percent of projected net savings at this level of achievement. For every 5 percentage points of additional achievement, the performance incentive would increase by 2 percentage points. The Company would earn 13 percent of projected net savings for achieving 100 percent of the goal. Public Service proposes to cap the percentage of retained projected net dollar savings at 21 percent, which is the amount earned for achieving 140 percent of the goal. Public Service proposes an overall annual cap of \$30 million for the combination of the bonus and the earned performance incentive in 2015 and \$35 million in 2016.

2. Intervenor Positions

25. SWEEP recommends maintaining the current performance incentive because it has worked well in the past. SWEEP also recommends an increase in the bonus to \$4.8 million if Public Service achieves 80 percent but less than 100 percent of the goal. For achievements greater than 100 percent, SWEEP recommends to increase the bonus to \$7.5 million. SWEEP also recommends increasing the annual cap on the combined incentive to \$35 million.

¹⁸ Public Service reduced its projected avoided costs from electric DSM by approximately 40 percent in its rebuttal case.

¹⁹ The current performance incentive scale begins at 80 percent of projected net dollar savings from DSM programs.

26. CEC recommends retaining the current bonus, but proposes a restructuring of the performance incentive to be a linear function of projected net dollar savings, such that the current incentive of 5 percent at the 100 percent achievement level would apply to all savings above the 75 percent achievement level. CEC argues this structure better aligns the performance incentive with the actual value of DSM and meets the applicable statutory requirements. CEC argues this proposal would eliminate the motivation to set the goals too low in order to increase the level of performance incentive. CEC likewise proposes the Commission retain the \$30 million cap for the combination of the bonus and performance incentive.

27. Staff believes it is premature to change the financial incentive because the current incentive has motivated Public Service to achieve energy savings above the 100 percent goal level in each year since 2009. Staff disagrees with Public Service that a more generous incentive package should be awarded with a decrease in goals.

28. The OCC also recommends the Commission continue the existing financial incentive mechanism if energy savings goals are increased or reestablished near the existing levels.

3. Conclusions and Findings

29. In 2013, Public Service earned a performance incentive of 6 percent of the net savings derived from its DSM programs, and a bonus of \$5 million for achieving in excess of 100 percent of approved savings goals. The \$16.7 million total was approximately 22 percent of the \$75 million spent on DSM programs in 2013.²⁰ If Public Service's proposed incentive was approved for 2015, the Company would earn an incentive and a bonus totaling approximately

²⁰ Hearing Exhibit 123 at p. 2; Hearing Exhibit 57 at p. 5.

\$20.2 million at the 100 percent level of achievement,²¹ or approximately 31 percent of the proposed \$66 million budget.²²

30. We agree with Public Service that one purpose of the financial incentive for electric DSM is to provide the Company with an opportunity for its DSM activities to be more profitable than other utility investments not subject to special incentives. However, the Company's projections of potential awards under its proposed incentive are too high. This is especially the case when performance falls below 100 percent of the energy savings goals. We also find maintaining the current incentive may encourage Public Service to underestimate projected savings because doing so results in a larger incentive share.²³ Similarly, we are concerned the existing incentive may place undue strategic importance on goal setting to produce a favorable financial result.

31. It is true the purpose of the bonus is to address the fact that DSM can conflict with the Company's business objectives. However, the evidence does not support Public Service's requested increase. We also question the need for a bonus when achieved savings are less than 100 percent of goal. Therefore, we retain the current bonus of \$5 million and will allow Public Service to earn the bonus if it achieves at least 100 percent of the annual savings goal. No bonus will be awarded at lesser achievement levels.

²¹ Hearing Exhibit 11, Rebuttal Testimony of Scott Brockett, Exhibit SBB-7, p.2.

²² Hearing Exhibit 2, Rebuttal Testimony of Deborah Sundin, p. 20, Table DLS-2.

²³ Hearing Exhibit 41, Answer Testimony of Howard Gellar, pp. 11-12.

32. No performance incentive shall accrue for savings below 100 percent of goal. Because the 5 percent linear incentive remains constant at any level of achievement at which the incentive applies, there is no longer a need to place a cap on the percentage of net dollar savings earned.²⁴ Finally, we retain the current \$30 million cap on the combination of the bonus and performance incentive. This will ensure ratepayers are protected from unreasonable rate increases.

33. Therefore, we direct Public Service to modify its electric DSMCA tariff to reflect the changes to the incentive structure adopted here and to make an advice letter filing with a compliance DSMCA tariff within 90 days of the effective date of this Decision. The compliance tariff advice letter filing shall be made on not less than ten days' notice.

D. Distribution Voltage Optimization (DVO)

1. Proposed Project

34. Public Service seeks Commission approval of a DVO project that would achieve 506 GWh of savings to be counted against its proposed goal of 2,349 GWh. The project involves upgrades to the electric feeders through the installation of capacitors, other power compensation devices, and special monitoring equipment to optimize voltages closer to amounts being drawn by customers. This optimized voltage results in savings to customers served by the upgraded feeders, because less energy is required to operate appliances and equipment. Public Service projects DVO will result in an annual energy savings of 1.8 percent to residential customers.

²⁴ Under the current financial incentive structure, the percentage of net dollar savings earned is capped at 15 percent at the 150 percent level of savings achievement.

35. Public Service explains that DVO operates in three modes: (1) VAR optimization, which improves the power factor on the distribution system; (2) demand reduction, which uses a sensing and communication system to operate DVO only at peak loads or in an emergency; and (3) voltage optimization, which manages voltage and power consumption to reduce demand and energy consumption for certain household devices. Public Service proposes to operate DVO in the voltage optimization mode to reduce overall energy consumption.

36. Public Service proposes a five-year timetable to the project with a capital budget of approximately \$92 million. Public Service seeks recovery of the DVO revenue requirements through the electric DSMCA, until such time as the capital and operating costs are introduced into base rates in a general rate case. Public Service also proposes compensation for lost margins expected from DVO. Finally, the Company seeks approval of a performance incentive equal to 2 percent of the projected net savings.

2. Intervenor Positions

37. SWEEP recommends the Commission approve the DVO project but also require Public Service to include additional details, such as specific costs, energy savings, and net dollar savings, in future DSM biennial plan filings. SWEEP also recommends that, if approved, the projected energy savings goals from DVO should be in addition to those set for more traditional DSM programs. SWEEP recommends the Commission require Public Service to conduct field testing on a sample of distribution feeders as the DVO program is implemented to verify savings. SWEEP argues recovery of DVO investments through base rates and an authorized rate of return, possibly with a small bonus, are adequate incentives. SWEEP supports a bonus for DVO implementation if no multi-year rate plan is approved for the Company in 2015 or beyond.

38. Sierra Club argues that Public Service's customers will benefit from DVO savings. Sierra Club further contends DVO could offset bill increases related to the costs of other DSM programs for a large portion of customers.

39. WRA also supports DVO. WRA argues this project is an ideal DSM program, because it would result in significant energy savings for all customer classes and contemplates a high participation rate. WRA suggests an annual calculation and recovery of the DVO incentive to ensure that the Company is rewarded for only the savings that DVO actually achieves.

40. CEO argues that DVO does not satisfy the statutory definition of a qualifying DSM program, but supports the implementation of the project outside the DSM rubric. CEO argues that the DVO assets are akin to traditional distribution assets and should not receive treatment afforded to a qualifying DSM program or recovery through the DSMCA. Further, CEO argues a decision on DVO incentive is beyond the scope of this proceeding.

41. CEC argues the Commission may count energy savings obtained through DVO towards the overall DSM savings goals, but it also recommends conditions on the project's approval. CEC recommends the Commission allow recovery of ongoing operation, maintenance, and capital costs solely through base rates rather than the DSMCA. In addition, CEC opposes any recovery of lost margins from the DVO project because Public Service is already receiving a bonus from its electric DSM financial incentive.

42. The City of Boulder does not oppose DVO but raises some concerns with the project. Boulder classifies DVO as a grid modernization project and suggests a Certificate of Public Convenience and Necessity (CPCN) may be necessary, especially because the implementation plan is not yet complete.

43. Staff and the OCC oppose the proposed DVO project as a DSM program. Staff supports the development of DVO outside of DSM, arguing the project can be characterized as another step in the development of the distribution system. Staff recommends the Commission encourage Public Service to explore whether a CPCN is required for the project and possibly file for approval of DVO in a separate application. Staff also questions whether DVO meets DSM requirements under § 40-3.2-104(4), C.R.S., and opposes the Company's cost recovery proposal.

44. The OCC argues DVO should be rejected because it would cause a \$ 481 million rate increase.²⁵ The OCC argues there will be a disparity in benefits between the customers whose feeders are converted to DVO early in the project cycle versus later. The OCC also questions the measurement and verification aspect of the project and advocates verification by a third party. The OCC further argues the goals for the DVO project should be established in each DSM plan year as the project is implemented. Finally, the OCC opposes the concept of a separate incentive for DVO.

3. Conclusions and Findings

45. The threshold legal question is whether the DVO project, as proposed by Public Service in this proceeding, meets the legal definition of DSM provided for in the Public Utilities Law. Public Service, WRA, and other parties argue it does.²⁶ For the reasons discussed below, we agree.

²⁵ Hearing Exhibit 49, Answer Testimony of Chris Neil, p. 29.

²⁶ Public Service SOP, pp. 19-20; WRA legal brief; CEC SOP, p. 18; SWEEP SOP, p. 22.

46. Section 40-1-102(6), C.R.S., defines “DSM programs” as “energy efficiency, conservation, load management, and demand response programs or any combination of these programs.” The statute does not define “energy efficiency” or “load management.” The Commission has adopted rules defining these and other relevant terms. Rule 3001(r) of the Rules Regulating Electric Utilities, 4 *Code of Colorado Regulations* (CCR) 723-3 defines “Load” as “the power consumed by an electric utility customer over time (measured in terms of either demand or energy or both).” Rule 3602(g) defines “Energy efficiency” as “the decrease in electricity requirements of specific customers during any selected period with end-use services of such customers held constant.” Rule 3602(e) defines “End-use” as “the light, heat, cooling, refrigeration, motor drive, or other useful work produced by equipment that uses electricity or its substitutes.”

47. The record evidence indicates DVO will decrease the electricity requirements of Public Service’s customers served by an upgraded feeder during any selected period.²⁷ Further, the decrease in electricity will occur while the end use services of these customers—such as light, heat, cooling, refrigeration, motor drive, or other useful work produced by equipment that uses electricity or its substitutes—remains constant.²⁸ Thus, DVO is an energy efficiency program within the meaning of Rules 3602(e) and (g). A 2012 resolution of the National Association of Regulatory Utility Commissioners also supports the status of DVO as an energy efficiency program.²⁹ In addition, the record indicates DVO will manage a

²⁷ Hearing Exhibit 7, Direct Testimony of Kelly Bloch, p. 6, lines 2-18; Hearing Exhibit 8, Rebuttal Testimony of Kelly Bloch, p. 4, line 20-p. 5, line 6.

²⁸ Hearing Exhibit 7, Direct Testimony of Kelly Bloch, p. 6, lines 5-18 (discussing how DVO will result in savings in context of incandescent light bulbs, air conditioners, dryers, and refrigerators while the customer will receive the same functions from these devices).

²⁹ Exhibit KLV-8 to the Cross-Answer Testimony of Kenneth L. Wilson, Hearing Exhibit 45. NARUC does not discuss the Colorado statutory definition of DSM, but we agree with the public policies discussed in the resolution.

decreased level of power consumption for Public Service's electric customers over time.³⁰ Thus, DVO is a load management program within the meaning of Rule 3001(r). Because DVO is both an energy efficiency and a load management program, we find it is a DSM program as defined by § 40-1-102(6), C.R.S.

48. Staff, the OCC, and the CEO, though not contesting the benefits of DVO, argue the project does not meet the legal definition of DSM.³¹ These parties emphasize DVO will involve facility and equipment deployments only on the utility side of the meter and will not give customers a choice of whether to participate.³² Staff, the OCC, and the CEO conclude these characteristics of DVO disqualify the project from the "opportunity to participate" requirement in § 40-3.2-104(4), C.R.S.

49. Section 40-3.2-104(4), C.R.S., says:

The commission shall ensure that utilities develop and implement DSM programs that give all classes of customers *an opportunity to participate* and shall give due consideration to the impact of DSM programs on nonparticipants and on low-income customers.

Emphasis added. This language only requires a utility to develop a portfolio of DSM programs that provide opportunities for all customer classes to participate.³³ The language reflects an intent to ensure all classes of customers have the ability to receive the benefits from DSM. DVO provides an opportunity for all customer classes served by a DVO-upgraded feeder—residential, commercial, or industrial—to participate. Transmission customers can also participate in DVO if they exercise the option to do so.³⁴ Thus, DVO will reach a broader group of customers than any traditional DSM program. Further, the plain language of the statute

³⁰ Hearing Exhibit 44, Answer Testimony of Kenneth L. Wilson, p. 4, line 13 to p. 5, line 18.

³¹ OCC SOP, pp. 14-15; CEO legal brief, p. 3; Staff SOP, p. 13.

³² *Id.*

³³ WRA legal brief, p. 4.

³⁴ Hearing Exhibit 7, Direct Testimony of Kelly Bloch, p. 10, lines 3-10.

does not require each DSM program to grant all customer classes the option of not receiving the benefits of energy efficiencies or load management. Finally, 98 to 99 percent of the DVO *savings* will occur on the customer side of the meter.^{35,36}

50. We also agree with WRA that DVO will have a smaller impact on nonparticipating and low-income customers than traditional DSM programs.³⁷ DVO will minimize the occurrence of non-participants, which is the first way of addressing the impact of DSM on non-participants.³⁸ Indeed, there will be no non-participants among Public Service's customers served by a DVO-upgraded feeder.³⁹ DVO also is more accessible to low-income customers than traditional DSM programs that require customers to spend money upfront to participate. We conclude that DVO is a DSM program, consistent with the requirements of § 40-3.2-104(4), C.R.S.

51. Defining DVO as a DSM program is also supported by § 40-3.2-104(5)(b), C.R.S. That statute gives the Commission an option of allowing utilities to accelerate depreciation or the amortization period for DSM investments. Investments subject to depreciation occur on the utility rather than on the customer side of the meter. Therefore, § 40-3.2-104(5)(b), C.R.S., contemplates utilities may include programs with investments on the utility side of the meter into their DSM portfolios.

³⁵ Hearing Exhibit 9, Kelly Bloch's Response to Surrebuttal, p. 5, lines 11-14.

³⁶ We also find a previous Commission decision denying the DSM status to another utility-side investment, the Electric Utility Infrastructure (EUI) improvement project, to be distinguishable. Hearing Exhibit 17, Answer Testimony of Paul Caldara, p. 11, lines 4-23. By Decision No. C11-0442, Proceeding No. 10A-0554EG, ¶¶ 105-108, the Commission declined to endorse the EUI program due to many outstanding questions rather than the location of the investment. In addition, EUI did not involve *savings* on the customer side of the meter. *Id.*, ¶ 105.

³⁷ WRA legal brief, p. 5.

³⁸ Decision No. C08-0560, mailed June 5, 2008 in Proceeding No. 07A-420E, at ¶ 146.

³⁹ We acknowledge Public Service may not plan to deploy DVO on every feeder and that customer savings will depend on the customer's location along the feeder, his or her actual appliances, or when his or her feeder will be upgraded. Staff SOP, pp. 15-16. However, DSM does not require perfect participation or that each participant receives the same savings. These questions are more relevant to the merits of Public Service's DVO proposal, rather than its status as DSM.

52. Although the legislative debates preceding the enactment of DSM statutes focused on the programs involving customer-side investments,⁴⁰ the legislative history of these debates does not indicate any intent to exclude other types of programs from DSM.⁴¹

53. Turning to the merits, we find DVO holds great potential because it will provide the greatest amount of energy savings benefits to the largest segment of ratepayers among all of the DSM programs. DVO also promises to be an important part of modernizing the distribution system. However, too little is known at this time concerning: (1) the costs of the program and when they will be incurred; (2) the calculation of the projected savings and when they will be realized; and (3) the timing of the deployment and implementation of the project.⁴² The project requires a closer examination in a future proceeding. This is the case even though capacitors and other required equipment used for DVO is equipment that the Company installs and replaces in the normal course of business. A CPCN for the proposed DVO project is not appropriate. We encourage Public Service to file for approval of a DVO project for voltage optimization in a separate application.

54. Because we do not approve DVO in this proceeding, we do not include the DVO savings goals in the energy efficiency goals established here. If DVO is approved in the future, we will establish new energy efficiency goals separately.

55. Finally, DVO investments are similar to traditional utility infrastructure and thus should receive similar cost recovery. Therefore, we do not approve the Company's proposal to recover DVO investments through the DSMCA. Instead, if DVO is approved in the future,

⁴⁰ Legal brief of CEO, pp. 3-4.

⁴¹ In any case, legislative history of a statute cannot contradict the plain language of the statute which contemplates DSM programs involving investments on the utility side of the meter. *See, e.g., People v. Simon*, 266 P.3d 1099, 1108 (Colo. 2011).

⁴² CEC SOP, p.16, ¶2.

we will permit recovery through base rates. We also find Public Service's proposed incentive for DVO will result in the Company retaining funds at overly high levels at the onset of the project.⁴³ Instead, the vast majority of DVO costs should be dedicated to installing the system improvements. If DVO is approved in the future, the Company may count the projected net dollar savings toward determining the performance incentive applicable to the DSM savings generally.

E. Demand Reduction Goals

56. In a previous strategic issues proceeding, the Commission found that demand reduction goals should include demand reductions from energy efficiency programs as well as from load management and demand-response resources.⁴⁴

57. Public Service seeks approval of proposed demand reduction goals associated with its load management and demand response programs. Public Service based its proposed goals on a recently completed demand response potential study and the Company's estimate of future resource needs identified in the Electric Resource Plan (ERP), Proceeding No. 11A-869E. The proposed demand reductions would be achieved through a combination of savings from: the 40 MW program managed by a party aggregator; the Interruptible Service Option Credit (ISOC) program; the Saver's Switch direct load control program for residential air conditioning; and additional savings found in the medium commercial and industrial sector.

58. The Company's proposed goals for demand reductions from load management and demand-response resources are as follows: 528 MW in 2015, 537 MW in 2016, 555 MW in 2017, 575 MW in 2018, 598 MW in 2019, and 623 MW in 2020. By adding the expected

⁴³ Public Service witness Mr. Brockett acknowledged the total DVO incentive would comprise 43 percent of the plant additions. Hearing Transcript Vol. III, p. 123, lines 6-12.

⁴⁴ Decision No. C11-0442, issued in Proceeding No. 10A-0554EG, ¶ 28.

demand reductions associated with energy efficiency programs, Public Service's proposed demand reduction increase to the following: 601 MW in 2015, 606 MW in 2016, 622 MW in 2017, 633 MW in 2018, 656 MW in 2019, and 681 MW in 2020.

59. SWEEP recommends the Commission approve the Company's proposed goals through 2017 but direct Public Service to improve its demand response potential study to consider dynamic pricing options and enabling technologies prior to the next DSM strategic issues filing. SWEEP also recommends the Commission direct the Company to conduct pilot programs with dynamic pricing options and enabling technologies.

60. We adopt Public Service's proposed demand response goals (528 MW in 2015, 537 MW in 2016, etc.) and a minimum annual demand reduction target of 65 MW from energy efficiency measures for 2015 through 2020 (528 MW + 65 MW = 593 MW in 2015, etc.). Specifically, Public Service shall achieve incremental demand reductions in the following amounts: 593 MW in 2015, 602 MW in 2016, 620 MW in 2017, 640 MW in 2018, 663 MW in 2019, and 688 MW in 2020. These demand reductions will allow for the continuation and some growth of the ISOC, Savers Switch, and third-party demand response programs. We direct the Company to use these demand reduction values in the determination of its resource needs in the next ERP filing. These demand reduction goals also contemplate Public Service will identify a need for capacity during the resource acquisition period of its next ERP.

61. We agree with Public Service that, absent significant changes in metering infrastructure and rate design, the Company's demand reduction potential will be limited to load management programs discussed in the Brattle Group demand response potential study.⁴⁵

⁴⁵ Hearing Exhibit 4, Direct Testimony of Jeremy Petersen, Exhibit JAP-6.

For this reason, we will not direct the Company to conduct a new demand response study to inform its next strategic issues filing.

F. Interruptible Service Option Credit (ISOC)

62. The OCC argues the ISOC credits paid by Public Service exceed the Company's avoided capacity costs.⁴⁶ In response, Climax and CF&I argue the Commission should not make any change to the ISOC tariff in this proceeding. They argue that there is not enough information or analysis in this record to change ISOC credits and that this is not an appropriate proceeding to consider such changes to rates.

63. We agree with Climax and CF&I, yet share the OCC's concern. We therefore direct the Company to reexamine the ISOC tariff after updating its avoided costs for its 2015 through 2016 DSM Plan filing and to either: (1) report to the Commission with a filing in this proceeding that avoided capacity costs do not warrant a reexamination of the ISOC tariff or program at this time; or (2) file an advice letter with supporting testimony seeking to change the ISOC tariff.

G. Natural Gas DSM

64. Public Service seeks Commission guidance regarding budgets, overall objectives, and the appropriate cost-effectiveness tests for its natural gas DSM programs. Specifically, the Company requests Commission approval of its proposal to limit gas DSM spending to about \$12 million per year due to relatively low natural gas prices projected in 2015 to 2020 and the associated impact on the cost-effectiveness of gas DSM measures and programs. Public Service also seeks Commission approval of energy savings goals for its gas DSM programs.

⁴⁶ Hearing Exhibit 49, Answer Testimony of Chris Neil, p. 47.

65. Staff recommends the Commission change the cost-effectiveness test for natural gas DSM programs from the Modified Total Resource Cost Test (MTRCT) to the Societal Cost Test (SCT). Staff argues the SCT is a variant of the MTRCT and complies with the statutory definition of “cost-effective” found at § 40-1-102(5), C.R.S.

66. EEBC, Public Service, and SWEEP support Staff’s proposal. However, Public Service requests the Commission adopt the SCT discount rate for calculating customer costs and continue to use its Weighted Average Cost of Capital (WACC) as the discount rate applicable to utility system costs.

67. SWEEP contends a social discount rate should apply in discounting all future costs and benefits. SWEEP also suggests the Commission direct Public Service to increase its gas DSM programs and to increase budgets above the proposed \$12 million level. SWEEP argues natural gas prices have been volatile over the past 15 years and future prices are difficult to predict, which increases the hedge value of natural gas DSM. In addition, SWEEP argues it is in the public interest to reduce pollutant emissions and conserve finite fossil fuel resources with gas DSM. SWEEP argues a \$12 million spending target would overly constrain programs.

68. CRES, SWEEP, CoSEIA, and Sierra Club support a \$17 million annual budget for gas DSM. Denver argues the elimination of heating system rebates, water heater rebates, and the reduced expenditures for home energy audits and consumer education could reduce the DSM services available to Denver residents and cause confusion in the marketplace.

69. We direct Public Service to spend no less than \$12 million annually on gas DSM in 2015 and 2016. This level of spending is consistent with the 2014 spending contemplated in the settlement approved in Proceeding No. 13A-0773EG and will provide program continuity.

70. Public Service shall propose savings goals in its subsequent biennial DSM plans commensurate with the \$12 million annual spending level. This spending level is in excess of the minimum required by § 40-3.2-103, C.R.S., and Rule 4753(h)(I), but we expect the Company will find sufficient market potential for cost-effective measures and programs. In 2013, Public Service exceeded its gas savings goals by 132 percent and spent \$13.6 million.⁴⁷

71. Public Service may propose to reduce spending on gas DSM below \$12 million in its biennial DSM plan addressing 2017 and 2018. However, the amount of spending on low-income gas DSM programs shall remain constant from the 2014 levels in 2015 through 2018. Budget targets for gas DSM beyond 2018 shall be addressed in the Company's next DSM strategic issues proceeding.

72. We also grant Public Service limited authority to apply the SCT to determine the cost-effectiveness of gas DSM measures and programs. Because the SCT is a variation of the MTRCT, we find the SCT is consistent with the definition of cost-effectiveness in § 40-2-102(5), C.R.S. If the Company cannot find cost-effective gas DSM programs using the MTRCT, it may use the SCT to screen additional programs to reach the \$12 million annual spending level. The discount rates applied in the SCT shall be as suggested by Public Service: (1) the Company's WACC will be used to discount utility costs and most of the benefits, such as avoided fuel costs; and (2) the United States Department of Treasury 20-Year Constant Maturity Rate will be used to discount customer incurred costs and environmental benefits. We will waive the requirements in the Commission's Gas DSM Rules, 4 CCR 723-4-4750, *et. seq.*, which require the use of the MTRC test as necessary.

⁴⁷ Hearing Exhibit 57, 2013 DSM Annual Status Report, p. 5.

H. Low-Income Programs and Non-Energy Benefits

73. The Commission previously adopted a non-energy benefit adder for electric and gas DSM programs of 25 percent.⁴⁸ A non-energy benefit adder increases the value of the measured benefits of a DSM measure or program to account for difficult or impossible to quantify benefits. The non-energy benefit adder is used in determining DSM cost effectiveness pursuant to § 40-1-102(5)(b), C.R.S. The non-energy benefit adder increases the likelihood that a DSM measure or program will be found to be cost-effective.

74. Public Service proposes no change to the non-energy benefits adder for low-income programs. EOC encourages the Commission to approve an increase in the current non-energy benefit adder for low-income DSM programs (electric and gas) from 25 percent to 50 percent. EOC argues more benefits accrue to the low-income community than are captured in the current adder. EOC further argues that energy savings are greater than what the Company counts for regulatory reporting purposes due to the DSM measures financed by grants and other non-ratepayer sources. EOC contends that additional non-energy benefits include the preservation of affordable housing in Colorado and the improved health and safety of buildings. EOC also encourages the Commission to direct Public Service to maintain its low-income efficiency programs during 2015 through 2020 at least at current levels. SWEEP and WRA agree with EOC.

⁴⁸ Decision No. C11-0442, issued in Proceeding No. 10A-554EG, ¶ 136.

75. The Commission is deeply interested in DSM programs that serve the low-income community. Because many residential DSM measures involve relatively expensive appliances, we are concerned these measures may focus on the more affluent customers. DSM for low-income customers provides important relief to customers who have difficulties paying their energy utility bills. We support the policies established in the first DSM strategic issues proceeding and continue to direct Public Service to give low-income customers special attention and substantial commitment because of their unique needs and challenges.⁴⁹ Public Service should not forego DSM programs for low-income residential and multi family housing simply because they do not pass the MTRC test.

76. We direct Public Service to maintain its low-income efficiency programs from 2015 to 2020 at existing levels. We will not order, however, an increase in the low-income non-energy benefits adder. The adder will remain at 25 percent for low-income gas and electric DSM programs.

I. Behavioral Change Programs

77. Behavioral change programs seek to increase electric energy savings by educating customers on how to reduce consumption through conservation advice, benchmarking, and other suggestions. Public Service proposes to continue implementation of behavioral change programs and to count the associated savings towards its goals and its performance incentive. Specifically, the Company proposes to include one third of the total net dollar savings from behavioral change programs each year during a three-year program period. The Company also seeks approval of an approach for measuring and counting annual savings by comparing a participant group to a

⁴⁹ Decision No. C08-560, mailed in Proceeding No. 07A-420E, ¶ 132.

control group.⁵⁰ Public Service further seeks permission to transition its behavioral change pilot program involving OPOWER energy reports to a full-scale program.⁵¹

78. SWEEP supports the transition of the behavioral change pilot to a full-scale program. SWEEP also supports the proposal to count one third of the savings over a three-year period. SWEEP also advocates for behavioral change programs for commercial and industrial customers. WRA, EEBC, Sierra Club, and OPOWER also support Public Service's proposals regarding behavioral change programs.

79. The OCC opposes the behavioral change program in its current form, arguing the program has a low level of cost-effectiveness. The OCC also argues that such programs may be more effective if competitively bid.

80. CEC opposes savings from behavioral change programs being counted towards Public Service's goals and performance incentives, arguing the Company should not receive any credit for changes in usage patterns undertaken by customers without financial support. CEC equates behavioral change program savings to market transformation or influenced savings.

81. We find the residential energy feedback pilot has a track record of being cost-effective and producing measurable savings. We therefore approve expansion of the residential program into a full-scale program as proposed by the Company.

⁵⁰ Public Service states it will develop its measurement and verification protocols according to industry-recommended approaches. In brief, savings are determined after the fact by comparing the actual savings achieved to a control group of non-participants. The savings are reported at a 95 percent statistical confidence level for each year. Public Service states this is the methodology recommended by the Department of Energy's State Energy Efficiency Action Network. Hearing Exhibit 4, Direct Testimony of Jeremy Petersen, p. 34, lines 17-21.

⁵¹ The OPOWER program provides residential customers with personalized energy usage reports, e-mails, and a web portal to make more informed decisions about energy usage based on comparative information in their neighborhoods. According to Public Service's 2013 DSM Annual Report, the program saves, on average, 1.5 to 2.5 percent of electric savings and 0.5 to 1.0 percent of gas savings on an annual basis. In 2013, the program had a positive MTRC value of 2.80 for electric and 5.68 for gas, at a total cost of approximately \$630,000. Hearing Exhibit 57, pp. 12 and 14. MTRC net benefits for both gas and electric were approximately \$998,000. Hearing Exhibit 57, p. 100.

In addition, Public Service has gained the experience of two years of managing its pilot residential behavioral change program. We therefore approve the measurement methodology advocated by the Department of Energy's State Energy Efficiency Action Network and adopted by Public Service. We agree that the use of control groups of participants and non-participants, while imperfect, is still the best method to measure savings from these programs. We also agree with Public Service's proposal to include one third of the total net dollar savings from behavioral programs each year during a three-year program period.

82. However, the measurement and verification of savings from feedback programs for non-residential customers are less certain. Because these pilots are less established, we will not permit savings derived from these pilots to be counted towards the overall DSM savings at this time. Instead, we encourage Public Service to file an application for approval of expansion in these areas prior to 2017 or in the next strategic issues proceeding.

J. LED Street Lighting Program

83. Public Service proposes an LED Street Lighting program in which customers, mostly municipalities, could upgrade existing street lights owned by Public Service by buying LEDs from the Company. Customers who elect to do so would receive a rebate for a portion of the capital costs of the upgrades. Public Service would pay for the installation and maintenance of the equipment. Public Service projects an annual cost of approximately \$6 million during 2015 through 2019. It proposes to file a detailed plan including budget, energy savings, and evaluation and measurement verification along with other requirements either in a future DSM Biennial Plan or a 60-Day Notice filing. Public Service would count all energy savings from LEDs towards its energy savings goals.

84. The OCC generally supports the proposed LED Street Lighting program, but argues that its cost effectiveness is likely to be marginal. The OCC advises the Commission to await technological improvements before approving the program.

85. SWEEP points to the keen interest of municipalities in regard to the program and fully supports the program as long as it is cost-effective. SWEEP recommends the inclusion of this program in future DSM biennial plans. SWEEP further requests the Commission order the Company to consult with municipalities in regard to implementing the LED program. CEC also supports the program so long as it is cost-effective.

86. Boulder also generally supports the program but argues it is still in the early stages of development. Boulder requests an opportunity to evaluate the monthly charges and rebates associated with the program prior to its implementation. Boulder argues that the structure of the rebate is still uncertain and an upfront discount is preferable to an after-the-fact rebate.

87. Staff opposes the approval of the LED Street Lighting program because there is insufficient information in the record to support it. Staff encourages the Company to further define the parameters and specifics of the proposed product and submit an application or an advice letter filing in the future so that the program could be more comprehensively evaluated.

88. We find the LED Street Light program to be promising with respect to projected net dollar savings. The program could also be positive in modernizing the state's transportation infrastructure. Indeed, a pilot program testing LED equipment is currently underway.⁵²

⁵² Hearing Exhibit 1, Direct Testimony of Debra Sundin, p. 63, lines 1-8.

We expect the results of this pilot—including what LED products are most beneficial, rate options, and maintenance—will assist in calculating cost-effectiveness.

89. We share Boulder’s concern that the LED program is still in the early stages of development. Thus, rather than approving the program in this proceeding, we encourage Public Service to gather further information through its pilot and introduce a full program in its next DSM Biennial Plan filing.⁵³ Before the program is introduced to the Commission, we encourage and expect Public Service to consult with affected municipalities. We expect to see plans for continued communications with the municipalities during and after the implementation of the program.

K. Avoided Capacity and Energy Costs

90. Avoided capacity and energy costs are the main components of the direct energy benefits of DSM. When determining cost-effectiveness of DSM, avoided capacity and energy costs are combined with certain non-energy benefits and the sum is compared to the direct and indirect costs of the programs. Section 40-1-102(5)(I), C.R.S., defines cost effectiveness and lists “The utility’s avoided generation, transmission, distribution, capacity, and energy costs” as some of the benefits of DSM.

91. In response to criticisms of its initial avoided cost calculations used to develop the Application and its direct testimony, Public Service updated its avoided cost calculations and proposed a number of changes to its original requests. On rebuttal, the Company determined a gas-fired combustion turbine (CT) was the type of generation avoided by the Company’s DSM activities beginning in 2015. Public Service also determined the capacity costs of CTs dropped

⁵³ An advice letter filing is required if the program will affect streetlighting service offered under tariffs.

by nearly 45 percent as compared to assumptions from the Company's recent DSM filings. The Company further decided on using Strategist, its resource planning model, to calculate avoided energy costs. The Company found the estimated avoided energy costs derived from Strategist were lower than the avoided energy values used in the recent DSM filings.

92. Public Service requests Commission approval of this alternative approach for calculating avoided costs during 2015 to 2020. Specifically, the Company seeks approval of using the value of capacity associated with an assumed addition of a utility-constructed and operated CT to its system as the measure of avoided capacity costs.⁵⁴ The Company also seeks approval of using the value of the system's marginal energy based on Strategist modeling with projected fuel prices and other inputs as the measure of avoided energy costs.

93. In addition, Public Service proposes to use \$35.39/kW-year as proxy for avoided transmission and distribution costs associated with DSM programs. The Company proposes to study the value of distribution capacity costs over the next few months and to include an updated value in its 2015 through 2016 DSM Biennial Plan for 2015 through 2016.

94. The OCC argues that, because an avoided CT is the basis for avoided capacity costs, no value should be ascribed to avoided transmission costs. This is because a new CT likely would not result in additional transmission costs given the present build-out of Public Service's transmission system. The OCC further disputes Public Service's proposal to add an estimate of avoided distribution capacity costs in future DSM biennial plans, arguing the Company should have done so in this proceeding.

⁵⁴Public Service seeks approval of the use of the full-avoided capacity costs of the RAP CT even in years in which the Company is long on generation resources. According to the Company, there would be significant swings in the cost-effectiveness of energy efficiency if there is no stability in the basis for the determination of avoided capacity costs.

95. WRA generally supports Public Service's proposed approach to determining avoided generation capacity costs, but it objects to the adjustment that the Company makes to the proposed value for avoided capacity. WRA urges the Commission to reject Public Service's proposed ancillary services cost adder in determining DSM cost effectiveness. WRA argues that this proposed adjustment was not vetted in this proceeding or the 2011 ERP, Proceeding No. 11A-869E.

96. We adopt Public Service's approach for determining avoided generation capacity costs, with the exception of the proposed adjustment for ancillary services. Public Service's derivation of the cost to develop the "Resource Acquisition Period (RAP) CT" is reasonable and representative of the generation capacity costs avoided by DSM when the Company's system has excess generation capacity. We also agree with Public Service that the Company's recent ERP competitive solicitation resulted in exceptionally low bids for CT capacity. Therefore, we will not adopt the avoided generation capacity costs recommended by the OCC.

97. We agree with WRA that the proposed ancillary services adjustment to the RAP CT value was not developed sufficiently for adoption in this proceeding. We also decline to adopt any value for avoided transmission and distribution costs associated with DSM programs in this proceeding, due to the lack of support in the record. However, we direct Public Service to study the avoided transmission and distribution capacity costs and propose values in its DSM Biennial Plan for 2015 through 2016. Finally, we approve the use of the Strategist model for determining avoided energy costs for electric DSM.

L. Avoided Emissions

98. Section 40-1-102(5)(b), C.R.S., says: "[i]n calculating the benefit-cost ratio, the benefits shall include, but are not limited to, the following, as applicable: (I) the utility's avoided

generation, transmission, distribution, capacity, and energy costs; (II) the valuation of avoided emissions; and (III) Nonenergy benefits as determined by the commission.”

99. Public Service suggests the Commission maintain the approach approved in the Company’s initial DSM strategic issues proceeding, where the values for avoided emissions from the ERP proceedings are applied to determine cost-effectiveness of DSM.⁵⁵ Under this approach, the quantifiable avoided costs from emission reductions are captured using Strategist modeling.

100. In the Company’s most recent ERP proceeding, the Commission recognized that, while the Environmental Protection Agency (EPA) is continuing to regulate carbon emissions from new power plants through its New Source Review program and may regulate existing power plants through its New Source Performance Standard program, it has not proposed any carbon pricing mechanism.^{56,57} The Commission also determined any impact on carbon pricing from the adoption of federal legislation is unclear. The Commission therefore directed Public Service to present bid evaluation results in two forms: one would use a \$0/ton cost for carbon and the other used \$20/ton beginning in 2017 escalating annually at the general rate of inflation.⁵⁸

101. WRA, Sierra Club, and SWEEP argue that federal action to regulate carbon emissions is increasingly likely. WRA also contends Public Service’s cost-effectiveness analysis does not properly account for the value of avoided emissions, as required by statute. WRA argues the Company takes an overly restrictive view of what constitutes the value of avoided emissions. It believes the statute explicitly requires the Commission to consider

⁵⁵ Decision No. C08-0560, Proceeding No. 07A-420E, ¶ 80.

⁵⁶ The EPA issued proposed “Section 111(d)” rules governing carbon emissions from existing power plants on June 2, 2014. This information is not in the record of this proceeding.

⁵⁷ Decision No. C13-0094, issued January 24, 2013 in Proceeding No. 11A-869E, ¶ 182.

⁵⁸ *Id.*, ¶ 186.

avoided emissions separately from other non-energy DSM benefits. WRA cites Decision No. C11-0442, issued in Proceeding No. 10A-554EG to support that argument.

102. WRA acknowledges that the Company includes some avoided emission costs, but argues the Company does not count avoided costs associated with carbon emissions. WRA also disputes Public Service's contention that the non-energy benefits adder of 10 percent includes the value of avoided carbon emissions.

103. WRA argues that neither Colorado statutes nor Commission rules require the use of assumptions from the most recent ERP when evaluating the cost-effectiveness of DSM. WRA also argues that reliance on the Company's most recent ERP assumptions can be contrary to the statute because these assumptions do not account fully for the value of avoided emissions. WRA urges the Commission to direct Public Service to use the carbon sensitivity analysis from its most recent ERP to model avoided costs and determine cost-effectiveness of programs in its next DSM strategic issues application. Even if no carbon price is assumed for the ERP purposes, WRA argues the Company nonetheless should be directed to identify a carbon emission value for determining the cost-effectiveness of DSM.

104. We find that Public Service adequately addressed avoided emissions costs in the determination of the energy costs avoided by DSM. We disagree with WRA's analysis and find that Colorado statutes allow the Commission to determine the value of avoided emissions and include certain emission benefits within the non-energy benefits adder. The statute does not require a separate accounting of these two types of DSM benefits.

105. Concerning the potential avoided costs of carbon regulations and given the record in this case, we agree with WRA that the carbon cost sensitivity analysis from Public Service's most recent ERP should play a role in the Company pursuing certain DSM programs.

If the Company identifies a DSM program that is marginally non-cost-effective under the zero carbon cost base assumption from the last ERP, it may nonetheless include that program in its DSM portfolio if the program becomes cost effective under the non-zero carbon cost scenario assumptions. This is consistent with the Commission's consideration of the clean energy benefits of "Section 123 resources"⁵⁹ in Proceeding No. 11A-869E.⁶⁰

M. Non-Energy Benefits Adder

106. The measured financial benefits associated with most of the Company's DSM programs are increased by a 5 percent non-energy benefits adder for natural gas programs and by a 10 percent non-energy benefits adder for electric programs.⁶¹ The measured financial benefits associated with low-income gas and electric DSM programs are increased by a 25 percent non-energy benefits adder. In the Company's first DSM strategic issues proceeding, the Commission developed the use of adders to account for the difficult to quantify non-energy benefits identified in the statute.⁶²

107. Public Service argues the current non-energy benefits adders are consistent with the adders used in other states and should be maintained. Public Service further argues no party offered substantial evidence that the adders are inadequate. Likewise, Public Service argues it should not be required to perform a new study of the non-energy benefits.

⁵⁹ Section 40-2-123(1)(a), C.R.S., states: The commission shall give the fullest possible consideration to the cost-effective implementation of new clean energy and energy-efficient technologies in its consideration of generation acquisitions for electric utilities, bearing in mind the beneficial contributions such technologies make to Colorado's energy security, economic prosperity, insulation from fuel price increases, and environmental protection[.]

⁶⁰ Decision No. C13-0094, Proceeding No. 11A-869E, ¶¶ 182-189.

⁶¹ The non-energy benefit adder must be excluded when calculating net dollar savings (*i.e.*, net economic benefits) for the calculation of the financial incentive. Decision No. C08-0560, Proceeding No. 07A-420E, ¶ 79.

⁶² Decision No. C08-0560, issued in Proceeding No. 07A-420E, ¶ 76.

108. In contrast, SWEEP urges the Commission increase the three non-energy benefits adders and agrees with Sierra Club's proposed adders. These adders average 45 percent for the residential electric programs and 20 percent for commercial and industrial electric programs. In regards to gas DSM, SWEEP argues that increasing the adders will help many programs to pass the MTRCT.

109. EEBC argues that the non-energy benefits of DSM should include new local jobs, more effective workplaces, more valuable homes and buildings, increased sales tax revenue, and cleaner water. EEBC further argues DSM is a customer's hedge against rate increases over time. EEBC urges the Commission to require Public Service to conduct a new study of non-energy benefits. WRA concurs with that recommendation.

110. We decline to change the non-energy benefits adders used by Public Service. We agree with the Company that there is an insufficient basis to support any change. In addition, the non-energy benefit adders should not be used to compensate for lower avoided capacity and energy costs. Moreover, there appears to be sufficient cost-effective DSM programs to meet the goals we establish here using the existing non-energy benefit adders.

111. We also will not require Public Service to complete any additional studies of non-energy benefit adders at this time. No party has supported why it is more feasible to quantify such hard-to-quantify non-energy benefits as compared to when the Commission established the current adders. In addition, no party has uncovered any significant, yet previously unrecognized, non-energy benefits.

N. Cost Effectiveness Tests

112. The Commission's standard for cost effectiveness is encapsulated in the MTRC, in accordance with § 40-1-102(5)(a), C.R.S. Certain parties advocated for a change in the

primary cost-effectiveness test used for DSM programs, including a broad change from the MTRC test to the Utility Cost Test (UCT). In addition, Public Service and other parties relied on RIM results to support a case for reducing energy savings goals. We reiterate the MTRC test shall continue to serve as the primary test for determining the cost-effectiveness of DSM programs notwithstanding the limited use of the SCT for certain gas DSM measures and programs as discussed above. As demonstrated in the record, the UCT can result in ratepayers spending on DSM measures that are uneconomic from a public interest perspective. We also disagree with CoSEIA that an interest rate other than Public Service's WAAC should be used for calculating the net present value of costs and benefits.

O. DSM Participation Rates

113. Public Service presented RIM test results to demonstrate the financial impact of DSM to ratepayers and to support its proposal lowering the existing goals. Public Service explains the RIM reflects the impact of a DSM program on non-participants.⁶³ During the hearing, however, Public Service admitted that little information has been developed with respect to the participant and non-participant rates of its DSM programs.⁶⁴

114. We share EEBC's concern that the lack of such information may render the results of the RIM test or other cost-effectiveness measures inaccurate. Without information on participants and non-participants, the Commission is hindered in its ability to estimate whether all classes of customers have the opportunity to participate in DSM programs as required by § 40-3.2-104(4), C.R.S. In addition, the Commission cannot determine whether the occurrence of non-participants is minimized.⁶⁵

⁶³ Hearing Exhibit 4, Direct Testimony of Jeremy Peterson, p. 52.

⁶⁴ Hearing Transcript Vol. 1, p. 89, lines 6-19.

⁶⁵ Decision No. C08-0560, issued in Proceeding No. 07A-420E, ¶146.

115. We therefore direct Public Service to collect, define, and analyze participant and non-participant rates. In future DSM plan filings, the Company shall explain how these data were collected and used for each program. These data may inform the goals in a future DSM strategic issues proceeding.

P. Updated Market Potential Study

116. Section 40-3.2-104(2), C.R.S., requires the Commission to consider cost-effective DSM potential in establishing energy savings goals. Public Service's market potential study satisfied this requirement and provided additional information, including technical assumptions that may be used for the projection of savings pursuant to DSM plans. Because market potential studies are an important foundation for DSM program development, design, implementation, and savings estimates, we direct Public Service to complete a new study prior to the filing of its next DSM strategic issues proceeding.

Q. Next DSM Strategic Issues Filing

117. We find that another strategic issues proceeding is necessary to examine energy savings goals, financial incentives, and other issues that will influence the Company's 2019-2020 Biennial DSM Plan. Therefore, we will require Public Service to file another DSM Strategic Issues proceeding in the first quarter of 2017.

R. Issues Not Addressed

118. The Commission denies all requests made in this proceeding that have not been addressed in this Decision. Many of these requests, such as those advocating for the inclusion of solar thermal technologies in DSM portfolios, are better addressed in DSM biennial plans rather than a strategic issues proceeding.

II. ORDER**A. The Commission Orders That:**

1. The Application for Approval of a Number of Strategic Issues Relating to Its Demand Side Management Plan filed on June 17, 2013 by Public Service Company of Colorado (Public Service or Company) is granted with modifications, consistent with the discussion above.

2. Public Service shall use its best efforts to achieve the electric energy savings and demand reduction goals discussed above during 2015 through 2020.

3. Public Service shall file an advice letter on not less than ten days' notice to modify its electric Demand-Side Management Cost Adjustment tariff to reflect the incentive structure adopted by this Decision.

4. Public Service shall examine its Interruptible Service Option Credit (ISOC) tariff after updating its avoided costs for its 2015 through 2016 DSM Plan filing and either: (1) report to the Commission through a filing in this proceeding that avoided capacity costs do not warrant a reexamination of the ISOC tariff or program; or (2) file an advice letter with supporting testimony seeking to change the ISOC tariff.

5. Public Service shall study the participation and non-participation rates associated with its DSM programs, consistent with the discussion above.

6. Public Service shall maintain its low-income efficiency programs from 2015 to 2020 to achieve savings levels equal to the savings expected from the low-income programs included in the Company's 2014 DSM Plan.

7. Public Service shall commence a DSM strategic issues proceeding to examine potential adjustments to its savings goals and changes to its DSM financial incentive mechanism

no later than March 31, 2017. Public Service shall complete a new market potential study prior to that filing.

8. The 20-day period provided in § 40-6-114, C.R.S., within which to file applications for rehearing, reargument, or reconsideration, begins on the first day following the effective date of this Decision.

9. This Decision is effective upon its Mailed Date.

**B. ADOPTED IN COMMISSIONERS' DELIBERATIONS MEETING
May 28, 2014.**

(S E A L)



ATTEST: A TRUE COPY

Doug Dean,
Director

THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

JOSHUA B. EPEL

PAMELA J. PATTON

GLENN A. VAAD

Commissioners