BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Application of Nevada Power Company d/b/a NV Energy for approval of a cost-of-service study and net metering tariffs.

Docket No. 15-07041

Application of Sierra Pacific Power Company d/b/a NV Energy for approval of a cost-of-service study and net metering tariffs.

Docket No. 15-07042

At a general session of the Public Utilities Commission of Nevada, held at its offices on December 22, 2015.

PRESENT: Chairman Paul A. Thomsen
Commissioner Alaina Burtenshaw
Commissioner David Noble
Assistant Commission Secretary Trisha Osborne

[PROPOSED ORDER]

The Public Utilities Commission of Nevada ("Commission") makes the following findings of fact and conclusions of law:

I. INTRODUCTION

Nevada Power Company d/b/a NV Energy ("NPC") filed an Application for approval of a cost-of-service study and net energy metering ("NEM") tariffs. Sierra Pacific Power Company d/b/a NV Energy ("SPPC," and together with NPC, "NV Energy") filed an Application for approval of a cost-of-service study and NEM tariffs.

II. SUMMARY

The Applications are granted as modified in the discussion and findings below. The Commission revises tariffs and rates for NPC and SPPC.

III. PROCEDURAL HISTORY

• On July 31, 2015, NPC filed an Application for approval of a cost-of-service study and NEM
<table>
<thead>
<tr>
<th>REVIEWED &amp; APPROVED BY</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMIN/ASST.</td>
<td>/</td>
</tr>
<tr>
<td>COMM. COUNSEL</td>
<td>8/21/15</td>
</tr>
<tr>
<td>SECRETARY/ASST. SEC.</td>
<td>/</td>
</tr>
<tr>
<td>OTHER</td>
<td>/</td>
</tr>
</tbody>
</table>
tariffs.

- On July 31, 2015, SPPC filed an Application for approval of a cost-of-service study and NEM tariffs.

- The Applications were filed pursuant to the Nevada Revised Statutes ("NRS") and Nevada Administrative Code ("NAC") Chapter 703 and 704, including but not limited to Section 4.5 of Senate Bill ("SB") 374 of the 78th Session of the Nevada Legislature (2015) and NAC 703.535.


- The Regulatory Operations Staff ("Staff") of the Commission participates as a matter of right pursuant to NRS 703.301.

- On August 4, 2015, the Attorney General’s Bureau of Consumer Protection ("BCP") filed a Notice of Intent to Intervene pursuant to NRS 228.360 in Docket Nos. 15-07041 and 15-07042.

- On August 14, 2015, the Sierra Club filed a Petition for Leave to Intervene ("PLTI") in Docket Nos. 15-07041 and 15-07042.

- On August 17, 2015, the Alliance for Solar Choice ("TASC") filed a PLTI in Docket Nos. 15-07041 and 15-07042.


- On August 17, 2015, Travis G. Miller filed a PLTI in Docket No. 15-07042.

- On August 17, 2015, Nevadans for Clean Affordable Reliable Energy ("NCARE") filed a PLTI in Docket Nos. 15-07041 and 15-07042.

- On August 17, 2015, the Southern Nevada Homebuilders Association ("SNHBA") filed a PLTI in Docket Nos. 15-07041 and 15-07042.

- On August 17, 2015, the United States Green Building Council, Nevada Chapter ("USGBC") filed a PLTI in Docket No. 15-07041.


- On August 18, 2015, the Solar Energy Industries Association ("SEIA") filed a late-filed PLTI in Docket No. 15-07042.
• On August 18, 2015, the Washoe County School District ("WCSD") filed a PLTI in Docket No. 15-07042.

• On August 19, 2015, the Commission held a prehearing conference. BCP, Bombard, Mr. Miller, NCARE, NV Energy, SEIA, SNHBA, Staff, TASC, USGBC, Vote Solar, and WCSD made appearances. The Presiding Officer excused the Sierra Club and Mr. O’Meara from appearing. The Presiding Officer consolidated Docket Nos. 15-07041 and 15-07042 for hearing purposes. The Presiding Officer granted the PLTIs filed by Bombard, NCARE, TASC, Vote Solar, and WCSD. The Presiding Officer conditionally granted the PLTIs filed by Mr. O’Meara, SEIA, Sierra Club, SNHBA, and USGBC, subject to those parties filing supplemental information. The Presiding Officer denied the PLTI filed by Mr. Miller.

• On August 19, 2015, the Sierra Club filed a Reply to Staff Response to Petition to Intervene in Docket Nos. 15-07041 and 15-07042.

• On August 20, 2015, the Great Basin Solar Coalition ("GBSC"), formerly Mr. O’Meara, filed supplemental information in Docket No. 15-07042.

• On August 20, 2015, SEIA filed a Supplement to Late-Filed Petition for Leave to Intervene in Docket Nos. 15-07041 and 15-07042.

• On August 20, 2015, SNHBA filed a Supplement to the Petition for Leave to Intervene in Docket Nos. 15-07041 and 15-07042.

• On August 20, 2015, USGBC filed a letter rescinding its PLTI in Docket No. 15-07041.


• On August 21, 2015, the Commission held a hearing in Docket Nos. 15-07041 and 15-07042. BCP, Bombard, GBSC, NCARE, NV Energy, SEIA, Sierra Club, SNHBA, Staff, TASC, and Vote Solar made appearances.

• On September 1, 2015, the Commission issued an Interim Order.

• On September 4, 2015, the Presiding Officer issued a Procedural Order establishing a procedural schedule in Docket Nos. 15-07041 and 15-07042.

• On October 26, 2015, the Presiding Officer held a discovery conference with NV Energy and TASC.

• On October 28, 2015, the Presiding Officer issued Procedural Order No. 2.

• On November 2, 2015, NV Energy and Vote Solar notified the Presiding Officer, via electronic mail to the Administrative Attorney, of an agreement to revise the procedural schedule.
as it pertains to work papers.

- On November 6, 2015, Sierra Club submitted a letter requesting to withdraw as a party and participate as a commenter.

- On November 12, 2015, the Presiding Officer issued Procedural Order No. 3.

- On November 18-20, 2015 the Commission held a continued hearing in Docket Nos. 15-07041 and 15-07042. BCP, Bombard, GBSC, NCARE, NV Energy, SEIA, SNHBA, Staff, TASC, Vote Solar, and WCSD made appearances. Exhibits 1A-102A were admitted to the record pursuant to NAC 703.730.

- On December 1, 2015, the Presiding Officer issued Procedural Order No. 4.

- On December 2, 2015, BCP, NCARE, NV Energy, SEIA, Staff, TASC, and Vote Solar filed legal briefs. On December 9, 2015, BCP, NCARE, NV Energy, Staff, TASC, and Vote Solar filed reply briefs.¹

IV. COST-OF-SERVICE STUDIES

NV Energy Position

1. NV Energy recommends that the Commission approve the marginal cost-of-service studies ("MCSS") prepared for NPC and SPPC and find that the MCSS are appropriate for designing rates for classes of customer-generators ("NEM ratepayers").² (Ex. 1A at 18; Ex. 4A at 18.)

2. NV Energy states that while it is appropriate to develop NEM ratepayer classes for all sizes of NEM ratepayers, NV Energy limited the MCSS and the new NEM tariffs to those classes that are not currently subject to more cost-based pricing (e.g., time-of-use ("TOU")

¹ Several parties also included analyses of SB 374 and the relevant statutes and regulations in witness testimony. (See Ex. 29A (NV Energy) at 15-17; Ex. 30A (NV Energy) at 15-17; Ex. 40A (WCSD) at 3; Ex. 41A (SNHBA) at 3-4; Ex. 44A (Vote Solar) at 7-9, 11, 13, 46-47, 50-51, 60, 62; Ex. 49A (TASC) at 6-7, 9-10; Ex. 62A (BCP) at 2; Ex. 64A (Staff) at 3, 11-12, 23-24; Ex. 70A (TASC) at 34, 48; Ex. 99A (NV Energy) at 5, 7-15, 79; Ex. 101A (NV Energy) at 6-7, 21-23, 26-31, 35-37, 39, 41-42; Tr. at 89-90 (NV Energy), 99-100 (NV Energy), 357-359 (TASC), 406 (Bombard), 442-443 (BCP), 474-477 (Staff), 503-505 (Staff), 552-554 (Staff), 580-583 (Staff), 595-596 (Staff), 1103-1104 (NV Energy), 1132-1133 (NV Energy), 1140-1144 (NV Energy).)

² NEM ratepayers who have completed applications that were accepted or approved by NV Energy prior to the cumulative capacity of all NEM systems reaching the 235 megawatts ("MW") are referred to as NEM1 ratepayers. NEM ratepayers who have completed applications that were accepted or approved by NV Energy after the cumulative capacity of all NEM systems reaching the 235 MW are referred to as NEM2 ratepayers.
demand charges, facilities charges). For NPC, the affected ratepayer classes are the single family residential ("RS"), multi-family residential ("RM"), large single family residential ("LRS"), and small general service ("GS") classes. For SPPC, the affected ratepayer classes are the single-family residential ("D-1"), multi-family residential ("DM-1"), and small general service ("GS-1") classes. The rate structures for the larger ratepayer classes have cost-based customer and facility distribution charges and recover a significant portion of the transmission and generation costs through TOU demand charges. (Ex. 2A at 26; Ex. 5A at 26.)

3. NV Energy states that the MCSS guides the development of each ratepayer class’s total revenue requirement and rate design. The MCSS develops the revenues at full marginal costs that would be realized if hourly differentiated prices equal to NV Energy’s marginal costs were charged to each ratepayer class. Through Statement O, the ratepayer class marginal revenues are used to allocate the embedded revenue requirement to the various classes. (Ex. 2A at 26, 46-47, 164-167; Ex. 5A at 26, 46-47, 158, 160.)

4. The MCSS demonstrate that NEM ratepayers have unique service and cost characteristics. The average NEM ratepayer and non-NEM ratepayer have distinctly different load shapes, load factors, and billing determinants. The load levels and hourly usage differences (let alone the partial-requirements nature of their service) are sufficient to justify separate rate classes. Further, the ability for the NEM ratepayers to flow energy back into the utility systems is something NV Energy does not allow larger partial-requirements (stand-by) ratepayers to do. The result is a substantial cost shift from NEM ratepayers to non-NEM ratepayers. (Ex. 2A at 11, 21, 33-35, 163, 177-184, 187; Ex. 5A at 11, 21, 32-35, 162, 166-172, 174; Tr. at 167-168.)

5. NV Energy states that while the MCSS redistributed the revenue requirement to all ratepayer classes, no other ratepayer class rate changes are being proposed. The sole
objective of the Applications is to establish NEM ratepayer classes and rates based on the MCSS. NV Energy prepared the MCSS consistent with: (1) the Commission’s regulations; (2) NV Energy practices that have evolved over 30 years; (3) previous MCSS that have been vetted and approved in the past by the Commission; and (4) the presentation made by NV Energy at the May 1, 2015, workshop in Docket No. 14-06009. (Ex. 2A at 9-10, 14, 16, 25, 46; Ex. 5A at 9-10, 14, 16, 25, 46.)

6. NV Energy states that it updated numerous inputs for the MCSS. NV Energy updated the marginal energy cost and hourly loss of load probability, which is used in the marginal generation cost allocation. NV Energy used the PROMOD results to reflect NPC’s integrated resource plan filing (Docket No. 15-07004) preferred plan. NPC’s integrated resource plan filing PROMOD results are used for both NPC and SPPC for marginal energy costs due to joint dispatching. The marginal energy costs over the period 2016-2018, which is the potential rate effective period. NPC’s and SPPC’s loss of load probabilities are determined separately because neither utility’s resources can prevent a loss of load occurrence for the other utility. The hourly loss of load probability is the hourly cost responsibility factor used to spread generation unit demand costs to each ratepayer class. The loss of load probability data was for the period prior to the forecasted significant capacity addition in 2020 (i.e., 2016-2019). NV Energy updated the probability of system peak cost responsibility factor used in the ratepayer class allocation of distribution demand and transmission costs. NV Energy also updated the historical ten-year period data to 2005-2014 and the forecasted period year to 2016. NV Energy updated NPC’s rate of return to reflect the authorized rate in the Docket No. 14-05004 Stipulation. NV Energy used the billing determinants for the twelve-month period that ended May 2014 for NPC and the twelve-month period that ended March 2015 for SPPC. The NEM2 class load shapes
were developed for the twelve months ended May 2015 and were removed from the otherwise full requirements class. The Customer Weighing Factor Study ("CWFS") was updated to include the new NEM classes. New surveys of the pertinent departments serving NEM ratepayers were made to determine the relative proportion of customer service and accounts expense attributable to the separate NEM ratepayer classes. (Ex. 2A at 26-28, 35, 38, 63; Ex. 5A at 26-27, 35, 38, 60-61, 68.)

7. NV Energy states that the MCSS have four functional components: facilities; customer; demand-related (non-revenue distribution feeders, substations, transmission, and generation); and energy. Other than facilities and customer costs, the marginal costs are determined using hourly data, developed from PROMOD outputs and historical data. Additionally, facilities and customer costs are recovered through the monthly basic service charge. (Ex. 2A at 26, 31-32; Ex. 5A at 26, 30, 32.)

8. NV Energy states that the facilities costs represent NV Energy’s investment in distribution facilities installed closest to the ratepayer (e.g., service drops, transformers, secondary distribution). The facilities investments are limited to those allowed pursuant to NV Energy’s line extension rules ("Rule 9"). As the density of NEM systems increases, additional costs or savings may be identified, but no differences have been identified to date. (Ex. 2A at 30, 73-77, 110; Ex. 5A at 29, 72-76, 102.)

9. NV Energy states that customer costs are comprised of the revenue requirement associated with meter investment, and related meter expenses, customer accounting expenses, and customer service expenses. The meter investment was developed by class, and a generation meter was also developed for each NEM ratepayer class. While NEM and full-requirements ratepayers use identical billing meters, the NEM ratepayers’ meters need to be programmed to
measure bi-directional flow. The skillset requirements for replacing a standard-billing meter with the NEM-modified version necessitate that journeyman electricians or meter technicians perform such installations. The NEM ratepayer meter costs exceed those for the residential full-requirements ratepayer. (Ex. 2A at 68-71, 111; Ex. 5A at 64-66, 103.)

10. NV Energy states that the customer accounting and service costs are allocated to each class through the use of a CWFS, with the results applied to the historical costs used in the last MCSS. NV Energy states that there are two causes for the increase in NEM ratepayer customer costs: fully dedicated employees and the Renewable Energy Department. NPC has three customer service representatives plus one supervisor's allocated time, and SPPC has 1.5 customer service representatives to handle phone calls and manually review NEM ratepayers' bills. The department heads anticipate the cost per NEM ratepayer not to change, but there will be an increase overall in costs due to the increase in the number of NEM ratepayers. 94 percent of the Renewable Energy Department internal labor costs are allocated to NEM ratepayer classes. The Renewable Energy Department processes the NEM applications. As the program transitions from an incentive program to serving the NEM ratepayer classes, the internal labor costs will still be incurred. The MCSS determined that the NEM ratepayer classes have greater customer accounting and service expenses. (Ex. 2A at 29, 64-66, 69-73, 75; Ex. 5A at 28, 62-64, 68-72; Ex. 17A; Ex. 18A.)

11. NV Energy states that the marginal distribution demand related costs (non-revenue distribution feeders, substations, and high voltage distribution) are allocated between ratepayer classes based upon the class load shapes (e.g., contribution to the hourly load) and the hourly normalized probability of peak cost responsibility factor. The NEM ratepayer’s load

---

3 Probability of peak is based upon those hours during which there is a 90-percent probability that the system peak will occur. (Ex. 2A at 40-41; Ex. 5A at 40-41.)
shape for each fifteen-minute interval is the greater of the excess generation returned to the utility's system or the total load. The total load is the sum of the deliveries to the NEM ratepayer by the utility and the NEM ratepayer generation consumed by the NEM ratepayer during the fifteen-minute interval. The total load represents the maximum potential burden on the distribution system if the NEM ratepayer were to lose their own generation. The excess generation above the NEM ratepayer's total load represents additional use of the distribution system by the NEM ratepayer to facilitate sending energy to the utility. The distribution system is designed to meet the ratepayer's estimated peak load demand, which is total load. No quantifiable primary distribution costs reductions have been identified for NEM customers. The excess generation component accounts for 0.1 percent of the NEM increase in marginal distribution costs, attributable to the excess energy occurring at times of relatively low distribution demand cost (primarily winter season). (Ex. 2A at 23, 40-41, 75-78; 5A at 23, 37-40, 72.)

12. NV Energy states that until further studies are performed, no basis exists for altering the distribution planning at this time. Additional costs may be incurred in the future, depending on the level of NEM system penetration and additional clustering of NEM systems. NV Energy is conducting studies on the matter. (Ex. 2A at 77-79; Ex. 5A at 75-76.)

13. NV Energy states that the marginal transmission system demand costs were calculated consistent with calculations for all other ratepayer classes. As with distribution demand cost, the class transmission marginal cost allocation is calculated using the probability of peak and the class load shape. Consistent with the distribution demand, NEM generation is assumed to be contained within the distribution system; therefore, the NEM ratepayer class total load shape is used in the transmission cost allocation. Further, recognizing some load diversity
does exist, the total hourly load was reduced by the ratio of the NEM class non-coincident peak to the total load non-coincident peak.\textsuperscript{4} This reduction results in a transmission cost that is roughly eleven percent lower than that which would result if the total load shape were used, and it appropriately reflects the diversity of the NEM system self-generation and its impact on the loads of all ratepayers within the class. (Ex. 2A at 42-43; Ex. 5A at 42-43).

14. NV Energy states that it has not experienced any documented beneficial effects of NEM systems on the transmission system. NV Energy also states that it has not seen dramatic shifts in operational complexity or costs caused by NEM systems, but it notes that significant penetration relative to load during any time of the year could cause dramatic shifts in reactive power switching, generation dispatch, and unit ramping requirements. (Ex. 2A at 79, 81-82; Ex. 5A at 76, 78-79.)

15. NV Energy states that marginal generation demand costs were calculated in the same manner as those calculated for other ratepayer classes.\textsuperscript{5} The NEM ratepayer class’ delivered load shapes were used. The delivered load shapes recognize load diversity and NV Energy’s inability to quantify the standby reservation and load-following costs. However, because system peaks are later in the day when rooftop solar production is in decline, the NEM ratepayer delivered load shape still results in significant capacity costs being allocated to these NEM ratepayer classes. (Ex. 2A at 24-25, 37, 39; Ex. 5A at 24-25, 37, 39.)

16. NV Energy states that the marginal energy costs were calculated in the same manner as they are calculated for other ratepayer classes. The NEM ratepayer class delivered

\textsuperscript{4} The reduction was accomplished by comparing, on an hourly basis, the maximum delivered kilowatts ("kW") to the total load kW in the load shape. (Ex. 2A at 42; Ex. 5A at 42.)

\textsuperscript{5} Marginal generation costs allocated to each ratepayer class were determined by using the hourly loss of load probability calculated using PROMOD for the period of time before the next significant generation capacity addition. In the MCSS, with the next significant capacity addition forecasted to occur in 2020, the loss of load probability period was 2016-2019. (Ex. 2A at 38; Ex. 5A at 38.)
load shapes were used. Marginal energy costs were developed consistent with the approved methodology used in NV Energy's last general rate case. The marginal energy costs were calculated hourly using the utilities' preferred integrated resource plan PROMOD for the anticipated three-year rate effective period (2016-2018). The hourly data were averaged. The marginal energy costs were adjusted for line losses to the secondary distribution voltage level for each NEM ratepayer class. The adjusted hourly rate was multiplied by the NEM ratepayer class's delivered load shape. The resulting hourly amounts were aggregated by TOU period. (Ex. 2A at 25, 35-36, 61; Ex. 5A at 25, 35-36, 60.)

17. NV Energy states that the NEM ratepayer class load shapes were developed using all active NEM ratepayers as of March 31, 2015, for the entire study period of June 2014 through May 2015. Actual generation data was used when available. Missing hourly generation data was estimated using the average of those ratepayers that have at least 95 percent of the necessary fifteen-minute generation data. The compiled data was then compared to the National Renewable Energy Laboratory's averages for reasonableness. (Ex. 2A at 52-54; Ex. 5A at 50-52.).

18. NV Energy states that the E3 Study is a cost/benefit study. A cost/benefit study does not estimate marginal costs or prices of any kind. Rather, it focuses on whether a specific investment, policy, or program is desirable or not. (Ex. 29A at 14-15; Ex. 30A at 14-15.)

19. NV Energy limited any ratepayer class revenue requirement change to that driven by the MCSS. The proposed rate revenue requirement represents the embedded revenue requirement allocated to each customer class using the MCSS developed class marginal revenue requirement through Statement O. Both the proposed and present rate revenue requirements

---

6 The E3 Study was completed in Docket No. 13-07010, an investigation to examine the costs and benefits of net metering in Nevada pursuant to Assembly Bill 428 of the 77th Legislature (2013).
were developed using the total general and base tariff energy rates effective July 1, 2015. (Ex. 2A at 46-47; Ex. 5A at 46-47.)

20. NV Energy states that the introduction of NEM systems coupled with the legacy two-part rate structure has resulted in the shifting of costs and revenues. The utilities receive less revenue from ratepayers who continue to pay two-part rates after these ratepayers install NEM systems; however, the fixed and demand costs incurred by the utilities to serve the NEM ratepayers largely remain the same. Responsibility for these costs then shifts to non-NEM ratepayers during the reallocation of costs resulting from lower billing determinants (due to reduced energy use by the NEM ratepayers) in the next general rate case. As a result, NEM ratepayers are subsidized by non-NEM ratepayers when a simple two-part rate design that relies primarily on volumetric rates to recover demand and fixed costs continues to be used. (Ex. 29A at 10-13; Ex. 30A at 10-13.)

**BCP Position**

21. BCP states that it is concerned that the marginal distribution facilities costs (a portion of the ratepayer-related costs) developed by NV Energy in the most recent general rate cases and used in this proceeding, are unreasonable for all residential ratepayers. Rule 9 allowances have been skewed upward by an unrepresentative sample of new construction based on the small amounts of home building that occurred during the recession. The skewed study, in combination with higher Rule 9 allowances, resulted in higher marginal facilities costs. As a result, many residential ratepayers are in fact paying twice for their facilities—(1) through higher house prices arising from the lower Rule 9 allowances in place when their houses were built in the decade before the allowances were changed, and (2) through the marginal facilities costs based on current Rule 9 allowances. Therefore, BCP is concerned that all residential ratepayers,
including residential NEM ratepayers, could be significantly overcharged. BCP was prepared to litigate this issue in NPC's last general rate case (Docket No. 14-05004) until that case settled with a zero rate change for everyone, which BCP believed was more advantageous than litigating the case. BCP states that it believes that the proper forum for litigating the correct level of marginal facilities costs is in a general rate case. Piecemeal solar rates should not be developed based on marginal costs that have not been adequately vetted and which contain serious conceptual flaws. (Ex. 62A at 4-6.)

22. BCP states that the customer accounting effort studies prepared by NV Energy over the past two decades have always resulted in fairly accurate estimates but may not be totally accurate for small ratepayer classes. NEM ratepayers are a very small class for both utilities. In the past, BCP found anomalies in the overall marginal ratepayer accounting costs. Further, the supervisors and managers who fill out the forms used for the studies know that NV Energy is concerned about NEM, so choosing a higher number rather than a lower number within a range might not be surprising. Finally, some of the costs associated with NEM systems are likely to be one-time costs of connecting new NEM ratepayers, not ongoing costs for maintenance. Perhaps a one-time fee should be considered to collect some of those costs; however, such a fee cannot be estimated from the record before the Commission and should be an issue in a general rate case. (Ex. 62A at 6-7.)

23. BCP states that it is concerned that the load analysis conducted by NV Energy is overloading NEM ratepayers with transmission and distribution costs. Using the higher of total ratepayer loads or energy delivered to the utility in each hour to establish the distribution load pattern is not reasonable. Unless whole neighborhoods are solar, the feedback into the distribution system will be absorbed in a localized area and will not affect most of the
distribution system, other than to reduce line loadings and losses. If a NEM ratepayer feeds power to its close neighbors for a few hours, the rest of the distribution system is largely unaffected. The same issue applies to transmission demands. While NV Energy points to the construction of transmission to serve bulk power needs of various sorts, many of these lines are not load-related transmission but are in fact interties that are historically excluded from MCSS because they are theoretically considered to be incorporated in the marginal generation costs. NEM ratepayers who do not use as much peak energy as other ratepayers should not pay more for bulk power just because there is a generator behind the meter. (Ex. 62A at 7-9.)

**Bombard Position**

24. Bombard states that the Commission should not adopt NEM ratepayer classes that penalize ratepayers for contributing to Nevada’s sustainable energy future. Any concern about cost-shifting between NEM ratepayers and non-NEM ratepayers can be handled adequately through a TOU rate. (Ex. 59A at 3).

25. Bombard states that TOU rates are designed to encourage ratepayers to reduce demand when energy prices are higher and to reward ratepayers by lowering energy prices to the ratepayer when the utility experiences lower energy costs. Accordingly, the utility value, and inherently the non-NEM ratepayer value, is included in the TOU rate. Further, TOU rates can and will be adjusted based upon economic principles of supply and demand through a general rate case adjudicated before the Commission, providing both the utility and ratepayers protection. If high penetration of NEM systems is experienced, then the Commission will have the opportunity to adjust the TOU rate in a general rate case. (Ex. 59A at 3.)

26. Bombard states that the E3 Study concluded that NEM policies do not result in NEM ratepayer free-riding and unreasonable cost-shifting; further, NEM ratepayers create an
estimated total net present value to the non-NEM ratepayer of $36 million during the systems’ lifetimes. NV Energy’s attempts to demonstrate that NEM creates a burden on the system while providing little or no benefit does not make common or logical sense. (Ex. 59A at 4-5.)

**SEIA Position**

27. SEIA states that NEM is currently available in 43 states. There are currently 13 states where legislative efforts are under way, and 31 states where regulatory efforts are under way, to revise NEM policies. (Ex. 45A at 3.)

28. SEIA states that NEM has many economic and environmental benefits. These benefits include allowing NEM ratepayers to reduce their electricity bills and increase predictability over their electricity costs by hedging a portion of all of their electricity usage. NEM also increases the amount of clean energy consumed by the public and capitalizes on the most efficient method of producing electricity with no line loss—consuming electricity at the point of generation. NEM empowers ratepayers by offering them a choice and the ability to limit the amount of electricity they take from traditional investor-owned utilities. NEM also opens the door to innovation. That innovation triggers large capital investments in the advanced battery and smart grid sectors. (Ex. 45A at 4-5.)

**SNHBA Position**

29. SNHBA states the results of the MCSS are presented largely without limitation or qualification even though it appears to be a very preliminary work in progress. There is no quantification of the errors or range of variation in the input data used to conduct the MCSS or an estimate of the corresponding errors or expected variations in the calculated results from the MCSS. As a result, the MCSS do not meet the minimum requirements for transparency required to adequately evaluate the public policy recommendations contained in the filing. The analysis
method is largely academic in nature and is based on idealized economic assumptions that do not actually apply to real residential homeowners. The MCSS are not grounded in real world policymaking or sufficient data. NV Energy's exclusive reliance on this analysis fails to account for much of the value that rooftop solar is widely acknowledged to provide to the grid and NV Energy's ratepayers. (Ex. 41A at 17-18.)

30. SNHBA states that the MCSS are based on a large number of unsubstantiated cost assumptions. Further, many of the NEM ratepayer costs cited by NV Energy are a direct result of NV Energy's business decisions and are not caused by the NEM ratepayer. For example, the NV Energy's decision to apply demand charges to NEM ratepayers dramatically increases metering costs for NEM ratepayers compared to flat rate non-NEM ratepayers with demand charges—NV Energy will have to add the capability to evaluate a long stream of time series demand data for each NEM ratepayer in order to apply a demand charge to NEM ratepayers. Further, NV Energy's decision to require NEM ratepayers to have a generation meter dramatically increases metering costs for NEM ratepayers compared to non-NEM ratepayers. The primary purpose for the generation meter is to enable carbon offset benefits based on generation from the NEM systems. Yet, NV Energy ignores the value of carbon offsets. NV Energy attempts to justify its failure to account for the NEM benefits in its analysis by claiming that they are difficult to document due to the low penetration (less than one percent of total ratepayers) and broad geographical distribution of NEM systems. NV Energy's decision not to include NEM benefits in the MCSS is not supportable. There have been many previous studies of net NEM value that could have been used in NV Energy's analysis. (Ex. 41A at 8-9.)

31. SNHBA states that it is the reasonableness of NEM's financial implications that are being examined in this proceeding. NV Energy's analysis is rendered questionable by the E3
Study that concluded NEM policies do not result in solar free-riding and unreasonable cost-shifting. Instead, according to the E3 Study, there is a total net present value to non-participating ratepayers of $36 million during the NEM systems’ lifetimes. (Ex. 41A at 14-16.)

**Staff Position**

32. Staff recommends that the Commission reject NV Energy’s MCSS and Statement O and not use them to develop specific rates for the proposed NEM ratepayer classes. While Staff believes that NV Energy performed the MCSS consistent with SB 374, NV Energy’s proposals do not appropriately and consistently use the methods of rate design for ratepayers that NV Energy has used in the past. (Ex. 82A at 1-2.)

33. Staff states that the most appropriate venue in which costs should be allocated and rates established for all ratepayer classes is a general rate case. In a general rate case, all parties and their respective experts can thoroughly review and analyze the data and provide their recommendations so that the Commission has sound and robust evidence for setting just and reasonable rates for all ratepayers. NV Energy should have utilized the allocations previously approved by the Commission in the most recently completed general rate cases, while using different billing determinants to generate a rate, thus keeping NV Energy revenue neutral. (Ex. 82A at 3-4, 9.)

34. Staff states that it is not appropriate to shift revenue from the NEM ratepayer classes to other ratepayer classes between general rate cases. Part of the change in revenue requirement is due to updating the inputs; however, the revenue requirement for several ratepayer classes has changed not only from updating the inputs but also from creating new NEM ratepayer classes. The rates to recover that adjusted revenue requirement should also reflect these changes. (Ex. 82A at 4.)
35. Staff states that the total load for NEM ratepayers was derived by summing the amount of delivered load plus the NEM ratepayers’ generation output less the amount of energy produced by the NEM ratepayers’ excess generation output received by NV Energy. In Staff’s view, this is an appropriate mathematical representation of a NEM ratepayer’s load. If the NEM ratepayer’s generation is off-line for any reason, NV Energy will then have to serve the load. Further, the load profile data was very robust with NV Energy using sample sizes anywhere from thirteen percent to thirty-six percent, which is a much higher percentage of ratepayers to represent the loads than what is normally used in a general rate case where NV Energy uses a sample size of less than one percent. However, the load profiles only show that NEM ratepayers are high usage ratepayers, not that additional costs are incurred to serve NEM ratepayers. (Ex. 82A at 4-6.)

36. Staff states that one load shape causes concern because NV Energy references an additional burden on the distribution system when excess generation from the NEM system is placed onto the distribution system. Staff states that it believes that the distribution system is not being burdened by the NEM systems and that it is merely in standby mode, although Staff recognizes that this could be a cost in the future. As the locational penetration of NEM systems increases, their production could exceed the capability of the distribution system. The impacts of increased locational penetration is something that would need to be analyzed as part of rate setting for the NEM ratepayer classes in a general rate case. However, at this point in time, increased locational penetration does not appear to be an issue. NV Energy should research and account for these costs and include that research when completed to assist in determining whether rates need to be further modified for NEM ratepayer classes in the next general rate case. (Ex. 82A at 7-8.)
37. Staff states that there are no specific benefits provided by NEM ratepayers to NV Energy in the short run. Staff asked Bombard, SEIA, TASC, and Vote Solar for support through specific examples of short run benefits, and none could provide this information. Benefits, if any, come in the future. (Ex. 82A at 8-9.)

38. Staff states that NV Energy’s use of estimated peak demand in the planning and designing of transmission and distribution systems is reasonable at this time. The forecasted NEM systems’ output reduces NV Energy’s overall peak demand and retail energy sales contained in the load forecasts. However, by 2017, NPC is forecasting the peak demand to occur in the early evening hours; therefore, NEM systems will have little to no impact on NV Energy’s actual peak demand. Further, in order to serve the expected peak demand, NV Energy does not currently design its distribution systems to account for any NEM system output. It is unreasonable for NV Energy to design and install smaller-sized capacity distribution facilities that would not meet the expected peak demand due to the installation of NEM systems for two reasons. First, sizing capacity distribution facilities on the maximum peak demand is most appropriate to ensure reliable service to all ratepayers, including NEM ratepayers. NV Energy is generally obligated to serve all ratepayers in its service territories. If NEM systems experience a reduction in output or cease to operate entirely, NV Energy would be expected to reliably supply the NEM ratepayers’ demand and energy needs. Second, the average service lives of NV Energy’s distribution facilities (38-70 years) and NEM systems (20-25 years) do not align. In order to even consider downsizing distribution facilities to account for the installation of NEM systems, NV Energy would have to assume that the NEM systems would always be replaced once the original NEM systems reach their end-of-life. There is no data to support such an assumption, especially given ownership turnover, changing economic factors, etc. Therefore, at
this point, it is impractical and unreasonable to design and install smaller sized capacity
distribution facilities for NEM systems. (Ex. 83A at 1-5.)

39. Staff states that there are currently no short-term (less than three years) impacts or
benefits to NV Energy’s transmission system due to the current NEM system penetration
accounting for 1.5 percent and 1.84 percent of peak demand as of August 31, 2015, for NPC and
SPPC, respectively. However, as the penetration of NEM systems continues to increase, NV
Energy’s transmission systems could experience short, steep ramping of generation (increases
and decreases in generator output), decreased frequency response, and/or voltage instability as a
result of the “duck curve”. The “duck curve” represents the net load of a utility’s electrical
system with high solar photovoltaic (“PV”) penetration and shows the dynamics associated with
integrating solar PV. Similarly, there are currently no short-term impacts or benefits to NV
Energy’s distribution system. However, as the clustering and/or penetration of NEM systems
increases on NV Energy’s distribution systems, voltage, frequency, and/or power factor stability
issues may arise and require additional upgrades and/or mitigation procedures. NV Energy
expects to fully implement modeling software by the end of 2015 and start load-flow studies of
its distribution system based upon NEM system installations in early 2016. (Ex. 33A at 6-8.)

40. Staff states that the long-term (greater than three years) impacts and/or benefits
NV Energy’s transmission and distribution systems will experience due to NEM system
penetration are currently unknown. As penetration increases, NV Energy will likely experience
increased costs associated with mitigating the “duck curve” and the resulting effects on the
distribution system. However, NEM systems may also provide benefits to ratepayers if the NEM
systems delay or mitigate the need for any transmission system upgrades or capacity additions or
reduce losses on the distribution system. Technological advances, such as cost-effective energy
storage, may further mitigate the intermittency associated with NEM systems and may provide benefits to ratepayers. Staff states that until potential long-term benefits from NEM systems are more concrete, Staff does not believe it is reasonable to modify NV Energy's current use of the estimated maximum peak demand in the planning and design of transmission or distribution systems. (Ex. 83A at 8.)

41. Staff states that the MCSS are not cost/benefit analyses. The MCSS look at what costs are incurred by NV Energy to serve ratepayers and how to allocate those costs to different classes of ratepayers. If benefits of NEM include decreased costs to different ratepayer classes, those benefits will eventually be reflected in the MCSS and the associated rates determined from the MCSS for that ratepayer class as well as other ratepayer classes. (Ex. 82A at 9.)

42. Staff states that the E3 Study should not be relied upon in the Commission's analysis. In a severe contrast to the MCSS, the E3 Study is a cost/benefit analysis, which utilizes different tests to assess the overall cost or benefit of NEM systems when viewed through different measurements. For the base case scenario, the E3 Study showed that non-NEM ratepayers receive a benefit from NEM ratepayers through the Ratepayer Impact Measure ("RIM") test. However, included in the E3 Study are alternative analyses of key drivers, including distribution avoided costs, retail rate design, retail rate escalation, demand charge reduction, and utility-scale solar PV power purchase agreement ("PPA") pricing—these inputs shape the authenticity of the E3 Study in that they reflect the validity of the E3 Study. The Commission should be aware that the E3 Study performed a sensitivity analysis for the utility-scale solar PV PPA pricing (from $100 per megawatt-hour ("MWh") in the base analysis to $80 per MWh in the sensitivity analysis). Using the $80 per MWh PPA pricing, the RIM test results indicate an estimated cumulative cost to non-NEM ratepayers through 2016 of $222 million.
43. Staff states that NEM ratepayers do not impose any significant additional costs on NV Energy or other ratepayer classes at this time. Instead, rate design and recovery are at issue here. NV Energy loses revenue from NEM ratepayers that was being recovered through rates when the NEM ratepayers did not have the NEM systems. Recovery of those revenues eventually shifts to other non-NEM ratepayers. Installation of NEM systems reduces NV Energy's sales, which correspondingly reduces billing determinants so that in subsequent general rate cases, the reduced billing determinants will likely lead to a shift of this lost revenue to other non-NEM ratepayers. (Ex. 64A at 12; Ex. 82A at 7.)

44. Staff recommends that the Commission find that it is in the public interest to establish new NEM ratepayer classes in this proceeding. New ratepayer classes are usually created as part of a general rate case, but the Commission may establish new ratepayer classes outside of a general rate case. There are generally three ways to differentiate ratepayers into classes: by cost differentiation, by usage differentiation, or by a combination of the two approaches. While there does not appear to be a significant difference at this time in the costs that NEM ratepayers cause compared to other non-NEM ratepayers, there is a significant difference between the usage profiles, and thus the cost recovery between those two types of ratepayers. Usage differentiations are used both to establish potential cost differentials as well as to ensure that the total cost recovery and allocations equal the authorized revenue requirement. After careful review of the load data and sales data (billing determinants) received in response to Staff data requests, it is clear that the load shape for NEM ratepayers is quite different from non-NEM ratepayers. When the revenue requirement for the residential and small commercial ratepayer classes is allocated, NEM ratepayers will avoid paying some of those costs if they are
collected in the variable kilowatt-hour ("kWh") rate, and non-NEM ratepayers who are not
offsetting their usage with self-generation will pay those avoided costs instead if NEM
ratepayers are not in a separate rate class. It is not appropriate to require utilities to treat
ratepayers who have chosen to take service differently, and consequently who have different load
profiles, in the same manner as those ratepayers who may not have such a choice. (Ex. 64A at 1-
9.)

45. Staff states that the fact that NEM ratepayers’ usage characteristics are different
from non-NEM ratepayers is a sufficient basis for establishing separate NEM ratepayer classes.
Additionally, establishing separate NEM ratepayer classes will diminish concerns regarding
public policy and ratepayer perception and, to some extent, it will acknowledge the differences in
the market structures of utilities and solar-leasing companies. Finally, establishing new NEM
ratepayer classes is in the public interest because it allows for more efficient tracking of NEM
ratepayers’ costs and billing determinants for use in future general rate cases or other ratemaking
proceedings. (Ex. 64A at 10.)

**TASC Position**

46. TASC recommends that NV Energy continue to provide NEM at existing retail
rates for residential and small commercial ratepayers. Doing so will not shift costs to non-NEM
ratepayers because the marginal cost of service for NEM ratepayers is lower than that for non-
NEM ratepayers after TASC’s revisions to the MCSS inputs. (Ex. 68A at 49.)

47. TASC states that installation of a NEM system does not typically move a NEM
ratepayer outside of the range of expected usage by other ratepayers in the same rate class. Even
though loads for NEM ratepayers are reduced by NEM systems, NV Energy’s delivered loads
are still significant, with average bills estimated at $970 per year for NEM ratepayers of NPC
and $870 per year for NEM ratepayers of SPPC. In fact, for the vast majority (85 percent to 95 percent) of NEM ratepayers, their delivered load remains well within the distribution of loads for the entire class. Becoming a NEM ratepayer does not typically move the NEM ratepayer outside of the range of expected usage by non-NEM ratepayers in the same rate class. Thus, NV Energy’s claim that NEM ratepayers’ usage is somehow unique is baseless. There is no justification to establish new classes for NEM ratepayers or impose a three-part tariff as proposed by NV Energy. (Ex. 68A at 6-7; 9-16.)

48. TASC states that the cost differences between NEM and non-NEM ratepayers on which NV Energy’s tariff proposals are based are limited to marginal ratepayer costs and marginal distribution demand costs. However, TASC disputes whether there are truly any differences with regard to either of these marginal costs. With respect to marginal ratepayer costs, NV Energy alleges that cost differences between NEM and non-NEM ratepayers exist with respect to revenue meter fees, a newly proposed generation meter fee, and ratepayer service costs. TASC has determined that the cost differences between NEM and non-NEM ratepayers for the revenue meter are related to programming and upfront activities related to interconnecting the new NEM ratepayer that are more appropriately recovered through an interconnection fee. TASC has also determined that there is no need for NV Energy to require new NEM ratepayers to install a generation meter. Finally, the costs associated with NV Energy customer service and billing personnel are overstated and largely cover expenses associated with initial adoption of a NEM system, which are more appropriately assessed to each new NEM ratepayer in an upfront application fee. Using this more appropriate assignment of costs, NEM and non-NEM ratepayers have very similar marginal costs. This fee and the underlying costs could be reviewed in more detail and with more experience in NV Energy’s next general rate cases and adjusted as
appropriate. (Ex. 68A at 7, 17-23, 35-48; Ex. 76A at 29-30.)

49. TASC recommends the use of metered loads for NEM ratepayers (i.e. what the ratepayer receives from NV Energy) for determining marginal distribution demand cost for NEM ratepayers. TASC agrees that other than service transformers the secondary distribution systems are sized to supply maximum current. TASC asserts that the service transformer is able to handle short periods of overload without failure. TASC disagrees with NV Energy’s assertion that it must design its other parts of the distribution system (e.g., service transformers, substations) to supply the peak load of NEM ratepayers under the condition of zero NEM generation rather than the delivered load served by NV Energy. Zero NEM system generation is extremely unlikely, and these other parts of the distribution system are not planned for this scenario. In fact, the peak load capacity has already been exceeded on parts of the distribution system, with no resulting outages over the past five years. Peak load is not a firm limit in distribution planning. Load diversity heavily influences equipment selection. Load diversity is the collection of customers being served, and not all types of customers peak at the same time. With increasing NEM system generation, NV Energy should see reductions in marginal cost on the distribution system as investments in other capacity resources are deferred. NV Energy’s Applications list some possible technical concerns with NEM system generation, but good solutions exist (including the use of new smart inverter functions and the adoption of new software tools (i.e. quasi-static time series modeling) for all of the technical concerns NV Energy raises. It would take many simultaneous NEM system failures to significantly affect distribution system loading, and NV Energy has not presented those probability calculations. (Ex. 79A at 2-12.)

50. TASC recommends rejecting NV Energy’s load shapes for marginal transmission
demand and distribution demand costs. Geographic diversity of the rooftop solar systems mitigates the output fluctuations and their transmission system impacts. Even with non-coincident peaks in system load and fluctuations in total rooftop solar output, there is still a reduction in the system net load. That reduction should be reflected in the load shape used for transmission marginal cost. Further, the residential NEM load shapes were not handled consistently, and the resulting impact increases the residential NEM ratepayer’s average annual load for marginal distribution costs. These load shapes need to be consistent with the load shapes used by NV Energy for generation energy and capacity costs of service to reflect the costs actually imposed on the distribution system by NEM ratepayers. By correcting NV Energy’s improper load shape assumptions, NV Energy’s marginal costs of service for transmission demand and distribution demand for NEM ratepayers are much lower than those estimated by NV Energy, and they are also lower than the costs for non-NEM ratepayers. (Ex. 49A at 14-17; Ex. 68A at 7-8, 23-35; Ex. 79A at 4-5, 10-11.)

51. TASC disagrees with NV Energy’s view of marginal distribution demand and banking costs. First, the distribution demand costs should reflect a true burden on the distribution system. The total-load and the reverse flow offset each other; they do not add up as NV Energy proposes. Second, a banking cost on top of this demand cost would imply an energy storage capability that NV Energy is not actually providing. This banking cost is only an accounting mechanism, not reflected in actual distribution or energy storage capacity. (Ex. 79A at 11.)

52. TASC states that NV Energy has not demonstrated that there will be any cost-shifting, and certainly not any unreasonable cost-shifting. Regardless, even if the cost to serve NEM ratepayers is found to be higher than the cost to serve non-NEM ratepayers, the difference
would not necessarily represent an unreasonable cost-shifting. In order to determine whether any amount of cost shifting is unreasonable, it is first necessary to estimate (1) the magnitude of any cost-shifting and (2) the magnitude of the electricity system benefits of the NEM resource. These two critical pieces of information will indicate whether any cost-shifting, to the extent it does occur, is unreasonable. (Ex. 49A at 10-12.)

53. TASC states that the MCSS do not fully capture the long-term benefits of NEM. These benefits will accrue to NV Energy ratepayers over time with the addition of new, long-term renewable resources to NV Energy's system. Future benefits will also reduce NV Energy's costs to comply with the Renewable Portfolio Standard ("RPS") and Clean Power Plan requirements as well as reduce the future market prices of the utility's wholesale purchases of power. Electric system benefits include enhanced reliability and resiliency. Societal benefits include the avoidance of harmful impacts of carbon emissions. Local economic benefits include a growing NEM system industry. The Commission should consider the fact that the quantitative results of the MCSS are not likely to account for all the benefits of NEM systems due to the inability of such studies to fully reflect the long-term costs and benefits to the utility system and Nevada as a whole. The presence of these additional long-term benefits should confirm for the Commission that there is no reason to change the structure of NEM. Even if there are cost shifts, these additional benefits should be weighed by the Commission in deciding whether such a cost shift is unreasonable given that SB 374 does not prohibit all cost shifts, just those that are unreasonable. (Ex. 49A at 17; 20; Ex. 79A at 32-48.)

54. TASC states that it is important for the Commission to understand the long-term utility system benefits in order to inform the ratemaking and rate design decision. First, if NEM is recognized as being very cost-effective and offering significant long-term benefits to the utility
system, then NEM policies and rates should be designed to promote such a beneficial resource. Second, if there are concerns about cost-shifting, or any indication that cost-shifting might exist, then the magnitude of the long-term utility system benefits can help inform the decision of whether any expected cost-shifting is reasonable. The conventional method for evaluating the long-term impacts of an electricity resource on the utility system is to quantify any increase or decrease in the utility’s revenue requirements as a result of the resource. There have been several studies in recent years conducted in Arizona, Colorado, Hawaii, Maine, Mississippi, Nevada, New Jersey and Pennsylvania, and North Carolina that have found NEM resources to be very cost-effective in terms of reducing ratepayer revenue requirements. The fact that NEM ratepayers bear more or all of the cost of generating the power is what makes NEM so extremely cost-effective from the perspective of the present worth of revenue requirement (“PWRR”). Any increase in rates to account for the fact that a utility's sales are lower than they otherwise would be is driven by the reduced sales, not by any overall increase in revenue requirement that results from NEM. (Ex. 49A at 21-26.)

55. TASC states that the concept of a separate rate class for NEM ratepayers is inconsistent with ongoing changes in the electric industry. Ratepayers are being provided with increasing options to control their electricity consumption through energy efficiency, demand response, distributed generation, advanced meters, improved information, price signals, and more. Storage and plug-in electric vehicles are expected to result in significantly different consumption patterns and load shapes soon. If separate rate classes are established for NEM ratepayers, TASC questions whether the same should be done for ratepayers who take advantage of all these other available options. The potential number of permutations clearly make this path impractical and unsustainable. (Ex. 49A at 37-38.)
Vote Solar Position

56. Vote Solar states that NV Energy’s proposal to separate NEM ratepayers into their own rate classes with different rates and rate structures is unsupported by the evidence presented by NV Energy. (Ex. 44 at 4, 9-10.)

57. Vote Solar states that NEM ratepayers do not have unique load and cost characteristics as compared to non-NEM ratepayers and do not unreasonably shift costs to non-NEM ratepayers under current rates. All ratepayers, including NEM ratepayers, have a standby aspect to their electric service. Residential service loads are not constant, varying throughout the day and in some cases dramatically, so utilities must stand ready to meet the entire ratepayer load at all times. Similarly, because NEM systems are not uniformly intermittent, a group of NEM systems smooths the variability to a more predictable pattern, similar to a group of residential loads. Standing by ready to serve all ratepayers is the core business of the utility. (Ex. 44A at 4, 13-15.)

58. Vote Solar states that NV Energy has not provided evidentiary support demonstrating any distinct differences between the load factors of NEM ratepayers and non-NEM ratepayers in this proceeding. Even if NV Energy could, it would be a slippery slope of segregating ratepayers. Every subgroup of residential and small business ratepayers that has something in common, such as a particular size or load factor or behind-the-meter equipment could then be subject to segregation into a separate rate class. The issues NV Energy raises as being unique to NEM ratepayers are common to other groups of ratepayers. (Ex. 44A at 16-17.)

59. Vote Solar states that NV Energy’s characterization of increasing distribution costs is unfounded and misleading. Such costs (in response to things such as reverse flow or voltage rise) are not happening or imminent. Penetration levels are too small to require
additional costs on the part of NV Energy. If and when things such as reverse flow or voltage rise occurs, other utilities will almost certainly have developed strategies to manage such penetration levels. For the purposes of this proceeding, these threats of distribution cost increases are unfounded and misleading and should be rejected. (Ex. 44A at 17-20.)

60. Vote Solar states that the MCSS do not take long enough views to capture the long-term (20-25 year) benefits of rooftop solar generation. The MCSS looks only at the marginal cost to serve NEM ratepayers and do not take into account the benefits of NEM system generation. Such a review was conducted in the E3 Study, showing that benefits exceed costs under current rates with the implication that current rates do not result in a shifting of costs. While some of the underlying figures and assumptions in the E3 Study have changed, the E3 Study results should stand until such time as the E3 Study is comprehensively updated. (Ex. 44A at 22-24.)

61. Vote Solar states that the MCSS submitted by NV Energy have several problems, including: flawed NEM ratepayer load shapes, which were used to allocate transmission and distribution costs; over-allocation of customer costs to the NEM ratepayer classes; and double-recovery of revenue related to the NEM ratepayers’ excess generation. (Ex. 44A at 23.)

62. Vote Solar states that for transmission load shapes, NV Energy uses the total load shape scaled downward to reflect the difference between the non-coincident peaks of the total load shape and the delivered load shape to assign transmission costs; however, only the delivered load shape should be used to assign transmission related costs in the MCSS. First, NV Energy does nothing to manage the outflows from a NEM system. As a result, there are no transmission-related costs associated with those energy exports. Second, rooftop solar (spread out across the grid) will likely have even higher capacity values than large-scale solar PV
systems to which NV Energy assigns a capacity value of 38 percent. As a result, rooftop solar has a capacity value that will help NV Energy avoid future investments in generation and transmission. (Ex. 44A at 25-27.)

63. Vote Solar states that for distribution load shapes, NV Energy uses the greater of ratepayer load delivered by NV Energy or excess generation (energy exports); however, energy exports from NEM ratepayers’ systems reduce the loading on the distribution circuit, distribution system, and transmission system and reduce generation needed to serve that distribution circuit. There is no added cost at current or anticipated penetration levels. As a result, the delivered load shape should be used for the assignment of distribution-related costs in the MCSS. (Ex. 44A at 27-28.)

64. Vote Solar states that for customer costs, NV Energy revised the CWFS approved in the last general rate cases to develop marginal customer accounting and customer service costs. The revision resulted in an over allocation to the proposed NEM ratepayer classes because it was conducted in such a way that would make it prone to inaccurate results. Department heads were tasked with a retroactive assignment of recorded costs to a subset of ratepayers where each department head was given significant liberty with which to assess his/her department. There was also insufficient vetting of department head responses. The ratio of costs per NEM ratepayer to costs per non-NEM ratepayer were surprising in a number of departments. As a result, the revised CWFS should be excluded from NV Energy’s MCSS. Going forward, NV Energy should be instructed to record costs separately for NEM ratepayers as they are incurred and with detailed support rather than estimate the separation after the fact. (Ex. 44A at 29-38.)

65. Finally, Vote Solar states that NV Energy has essentially proposed to receive payment for energy exports from a NEM system from two different sources. The first payment
comes from the ratepayer near the NEM system who actually receives that power and pays NV Energy for it. The second payment comes from NV Energy calculating a value for exports (banking) and charging the total amount to all ratepayer classes. This double-recovery is improper and must be rejected. (Ex. 44A at 38-39.)

66. Vote Solar states that there are also underlying data problems with the MCSS that likely lead to skewed results. First, NV Energy used inconsistent load data (different twelve-month periods), which may lead to inaccurate results, especially given the significant year-over-year NEM ratepayer growth in each service territory. Second, NV Energy updated the production costs modeling in the MCSS with an analysis completed in May 2015. The production costs modeling underlying the general rate cases for NPC and SPPC were previously completed in April 2014 and June 2013, respectively. Because the underlying marginal cost data, the spread of the marginal costs across the hours of the year, and the NEM ratepayer load shape data are all based upon different timeframes, the results of the analysis are likely to be skewed in different directions. However, there is insufficient data in this proceeding to say by how much and in what direction. This is best handled in the next general rate case. As a result, Vote Solar urges the Commission to be especially cautious about establishing new and far-reaching policies based upon this data. (Ex. 44A at 39-43.)

67. Vote Solar states that when all of these flaws are corrected, the MCSS actually indicate that the costs to serve NEM ratepayers are less than the costs to serve non-NEM ratepayers. (Ex. 44A at 4, 44-46.)

68. Vote Solar recommends that the Commission direct NV Energy to perform new MCSS using consistent data and incorporating the other corrections included above in SPPC’s and NPC’s next general rate cases. Corrected MCSS will help NV Energy and the Commission
determine whether a new rate for NEM2 ratepayers is beneficial and in the public interest. (Ex. 44A at 5-6).

NV Energy Rebuttal Position

69. NV Energy maintains that the Commission should adopt separate rate classes for NEM ratepayers based on the MCSS. The MCSS were developed for these filings using methodologies and inputs that are wholly consistent with the models that have been reviewed and approved by the Commission in past general rate cases. The inputs and analysis that went into these filings were critiqued, discussed, and vetted through all areas of the organization. The amount of time, effort, analysis, and development rivaled that of preparing two general rate cases in a condensed timeframe, yet the amount of consideration that went into each and every input and modification from previously approved MCSS is quite possibly greater than any other utility has put into analyzing and developing rates for NEM ratepayers in the United States. Simply ignoring that analysis and using a blunt tool such as the full-requirements MCSS and rate design to propose admittedly arbitrary rates for NEM ratepayers, as Staff proposes, is wholly inappropriate and should not be considered a viable alternative to NV Energy’s proposal. (Ex. 99A at 58-63.)

70. NV Energy states that BCP’s characterization of NV Energy’s MCSS is incorrect and misleading. It is also wholly inconsistent with the evidence presented by NV Energy in these proceedings and the position and arguments set forth by BCP in its Petition and corresponding comments in Docket Nos. 14-03026 and 14-06009. In those proceedings, BCP stated that NEM ratepayers have unique demand characteristics, and one of the consequences of these differences in demand characteristics is that NEM ratepayers have different costs of service than full requirement ratepayers. BCP’s other arguments and concerns about NV Energy’s
MCSS have been presented and rejected by the Commission in previous dockets. BCP presents no new arguments or information in this proceeding. (Ex. 99A at 22-28.)

71. NV Energy states that it disagrees with BCP’s claim that the output of NEM installations is relatively predictable and, therefore, the utility should focus on delivered load. A review of the data reveals that there are differences between the delivered load attributes of NEM ratepayers and non-NEM ratepayers. Further, data highlights that the delivered load shapes for NEM ratepayers and non-NEM ratepayers is different. The largest changes occur on cloudy days when NV Energy is standing by to meet the instantaneous electrical demand and energy needs of all NEM ratepayers. Differences show that non-NEM ratepayers have smoother transitions or less volatile delivered load than non-NEM ratepayers. There is a difference in demand requirements within an hour as well as across hours between NEM ratepayers and non-NEM ratepayers. (Ex. 89A at 9-11.)

72. NV Energy agrees with Staff that there is a significant difference between the load shape (usage profiles) of NEM and non-NEM ratepayers, thus supporting the establishment of new NEM ratepayer classes. The total load shape and delivered load shape of NEM ratepayers are distinct and vary from the load shapes of non-NEM ratepayers on an hourly basis. Differences in hourly load shapes thus reflect the differences in the costs incurred by NV Energy to provide the unique and specific energy services required by NEM ratepayers. NV Energy also conducted an Epps-Singleton equality of distribution test to further demonstrate that the total hourly loads of the two groups are statistically different. Hourly, not monthly (as TASC asserts) load shapes provide information regarding the cost of providing service to groups of ratepayers. Similarities in the ranges of monthly consumption may mask marked differences in the time-of-day consumption and, therefore, the facilities required to provide service to a class of ratepayers.
TASC used truncated charts with numerous data errors to try and demonstrate that the residential ratepayer class as a whole and the residential NEM ratepayers within that class are very similar. TASC confirmed in deposition that it did not perform any statistical analysis to determine whether there was a statistically significant difference between these NEM and non-NEM ratepayers. (Ex. 89A at 4-9; Ex. 90A at 1-2; Ex. 99A at 29-30.)

73. NV Energy disagrees with numerous assertions made by TASC concerning distribution system planning. It is normal distribution planning practice to size the distribution system based upon a ratepayer’s full estimated peak load. This sizing reflects the true burden on the distribution system. The potential extent of cloud cover, especially in the Las Vegas Valley, could surely cause the output of many NEM systems to drop to near zero simultaneously. Also, the planned overloading of distribution equipment under normal operating conditions for what could be repeated instances on a continual annual basis is not within commonly accepted good utility practice—stress on the equipment due to overloading causes accelerated loss of life. NV Energy has not identified any currently planned distribution investments that can be eliminated or deferred due to NEM systems. Even though NEM systems may reduce distribution system loading to a certain degree during peak loading conditions, the distribution system must still be designed to accommodate the full load requirements of ratepayers. Until future studies indicate otherwise, NV Energy does not believe there is a basis for altering the distribution design criteria and planning methods for the distribution system based upon NEM systems. Finally, while there are technical solutions available to address the impacts of expected higher penetrations of NEM systems on the distribution system in the future, these solutions will come at a cost. (Ex. 84A at 3-15.)

74. NV Energy states that in order to accurately reflect the costs for NEM ratepayers,
the load shapes that are necessary to develop the cost of service must (1) include the generation that the NEM ratepayer sends back on to the distribution system and (2) reflect the standby nature of the service that NV Energy provides to these ratepayers to account for the facilities that are installed to meet the NEM ratepayers’ energy requirements when their systems are not producing energy. It is appropriate to include the generation from NEM ratepayers that is sent back onto the grid as this is additional load on the distribution system. Significant amounts of generation are physically delivered by NEM ratepayers to the grid—approximately 42 percent and 49 percent of all NEM system generation for NPC and SPPC, respectively. No party to this proceeding produced any evidence that correlates the installation of NEM systems with a reduction in energy consumption. Further, rates for NV Energy’s other partial-requirements standby ratepayers are based upon the total loads of the otherwise applicable schedules, which represent ratepayer loads in the absence of self-generation. As with the distribution system, the standby nature of NEM service means that NEM ratepayers physically affect the transmission system for loads that are required when their generation is not producing. Therefore, the costs of providing this standby component of service should be reflected in the development of transmission costs for NEM ratepayers. (Ex. 93A at 8-12; Ex. 99A at 38-45.)

75. NV Energy states that the CWFS takes a forward-looking approach to the allocation of expenses. NV Energy looked at historical expenses, logically evaluated those historical costs, and proposed adjustments where appropriate to reflect expected going-forward levels of expense, consistent with prior general rate case filings. NV Energy must continue to administer the Renewable Generations program for at least five more years to process the performance-based incentives, so the cost allocation is reasonable with respect to the effective period of the rates in question. The large disparity in customer service representatives serving
NEM ratepayers versus non-NEM ratepayers highlighted by TASC and Vote Solar is inaccurate because the NEM customer service representatives perform not only call center functions but billing department functions; the disparity drops by many multiples when the total number of customer service representatives is recognized. Further, when it comes to determining the most reasonable allocation of expense on a going forward basis, the department head has the experience and knowledge to determine the most applicable and reasonable allocation of expenses for the department under his or her direction. While Vote Solar requests that NV Energy record NEM costs separately, tracking specifically incurred costs, the cost of doing so (creation of tracking mechanisms, training of employees, and modification of systems) would increase the cost of providing NEM service. (Ex. 91A at 3-9; Ex. 99A at 81-84.)

76. NV Energy states that externalities, such as societal, economic, and environmental costs and benefits, should not be included in a MCSS. This approach conflates two separate and distinct regulatory processes: (1) the rate setting process, and (2) the resource planning process. Such externalities may be important in determining the choice of resources in an integrated resource plan, however, rates are based on marginal (internal utility) costs and do not reflect external benefits or costs for any class. The Commission does not attempt to assess and reflect the saturation of energy efficiency measures taken, demand response programs, charitable contributions, or other investments that ratepayers make—all ratepayers receive the direct benefits from their participation and investments in such things. External societal costs are not included in the cost recovery that NV Energy's rates provide, and no exception should be made for NEM ratepayers. The Commission should reject proposals to weigh speculative, unquantified future values of NEM to offset current, known costs.⁷ When determining the rates

⁷ For instance, NV Energy states that it disagrees with the assertion made by TASC regarding NEM system benefits for future RPS compliance. The value of Renewable Energy Credits ("REC") has plummeted over the last couple of
that ratepayers pay for service, the appropriate method of allocating the embedded revenue requirement to ratepayer classes is on the actual costs to provide the service. (Ex. 99A at 45-50; 101A at 39.)

77. NV Energy agrees with Staff that the E3 Study shows that existing NEM1 service has a significant negative impact on NV Energy’s rates. The RIM test quantifies the impact of NEM service on non-participating ratepayers. When the RIM test result is negative, rates increase and costs are shifted from NEM ratepayers to non-NEM ratepayers. According to the E3 Study, RPS compliance value constitutes a large portion of the estimated 2014-2015 benefits. In the absence of an RPS, NEM systems would be compared to thermal generations, and non-NEM ratepayers would experience a net cost of $0.06 per kWh generated. Another important conclusion of the E3 Study is that utility-scale solar PPA prices can drive the cost-effectiveness results. With a utility-scale solar PPA price of $80 per MWh, the RIM test shows a $220 million subsidy to NEM ratepayers. The result is exacerbated with the current utility-scale PPA prices below $50 per MWh. (Ex. 101A at 42-44).

78. NV Energy states that when NEM ratepayers reduce energy consumption with rooftop solar generation, the NEM ratepayers lower their bills at the full retail energy rate, which includes charges not only for fuel costs but also for fixed and demand costs that do not go down because the NEM ratepayers consumed less energy. Because NEM ratepayers are under-paying, the difference has to be collected from non-NEM ratepayers. The collection of the difference from non-NEM ratepayers is an inequity, which is being addressed and resolved by NV Energy’s years as states have brought additional resources on-line at increasing rates. Any impacts to the value of REC's in the future due to regional markets, an increased RPS, etc. is simply speculative at this time. Further, if there is a need for REC's in the future, NV Energy's preference would be to source the REC's from larger, utility-scale projects. Such projects provide a more certain stream of future REC's as they have contractually defined delivery requirements with consequences for non-performance, and the administrative cost of obtaining, certifying, and verifying REC's is considerably lower with a single site and single meter. (Ex. 85A at 10-11.)
proposals. It is important to note that this issue of under-collection of revenue from NEM ratepayers and over-collecting of revenues from non-NEM ratepayers is an equity issue even if NEM and non-NEM ratepayers have identical marginal costs of service. NV Energy states that the rationale for its proposal is to reverse the inequity between NEM and non-NEM ratepayers, not between NEM ratepayers and the utility. (Ex. 87A at 7, 11.)

79. NV Energy states that only Staff seems to understand that by its nature, partial-requirements service ratepayers have lower billing determinants that, if applied to full requirements rates, will result in costs not being recovered from partial-requirements ratepayers. This, in turn, results in costs being shifted to other ratepayers, resulting in subsidies. In order to reduce or eliminate cost shift associated with partial-requirements ratepayers, rates have to be designed to recover certain capacity and fixed costs considering the lower billing determinants. Regardless of whether costs are specifically calculated for the group of partial-requirements ratepayers, enough revenue will not be generated to recover whatever costs were intended to be recovered from the particular rate if the rate design does not compensate for the differential in billing determinants. (Ex. 99A at 55-57.)

80. NV Energy states that, under NEM1, there is a significant shift in cost responsibility when a ratepayer installs a NEM system. This amount can be quantified using the existing base tariff energy charge ("BTER") and total energy production of the NEM system. On average, the resulting shift in cost responsibility is about $661 and $511 per NEM ratepayer annually for NPC and SPPC, respectively. The total subsidy (cost shift) from non-NEM ratepayers to the full 235 MW of NEM1 ratepayers will be $28 million annually. NEM ratepayers have chosen a different manner by which to meet their electric service needs. It is no longer appropriate to ask non-NEM ratepayers to pay more for their service as a result of the
choices NEM ratepayers have made. (Ex. 99A at 16-17; Ex. 101A at 11-18.)

81. NV Energy states that the MCSS support the development of new NEM ratepayer classes due to the unique load and cost characteristics of these ratepayers that extend to every aspect of the service provided by NV Energy. NEM ratepayers have different billing determinants, different load shapes, different demand and energy relationships (load factors), different levels of variation across and within an hour, and different requirements on NV Energy, including standby service, additional customer service, accounting and metering needs, compared to full requirements ratepayers. The creation of separate classes for NEM ratepayers allows the Commission to establish fair and equitable cost-based rates that reflect the unique services provided to these partial-requirements ratepayers. Even if the cost to serve NEM ratepayers is lower than the cost to serve non-NEM ratepayers as TASC asserts, all of the other differences associated with NEM ratepayers still warrants the establishment of separate NEM ratepayer classes. (Ex. 87A at 7-8; Ex. 93A at 2-5; Ex. 99A at 30-38; Ex. 101A at 26-29.)

Commission Discussion and Findings

MCSS

82. Pursuant to Section 4.5(1) and (2) of SB 374, NV Energy was required to file a cost-of-service study in support of a tariff with the terms and conditions of service that includes the rates the utility must charge for providing electric service to NEM ratepayers (customer-generators). NV Energy conducted MCSS for NPC and SPPC.

83. The Commission uses MCSS to allocate the embedded revenue requirement to the various customer classes as the means of implementing accepted economic principles into the rate making process. Marginal costing enhances economic efficiency by providing price signals

\footnote{NAC 704.660 requires the Commission to consider the utility’s marginal costs in the determination of each ratepayer class’s revenue requirement.}
as to the future cost structure facing the utility. The MCSS estimate the cost of the new or next increment of utility investment (e.g., generation, transmission, and distribution). Rates are balanced in Nevada by using marginal cost pricing along with an historical test year and other rate-making considerations (e.g., understandability of rates).\(^9\) As a result of this balancing, the MCSS guides the development of each ratepayer class’s total revenue requirement and rate design. In these proceedings, the Commission views the statutorily-required MCSS as guides to aid the Commission in its evaluation of the NEM rates and tariffs.

84. NV Energy’s MCSS for NPC and SPPC provides reasonable estimates for the marginal costs of providing service to NEM ratepayers and shall be used for purposes of allocating costs and establishing rates for NEM ratepayers in this proceeding. The MCSS were based on the latest versions used in each utility’s last respective general rate case (SPPC’s compliance filing in Docket No. 13-06002 and NPC’s certification filing in Docket No. 14-05004). The MCSS included updated inputs to remove stale or outdated information and new inputs necessary to reflect the unique characteristics of the NEM ratepayer classes. While parties raised several issues pertaining to load shapes, transmission and distribution marginal costs, customer facilities costs, customer costs, etc., NV Energy adequately explained the reasons for the inputs in the MCSS. Of particular note, the other parties’ proposals for load shapes afford no weight to the standby service that NV Energy provides to partial-requirements NEM ratepayers, which would effectively shift the cost burden to non-NEM ratepayers—such cost shifting is not reasonable or in the public interest.

85. Parties’ proposals to weigh speculative, unquantified future benefits/values of NEM to offset current, known costs are rejected. These proposals conflate two separate and

\(^9\) NAC 704.662(1)(c)(2).
distinct regulatory processes: (1) the rate setting process, and (2) the resource planning process. When determining the rates that ratepayers pay for electric service, the revenue requirement is allocated to ratepayer classes based on the actual, measurable costs of providing service. Future benefits/values of NEM should be evaluated in the resource planning process. Rates are based on marginal (internal utility) costs and do not reflect external benefits or costs for any ratepayer class. External societal costs and benefits are not included in the cost recovery that NV Energy’s rates provide for any class. No exception should be made for NEM ratepayers.

86. It is also unreasonable to rely on the results of the E3 Study for purposes of cost allocation for NEM ratepayers. The E3 Study was conducted for purposes of informing legislative policy decisions regarding NEM and rooftop solar development in Nevada based on the costs and benefits to various groups. Conversely, pursuant to the mandates in SB 374, the Commission is not to engage in the type of policy-making reserved for the Legislature, but rather to accurately allocate the costs required to serve NEM ratepayers.

87. Based on the foregoing, NV Energy’s MCSS demonstrate that NEM ratepayers have unique service and cost characteristics. These differences result in the revenue requirement allocated to NEM ratepayers in the MCSS to exceed the revenue requirement currently collected from NEM ratepayers.

The Commission does not attempt to assess and reflect on the saturation of energy efficiency measures, demand response programs, charitable contributions, or other investments that ratepayers make. All ratepayers receive the direct benefits from their participation and investments in such things.

The E3 Study (see Docket Nos. 13-07010 and 14-06009) was a snapshot in time for purposes of reviewing the costs and benefits of rooftop solar in Nevada. The $36 million figure highlighted by several parties was based on data current as of December 2013. That data is now two years old and did not include, among other things, the resource planning costs for compliance with SB 123 (2013). Further, numerous assumptions were made in the E3 Study, including the price of utility-scale solar at $100 per MWh. While the E3 Study contained a sensitivity analysis at $80 per MWh, turning the $36 million benefit to non-NEM ratepayers into a $222 million cost to non-NEM ratepayers (see Docket No. 13-07010, E3 Study filed 7/2/14, at 19-21, 128-130), the two most recent utility-scale contracts approved by the Commission (see Docket No. 15-07003, Order issued 9/10/15) have a levelized cost of energy below $50 per MWh. This new information demonstrates that the E3 Study is already outdated and irrelevant to the discussion of the costs and benefits of NEM in Nevada for purposes of marginal cost allocations in this proceeding.
88. The current subsidy ranges from $9-114 each month for NPC’s NEM ratepayers and $39-$98 each month for SPPC’s NEM ratepayers:

<table>
<thead>
<tr>
<th>NPC</th>
<th>RS-NEM</th>
<th>RM-NEM</th>
<th>LRS-NEM</th>
<th>GS-NEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCS Allocated Revenues</td>
<td>$9,129,987</td>
<td>$70,376</td>
<td>$47,466</td>
<td>$220,061</td>
</tr>
<tr>
<td>Present Rate Revenues</td>
<td>5,787,670</td>
<td>45,201</td>
<td>46,590</td>
<td>128,266</td>
</tr>
<tr>
<td>Revenue Difference</td>
<td>$3,342,317</td>
<td>$25,175</td>
<td>$876</td>
<td>$91,795</td>
</tr>
<tr>
<td>Monthly Bills</td>
<td>64,416</td>
<td>900</td>
<td>96</td>
<td>804</td>
</tr>
<tr>
<td>Average Monthly Subsidy per NEM Customer</td>
<td>$51.89</td>
<td>$23.98</td>
<td>$9.13</td>
<td>$114.17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPPC</th>
<th>D-1-NEM</th>
<th>GS-1-NEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCSS Allocated Revenues</td>
<td>$1,293,051</td>
<td>$94,043</td>
</tr>
<tr>
<td>Present Rate Revenues</td>
<td>788,084</td>
<td>321,360</td>
</tr>
<tr>
<td>Revenue Difference</td>
<td>$504,967</td>
<td>$172,683</td>
</tr>
<tr>
<td>Monthly Bills</td>
<td>12,876</td>
<td>1,764</td>
</tr>
<tr>
<td>Average Monthly Subsidy per NEM Customer</td>
<td>$39.22</td>
<td>$97.89</td>
</tr>
</tbody>
</table>

(Ex. 2A at 11, 21, 33-35, 96, 163-164, 177-187; Ex. 5A at 11, 21, 32, 35, 93, 162, 166-172, 174.)

On average, the resulting shift in cost responsibility is approximately $623 and $471 for each single family residential NEM ratepayer supplement annually for NPC and SPPC, respectively. The magnitude of this cost shift is unreasonable.

**Separate Ratepayer Classes**

89. New ratepayer classes are usually created as part of a general rate case, but the Commission may establish new classes outside of a general rate case when appropriate.

Pursuant to Section 2.52(a) of SB 374, the Commission may establish one or more rate classes...

---

12 NPC’s current RS and SPPC’s current D-1 residential NEM ratepayers make up approximately 97 percent and 88 percent of the NEM ratepayers that are the subject of this proceeding.
for NEM ratepayers in this proceeding. There are generally three ways to differentiate ratepayers into classes: cost differentiation, usage differentiation, or a combination of the two.

90. Partial-requirements service, including electric service for NEM ratepayers, presents both a cost issue and a rate design issue (and revenue recovery issue) in this proceeding. The issue is the relationship between reduced consumption and the cost to provide service. When NEM ratepayers reduce energy consumption with solar generation, the NEM ratepayers lower their bills at the full retail energy rate, which includes charges not only for fuel costs but also for fixed and demand costs; these fixed and demand costs do not go down simply because the NEM ratepayers consume less energy. In other words, the reduction in the amount of electricity delivered to the NEM ratepayer after the installation of the NEM system does not result in a proportional decline to the cost of providing service. The price charged does not equate to the cost to provide service. As a result, NEM ratepayers are under-paying, and the difference has to be collected from non-NEM ratepayers (eventually via reallocation in the next general rate case) if NEM ratepayers are not in separate rate classes. By placing NEM ratepayers in a separate class, the Commission can design rates that effectively collect those costs through an alternative rate structure. Separate rate classes will address the inequity between NEM and non-NEM ratepayers that exists under the NEM1 framework. The subsidy to NEM ratepayers under NEM1 is not paid by the utility as some parties incorrectly suggest; rather, the subsidy flows from non-NEM ratepayers to NEM ratepayers, with the utility collecting the same amount regardless of flow costs are allocated among the different ratepayers. Indeed, NV Energy’s revenues will not increase as a result of the Commission requiring NEM ratepayers to pay their full share of costs.\footnote{See discussion on NV Energy’s request to establish regulatory liability accounts in Section VII D below.}
91. It is just and reasonable and in the public interest to establish separate rate classes for NEM ratepayers based on both the cost differentiation and load (usage) differentiation between NEM ratepayers and non-NEM ratepayers. Different services have different costs and thus require different rate classes. NEM ratepayers are partial-requirements service ratepayers. The Commission has historically established separate, optional rate schedules for ratepayers who self-select to become partial-requirements ratepayers.\(^\text{14}\) Partial-requirements service ratepayers are ratepayers whose electric requirements are partially or totally provided by non-utility generation. There is a significant difference in the load (usage) profiles between partial-requirements NEM ratepayers and full-requirements ratepayers. NEM ratepayers can rapidly go from exporting unused electricity to importing needed electricity from the local grid. As a result, NV Energy provides a distinct service to partial-requirements ratepayers who choose to purchase some, but not all, of their energy needs from the utilities.

92. Besides the partial-requirements nature of NEM ratepayers' service, the load levels and hourly usage differences between NEM and non-NEM ratepayers are sufficient (alone) to justify separate ratepayer classes for NEM ratepayers. There is a significant difference between the load shapes (usage profiles) of NEM and non-NEM ratepayers, thus supporting the establishment of new NEM ratepayer classes. The total load and delivered load of the NEM ratepayer is distinct and varies from the shape of non-NEM ratepayers on an hourly basis. Differences in hourly load shapes thus reflect the differences in the costs incurred by NV Energy.

\(^{14}\) Historically, NV Energy has distinguished between full and partial-requirements ratepayers. However, in 1997, the Nevada Legislature adopted a pilot program for NEM ratepayers essentially eliminating this historical distinction. Subsequently, in 2015, the Nevada Legislature ended the pilot program by authorizing the Commission to again recognize that partial-requirements NEM ratepayers receive unique services from NV Energy and authorized the Commission to address those distinctions by adopting unique rate designs and corresponding prices to recover the costs for serving NEM ratepayers.
to provide the unique and specific energy services required by NEM ratepayers. NV Energy also conducted an Epps-Singleton equality of distribution test to further demonstrate that the total hourly loads of the two groups are statistically different. Hourly, not monthly, load shapes provide information regarding the cost of providing service to groups of ratepayers. Similarities in the ranges of monthly consumption may mask marked differences in the time-of-day consumption and, therefore, the facilities required to provide service to a class of ratepayers.

93. The fact that NEM ratepayers' usage characteristics are different from non-NEM ratepayers is a sufficient basis for establishing new NEM ratepayer classes. However, establishing new NEM ratepayer classes is also in the public interest to allow more efficient tracking of NEM ratepayers' costs and billing determinants for use in future general rate cases or other ratemaking proceedings. Even if the total costs for NEM ratepayers were currently the same, which they are not, the types of costs are different because they reflect the different types of service provided by NV Energy. Separate ratepayer classes will help capture any change in those costs (higher or lower) in the future. For instance, the impacts (both costs and benefits) of expected higher penetration of NEM systems on the distribution system in the future will need to be addressed.\(^\text{15}\) Future impacts on the distribution system are something that would need to be analyzed as part of rate setting for the NEM ratepayer classes in a general rate case. However, at this point in time, there do not appear to be any impacts on the distribution system. NV Energy shall study and account for the costs and benefits of higher penetration of NEM systems on the distribution systems and include the results when completed to assist in determining whether rates need to be further modified for NEM ratepayers in future general rate cases.

V. "GRANDFATHERING"

---

\(^{15}\) For example, as the locational penetration of NEM systems increases, their production could exceed the capability of the distribution systems.
NV Energy Position

94. NV Energy recommends the Commission keep the existing NEM rules and rate structures for NEM1 ratepayers, whose NEM applications were accepted or approved prior to the 235MW capacity cap being met. NV Energy also recommends the Commission approve new rules and rates for NEM2 ratepayers, whose NEM applications are accepted or approved after the 235MW capacity cap is met. (Ex. 2A at 5, 14, 88; Ex. 5A at 5, 14, 85.)

BCP Position

95. BCP states that NEM1 ratepayers should be grandfathered for a period of at least 8-10 years (roughly equivalent to the payback period for NEM system investments) to assure that investments are recovered over that time period. (Tr. at 444-445.)

Bombard Position

96. Bombard states that it supports the Commission doing what is best for the ratepayers of Nevada. (Tr. at 415.)

SEIA Position

97. SEIA states that if any changes are made to the NEM tariffs, such changes should only be effective for new NEM ratepayers as of the date of the final decision in this proceeding. Ratepayers who signed up for the NEM tariff under the 235 MW cap have the expectation that NEM would be available to them and additional fees would not be imposed. It is important that ratepayers have transparency and predictability in their rates, and NEM ratepayers entered into NEM agreements with this understanding and expectation. Further, business models and industries have been structured around the expectation that past policies would remain consistent. Fundamental changes in regulation can irreversibly harm these industries, which employ thousands of Nevadans, provide ratepayers with innovative energy services, and benefit
the environment. (Ex. 45A at 12.)

Staff Position

98. Staff recommends that the Commission find that it is in the public interest to apply the new NEM rate structure to all NEM ratepayers or, at a minimum, set a time limit for the "grandfathering" of those NEM ratepayers that participated under the 235 MW cap. First, Section 2.3(3) of SB 374 plainly provides that the Commission may determine in this proceeding whether grandfathering of NEM1 ratepayers should occur. Second, NV Energy is generally not allowed to discriminate between similarly-situated ratepayers but is allowed to differentiate between classes of ratepayers if either the costs to serve or the usage patterns are sufficiently different. The ratemaking principle of horizontal equity supports treating equals (NEM ratepayers) equally. Third, Staff does not believe it is appropriate to use NEM1 data (as NV Energy used for a proxy group because no data exists for NEM2 ratepayers yet) to establish NEM2 rates and then not apply those same rates to NEM1 ratepayers. Fourth, Staff’s proposal gives all ratepayers the ability to choose to install NEM systems and choose whether to elect the NEM or TOU rates. Fifth, Staff’s proposal provides a more accurate signal of the value of excess generation to all NEM ratepayers. Providing different price signals to similar ratepayers is illogical and potentially confusing. Sixth, it is impractical to track different generations of ratepayers, especially if circumstances change (i.e. Does the rate structure stay with the account, stay with the premise, or stay with the ratepayer? What if the NEM system fails?; What if more panels are added to the NEM system?). Seventh, lawsuits alleging antitrust matters have been filed in other jurisdictions for differential treatment of NEM ratepayers. (Ex. 64A at 1-2, 22-25.)

99. Staff states that it is concerned for the NEM1 ratepayers who were sold/leased NEM systems based on assumptions that turn out to be incorrect. However, most ratepayers
understand the fundamental principle that utility rates are all subject to change over time. There was no representation or guarantee from the Legislature, NV Energy, or the Commission that the NEM framework would continue in its original form in perpetuity. Sales offerings that are made by rooftop solar installers are not within Staff’s or the Commission’s control. The Commission changes utility rates frequently, and no other set or subset of ratepayers is shielded from those changes. Sending a more accurate price and value signal through Staff’s proposed rate structure is more important than shielding a subset of ratepayers from changes in utility rates. (Ex. 64A at 25-26.)

100. Staff states that if the Commission disagrees with Staff’s recommendation and allows grandfathering of NEM1 ratepayers, Staff recommends that the Commission limit the timeframe in which to grandfather NEM1 ratepayers, such as four years for SPPC ratepayers and five years for NPC ratepayers to be consistent with the general rate case cycles of both utilities, and then move those ratepayers to the NEM2 rates at the end of that time period as rates are changed and calculated for all classes. Grandfathering NEM ratepayers indefinitely is not reasonable because the NEM systems are not indefinite themselves and will eventually need to be replaced. As a result, NV Energy may not know if/when the NEM systems are replaced, which could result in a special rate in perpetuity. (Ex. 64A at 25-26.)

TASC Position

101. TASC recommends that interim NEM ratepayers that apply for interconnections prior to the Commission issuing an order on NEM2 rates and NEM1 ratepayers who have taken service below the 238MW cap should be grandfathered under the NEM1 rates and tariffs. Through the end of 2015, NEM ratepayers who receive incentives through the Solar Energy Systems Incentive Program ("RenewableGenerations program") will provide NV Energy with
RECs with a 2.45x multiplier. These multiplied RECs will have significant additional value to NV Energy for RPS compliance. The Commission should also recognize that existing NEM ratepayers have made long-term commitments to NEM systems in reliance on existing rates and with the encouragement of the existing incentive program, albeit under conditions of substantial uncertainty. Any issues pertaining to changed circumstances with the NEM systems can be worked out fairly easily. Finally, TASC fully recognizes that when NEM ratepayers decide to install systems under a NEM tariff, they bear the risks and rewards over time of typical changes to the levels and designs of utility rates. However, the 35-40 percent rate increase proposed by NV Energy is truly extraordinary and far beyond what is typical through the normal ratemaking process. (Ex. 45A at 31-32; Tr. at 309-313.)

102. TASC also recommends that NEM2 ratepayers who take service after December 31, 2015, should take service under the existing NEM1 rates because the NEM2 rate design will not impact other ratepayers until new rates take effect after the general rate cases are complete. The NEM2 rate design will do nothing until the next general rate case to remedy any perceived cost shifting because the increased revenues during the interim period will flow to NV Energy shareholders at a time when NV Energy has earned approximately $33.5 million, as of March 2015, in excess of its authorized rate of return. After revised NEM2 rates have been approved in the next general rate cases, the NEM2 ratepayers can move to the permanent NEM2 rates. (Ex. 45A at 32, 49-50.)

**WCSD Position**

103. WCSD recommends that the rules governing NEM1 systems remain unchanged. WCSD has 39 NEM systems at its facilities. WCSD made investments in NEM systems based on encouragement from the Nevada Legislature and SPPC to install systems on schools for
educational benefits and operational cost savings. The investments were made based on cost estimates and projected savings to WCSD for the 20-year commitment required to participate in the RenewableGenerations program. The cost savings associated with the NEM systems have resulted in lower electrical costs to WCSD that are then utilized for other educational expenses. Any changes to NEM1 tariffs could have a negative consequence on WCSD. (Ex. 40A at 2, 4-5.)

**NV Energy Rebuttal Position**

104. NV Energy states that the Commission should reject proposals to grandfather NEM2 ratepayers. Placing NEM2 ratepayers under the umbrella of the NEM1 rate structure would increase, rather than decrease, the existing cost shift that SB 374 was meant to address. The Commission should not grandfather NEM2 ratepayers to protect the rooftop solar industry from the consequences of poor contracting decisions. (Ex. 101A at 35-36.)

105. NV Energy states that the Commission should weigh Staff’s proposal to not grandfather any NEM ratepayers under the existing rate structure. Staff’s proposal reduces the cost of administering two separate schedules for similarly situated, partial-requirements NEM ratepayers. (Ex. 101A at 36.)

106. NV Energy states that almost all of WCSD’s projects are located at facilities billed under an existing three-part pricing structure that already includes a demand charge and thus are not the subject of this proceeding. Further, existing NEM1 rates are not necessary to ensure that the NEM systems installed at WCSD sites provide the appropriate payback. Since 2005, WCSD has installed 36 solar and wind systems through Nevada’s incentives programs and received $17.5 million in incentives for these projects. For 32 of 36 projects, NV Energy has information demonstrating that the incentives covered 88.6 percent of the total system costs. In
addition, these systems have resulted in energy savings of at least $1,338,787 through October 2015. WCSD is on pace to save approximately $365,000 annually going forward if no changes are made to the NEM1 rates. (Ex. 85A at 2-4.)

**Commission Discussion and Findings**

107. Section 2.3(3) of SB 374 states:

In approving any tariff submitted pursuant to subsection 1, the Commission shall determine whether to which any tariff approved or rates or charges authorized pursuant to this section are applicable to customer-generators who, on or before the date on which the cumulative capacity requirement described in paragraph (a) of subsection 1 or NRS 704.773 is met, submitted a complete application to install a net metering system within the service territory of a utility.

The customer-generators referenced above are those ratepayers whose NEM applications have been accepted or approved prior to the 235 MW cap being met, as provided in NRS 704.773 (as modified by Section 2.95 of SB 374). As a result, the Commission must determine whether to grandfather NEM1 ratepayers or apply any or all of the NEM2 rates and tariffs to NEM1 ratepayers.

108. The Commission finds that it is in the public interest to apply the same rates and tariffs to all NEM ratepayers, regardless of the vintage of the NEM system (whether or not their completed NEM applications were submitted prior to the 235 MW cap being met). NV Energy is generally not allowed to discriminate between similarly-situated ratepayers but is allowed to differentiate between classes of ratepayers if either the costs to serve or the usage patterns are sufficiently different. There will be no difference between NEM1 and NEM2 ratepayers in NV Energy’s costs to serve them or their usage patterns. The ratemaking principle of horizontal equity supports treating equals (all NEM ratepayers) equally. Also, providing different price signals, through different rates and tariffs, to similar ratepayers is illogical and potentially confusing. Treating all NEM ratepayers the same will also reduce the costs of administering two
separate schedules for similarly-situated ratepayers. Finally, grandfathering NEM1 ratepayers indefinitely is impractical to track, especially if circumstances change,\textsuperscript{16} and would potentially allow for the NEM1 rates and tariffs to continue in perpetuity.

109. Utility rates are by their very nature subject to change as the cost of energy and the allocation of costs (to serve classes of ratepayers) used to determine rates change with each relevant filing by the utility. Most ratepayers understand this fundamental principle; even under the NEM1 rate design, rates for NEM ratepayers have previously fluctuated in accordance with the rates that NEM ratepayers were charged equal to their corresponding class of non-NEM ratepayers as provided by NRS 704.773(2)(c) and (3)(b).\textsuperscript{17} There was no contract with NV Energy guaranteeing utility rates for the life of the NEM system. Any misconception on the part of NEM1 ratepayers on this important point is not a valid reason to grandfather existing rates for NEM1 ratepayers in perpetuity. The Commission changes utility rates as needed, and no set or subset of ratepayers is shielded from those changes. Sending a more accurate price and value signal through the revised rate structure (see discussion below) is more important than creating an inaccurate, false sense of stability.

110. It seems incontestable that the State of Nevada has provided tremendous support for the rooftop solar industry with the mandated increases in the NEM cap along with substantial rebates since the first NEM statute was passed in 1997. A significant number of NEM1 ratepayers received incentives for installing their systems. In many cases, these State incentives along with federal tax credits covered all or a significant portion of the cost of the installation of

\textsuperscript{16} For example, (1) Does the rate structure stay with the account? (2) Does the rate structure stay with the premise? (3) Does the rate structure stay with the ratepayer? (4) What if solar panels are added to the NEM system? (5) What if (a portion of) the NEM system fails and is replaced?

\textsuperscript{17} While the Nevada Legislature previously adopted a policy of tying rates for NEM ratepayers to those of the corresponding class of non-NEM ratepayers, the Nevada Legislature eliminated that mandate with the passage of SB 374, effective June 5, 2015, upon approval by the Governor.
the NEM1 systems. NV Energy ratepayers will have paid $255 million to subsidize the installation of these NEM1 systems (see NRS 701B.260(4)(b)) upon the exhaustion of the RenewableGenerations program's budget. None of these rebates have been or will be taken away from the NEM1 ratepayers who continue to meet their obligations under the incentive program.

111. With regard to TASC's recommendation that no changes be made until the next general rate case because only NV Energy shareholders will benefit from the collection of additional monies during the interim, this argument is moot now that NV Energy has proposed a regulatory liability for any such monies collected from NEM ratepayers during the interim periods between general rate cases. (See Section VII D below).

VI. RATE DESIGN

NV Energy Position

112. NV Energy recommends a three-part rate design for new NEM ratepayers. The rates are based on the MCSS. The three-part rates include a monthly service charge, a demand charge, and an energy charge. Two choices are being offered to NEM ratepayers, one of which does not have a time variation in the demand and energy charges, and one of which does have a time variation in these charges. (Ex. 29A at 3; Ex. 30A at 3.)

113. NV Energy states that the proposed rates are consistent with the five principles of rate design: (1) economic efficiency, (2) equity, (3) bill stability, (4) revenue stability, and (5) customer satisfaction. These principles accord with the established notion of cost causation in rate design. Economic efficiency and equity relate directly to the notion of cost causation. Economic efficiency is achieved by having cost-reflective prices, while respecting the equity

---

principle requires that the tariff’s design not result in one ratepayer unintentionally subsidizing another ratepayer. Prices that are cost-reflective minimize unintentional subsidies. However, cost causation may need to be balanced against the other core principles such as customer satisfaction or bill stability. (Ex. 29A at 4-8; Ex. 30A at 4-8.)

114. NV Energy states that according to the notion of cost causation, rate structures should match the nature of the costs and have a fixed service charge, a demand charge, and an energy charge. The demand and energy charges might vary with the time of use of electricity and have different seasonal and/or peak/off-peak charges. Most commercial and industrial ratepayers across the country are served under cost-reflective, three-part rate structures. Historically, residential ratepayers have not been served under three-part rate structures; however, this is changing rapidly due to several technological advances, including advanced metering infrastructure (“AMI”) that have emerged in the last several years. At least 19 utilities in 15 states are currently offering three-part rates to residential ratepayers. (Ex. 29A at 8-10, 17-26; Ex. 30A at 8-10, 17-26).

115. NV Energy states that currently, residential NEM ratepayers continue to pay the same rates as their otherwise applicable tariff schedule. This schedule includes a monthly fixed charge (the basic service charge) and a variable (volumetric) charge. Ratepayers have a choice of a flat volumetric rate or a TOU volumetric rate. Any excess kWh production from the NEM system is credited on the otherwise applicable tariff schedule. This credit goes into a “bank” account, which is used to pay for kWh consumption either in the current or future billing period. (Ex. 29A at 10-11; Ex. 30A at 10-11.)

---

Smart meters are capable of recording advanced billing functions such as incremental consumption and demand, thereby removing a large barrier/cost to the dissemination of cost-reflective rates. (Ex. 29A at 9; Ex. 30A at 9.)

Approximately 99 percent of residential ratepayers have chosen the flat rate and 1 percent have chosen the volumetric rate. (Ex. 29A at 11; Ex. 30A at 11.)
116. NV Energy states that the MCSS are the proper pricing tools for cost-based rates. Prices send signals to ratepayers about what actions to take and to the utility about what investments to make. If these price signals are cost-reflective, then optimal decisions will be made that raise economic efficiency and enhance ratepayer well-being, making society better off. MCSS establish a measure of long-run marginal costs for various aspects of utility costs. If these costs are then passed on to ratepayers with minimal distortions (some distortions are needed for revenue recovery), then ratepayers will pay cost-reflective prices that enable them to make optimal decisions. (Ex. 29 A at 15; Ex. 30A at 15).

117. NV Energy states that it proposes two new rate designs. The first is a three-part rate where the demand and energy charges do not have a TOU component. The second is also a three-part rate, but its demand and energy charges have a TOU component. Both are shown below for each of NPC’s and SPPC’s proposed NEM ratepayer classes:

<table>
<thead>
<tr>
<th>Rates</th>
<th>NPC</th>
<th>RS</th>
<th>NPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Service Charge</td>
<td>$12.75</td>
<td>$18.15</td>
<td>$18.15</td>
</tr>
<tr>
<td>Generation Meter*</td>
<td>$1.43</td>
<td>$1.43</td>
<td>$1.43</td>
</tr>
<tr>
<td>Max Demand Rate ($/kW)</td>
<td>$14.33</td>
<td>$4.04</td>
<td>$22.15</td>
</tr>
<tr>
<td>Flat kWh Rate ($/kW)</td>
<td>$0.11642</td>
<td>$0.05470</td>
<td>$0.05470</td>
</tr>
<tr>
<td>TOU kWh Rate ($/kWh)</td>
<td></td>
<td>$0.09147</td>
<td></td>
</tr>
<tr>
<td>Summer On</td>
<td></td>
<td>$0.05016</td>
<td></td>
</tr>
<tr>
<td>Summer Off</td>
<td></td>
<td>$0.04727</td>
<td></td>
</tr>
<tr>
<td>Winter</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rates</th>
<th>RM</th>
<th>RM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Service Charge</td>
<td>$9.00</td>
<td>$11.22</td>
</tr>
<tr>
<td>Generation Meter*</td>
<td>$1.40</td>
<td>$1.40</td>
</tr>
<tr>
<td>Max Demand Rate ($/kW)</td>
<td>$13.95</td>
<td>$3.97</td>
</tr>
<tr>
<td>Flat kWh Rate ($/kW)</td>
<td>$0.10939</td>
<td>$0.05648</td>
</tr>
<tr>
<td>TOU kWh Rate ($/kWh)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### NPC

<table>
<thead>
<tr>
<th>Rates</th>
<th>Current Flat</th>
<th>NEM Flat</th>
<th>NEM TOU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Service Charge</td>
<td>$82.50</td>
<td>$78.86</td>
<td>$78.86</td>
</tr>
<tr>
<td>Generation Meter*</td>
<td>$8.98</td>
<td>$8.98</td>
<td></td>
</tr>
<tr>
<td>Max Demand Rate ($/kW)</td>
<td>$14.84</td>
<td>$4.11</td>
<td></td>
</tr>
<tr>
<td>Summer On Peak Demand Rate ($/kW)</td>
<td></td>
<td>$28.54</td>
<td></td>
</tr>
<tr>
<td>Flat kWh Rate ($/kW)</td>
<td>$0.10955</td>
<td>$0.03358</td>
<td></td>
</tr>
<tr>
<td>TOU kWh Rate ($/kWh)</td>
<td></td>
<td>$0.09046</td>
<td></td>
</tr>
<tr>
<td>Summer On</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer Off</td>
<td></td>
<td>$0.05347</td>
<td></td>
</tr>
<tr>
<td>Winter</td>
<td></td>
<td>$0.04727</td>
<td></td>
</tr>
</tbody>
</table>

*Generation Meter Charge is waived for SolarGenerations customers.

### D-1

<table>
<thead>
<tr>
<th>Rates</th>
<th>Current Flat</th>
<th>NEM Flat</th>
<th>NEM TOU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Service Charge</td>
<td>$15.25</td>
<td>$24.50</td>
<td>$24.50</td>
</tr>
<tr>
<td>Generation Meter*</td>
<td>$1.12</td>
<td>$1.12</td>
<td></td>
</tr>
<tr>
<td>Max Demand Rate ($/kW)</td>
<td>$8.63</td>
<td>$4.46</td>
<td></td>
</tr>
<tr>
<td>TOU Demand Rate ($/kW)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer On Peak Demand Rate ($/kW)</td>
<td></td>
<td>$14.66</td>
<td></td>
</tr>
<tr>
<td>Winter On Peak Demand Rate ($/kW)</td>
<td></td>
<td></td>
<td>$1.43</td>
</tr>
<tr>
<td>Flat kWh Rate ($/kWh)</td>
<td>$0.09842</td>
<td>$0.04749</td>
<td></td>
</tr>
<tr>
<td>Rates</td>
<td>SPPC</td>
<td>DM-1</td>
<td>DM-1</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td></td>
<td>Current Flat</td>
<td>NEM Flat</td>
<td>NEM TOU</td>
</tr>
<tr>
<td>Basic Service Charge</td>
<td>$7.50</td>
<td>$10.75</td>
<td>$10.75</td>
</tr>
<tr>
<td>Generation Meter*</td>
<td>$1.12</td>
<td>$1.12</td>
<td></td>
</tr>
<tr>
<td>Max Demand Rate ($/kW)</td>
<td>$7.36</td>
<td>$3.70</td>
<td></td>
</tr>
<tr>
<td>TOU Demand Rate ($/kW)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer On Peak Demand Rate ($/kW)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winter On Peak Demand Rate ($/kW)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flat kWh Rate ($/kW)</td>
<td>$0.089</td>
<td>$0.04569</td>
<td></td>
</tr>
<tr>
<td>TOU kWh Rate ($/kW)</td>
<td>$0.089</td>
<td>$0.04569</td>
<td></td>
</tr>
</tbody>
</table>

| Rates                                | SPPC  | GS-1   |        |
|                                      | Current Flat | NEM Flat | NEM TOU |
| Basic Service Charge                 | $2.00  | $39.00 | $39.00 |
| Generation Meter*                    | $2.40  | $4.67  | $4.67  |
| Max Demand Rate ($/kW)               | $11.07 | $5.53  |        |
| TOU Demand Rate ($/kW)               |       |        |        |
| Summer On Peak Demand Rate ($/kW)    |       |        |        |
| Winter On Peak Demand Rate ($/kW)    |       |        |        |
| Flat kWh Rate ($/kW)                 | $0.08471 | $0.04462 |        |
| TOU kWh Rate ($/kW)                  | $0.08471 | $0.04462 |        |

*Generation Meter Charge is waived for SolarGenerations customers.
(Ex. 5A at 48).

The three-part rates directly reflect the different cost elements from the MCSS, scaled so as to recover the revenue requirement. The numerical parameters of the rates should be updated periodically in a general rate case to reflect changes in the marginal costs and loads that determine the rates. Structurally, the rates should remain unchanged unless it is shown that the three-part rate no longer adequately reflects the underlying cost elements. Any excess production from the NEM system is credited for the excess kWh production. This credit goes into a "bank" account, which is used to pay for kWh consumption either in the current or future billing period. (Ex. 2A at 87-89; Ex. 5A at 84-86; Ex. 29A at 13-14; Ex. 30A at 13-14.)

118. NV Energy states that the proposed rate design recovers the cost of banking from the other non-NEM ratepayer classes. The cost of banking is created by NV Energy not recovering the commodity costs (i.e., energy and 38 percent of generation) associated with the banked energy returned to the NEM ratepayers. NV Energy proposes to collect the lost revenue from the other ratepayer classes. The revenues are allocated to the other ratepayer classes using the classes' marginal generation and energy allocation. (Ex. 2A at 45, 47, 163, 187; Ex. 5A at 45, 47, 159, 174.)

119. NV Energy states that the three-part rate design is consistent with the principles of cost causation and largely eliminates subsidies from non-NEM to NEM ratepayers as required by Section 23(2)(e) of SB 374. In accordance with Section 4.5 of SB 374, the rates include a basic service charge that reflects marginal fixed costs incurred by NV Energy to serve NEM ratepayers, a demand charge that reflects the marginal demand costs incurred by NV Energy to serve NEM ratepayers, and an energy charge that reflects the marginal energy costs incurred by NV Energy to serve NEM ratepayers. (Ex. 29A at 16-17; Ex. 30A at 16-17.)
BCP Position

120. BCP recommends that the Commission reject NV Energy's proposal for residential and small commercial demand charges. No changes should be made to the rate design for NEM ratepayers between general rate cases unless the Commission finds that there is some unreasonable cost shift. NV Energy has not provided information on the usage of ordinary residential ratepayers to allow the determination of whether rates with demand charges are biased by usage levels due to different levels of coincidence between ratepayer demand and maximum demand. If the issue is pursued at all, it should be pursued in a general rate case. (Ex. 62A at 3, 9-10.)

121. BCP states that demand charges have the fundamental problem of charging a ratepayer who uses power for a limited period of time the same amount as a ratepayer who uses large volumes of power throughout an entire peak period. Demand charges are both unknown to residential ratepayers and complicated to explain. NV Energy could end up with serious customer relations problems if it designs a demand charge in a way that ratepayers see as punitive and then do not provide adequate information to ratepayers. (Ex. 62A at 10-11.)

122. BCP states that any demand charge should be measured based on an hour interval instead of fifteen minutes. Individual residential ratepayers have relatively random patterns of energy use and thus have less coincidence with peak, compared to large industrial ratepayers. With a fifteen-minute demand charge, random events having little or nothing to do with cost causation could trigger a significant demand charge. Many of those random spikes (i.e. turning on a hair dryer, a microwave, and a toaster at the same time) are at least partly dampened over an hour. As an example, Arizona Public Service's residential demand charges are based on an hour, not 15 minutes. (Ex. 62A at 11.)
123. BCP states that if a demand charge is adopted, there should be a period of time before it is put into effect when ratepayers should be provided education on what a demand charge is, how it works, and how to reduce it. Otherwise, the demand charge shift could be seen as a ploy to put money in shareholders' pockets while profiting from ratepayers' inattention to details that ratepayers never had to understand or consider before. (Ex. 62A at 11-12.)

124. BCP states that the Commission should not change the cost of energy delivered by NV Energy until the next general rate cases where there will be comprehensive MCSS performed. By not making changes to the cost of energy delivered, the Commission will also not be using MCSS with arbitrary load assumptions mixed with different load assumptions for other ratepayer classes and will not single out NEM ratepayers for extremely high facilities charges that the BCP believes are inappropriate for all residential ratepayers. On the other hand, BCP states that it believes that the Commission should reduce the rate paid for banked kWh to exclude 80 percent of the distribution volumetric rate because the amount associated with substations and high voltage distribution is about 10-25 percent of the volumetric rate, depending on the utility, and some portion of upstream feeders near the substation is avoidable by diversified demand. NV Energy should be required to make a compliance filing on this issue based on current levels of costs. (Ex. 62A at 12.)

125. BCP states that NEM ratepayers should not be placed on current TOU rates in the near term. It is possible that time periods will shift in the future due to more utility-scale solar plants coming on line, so providing both NEM and the current TOU periods may over-assign benefits to these ratepayers. (Ex. 62A at 13; Tr. at 446-447.)

**Bombard Position**

126. Bombard recommends TOU rates for NEM ratepayers. NV Energy's kWh to
kWh credit provides NEM ratepayers with an actual dollar value for a net-metered kWh. If a NEM ratepayer then is required to participate in the corresponding optional TOU ratepayer class, this will allow prospective NEM ratepayers to accurately predict the value of a prospective NEM system and make an informed decision as to whether proceeding with such a NEM system is worthwhile for the ratepayer. TOU rates are fair because such rates helps the NEM ratepayer understand the value of each kWh based upon when it is produced. (Ex. 59A at 2-3.)

127. Bombard states that NEM ratepayers need a rate design that is simple to understand. Layering on unjustified and hard-to-understand demand charges and other large fixed charges will confuse NEM ratepayers. (Ex. 59A at 2.)

128. Bombard states that a demand charge is not warranted for NEM ratepayers who do not currently have a demand charge because NEM ratepayers do not increase their demand relative to other ratepayers in the same rate class. In fact, when a ratepayer installs a NEM system, ratepayer demand does not increase but rather decreases during the times that the NEM system produces energy.

**SEIA Position**

129. SEIA states that the imposition of a demand charge on NEM ratepayers is not common. Several jurisdictions have considered but not ultimately imposed demand charges. Only three utilities have adopted such capacity-based charges—Salt River Project (Arizona), Sanree Cooper (South Carolina), and WE Energy (Wisconsin). When the Salt River Project implemented a demand charge (coinciding with the sunset of a small incentive), applications for NEM service dropped by 95 percent. (Ex. 45A at 5-11.)

130. SEIA states that imposing a demand charge on NEM ratepayers would deter the continued growth of NEM systems. Fewer people will participate in NEM service, slowing the
continually dropping price of NEM systems. A demand charge adds confusion because it is
difficult to predict and calculate the savings that would come from a NEM system, dissuading
many from electing to install a NEM system on their homes. A reduction in the number of future
NEM system installations would also have a significant impact on the number of rooftop solar
jobs in Nevada. (Ex. 45A at 11.)

131. SEIA states that imposing a demand charge would also affect Nevada’s
homebuilding industry. Rooftop solar is increasingly becoming an important tool in meeting
energy efficiency standards in strict new building codes as homebuilders opt for rooftop solar
systems instead of more expensive building materials to meet modern code requirements. (Ex.
45A at 11.)

SNHBA Position

132. SNHBA states that a flat rate has worked well to date because it is easy to
understand. Adding a new and untested demand charge, as proposed by NV Energy, will not
achieve a level of simplicity that resonates with the average residential ratepayer. Simplicity is a
critical element for customer adoption. However, if the Commission ultimately decides to
include a demand charge, it should be applied equally to all residential ratepayers because non-
NEM ratepayers are primarily responsible for the large capacity costs associated with peak
summer loads. Equal applicability is particularly important to homebuilders who will otherwise
have difficulty explaining to prospective homebuyers why NEM ratepayers automatically get
high demand charges while non-NEM ratepayers do not. One of SNHBA’s largest members has
already lost two home sales as a result of trying to explain NV Energy’s rate design proposal.
NV Energy’s proposal, as currently structured, will have a negative impact on NEM ratepayers.
(Ex. 41A at 6-8, 18.)
133. SNHBA states that the financial impacts of NV Energy's TOU option are untested and more than likely not understood by most ratepayers. (Ex. 41A at 6.)

Staff Position

134. Staff recommends that the Commission find that it is in the public interest to establish and impose a new NEM rate structure with rates to be updated in NV Energy's subsequent general rate cases. Staff is sufficiently uncomfortable with the inputs and analysis underlying NV Energy's MCSS that Staff does not rely on them to calculate the proposed rates and cautions the Commission from relying on them to set rates. Instead, Staff looks back to the last approved MCSS from the general rate cases for NV Energy. This method, at a minimum, avoids the problem of using different MCSS to set rates for different ratepayer classes. Staff reviewed net metering dockets in Hawaii, Massachusetts, South Carolina, Minnesota, Ohio, Oregon, and Texas in developing its proposed NEM rate structure. (Ex. 64A at 1,13.)

135. Staff recommends a buy/sell arrangement whereby the provision of electricity is governed by the results of the MCSS from the last general rate cases, but adjusted to recover a larger portion of the fixed customer, facility, and demand costs in the basic service charge. The use of energy produced by the NEM system by the NEM ratepayer on-site is not charged or credited. The net credit for excess generation by the NEM ratepayer back onto the utility's grid will be in accordance with the avoided costs. (Ex. 64A at 13-14.)

136. Staff recommends that the Commission set the basic service charge rates to recover the full amount of customer, facilities, and primary and high voltage distribution costs that were discussed in NV Energy's last general rate cases. Staff provides a comparison of the current and proposed basic service charge rates as follows:

<table>
<thead>
<tr>
<th>Class</th>
<th>Current BSC</th>
<th>NPC Proposed BSC</th>
<th>Staff Proposed BSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>RM</td>
<td>$9.00</td>
<td>$18.15</td>
<td>$16.24</td>
</tr>
<tr>
<td>Class</td>
<td>Current BSC</td>
<td>SPPC Proposed BSC</td>
<td>Staff Proposed BSC</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td>-------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>DM-1</td>
<td>$7.50</td>
<td>$10.75</td>
<td>$15.46</td>
</tr>
<tr>
<td>D-1</td>
<td>$15.25</td>
<td>$24.50</td>
<td>$32.97</td>
</tr>
<tr>
<td>GS-1</td>
<td>$32.00</td>
<td>$39.00</td>
<td>$53.52</td>
</tr>
</tbody>
</table>

This is the simplest and most easily understood method to recover primarily fixed charges through a fixed rate. (Ex. 64A at 14-16.)

137. Staff recommends that the Commission not impose a demand charge for NEM ratepayers. Once the NEM ratepayer classes are established, over time NV Energy could propose to implement demand charges as part of a general rate case, and Staff and interested parties could review the proposals at that time. However, if the Commission believes that demand charges are appropriate now for NEM ratepayers, Staff recommends that the Commission use the basic service charge and demand charges that are contained in NV Energy’s respective Schedule SSR tariffs, which incorporate a ratepayer’s otherwise applicable rate schedule and are also similarly based on the last approved MCSS and billing determinants from the last general rate case. Alternatively, the Commission can determine the appropriate rate tilt to use for NEM ratepayer classes, consistent with the rate tilt of larger ratepayer classes and apply the same factors to the percentage recovery of these costs in the fixed charges and the demand charges for the NEM ratepayer classes. NV Energy would have to file these work papers as a compliance to be checked by Staff for accuracy and compliance with the Commission’s order. Either method would be consistent with past Commission practices and ratemaking. (Ex. 64A at 15-17.)

138. Staff states that because 100 percent of the customer, facilities, and primary and
high voltage distribution costs would be recovered in the fixed basic service charge under Staff’s proposal, the base tariff general rate ("BTGR") would need to change correspondingly. Using a fully compensatory basic service charge and the previously approved MCSS and allocations, there should be no cost or revenue shifting for NEM and non-NEM ratepayers between general rate cases. This method yields much lower BTGRs for the NEM ratepayers because more of the fixed costs are being recovered in the fixed charges. In the next general rate case, the NEM ratepayer classes will be allocated their share of the functionalized costs, and NV Energy will use the billing determinants for those classes to set the rates for the next cycle. This analysis will occur in each subsequent general rate case, and as costs or usage change, those factors will correspondingly change and be reflected in the rates of the NEM classes. (Ex. 64A at 16).

139. Staff recommends that the Commission set a value for the NEM ratepayers’ excess generation that captures the majority of the variables that make up the possible value/detriment of NEM. The value of NEM changes over time based on a variety of factors—relative location and concentration, natural gas prices, and the price of utility-scale renewables amongst other things. Consequently, setting a fixed value for a long period of time is unwise. The Commission can set a value during each general rate case by using a methodology similar to the one stipulated to in South Carolina. In short, the methodology considers both the positive and negative effects of: (1) avoided energy; (2) energy losses/line losses; (3) avoided capacity; (4) ancillary services; (5) transmission and distribution capacity; (6) avoided criteria pollutants; (7) avoided CO2 emission cost; (8) fuel hedging; (9) utility integration and interconnection costs; (10) utility administration costs; (11) environmental costs. The value to NV Energy and the ratepayers is the avoided, incremental cost forgone by the utility by acquiring the net excess generation from the NEM system. Consequently, Staff proposes to use the average annual long-
term avoided energy cost that is forecasted by PROMOD from NV Energy’s last approved integrated resource plan filings with an adder for avoided distribution line losses. NV Energy should account for this monthly credit on NEM ratepayers’ bills as a fuel and purchased power expense which would go into the base tariff energy rate ("BTER") and deferred energy account adjustment ("DEAA") accounts accordingly. There is insufficient time or data in this proceeding to assign a value to the other nine variables, but other information can be vetted in future general rate cases. (Ex. 64A at 17-19; Tr. at 539-540.)

140. Staff recommends using the value of $26.51 per MWh for NPC’s rate and $26.93 per MWh for SPPC’s rate to credit hourly excess generation for 2016. Staff took the average monthly long-term avoided costs for NV Energy in Docket No. 15-07004 and averaged the monthly avoided costs to calculate an annual rate of $25.84 for 2016 and $28.82 for 2017. NV Energy’s Portfolio Pro software (used to determine the costs and benefits of a demand-side management program) uses an average line loss (for transmission and distribution) of 4.2 percent for NPC and 5.8 percent for SPPC. In NV Energy’s last Federal Energy Regulatory Commission rate case, NV Energy testified that the average transmission loss was 1.57 percent. Thus, subtracting the transmission losses from those figures results in distribution line losses of 2.63 percent for NPC and 4.23 percent for SPPC, which are used to gross up the annual rate to get the value of the excess generation. One would use the same chart and line loss factors for each subsequent year until a new integrated resource plan is filed, at which time the Commission would adopt the new rates as part of its next general rate case. (Ex. 64A at 18-19.)

141. Staff states that there are other options the Commission can use to value the excess generation. Precision is always better, but it is not always necessary if the same goal can be achieved in large part by using an average price. First, the Commission could use an average
of the daily Powerdex prices for each of the utilities. Second, the Commission could use real-
time Powerdex average prices, which would only be posted after the fact. Third, the
Commission could use the value of the lowest last-approved renewable PPA, minus the portfolio
energy credit value, putting NEM on par with utility-scale solar generation ($36.11 per MWh for
NPC and $36.68 per MWh for SPPC after gross-up for avoided line losses). Fourth, the
Commission could credit the excess generation at the same rate as the BTER if the Commission
wished to be generous and simply average the value of the entire energy portfolio. (Ex. 64A at
20; Tr. at 464-469.)

142. Staff recommends that the Commission allow NEM ratepayers to choose whether
to take service under the NEM rate or NEM TOU rate. The NEM TOU rate would be the same
as the otherwise applicable ratepayer class's TOU rate. Using these rates is a consistent and
reasonable choice because the TOU rates have been calculated and adopted using the last
approved MCSS and the Commission approved those rates as being just and reasonable to use to
value usage at different times of the day. As usage and load factors and profiles change, those
ratepayers who choose NEM TOU will see a reflection of those factors in the rates at subsequent
general rate cases. (Ex. 68A at 21.)

143. Staff disagrees with NV Energy's proposed banking of excess credits and the
proposed recovery of value of those credits. Non-NEM ratepayers are still paying the rates that
incorporate the costs of generation without being adjusted for the benefits of offsetting
generation and energy costs as NV Energy claims. It is not appropriate to request that non-NEM
ratepayers pay for this banking. The appropriate forum to address this topic is in a general rate
case where all ratepayer classes are represented. (Ex. 82A at 10-11.)

144. Staff states that NV Energy should endeavor to use consistent rate design for all
ratepayer classes. While NV Energy proposes a demand charge for residential NEM ratepayers, residential ratepayers have not had a demand cost recovery component in the past. Further, the proposed amount of rate tilt for NEM ratepayers is different. Rate tilt refers to how a cost is recovered. In the past, the Commission has utilized its authority to design rates and shift (tilt) some fixed and demand costs to be recovered through a volumetric commodity rate. One of the underlying principles of rate design is to have a consistent methodology in calculating rates. By being consistent, rates should, in theory, not fluctuate too much between general rate cases. However, an argument can be made that because NV Energy states that NEM ratepayers are partial-requirements ratepayers, a deviation in rate tilt is required in the collection of costs from different rate components. As long as the NEM ratepayers are in different classes, over time the Commission can strive for consistency in the applicability of those rates. (Ex. 82A at 2, 11-12.)

**TASC Position**

145. TASC recommends that the Commission reject NV Energy’s proposed NEM2 rates and direct NV Energy to continue to provide NEM at existing retail rates for residential and small commercial ratepayers, as is now the practice under NEM1. To the extent that the NV Energy NEM program results in additional costs, those costs can be collected from NEM ratepayers through interconnection and application fees. This will prevent any unreasonable cost shifting, consistent with SB 374. (Ex. 76A at 25.)

146. TASC states that in passing SB 374 (and in particular Section 2.8), the Legislature reaffirmed that the purposes of NEM in Nevada are to do the following:

1. Encourage private investment in renewable energy resources;
2. Stimulate the economic growth of this State;
3. Enhance the continued diversification of the energy resources used in this State; and
4. Streamline the process for customers of a utility to apply for and install net metering systems.
These goals clearly indicate that the Legislature intended for NEM service to continue to grow as a viable energy resource for Nevada and for customers to have NEM service as a reasonable choice to provide for a portion of their electricity needs. Unless NEM service remains viable, customers will not make private investments in NEM systems, the rooftop solar industry will not contribute to Nevada's economic growth, and the opportunity to diversify Nevada's energy resources with clean, local, distributed solar generation will be lost. (Ex. 49A at 6; Ex. 76A at 3-4.)

147. TASC states that ratemaking and rate design decisions are typically based on many factors, not all of which can be quantified. Rate design is not a simple mechanical process. In designing rates, several ratemaking principles should be considered. In Principles of Public Utility Rates, Professor James Bonbright discusses eight key criteria for a sound rate structure:

1. The related "practical" attributes of simplicity, understandability, public acceptability, and feasibility of application;
2. Freedom from controversies as to proper interpretation;
3. Effectiveness in yielding total revenue requirements under the fair-return standard;
4. Revenue stability from year to year;
5. Stability of the rates themselves, with a minimum of unexpected changes seriously adverse to existing customers;
6. Fairness of the specific rates in the apportionment of total costs of service among the different customers;
7. Avoidance of "undue discrimination" in rate relationships;
8. Efficiency of the rate classes and rate blocks in discouraging wasteful use of service while promoting all justified types and amounts of use:
   a. in control of the total amounts of service supplied by the company;
   b. in the control of the relative uses of alternative types of service (on-peak versus off-peak electricity, Pullman travel versus coach travel, single-party telephone service versus service from a multi-party line, etc.)

These principles have been recognized and used by Commissions throughout the country for many years. Sometimes these principles are in tension with each other, and Commissioners must strike the appropriate balance between these principles. Too much
emphasis on any one can lead to undermining the other principles. (Ex. 49A at 20, 26-
28.)

148. TASC states that NV Energy’s proposed increased fixed charges and demand
charges for NEM ratepayers fail to satisfy the principles of rate stability, efficiency, equity, and
that of simplicity, understandability, public acceptability, and feasibility of application. NV
Energy’s proposal violates the principle of rate stability because it raises the customer charge by
42 percent and 61 percent for NPC and SPPC, respectively, and it shifts a significant portion of
the ratepayer’s bill to the demand charge. NV Energy’s proposal violates the principle of
efficiency because it reduces ratepayers’ ability and incentive to reduce electricity consumption
by reducing the energy charge. NV Energy’s proposal violates the principle of equity because it
creates significantly different rates for ratepayers whose costs are very similar (after corrections
are made to the MCSS). NV Energy’s proposal violates the principles of simplicity,
understandability, and customer acceptability because it introduces a rate structure (demand
charges) that is difficult for residential ratepayers to understand and reduces ratepayers’ control
of their bills. Furthermore, NV Energy’s proposal is inconsistent with recent decisions from
commissions in several other states on this issue whereby requests for an increase in fixed
charges have been rejected in whole or approved only in part. (Ex. 49A at 29-37.)

149. TASC states that the simplicity and understandability of the existing NEM rate
structure is a significant benefit to ratepayers, NV Energy, and the Commission. Under the
current structure, all NEM ratepayers continue to see exactly the same price signals from rate
design as non-NEM ratepayers. Ratepayers find this easy to understand. This also means that
NV Energy, the rooftop solar industry, and the Commission do not have to educate NEM
ratepayers about rate design in any way that is different than with non-NEM ratepayers.
Similarly, if Nevada were to decide to encourage more ratepayers to adopt TOU or Critical Peak Pricing rates, informing ratepayers about these new rate structures will be the same regardless of whether the ratepayer has a NEM system or not. (Ex. 76A at 10.)

150. TASC recommends that the Commission not adopt a demand charge as proposed by NV Energy. As seen in customer surveys from three major investor-owned electric utilities in California in 2013, demand charges will confuse ratepayers. Such confusion is not surprising given that demand data for typical home energy uses is not readily available—energy usage for home appliances is typically expressed in terms of the annual kWhs of energy use, not the maximum power use. Further, data on each residential ratepayer’s maximum hourly demand for their home as a whole only became available recently with the advent of AMI. If a demand charge is adopted, NV Energy will need to undertake a comprehensive education program on the demand charges that apply to a ratepayer who installs rooftop solar. This will also significantly complicate the sales process for rooftop solar companies, as ratepayers will have much greater difficulty understanding and trusting the salesperson’s estimates because modeling savings under a demand charge structure would be much more complex. Such complex rate structures may be appropriate for large commercial, industrial, and institutional facilities, who understand both their TOU energy usage and their maximum monthly demand, have the metering to track both energy use and demand in real-time, and can pay facility managers dedicated to managing those demands and costs. Such a rate structure is not understandable or workable for residential or small commercial ratepayers who spend only a few minutes a month focused on their utility bills. (Ex. 76A at 6-10.)

151. TASC states that demand charges also present a significant barrier to the continued adoption of rooftop solar in Nevada and will not contribute to its sustainable growth as
required by NRS 704.766. TASC states that NEM ratepayers will not be able to avoid the demand charges to the same extent as the current volumetric rates, as NV Energy's analysis shows. Because NV Energy's proposed NEM2 rates move significant costs from volumetric energy rates to demand charges, the energy rates assessed under NV Energy's NEM2 rates are approximately 60-65 percent of what they would be for existing NEM ratepayers, which results in a dramatic loss of bill savings. The bill savings from solar generation must offset the cost of the rooftop solar system within a reasonable payback period if solar generation is to be a viable and reasonable investment for the customer. (Ex. 76A at 45-49.)

152. TASC states that the proposed demand charges are not cost-based. When ratepayers install rooftop solar systems, the ratepayers serve a significant portion of their load with their own on-site generation. This reduces NV Energy's costs to serve the NEM ratepayers and provides new renewable capacity to the grid. Based on the hourly profile of marginal costs, the average NPC NEM ratepayer will reduce the utility's generation capacity costs by 42 percent and their transmission and distribution capacity costs by 45 percent. However, if a significant portion of NV Energy's costs for capacity-related generation, transmission, and distribution costs are collected through a demand charge, the ratepayers may see little reduction in their bills for the costs covered by the demand charge. NV Energy's data shows that the average NEM ratepayers will only reduce their bills by eight to nine percent with the proposed demand charge, whereas if the same capacity-related costs are recovered through a volumetric rate, the average NEM ratepayers will reduce their bills by 36 percent based on the difference between pre-solar total loads and post-solar delivered volumes. Therefore, a demand charge structure will undercompensate the average NEM ratepayer, allowing the NEM ratepayer to reduce bills by less than 20 percent of the amount of capacity-related costs that the ratepayer allows the utility to avoid,
whereas a volumetric rate would allow the NEM ratepayer to reduce bills by more than 80 percent of the amount by which the utility’s costs are reduced. (Ex. 76A at 11-17.)

153. TASC states that it is not cost-based to assess a demand charge on NEM ratepayers based on the NEM ratepayers’ maximum use in any hour. The marginal capacity-related costs, which the utilities would include in the demand charge, are focused on the afternoon and early evening hours, not morning or nighttime hours. As a result, it is not reasonable to impose a demand charge on residential NEM ratepayers based on their maximum demand in any hour because such maximum demands may occur outside of the hours that drive the utilities’ marginal costs. There is a level of diversity on residential circuits with many small ratepayers such that the utility does not have to plan to size residential circuits to serve the sum of the non-coincident demands of all residential ratepayers on the circuit. Such diversity does not exist to the same extent on circuits serving larger ratepayers, thus non-coincident demand charges are more reasonably a part of commercial and industrial distribution rates. As a result, it would be reasonable to collect transmission and distribution costs from residential ratepayers based on their average demand over a summer on-peak TOU period that covers just the hours when the circuit is most likely to peak. This can be accomplished through a volumetric TOU charge to recover transmission and distribution costs during these peak hours. A ratepayer’s kWh usage over the peak period measures the ratepayer’s contribution to the average demand during those hours and would be a reasonable, cost-based charge. An even more accurate rate would be very high Critical Peak Pricing rates, which are volumetric TOU rates that charge very high on-peak rates to ratepayers in a limited number of high-demand hours each year that the utility or system operator declare on a day-ahead basis. Demand charges are increasingly obsolete because, with new metering technology, focused TOU rates will be much more accurate.
than traditional fifteen-minute demand charges. Some jurisdictions are replacing demand charges with TOU and Critical Peak Pricing rates. This represents a far more accurate, targeted, and cost-based means to charge ratepayers than the traditional fifteen-minute maximum demand charge. (Ex. 76A at 17-20.)

154. TASC states that the Salt River Project ("SRP") adopted a new NEM tariff that included significantly higher monthly fixed charges as well as demand charges. The impact of the new rate structure that is similar to, but not quite as onerous as what NV Energy has proposed, has been almost a complete shutdown of the rooftop solar market in SRP’s service territory with a decline of 95 percent in the average number of NEM applications received each month compared to the previous year. (Ex. 49A at 8-9; Ex. 76A at 20-24.)

155. TASC states that NV Energy has admitted that under the proposed NEM2 rates, a ratepayer who wishes to install a NEM system will have to pay a premium to continue service from the utility when one considers both the NEM2 rate and the cost of a rooftop solar system. Very few, if any, ratepayers would be willing to lease or purchase NEM systems if the end result is to simply increase their total energy costs.\(^ {21} \)

There is no question that such an outcome would be inconsistent with the clear intent of SB 374 to encourage private development of renewable resources, stimulate economic growth in Nevada, and enhance the diversification of Nevada’s energy resources. (Ex. 49A at 7-8.)

**Vote Solar Position**

156. Vote Solar recommends that the Commission reject NV Energy’s proposed rates and tariffs and permit NEM2 ratepayers to continue to take service under current rates. (Ex. 44A

\(^ {21} \) Currently, SPPC’s Green Energy Choice program allows ratepayers to pay a premium (similar to the reduction in bill savings for NEM ratepayers from the proposed NEM 2 rate) to increase the percentage of renewable energy that serves them. As of the end of 2014, just 15 residential ratepayers and 2 small commercial ratepayers have signed up for this program. (Ex. 76A at 24.)
157. Vote Solar states that the Nevada Legislature made clear in section 2.8 of SB 374 that the purpose and policy in requiring that utilities offer NEM to ratepayers is to: (1) encourage private investment in renewable resources; (2) stimulate the economic growth of Nevada; (3) enhance the continued diversification of the energy resources used in Nevada; and (4) streamline the process for ratepayers of a utility to apply for and install NEM systems. It is important for the Commission to keep this purpose and policy in mind when reviewing the NEM proposals in this proceeding. (Ex. 44A at 8.)

158. Vote Solar states that the proposed tariffs do not reflect marginal costs as required by SB 374. NV Energy’s demand, energy, and customer rates in its proposed tariffs do not reflect marginal costs, but rather reflect NV Energy’s embedded revenue requirement. NV Energy prorates the result of the MCSS to the respective utility’s revenue requirement. The MCSS serve only to allocate the costs that are reflected in the revenue requirements. Thus, it is the revenue requirements, not marginal costs, which are reflected in NV Energy’s proposed rates. Because the cost of the next unit of service to the system often exceeds, and is certainly different than, the current average cost of service, NV Energy cannot base its proposed charges for its NEM tariffs on marginal costs and recover the proper cost of service. It is a reasonable approach for the purpose of assuring that the rates in effect do not allow the utility to over earn, however, the rates developed are not reflective of marginal costs and do not comply with SB 374. Marginal costs can be used as the primary price signal for periods of higher costs, if balanced by lower prices during periods of lower costs. A good example of this approach is TOU rates in which pricing for the peak periods reflects marginal costs. (Ex. 44A at 46-51.)

159. Vote Solar states that the Commission should not approve a demand charge
component in NEM rates. Demand charges may be appropriate for large commercial and industrial ratepayers that are able to manage their energy and peak demand levels but are wholly inappropriate for small ratepayers who have little ability to manage the peak demand upon which demand charges are based. Solar rooftop installations have little effect on a ratepayer's peak demand, regardless of orientation. With peak demand charges based on a fifteen-minute interval, the shading provided by afternoon clouds that often appear in the desert Southwest is sufficient to reduce solar generation long enough for the ratepayer to set a peak as it only has to happen once in a 30-day time period. Randomly timed demand charges do not send appropriate price signals to encourage ratepayers to move load off-peak. As a practical matter, there are only two ways to reduce peak demand, either through behavioral changes or through advanced technologies such as timing of certain appliance usage or integrating storage technologies. Both require ratepayers to fully understand their daily load patterns. While it is a relatively simple matter for a small ratepayer to use, or avoid using, electricity during certain hours of the day, it has no way of knowing when the fifteen-minute interval may occur so that it can reduce its demand for the entire period. Further, a demand charge would not send a proper price signal to NEM ratepayers. A price signal is one for which the customer has an ability to respond. If the customer is unable to respond, particularly using the technology driving the utility's desire for the new charge, then the demand charge simply acts as a fixed charge. Finally, batteries and other forms of storage are already in use by larger ratepayers to mitigate the effects of demand charges. To the extent that storage technologies follow a similar cost curve as have some solar technologies and use of storage becomes more ubiquitous over the next few years, there is a risk that NV Energy will again seek changes to rates and rate structures that will make that new technology less cost-effective for ratepayers. (Ex. 44A at 10-11, 53-59.)
160. Vote Solar states that demand charges have been demonstrated to have a negative impact on the market for rooftop solar resources. SRP saw a 95 percent drop in rooftop solar applications after it required a demand charge for new residential solar ratepayers. Here, the main driver of the bill increase from NEM1 to NEM2 is the demand charge. So singling out NEM ratepayers and subjecting them to these demand charges would not encourage private investment in renewable energy resources. (Ex. 44A at 10-11, 52-53.)

161. Vote Solar states that separate ratepayer classes for NEM2 ratepayers with rates and charges that include a demand charge add costs to the opportunity to become a customer-generator, making such an investment less economic. Making the investment less economical will discourage private investment in renewable energy resources and reduce the growth of distributed solar energy and related economic growth in Nevada. (Ex. 44A at 60.)

162. Vote Solar recommends that in an effort to continue to gather information to help inform the Commission on future potential rate designs, the Commission should implement an alternate TOU tariff through shadow billing. TOU rates are now an option that can be considered by the Commission (see Section 2.5 of SB 374). TOU rates can be structured such that peak period pricing reflects the marginal costs of providing service to NEM ratepayers as required by SB 374. Vote Solar developed a conceptual framework for a TOU tariff (for NPC only) based upon the time when electricity is consumed, the current TOU periods in NPC's tariffs, and the marginal cost for the on-peak period as follows:

<table>
<thead>
<tr>
<th>Monthly Customer Charge</th>
<th>RS-NEM</th>
<th>RM-NEM</th>
<th>GS-NEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer on-peak</td>
<td>$0.13400</td>
<td>$0.10387</td>
<td>$0.08901</td>
</tr>
<tr>
<td>Summer off-peak</td>
<td>$0.11146</td>
<td>$0.09712</td>
<td>$0.08190</td>
</tr>
<tr>
<td>All other hours</td>
<td>$0.10575</td>
<td>$0.09222</td>
<td>$0.07754</td>
</tr>
</tbody>
</table>

Shadow billing with TOU rates will allow NV Energy and NEM ratepayers to gain a better
understanding of the effects of a marginal cost-based rate before any such rate would go into effect. Additionally, NV Energy will be able to use consistent time periods for the studies. (Ex. 44A at 5, 61-64.)

**NV Energy Rebuttal Position**

163. NV Energy continues to recommend a three-part rate structure for NEM2 ratepayers based on the results of the MCSS. NV Energy states that it has modifications that should be incorporated into NPC’s proposal. There was a linking error in the MCSS that affected the marginal energy costs. There were three errors pertaining to the present rate revenue calculations. The modified rates are as follows:

<table>
<thead>
<tr>
<th>NPC</th>
<th>RS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rates</td>
<td></td>
</tr>
<tr>
<td>Basic Service Charge</td>
<td>$18.15</td>
</tr>
<tr>
<td>Generation Meter*</td>
<td>$1.43</td>
</tr>
<tr>
<td>Max Demand Rate ($/kW)</td>
<td>$14.33</td>
</tr>
<tr>
<td>Summer On Peak Demand Rate ($/kW)</td>
<td>$22.15</td>
</tr>
<tr>
<td>Flat kWh Rate ($/kW)</td>
<td>$0.05470</td>
</tr>
<tr>
<td>TOU kWh Rate ($/kWh)</td>
<td>$0.09147</td>
</tr>
<tr>
<td>Summer On</td>
<td>$0.05016</td>
</tr>
<tr>
<td>Summer Off</td>
<td>$0.04727</td>
</tr>
<tr>
<td>Winter</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NPC</th>
<th>RM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rates</td>
<td></td>
</tr>
<tr>
<td>Basic Service Charge</td>
<td>$11.22</td>
</tr>
<tr>
<td>Generation Meter*</td>
<td>$1.40</td>
</tr>
<tr>
<td>Max Demand Rate ($/kW)</td>
<td>$13.95</td>
</tr>
<tr>
<td>Summer On Peak Demand Rate ($/kW)</td>
<td>$24.39</td>
</tr>
<tr>
<td>Flat kWh Rate ($/kW)</td>
<td>$0.05648</td>
</tr>
<tr>
<td>TOU kWh Rate ($/kWh)</td>
<td>$0.11491</td>
</tr>
<tr>
<td>Summer On</td>
<td>$0.05787</td>
</tr>
<tr>
<td>Summer Off</td>
<td>$0.04727</td>
</tr>
<tr>
<td>Winter</td>
<td></td>
</tr>
</tbody>
</table>
## Rates

<table>
<thead>
<tr>
<th>Rates</th>
<th>NEM Flat</th>
<th>NEM TOU</th>
<th>Revised NEM Flat</th>
<th>Revised NEM TOU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Service Charge</td>
<td>$78.86</td>
<td>$78.86</td>
<td>$78.76</td>
<td>$78.76</td>
</tr>
<tr>
<td>Generation Meter*</td>
<td>$8.98</td>
<td>$8.98</td>
<td>$8.96</td>
<td>$8.96</td>
</tr>
<tr>
<td>Max Demand Rate ($/kW)</td>
<td>$14.84</td>
<td>$4.11</td>
<td>$14.80</td>
<td>$4.09</td>
</tr>
<tr>
<td>Summer On Peak Demand Rate ($/kW)</td>
<td>$28.54</td>
<td></td>
<td>$28.47</td>
<td></td>
</tr>
<tr>
<td>Flat kWh Rate ($/kW)</td>
<td>$0.05358</td>
<td></td>
<td>$0.05352</td>
<td></td>
</tr>
<tr>
<td>TOU kWh Rate ($/kW)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer On</td>
<td>$0.09046</td>
<td></td>
<td>$0.09017</td>
<td></td>
</tr>
<tr>
<td>Summer Off</td>
<td>$0.05547</td>
<td></td>
<td>$0.05543</td>
<td></td>
</tr>
<tr>
<td>Winter</td>
<td>$0.04727</td>
<td></td>
<td>$0.04727</td>
<td></td>
</tr>
</tbody>
</table>

## NPC

<table>
<thead>
<tr>
<th>Rates</th>
<th>NEM Flat</th>
<th>NEM TOU</th>
<th>Revised NEM Flat</th>
<th>Revised NEM TOU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Service Charge</td>
<td>$35.43</td>
<td>$35.43</td>
<td>$35.39</td>
<td>$35.39</td>
</tr>
<tr>
<td>Generation Meter*</td>
<td>$7.50</td>
<td>$7.57</td>
<td>$7.57</td>
<td>$7.56</td>
</tr>
<tr>
<td>Max Demand Rate ($/kW)</td>
<td>$15.27</td>
<td>$4.72</td>
<td>$15.23</td>
<td>$4.70</td>
</tr>
<tr>
<td>Summer On Peak Demand Rate ($/kW)</td>
<td>$28.27</td>
<td></td>
<td>$28.20</td>
<td></td>
</tr>
<tr>
<td>Flat kWh Rate ($/kW)</td>
<td>$0.04960</td>
<td></td>
<td>$0.04954</td>
<td></td>
</tr>
<tr>
<td>TOU kWh Rate ($/kW)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer On</td>
<td>$0.06653</td>
<td></td>
<td>$0.06615</td>
<td></td>
</tr>
<tr>
<td>Summer Off</td>
<td>$0.05049</td>
<td></td>
<td>$0.05044</td>
<td></td>
</tr>
<tr>
<td>Winter</td>
<td>$0.04695</td>
<td></td>
<td>$0.04695</td>
<td></td>
</tr>
</tbody>
</table>

*Generation Meter Charge is waived for Solar Generations customers.

(See Ex. 98A at 15.) NV Energy states it has three modifications that should be incorporated into SPPC's proposal. Two modifications pertain to the reduction in time to install a generation meter for the D-1 NEM and GS-1 NEM. The third modification reduces the amount of generation costs included in the proposed GS-1 NEM demand change. The modified rates are as follows:

## SPPC

<table>
<thead>
<tr>
<th>Rates</th>
<th>NEM Flat</th>
<th>NEM TOU</th>
<th>Revised NEM Flat</th>
<th>Revised NEM TOU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Service Charge</td>
<td>$24.50</td>
<td>$24.50</td>
<td>$24.50</td>
<td>$24.50</td>
</tr>
<tr>
<td>Generation Meter</td>
<td>$1.12</td>
<td>$1.12</td>
<td>$0.71</td>
<td>$0.71</td>
</tr>
<tr>
<td>Max Demand Rate ($/kW)</td>
<td>$8.63</td>
<td>$4.46</td>
<td>$8.63</td>
<td>$4.46</td>
</tr>
<tr>
<td>TOU Demand Rate ($/kW)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer On Peak Demand Rate ($/kW)</td>
<td>$14.66</td>
<td></td>
<td>$14.66</td>
<td></td>
</tr>
</tbody>
</table>

## D-1

<table>
<thead>
<tr>
<th>Rates</th>
<th>NEM Flat</th>
<th>NEM TOU</th>
<th>Revised NEM Flat</th>
<th>Revised NEM TOU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Service Charge</td>
<td>$24.50</td>
<td>$24.50</td>
<td>$24.50</td>
<td>$24.50</td>
</tr>
<tr>
<td>Generation Meter</td>
<td>$1.12</td>
<td>$1.12</td>
<td>$0.71</td>
<td>$0.71</td>
</tr>
<tr>
<td>Max Demand Rate ($/kW)</td>
<td>$8.63</td>
<td>$4.46</td>
<td>$8.63</td>
<td>$4.46</td>
</tr>
<tr>
<td>TOU Demand Rate ($/kW)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer On Peak Demand Rate ($/kW)</td>
<td>$14.66</td>
<td></td>
<td>$14.66</td>
<td></td>
</tr>
<tr>
<td>Winter On Peak Demand Rate ($/kW)</td>
<td>$1.43</td>
<td>$1.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flat kWh Rate ($/kW)</td>
<td>$0.04749</td>
<td>$0.04749</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOU kWh Rate ($/kWh)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer On</td>
<td>$0.08694</td>
<td>$0.08693</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer Mid</td>
<td>$0.05934</td>
<td>$0.05933</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer Off</td>
<td>$0.04302</td>
<td>$0.04302</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winter On</td>
<td>$0.05036</td>
<td>$0.05035</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winter Off</td>
<td>$0.04302</td>
<td>$0.04302</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SPPC**

<table>
<thead>
<tr>
<th>Rates</th>
<th>NEM Flat</th>
<th>NEM TOU</th>
<th>Revised NEM Flat</th>
<th>Revised NEM TOU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Service Charge</td>
<td>$10.75</td>
<td>$10.75</td>
<td>$10.75</td>
<td>$10.75</td>
</tr>
<tr>
<td>Generation Meter*</td>
<td>$1.12</td>
<td>$1.12</td>
<td>$0.71</td>
<td>$0.71</td>
</tr>
<tr>
<td>Max Demand Rate ($/kW)</td>
<td>$7.36</td>
<td>$3.70</td>
<td>$7.36</td>
<td>$3.70</td>
</tr>
<tr>
<td>TOU Demand Rate ($/kWh)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer On Peak Demand Rate ($/kW)</td>
<td>$12.71</td>
<td>$12.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winter On Peak Demand Rate ($/kW)</td>
<td>$1.44</td>
<td>$1.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flat kWh Rate ($/kW)</td>
<td>$0.04569</td>
<td>$0.04568</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOU kWh Rate ($/kWh)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer On</td>
<td>$0.10639</td>
<td>$0.10637</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer Mid</td>
<td>$0.05611</td>
<td>$0.05609</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer Off</td>
<td>$0.04077</td>
<td>$0.04077</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winter On</td>
<td>$0.04994</td>
<td>$0.04989</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winter Off</td>
<td>$0.04077</td>
<td>$0.04077</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DM-1**

<table>
<thead>
<tr>
<th>Rates</th>
<th>NEM Flat</th>
<th>NEM TOU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Service Charge</td>
<td>$39.00</td>
<td>$39.00</td>
</tr>
<tr>
<td>Generation Meter*</td>
<td>$4.67</td>
<td>$4.67</td>
</tr>
<tr>
<td>Max Demand Rate ($/kW)</td>
<td>$11.07</td>
<td>$5.53</td>
</tr>
<tr>
<td>Summer On Peak Demand Rate ($/kW)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winter On Peak Demand Rate ($/kW)</td>
<td>$1.94</td>
<td>$1.94</td>
</tr>
<tr>
<td>Flat kWh Rate ($/kW)</td>
<td>$0.04462</td>
<td>$0.04629</td>
</tr>
<tr>
<td>TOU kWh Rate ($/kWh)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer On</td>
<td>$0.08466</td>
<td>$0.08466</td>
</tr>
<tr>
<td>Summer Mid</td>
<td>$0.05687</td>
<td>$0.05687</td>
</tr>
<tr>
<td>Summer Off</td>
<td>$0.04221</td>
<td>$0.04221</td>
</tr>
<tr>
<td>Winter On</td>
<td>$0.04975</td>
<td>$0.04975</td>
</tr>
<tr>
<td>Winter Off</td>
<td>$0.04221</td>
<td>$0.04221</td>
</tr>
</tbody>
</table>

*Generation Meter Charge is waived for SolarGenerations customers.*
(See Ex. 93A at 23.)

164. NV Energy states that its proposals take into consideration the principles of rate stability, efficiency, equity, as well as the principles of simplicity, understandability, public acceptability, and feasibility of application. Rates should be changed gradually with minimal unexpected changes seriously adverse to existing ratepayers. It is also important to note that rate stability is not an end in itself and has to be weighed along with other criteria. The NEM1 rates have outlived their usefulness. They were required to jumpstart the installation of rooftop solar and have successfully done so in the time it took to reach the statutory cap. It is a generally accepted principle that public utility rates are subject to revision if and when they become unreasonable. (Ex. 87A at 2-4.)

165. NV Energy states that the simplest way to develop an equitable pricing structure is to adopt prices that mirror the cost structure of the utility. Demand charges are a good and reasonable fit for NEM ratepayers because NEM ratepayers use existing local grid capacity for both export of unused on-site generation and import of energy from the utility when the on-site generation cannot fully meet demand. The prices that NV Energy charges to the majority of its load have demand charges. The simple fact is that demand charges establish a price that reflects demand-driven costs. (Ex. 101A at 29-33.)

166. NV Energy states that existing rates for NEM1 ratepayers do not have a demand charge that provides the NEM1 ratepayers with an incentive to use capacity efficiently. NEM1 ratepayers do have an energy charge, but that charge does not vary by time of day and provides no incentive to use capacity efficiently. Demand charges should not be equated to fixed costs. Demand charges are largely under the ratepayer's control while fixed charges are not. Both are essential elements in electric rate design because they mirror the structure of utility costs and
have been a staple of large commercial and industrial rates for decades. With the advent of AMI, it is now possible to deploy this three-part rate structure to the smaller classes. (Ex. 87A at 4-6; Ex. 93A at 14-16.)

167. NV Energy disagrees with the assertion that NEM ratepayers will not be able to understand the concept of electricity demand. Almost all non-NEM ratepayers have access to their fifteen-minute demand data now, and NEM ratepayers with smart meters will have the same demand data by the end of 2015. To assert that NEM ratepayers can understand consumption-based information but not demand-based information is just not logical—the only difference is the element of time. A host of new technologies and programs are being adopted by ratepayers of all backgrounds: smart thermostats, demand-side management, TOU, and distributed generation. These new technologies will promote economic efficiency in both a static and dynamic sense. There is clear evidence that ratepayers can understand these advancements and adapt accordingly. The Nevada Dynamic Pricing Trial demonstrated that ratepayers will indeed change their behavior in response to price signals. Knowing that they will respond to price signals, ratepayers have a range of options to lower demand. Understanding that running several appliances at once increases demand and demand costs, ratepayers alter their behavior and spread out those loads. Demand can also be explained easily using the wattage of light bulbs as an example. Ratepayers are smart, capable, and willing to participate in a market that is based on cost causation and fairness. The fact that a ratepayer has decided to install rooftop solar is one indication of that ratepayer’s ability to understand energy use as well as the concept of demand. NV Energy plans to educate NEM ratepayers on demand, as well. Further, the notion that all large commercial and industrial ratepayers have energy managers to help manage demand is not true—many small businesses fall under these classes and do not represent large
organizations with dedicated energy managers. Demand is simply energy consumption with the additional element of time. (Ex. 85A at 4-10, Ex. 87A at 8-17; Ex. 99A at 76-77; Ex. 101A at 33-35.)

168. NV Energy states that demand charges are not unavoidable. Instead, demand charges signal the cost of providing service by the electric utility and will provide information necessary to allow NEM ratepayers to determine their generation and consumption patterns. Ratepayers can make informed decisions about how much power to consume and at what time. Whether a ratepayer reduces demand in response to a demand charge is a secondary benefit. For instance, demand charges can influence orientation of rooftop solar systems based on when the NEM ratepayer needs the power most (earlier or later in the day). (Ex. 85A at 4-6; Ex. 87A at 9-11.)

169. NV Energy states that demand charges do not prevent ratepayers from realizing the benefits of NEM installations. By way of example, over 500 ratepayers decided to install NEM systems through the RenewableGenerations program, even though these ratepayers are already billed under a three-part rate structure that includes a demand charge. (Ex. 85A at 3.)

170. NV Energy states that modeling ratepayer savings from rooftop solar under a demand charge structure is not too complex for the solar sales process. Current ratepayers considering adding a NEM system can download their fifteen-minute kWh data from the MyAccount web portal, then search their data for the times and values that are the highest. To determine their peak demand, ratepayers simply multiply their highest-value fifteen-minute period by four. (Ex. 99A at 85-86.)

171. NV Energy states that SNHBA's contention that demand charges are too complex to explain and that they discourage ratepayers from buying new solar homes overlooks the fact
that buying a new home is a complex interaction that requires mastery of a number of complicated topics such as financing, building materials, design, number of stories, and so on. Similarly, it is hard to imagine that solar ratepayers, who are already familiar with the concepts of capacity (the size of their rooftop solar panels is expressed in kW) are unable or uninterested in investing the relatively small amount of time needed to understand the proposed new rate. The examples of declining solar home sales arise not because of the proposed new NEM rate but because of uncertainty over the future of the NEM rate and the federal investment tax credit. Further, delaying NEM rate changes to the next general rate case will only prolong this uncertainty. (Ex. 87A at 19-20.)

172. NV Energy disagrees with BCP’s proposal that a demand charge based on a 60-minute interval is more appropriate than one based on a fifteen-minute interval. First, BCP is incorrect that residential ratepayers are not coincident with peak loads. Residential air conditioning loads at NPC largely drive the higher-use summer peak season. Further, the fifteen-minute duration is consistent with the duration currently used for the larger commercial classes that include demand charges. The smaller duration will more appropriately reflect the demand that a NEM ratepayer places on the system within a smaller window and will more appropriately reflect the size of facilities that have been built to meet the maximum demands of the ratepayer. (Ex. 93A at 18-19.)

173. NV Energy agrees that TOU rates are an improvement over the existing annual flat-rate in providing price signals that better reflect the variations in costs across the year. However, TOU rates convey an average demand across an entire TOU period and do not reflect the maximum demands that a ratepayer may place on the system during the TOU period. Intermittent and short duration spikes in a NEM ratepayer’s load will not significantly affect a
NEM ratepayer's energy charges or recover the capacity costs associated with these spikes. NV Energy is obligated to instantaneously meet the maximum demand of the individual ratepayers, thus it is reasonable to recover distribution demand costs based on maximum demand. If these capacity costs are recovered entirely through a kWh energy charge, then higher-than-average-load-factor ratepayers will subsidize lower-than-average-load-factor ratepayers within a class. (Ex. 93A at 12-13.)

174. NV Energy states that if the Commission opts for Staff's proposed rate structure, it should include the recovery of 100 percent of transmission demand and 62 percent of generation demand costs, in addition to Staff's proposed recovery of all distribution costs in the basic service charge. Otherwise, there will still be a cost shift because the current BTGR volumetric rate recovers 100 percent of transmission and generation demand costs, which are not entirely avoided from the NEM generation. Further, NV Energy states that it believes that utilizing the MCSS developed for full-requirements ratepayers does not accurately reflect the unique cost characteristics of the partial-requirements NEM2 classes. This was actually explicitly noted in SB 374, "[t]he charges included pursuant to this subsection must adequately reflect the marginal costs of providing service to customer-generators." Because of this concern, it is appropriate to use the MCSS and rate designs filed by NV Energy in this Docket versus using those that were last approved by the Commission as proposed by Staff. The table below provides a comparison of Staff's proposed rates, modified Staff rates using the MCSS from Docket Nos. 13-06002 (SPPC) and 14-05004 (NPC) with recovery of 100 percent of transmission demand and 62 percent of generation demand costs, and modified Staff rates using the MCSS in this proceeding with recovery of 100 perception transmission demand and 62 percent of generation demand costs using the NEM MCSS:
## SPPC

<table>
<thead>
<tr>
<th>Class</th>
<th>Staff’s Proposed Rates</th>
<th>Modified Staff Rates Using MCSS in 13-06002</th>
<th>Modified Staff Rates Using MCSS in 15-07042</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BSC</td>
<td>kWh BTGR</td>
<td>BSC</td>
</tr>
<tr>
<td>D-1</td>
<td>$28.36</td>
<td>$0.04063</td>
<td>$48.44</td>
</tr>
<tr>
<td>DM-1</td>
<td>$13.08</td>
<td>$0.03628</td>
<td>$23.37</td>
</tr>
<tr>
<td>GS-1</td>
<td>$46.20</td>
<td>$0.03308</td>
<td>$74.18</td>
</tr>
</tbody>
</table>

## NPC

<table>
<thead>
<tr>
<th>Class</th>
<th>Staff’s Proposed Rates</th>
<th>Modified Staff Rates Using MCSS in 14-05004</th>
<th>Modified Staff Rates Using MCSS in 15-07042</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BSC</td>
<td>kWh BTGR</td>
<td>BSC</td>
</tr>
<tr>
<td>RS</td>
<td>$33.31</td>
<td>$0.05123</td>
<td>$86.48</td>
</tr>
<tr>
<td>RM</td>
<td>$16.24</td>
<td>$0.05103</td>
<td>$41.50</td>
</tr>
<tr>
<td>LRS</td>
<td>$238.32</td>
<td>$0.04971</td>
<td>$689.63</td>
</tr>
<tr>
<td>GS</td>
<td>$31.04</td>
<td>$0.02175</td>
<td>$47.50</td>
</tr>
</tbody>
</table>

(Ex. 93A at 19-20; Ex. 98A at 9-11, 77-78).

175. NV Energy addresses concerns about the banking mechanism and revenue recovery referenced by Vote Solar and Staff. The NEM banking revenue shortfall included in these Applications is an illustrative example of how NV Energy proposes to recover the cost of banking. If the NEM commodity rates were designed using delivered kWh net of excess generated (banked) energy, the commodity rates would be higher and the allocated revenue requirement would be collected appropriately. However, as NEM rates were developed including banked kWh, a difference will exist. (Ex. 98 at 6-8; Ex. 98A at 2-8; Tr. at 1031.)

176. NV Energy states that the buy/sell arrangement for energy proposed by Staff has certain positive attributes. First, the arrangement has the potential to eliminate the very type of cost shifting that SB 374 was designed to address. Because the ratepayer purchases all of the ratepayer’s energy requirements from NV Energy, cost responsibility is not shifted to other ratepayers, even when a less-efficient, two-part pricing structure is used. Second, the arrangement has the benefit of efficiently and transparently valuing the energy and any other
attributes produced by the NEM systems. The arrangement avoids conflating two separate and
distinct transactions: (1) the sale of energy services by NV Energy to NEM ratepayers, and (2)
the sale of energy and other attributes by the NEM ratepayers to NV Energy. However, it should
be noted that any proposal to pay for excess energy may be prohibited. Pursuant to NRS
704.775(2)(c)(1), the customer-generator is not eligible for cash compensation for excess energy.
(Ex. 98A at 78-80; Ex. 101A at 37-38.)

177. NV Energy states that it does not support the shadow billing proposed by Vote
Solar. There would be nothing to learn from such shadow prices because behavioral changes
cannot be observed without true price signals to which a NEM ratepayer can respond. Further,
NV Energy has identified numerous methodological problems with the shadow prices developed
by Vote Solar—shadow prices are not reflective of marginal cost. (Ex. 99A at 73-76.)

178. NV Energy disagrees with TASC's position that bill savings must offset the cost
of the rooftop solar system. Instead, rates should be set to reflect costs and avoid unreasonable
shifting of costs to other ratepayers. NV Energy reviewed a sampling of contracts NEM1
ratepayers have with rooftop solar providers that show the current NEM1 ratepayers are not
seeing monthly savings today, considering the NEM1 bill plus the cost of rooftop solar. Thus, it
appears that whatever utility bill savings are expected to be realized accrue to the solar vendor,
not the NEM ratepayer. (Ex. 99A at 88-89.)

179. NV Energy states that SB 374 was designed to reduce or eliminate the subsidy for
NEM provided by the piloting program that began in 1997. NV Energy provides nearly 20 years
of legislative history in support of this conclusion. Also, independent analysis conducted by E3,
Lawrence Berkeley National Laboratory, and the Massachusetts Institute of Technology support
the conclusion that NEM increases utility rates and shifts costs to non-participating ratepayers.
The obvious solution is to redesign the pricing structure for ratepayers who choose to become partial-requirements NEM ratepayers so that fixed and demand costs are removed from volumetric charges. Instead, these costs should be reflected in fixed and demand prices, just as NV Energy has proposed. (Ex. 101A at 18-25.)

Commission Discussion and Findings

Statutory Authority

180. Pursuant to SB 374, the Commission has very broad authority to establish new rate classes, terms and conditions, and rates and charges for NEM ratepayers. (See Sections 2.3, 2.95(1)(b), and 4.5 of SB 374.) The Nevada Legislature directed the Commission to establish just and reasonable rates and charges to avoid, reduce, or eliminate any unreasonable shifting of costs from NEM ratepayers to non-NEM ratepayers.

Overview

181. To the extent it is reasonably possible, rates charged to a class of ratepayers should recover the costs to serve that class of ratepayers. Current rates for NEM ratepayers are not properly aligned with the costs to serve NEM ratepayers. The misalignment can be attributed in part to the NEM policies enacted by the Nevada Legislature prior to the passage of SB 374. As NEM system penetration increases the cost-shift will grow. Consequently, it is in the public interest to take steps to transition to accurate, cost-based, non-discriminatory rates.

182. While rates charged to a class of ratepayers should reasonably recover the costs to serve that class of ratepayers, the design of cost-based rates is not a simple, mechanical process. Rate design encompasses many factors, not all of which can be quantified. The general principles of rate design are (1) economic efficiency, (2) equity, (3) bill stability, (4) revenue stability, and (5) customer satisfaction. It is generally understood that these principles are
sometimes in tension with each other and that regulators must strike the appropriate balance between these principles. For example, rate stability is not an end in itself and has to be weighed along with the other criteria. Striking the appropriate balance requires consideration of many factors.

183. The simplest way to develop an equitable pricing structure is to adopt prices that mirror the cost structure. Specifically, the fixed costs should be collected through fixed charges and costs which vary with consumption should be collected through volumetric charges. In this proceeding, NV Energy proposes a three-part tariff that includes (1) a basic service charge, (2) a demand charge, and (3) a volumetric charge. This proposal most closely mirrors the nature of costs incurred by NV Energy to serve NEM ratepayers. However, the Commission rejects this proposal.

**Demand Charge**

184. Residential and small commercial ratepayers in Nevada have not had a demand charge (demand cost recovery component) in the past.\(^{22}\) A certain level of ratepayer education would be necessary to implement a demand charge for the NEM ratepayer classes. NEM ratepayers are sophisticated enough to understand demand charges and can reduce their demand impacts in many ways, including how they configure their installations\(^{23}\) and whether they elect to modify their ongoing usage patterns. However, ratepayer acceptance of this potential rate change is unknown. As a result, now is not the time to adopt a demand charge for residential and small commercial NEM ratepayers, given the other changes taking place in this proceeding.

---

\(^{22}\) A demand charge is one option designed to recover costs that are based on a ratepayer's unique maximum load. The maximum load is what the utility must be prepared to serve, and the maximum load also triggers a sudden and intense need for electricity. This sudden and intense need for energy is filled by the utility's ability to ramp up and ramp down generating units. For decades, demand charges have been used for large industrial or commercial ratepayers due to the costs and strains put on the utility's systems due to their particular demand characteristics.  

\(^{23}\) Orientation of solar panels can increase generation at different times of the day to suit the load needs of the individual ratepayer. (Ex. 99A at 72.)
185. Instead, the Commission approves a two-part tariff consisting of a modified basic service charge and a volumetric commodity charge.

**Basic Service Charge**

186. The basic service charge shall be calculated by NV Energy to recover the full amount of customer, facilities, and primary and high voltage distribution costs. These costs do not change for a ratepayer after the installation of a NEM system; however, because installation of a NEM system results in less energy delivered by the utility to the NEM ratepayer, a NEM ratepayer will avoid paying for these fixed costs if rates remain designed to collect them through a volumetric charge. A basic service charge is the simplest and most easily understood method to ensure recovery of such fixed costs from a ratepayer regardless of the volume of sales to the ratepayer.

187. Primary and high voltage distribution costs, while fixed in nature, are allocable to each ratepayer class based upon that class's contribution to demand, which may change over time. Assigning a demand charge reflects both the fixed nature of the costs and usage of the allocated primary distribution costs to the ratepayers within the class. Including primary and high voltage distribution in the basic service charge is in lieu of instituting a facilities charge based on demand. As the Commission has forestalled instituting demand charges at this time, including these costs in the basic service charge reflects the nature of these costs better than including them in the variable commodity rate. Another benefit for including the costs in the basic service charge is a reduction in volatility for NEM ratepayers, providing more predictable and stable electric bills because the increase in the basic service charge yields a corresponding reduction in the variable commodity rate.24

---

24 The primary drawback to including the costs in the basic service charge is the creation of some level of intra-class inequity and some price signal distortion—NEM ratepayers are unable to potentially avoid some of the costs by
188. The Commission does not have enough information to make an informed decision regarding NV Energy’s proposal to include 100 percent of transmission and 62 percent of generation demand costs in the basic service charge. Therefore, in the next general rate cases for SPPC (2016) and NPC (2017), NV Energy shall recommend (with additional support) what portion of transmission and generation demand costs should be shifted (tilted) between the basic service charge and volumetric commodity rate. A future determination on rate tilt is particularly important in the case of NEM ratepayers because they are partial requirements ratepayers who, in many cases, can avoid all or nearly all volumetric commodity rates for some months of the year. Until the Commission makes the necessary adjustment to the volumetric rates in the next general rate cases, the volumetric commodity rates will continue to be used to recover 100 percent of the transmission and generation demand costs. Nothing in this discussion precludes a party from requesting the implementation of demand charges for NEM ratepayers in the future.

TOU

189. The NEM TOU rate schedules proposed by NV Energy are approved as modified by the other rate design decisions in this Order. TOU rates are an improvement over the flat rates in providing price signals that better reflect the variations in costs across the year. TOU rates represent a far more accurate, targeted, and cost-based means to charge NEM ratepayers. NEM ratepayers can understand more complex cost structures, such as TOU, and change their behavior to produce savings based on a price signal. TOU periods can also be adjusted as peak demand changes in the future.\(^\text{25}\)

\(^{25}\) For example, NPC is forecasting the peak demand to shift to later in the day to the early evening hours by 2017 as more solar generation impacts the utility’s system. (Ex. 83A at 2.)
190. Pursuant to NRS 704.085, as modified by SB 374, there are no restrictions on the implementation of TOU rates for NEM ratepayer classes. The changing technology landscape makes time-variant pricing a viable and important element of future NEM rate design. Therefore, in the next general rate cases (SPPC in 2016 and NPC in 2017), NV Energy shall recommend whether TOU rates for NEM ratepayers should continue to be opt-in, opt-out, or mandatory in the future.\(^{26}\)

**Net Excess Energy**

191. Banking the net excess energy at the retail rate as some parties propose is not just and reasonable because the energy delivered by the NEM ratepayers is not the same as the energy delivered by NV Energy. Pursuant to NRS 704.001(4), NV Energy is required to provide reasonably reliable service at just and reasonable rates. NV Energy is required to provide this service at the times and place and in the volumes required by any ratepayer, including a NEM ratepayer. This requires that the utility adhere to industry standards for the design and operation of its electric system including system reserves and redundancies. Failure to provide this service can result in fines and the revocation of NV Energy's operating certificate. In contrast, NEM ratepayers have no legal requirement to provide any volumes to the grid at any time. NEM ratepayers provide these volumes solely at the discretion of each individual NEM ratepayer and are not scheduled in advance and can be withdrawn at any time by the NEM ratepayer. Further, the volumes flow to the grid without consideration for overall grid demand or system reliability which remains the legal responsibility of NV Energy.

\(^{26}\) The Commission notes that the investor owned utilities in California have been ordered to file applications no later than January 1, 2018 that propose default TOU rate structures to begin in 2019. (See Decision on Residential Rate Reform for Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company and Transition to Time-Of-Use Rates, Ratemaking 12-06-013, issued 7/13/2015).
192. NRS 704.769 requires measuring the difference between the electricity supplied by a NV Energy and the electricity generated by a NEM ratepayer which is fed back to NV Energy over the applicable billing period. This measuring can be accomplished in various increments over the applicable billing period (i.e. 15-minute, hourly, multiple periods of hours in a day, daily, monthly).

193. Staff’s proposed buy/sell arrangement with NEM ratepayers for energy is just and reasonable and in the public interest. NV Energy shall use the average annual marginal energy cost that is forecasted by PROMOD from NV Energy’s last approved integrated resource plan filings with an adder for avoided distribution line losses. NV Energy shall account for this monthly credit on NEM ratepayers’ bills as a fuel and purchased power expense which would go into the BTER and DEAA accounts accordingly. Staff’s proposal allows NEM ratepayers to avoid energy costs and gives appropriate credit for the net excess energy from the NEM systems. The arrangement avoids conflating two separate and distinct transactions: (1) the sale of energy services by NV Energy to a NEM ratepayer and (2) the sale of energy and other attributes by the NEM ratepayer to NV Energy. Through hourly settlement, the arrangement has the potential to nearly eliminate the very type of cost shifting that SB 374 was designed to address, including revenue under-recovery associated with retaining transmission and generation demand costs in the commodity rate, even when a less efficient, two-part pricing structure is used. Also, the arrangement has the benefit of efficiently and transparently valuing the net excess energy and any other attributes produced by the NEM systems in advance.

194. The NEM ratepayers’ net excess energy is set at a value that captures the majority of the variables that make up the possible value/detriment of NEM during each general rate case.

27 PROMOD forecasts the value that the utility thinks it will have to pay for energy in the future. (Tr. at 540-541.)
The Commission will set a value during each future general rate case by using a methodology that considers both the positive and negative effects of: (1) avoided energy; (2) energy losses/line losses; (3) avoided capacity; (4) ancillary services; (5) transmission and distribution capacity; (6) avoided criteria pollutant costs; (7) avoided carbon dioxide emission cost; (8) fuel hedging; (9) utility integration and interconnection costs; (10) utility administration costs; and (11) environmental costs. These variables must be known and measurable positive and negative effects internal to the utility; these variables cannot be speculative or unquantified. For other than the avoided energy and energy losses/line losses, there is insufficient time or data in this proceeding to assign a value to the other nine variables, but other information can be vetted in future general rate cases.

195. Using an optional alternative to the annual price for net excess energy would enhance the price signal sent to NEM ratepayers by informing the NEM ratepayer or potential NEM ratepayer as to the value of net excess energy. Some price diversity could be achieved by establishing “time-of-production” (“TOP”) pricing with the time periods mirroring the TOU periods used by NPC and SPPC in their respective TOU rate designs. Therefore, NV Energy shall establish TOP rates for NEM ratepayers. The rates shall be based on the long-term avoided costs for each hour, grouped into the same seasonal time periods used for the TOU rates. The tariffs shall require NEM ratepayers who select service under the TOP rates to also take service under the TOU rates.

**Gradualism**

196. Consistent with the principle of bill stability described above, the Commission finds that it is in the public interest to establish a time frame in which to gradually move to the revised rate structure in order to prevent rate shock and allow current and future NEM ratepayers
ample time and opportunity to adjust their current usage patterns.\textsuperscript{28}

197. The transition will be similar to the process of climbing a ladder to the ceiling. The ceiling reflects the revised rates for NEM ratepayers as provided in the discussion above and the floor reflects existing rates for NEM ratepayers. The first rung of the ladder will be implemented on January 1, 2016, and continue through December 31, 2016. Beginning on January 1, 2017,\textsuperscript{29} the second rung will be implemented and continue through December 31, 2017. Beginning on January 1, 2018,\textsuperscript{30} the third rung will be implemented and continue through December 31, 2018. Beginning on January 1, 2019, the fourth rung will be implemented and continue through December 31, 2019. The fifth and final rung will be implemented on January 1, 2020,\textsuperscript{31} when the transition to cost-based rates will have been completed. As a result, incremental changes from the current rates will be made consistent with the general rate case cycles of both utilities. Gradualism will mitigate rate shock by providing a glide path to cost-based rates that are not subsidized by non-NEM ratepayers.

198. The transition will result in bills that are higher than bills currently experienced by NPC and SPPC NEM ratepayers. The improved price signals coupled with the length of transition period will allow NEM ratepayers adequate opportunity to modify their energy use patterns and become accustomed to the new rates. It should be noted that NEM ratepayers will

\textsuperscript{28} The rooftop solar PV industry has benefited from and now thrives under two major subsidy programs fostered by the Nevada Legislature. The first subsidy comes in the form of a full requirements rate structure that results in cost shifts away from NEM ratepayers to non-NEM ratepayers. This subsidy has been in place in Nevada since 1997, when the Nevada Legislature passed SB 255 creating the retail credit NEM mechanism. The second subsidy comes in the form of the rebate through the RenewableGenerations program. This subsidy has been in place for over a decade (established by the Nevada Legislature in 2003), and the amounts paid (which will total $255 million upon exhaustion) have steadily decreased over time. This program has created a glide path. The migration (through gradualism) to cost-based rates instituted in this proceeding continues that glide path to take the rooftop solar industry towards self-sustainability in Nevada.

\textsuperscript{29} The "ceiling" for SPPC's NEM ratepayers will now be based on the outcome of SPPC's 2016 general rate case.

\textsuperscript{30} The "ceiling" for NPC's NEM ratepayers will now be based on the outcome of NPC's 2017 general rate case.

\textsuperscript{31} The "ceiling" for SPPC's NEM ratepayers will now be based on the outcome of SPPC's 2019 general rate case.
benefit significantly from continued subsidies during the transition period.\textsuperscript{32}

199. The costs related to facilitating the transition, while significant, will ensure an orderly transition to cost-based rates while providing substantial benefits through this subsidy to NEM ratepayers. While subsidies are not optimal, the orderly transition provided in this Order will protect the significant investments made by the State of Nevada in NEM systems over the years. The costs associated with the transition will be shared by NEM ratepayers, NV Energy shareholders, and non-NEM ratepayers of both utilities. The industry will have adequate time to adjust and modify their business models to respond to these changes and still enjoy the benefits of the subsidization of their products and services provided by non-NEM ratepayers and the utility.

Section 2.8 of SB 374

200. Arguments stating that any rate design that increases costs for NEM ratepayers does not meet the purpose and policy of SB 374 are not compelling. Several parties reference NRS 704.766 as revised by Section 2.8 of SB 374, as proof that the Nevada Legislature in 2015 reiterated its prior purpose and policy of implementing NEM. In reality, Section 2.8 was only included to capture the reference to Section 2.3 of SB 374 which will be codified as a new statute. Pursuant to SB 374, the Legislature directed the Commission to ensure that there was no unreasonable cost shift from NEM ratepayers to non-NEM ratepayers. To the extent that the Commission found a subsidy to exist, it has established a rate design to begin addressing the matter through cost-based rates. Reducing subsidies benefits all ratepayers—those on fixed incomes, those operating businesses that fuel the local economy, and those institutions (such as schools and hospitals) that provide other basic governmental services. Notwithstanding, cost-

\textsuperscript{32} See discussion of current subsidy at paragraph 88.
based rates that increase costs for rooftop solar relative to other renewable technologies will encourage private investment in other renewable technologies such as utility-scale solar PV and storage technologies. This will stimulate the economic growth of Nevada and enhance the continued diversification of the energy resources used in Nevada.

VII. MISCELLANEOUS ISSUES

A. New-Build Solar

SNHBA Position

201. SNHBA recommends a separate tariff for NEM systems on new-build homes. SNHBA states that distinct treatment of new-build solar is necessary to accurately reflect the unique value of new-build solar and the benefits for NV Energy’s general body of ratepayers. It is unreasonable to assume that the costs and load characteristics for existing residential ratepayers who retrofit their homes using solar are the same as residential ratepayers occupying new homes that have solar included as a package design for compliance with modern building codes. It is self-evident that the demand on a utility’s electric system from a new, modern home built in the last 15 years will differ substantially from that of a home built in the nineteen-sixties, seventies, eighties and even the nineties. However, SNHBA could provide no information demonstrating that any of its developers have asked NV Energy to modify the distribution facilities used to provide service to new-build solar homes. (Ex. 41A at 2-3; Tr. at 196-205.)

202. SNHBA states that NV Energy, through its filings, discovery responses, and witness testimony, is on record numerous times admitting that it lacks data to substantiate application of the proposed NEM2 rate to new-build solar. There is also no research or previous study to support the application of cost assumptions based on retrofit to new construction. NV Energy’s estimates of increased service costs for NEM ratepayers are entirely based on existing
customers. These retrofit-based cost assumptions are unreasonable if applied to new
collection due to the inherent economies of scale and significant differences in opportunities
for design optimization and quality control in new construction compared to existing homes.
(Ex. 41A at 4.)

203. SNHBA states that it is reasonable to assume that new-build solar has much less
demand on a utility’s system especially during peak hours in sunny, desert states like Nevada
because new homes are subject to stringent building codes and benefit from the availability of
more energy efficient building materials and appliances compared to homes built 40-50 years
ago or even 10-20 years ago. New-build solar is a more holistic approach to solar deployment
whereby a home is designed from the start to optimize solar generation and energy efficiency.
Having data on this point would be immensely helpful, but NV Energy admits that it does not
gather such granular information, even though NV Energy states on numerous occasions in the
Applications that the best and most accurate way to develop rates is by gathering and analyzing
actual production and usage data over multiple years. (Ex. 41A at 10-12.)

204. SNHBA states that Nevada has a unique opportunity in this proceeding to
officially recognize that not all rooftop solar is the same and to develop separate rates
accordingly. Doing so would position Nevada as among the most forward-looking and
thoughtful states when it comes to understanding the many nuances of solar power. (Ex. 41A at
15-16.)

205. SNHBA states that a separate rate for new-build solar would also lead to a
number of economic benefits for Nevada. A uniform rate for rooftop solar would invariably
drive up the cost of new-build homes that include rooftop solar by limiting the financial benefit
of these homes for consumers. Driving up the cost of new-build homes, in turn, would price
many consumers out of the housing market, especially those in the market for greener homes.
(Ex. 41A at 19.)

**BCP Position**

206. BCP states that the Commission should consider a lower Rule 9 allowance for new home construction where rooftop solar is installed at the time a dwelling is built, reflecting lower usage and less revenue to justify the allowances. This issue could be dealt with in a general rate case. (Ex. 41A at 14.)

**Staff Position**

207. Staff states that it is unreasonable for NV Energy to downsize the design for its distribution facilities that serve new residential housing communities who offer rooftop solar systems. NV Energy’s distribution facilities need to be sized to reliably serve the entire load of a NEM ratepayer in the event that the NEM ratepayer’s on-site generation fails; otherwise, there could be reliability impacts and/or service disruptions to the NEM ratepayer and potentially all other ratepayers on the distribution path. Further, in response to a Staff data request, the builders represented by SNHBA indicated that they do not downsize the electrical service ratings for new homes to reflect installation of a rooftop solar system. (Ex. 83A at 5-6.)

**NV Energy Rebuttal Position**

208. NV Energy states there is no need to create a separate rate class for new-build solar homes. The Commission has never considered differentiating electric service and charges based on vintage (i.e., when they become a ratepayer). A ratepayer who buys a new home with modern energy efficiency built in pays the same rates as ratepayers in older, less efficient homes. If a ratepayer retrofits his older home to have the same efficiency standards as a new home, the ratepayer still pays the same energy rates as before the retrofit and the same rates as the ratepayer
who bought the more efficient home. Absent some marked change in the distribution service provided, retrofitted rooftop solar homes should not be treated differently than new-build rooftop solar homes. (Ex. 99A at 36-38.)

209. NV Energy states that developers have not asked NV Energy to design and install distribution facilities smaller than otherwise are required pursuant to NV Energy's distribution design guidelines/standards. The absence of any significant difference in the type of service provided to new-build NEM ratepayers, compared to other NEM ratepayers, suggests that it is inappropriate to create a separate class for NEM ratepayers with new-build solar. (Ex. 84A at 15-16; Tr. at 773-777, 1054-1055.)

Commission Discussion and Findings

210. It is not just and reasonable to establish a separate tariff for new-build solar. There is insufficient data upon which to establish a separate rate class at this time. NV Energy's distribution facilities need to be sized to reliably serve the entire load of a NEM ratepayer in the event that the NEM ratepayer's on-site generation fails; otherwise, there could be reliability impacts and/or service disruptions to the NEM ratepayer and potentially all other ratepayers on the distribution path. The absence of any significant difference in the type of service provided to new-build NEM ratepayers is supported by the fact that developers do not downsize the electrical service ratings for new residential homes to reflect installation of solar PV systems. Absent some marked change in the distribution service provided by NV Energy, there should be no separate ratepayer class for new-build solar.

B. Generation Meter

NV Energy Position

211. NV Energy recommends a monthly charge applied only to non-incentivized
NEM2 ratepayers for the cost of generation meters. NV Energy states that generation meters will facilitate compliance with SB 374's requirement that NV Energy assess the effect of distributed generation on its NEM systems, accurately measure the cost of service, and potentially aid in demonstrating compliance with the Clean Power Plan. (Ex. 2A at 21; Ex. 5a at 21.)

**BCP Position**

212. BCP states that unless something like a value-of-solar approach (or NV Energy's proposal to charge for total energy including solar) is adopted, the extra generation meter proposed by NV Energy and included in costs is unnecessary. All that is necessary is to use the AMI data so that energy delivered by the utility to the customer and excess energy sent to the utility are paid different amounts. Some generation meters may be required for load research, but it is not clear that all NEM ratepayers need them. If an extra meter is required, it should be paid for up front by the NEM ratepayer, not financed by the utility. (Ex. 62A at 6.)

**TASC Position**

213. TASC states that there is no need to require all NEM2 ratepayers to install a generation meter. Historically, the rationale for generation meters has been to allow NV Energy to claim the PECs from NEM ratepayers who receive an incentive under the RenewableGenerations program. (See NRS 704.775(3)(a)). However, this program will be ending in the near future. Presumably, NV Energy's primary rationale for requiring these meters in the future is to perform load research, which only requires metering a small, statistically valid sample of a ratepayer class—perhaps one percent. Given that a significant number of NEM1 ratepayers already have generation meters, it is questionable whether NV Energy would need additional generation meters for NEM2 ratepayers in order to obtain a statistically valid sample.
If NV Energy needs the metering data for any future Critical Peak Production credits from NEM, all ratepayers would benefit by reducing NV Energy’s Clean Power Plan compliance costs. As a result, the costs of the metering needed to secure such credits should be borne by NV Energy because all ratepayers will benefit. If NEM2 ratepayers want a generation meter in order to account for the PECs that they own, or simply to collect the output data from their generator, NV Energy should offer to split the cost of the generation meter 50/50. No other utility requires ratepayers to pay for a generation meter without a clear program purpose for that meter. (Ex. 62A at 26-29; Ex. 68A at 35-38.)

**Vote Solar Position**

214. Vote Solar recommends eliminating the generation meter requirement and associated cost and rate. Vote Solar states that it does not find NV Energy’s explanations compelling. Generation meters are not needed. To develop load shapes, NV Energy needs to know how much energy it is supplying to the NEM ratepayer and at what time. The total hourly profile is not needed. A dual register meter or a second meter to measure exports on a temporal basis will provide the additional information NV Energy needs to net exports against future consumption. A single bi-direction meter would be sufficient. To the extent that the generation meters are desirable to measure total on-site generation for the purposes of Clean Power Plan compliance, such use benefits all ratepayers, so the costs should be spread to all ratepayers. (Ex. 44A at 59-61.)

**NV Energy Rebuttal Position**

215. NV Energy continues to support the incremental monthly charge as proposed in the direct filing. NV Energy needs to continually monitor and review the sample data that is provided by all meters, in particular as a certain population, or segment of a population, is
growing. That is certainly the case with the NEM ratepayer class. By simply using the
generation meters that are already installed as the sample, the growth and potential
diversification of the loads is ignored. For this reason alone, the monthly charge applied only to
non-incentivized NEM2 ratepayers is justified and reasonable. The amount of energy that NEM
ratepayers provide to serve their load is also an important piece of the total load equation and is a
vital input to the load shapes that are used in developing the MCSS for NEM ratepayers. (Ex.
99A at 51-54.)

216. NV Energy states that ratepayers who choose to participate in the
RenewableGenerations program are required to have a generation meter so that the PECs can be
measured, verified, and reported. The PECs are retained by NV Energy on behalf of all
ratepayers who fund the incentive payment to participants in the RenewableGenerations
program. This requirement for participants in the RenewableGenerations program to have a
generation meter will continue to remain the case for NEM2 systems because the
RenewableGenerations program is still active and was not affected by SB 374. (Ex. 85A at 11.)

**Commission Discussion and Findings**

217. NV Energy's proposed generation meter installation requirement and cost
allocation is denied at this time. The Commission is not convinced at this time that the
installation of generation meters for all NEM ratepayers is necessary. This decision has no
impact upon NV Energy's requirement to have generation meters installed for those ratepayers
receiving incentives pursuant to the RenewableGenerations incentive program. To preserve the
option for NV Energy to install generation meters in the future (should the need arise), NV
Energy shall include in its NEM tariffs a provision requiring the NEM ratepayer to authorize NV
Energy's ability to install and maintain a generation meter, if deemed necessary by the utility.
C. **Interconnection Charges**

**BCP Position**

218. BCP states that the Commission should consider some type of reasonable one-time administrative fee to recover one-time accounting and service costs associated with hooking up a NEM ratepayer. This issue would be ripe for resolution in a general rate case. (Ex. 62A at 14.)

**TASC Position**

219. TASC recommends that the Commission authorize NV Energy to implement an upfront interconnection charge for new NEM ratepayers as follows:

<table>
<thead>
<tr>
<th>Customer Class</th>
<th>Interconnection Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS</td>
<td>$80</td>
</tr>
<tr>
<td>RS-M</td>
<td>$90</td>
</tr>
<tr>
<td>GS</td>
<td>$130</td>
</tr>
</tbody>
</table>

Upfront processing charges for interconnection applications are not uncommon (Excel Energy in Colorado and Avista and Idaho Power in Idaho), with a typical fee of no more than $100 for residential NEM ratepayers. While the meters used for NEM ratepayers are the same as those used for non-NEM ratepayers, additional programming and inspections are required at the time of installation of the NEM system. Such additional costs are logically associated with the initial interconnection process and are best collected through an upfront fee for interconnection. The Commission should revisit these costs in subsequent general rate case cycles to ensure that they remain cost-based. (Ex. 76A at 28-29; Ex. 68A 34-35.)

**NV Energy Rebuttal Position**

220. NV Energy states that the appropriate recovery of these costs would be the same as recovery of the meter installation costs for any non-NEM ratepayer, which is through a basic service charge and not a one-time interconnection fee as proposed by TASC. Meter costs are
ongoing and do not end once initial installation is complete. NV Energy is responsible for the ongoing maintenance of a NEM ratepayer’s installed meter, including the cost of replacing the meter as necessary. (Ex. 99A at 84).

Commission Discussion and Findings

221. It is not reasonable to establish an interconnection charge for NEM ratepayers at this time in lieu of collecting such meter costs in the basic service charge. Besides the additional costs associated with meter programming and testing, NV Energy is responsible for the ongoing maintenance of NEM ratepayers’ installed meters, including the costs of replacing the meters as necessary. An ongoing charge in the basic service charge will adequately reflect such costs incurred by NV Energy. Parties can review these costs in subsequent general rate case cycles to ensure that they remain cost-based.

D. Regulatory Liability

NV Energy Rebuttal Position

222. NV Energy states that it will create a regulatory liability for each utility. This will be a reserve account to offset NV Energy’s revenue requirement in future general rate cases. Periodically, each utility will calculate the difference between the revenue it would have collected under the NEM1 rates and rules and the revenue that it actually collects under the NEM2 rates and rules. The amounts will be recorded in a regulatory asset/liability (Account No. 186). NV Energy will track and account for incremental NEM2 revenue in this manner regardless of which NEM2 proposal the Commission adopts in this proceeding. NV Energy will not benefit from any changes to the NEM rate structure. Instead, non-NEM ratepayers will benefit by seeing even lower rates in the future. (Ex. 101A at 5-6.)

Commission Discussion and Findings
223. It is just and reasonable to establish regulatory liability accounts for each utility until NEM rates approved in the next general rate case (2016 for SPPC and 2017 for NPC) go into effect. The accounts will be used to collect the difference between the revenue NV Energy would have collected under the NEM1 rates and rules and the revenue that NV Energy actually collects under the new NEM rates and rules. Several parties complained that any shift in rate design for NEM ratepayers between general rate cases would lead to an increase in revenues to be retained by NV Energy and its shareholders. One of the purposes of these proceedings is to establish just and reasonable rates and charges “to avoid, reduce, or eliminate an unreasonable shifting of costs from customer-generators [NEM ratepayers] to other customers [ratepayers] of the utilities.” (See Section 2.3(2)(d) of SB 374). Though SB 374 does not mention ensuring that there are no unreasonable shifting of costs from NEM ratepayers to NV Energy between general rate cases, the Commission finds that it is in the public interest to approve NV Energy’s proposal to ensure that non-NEM ratepayers, and not NV Energy, receive the benefit of NEM ratepayers’ increased contributions to their share of costs until the next general rate cases. Parties may make recommendations on the proper allocation of the monies in the regulatory liability accounts in the next general rate cases.

E. Load Data

WCSD Position

224. WCSD recommends that the new NEM tariffs not be applied to any NEM ratepayers who have not been equipped with smart meters and have access to less than one year of load data. SPPC has yet to install smart meters at all WCSD schools with NEM systems, and the most recent estimate for installation is the first quarter of 2016. The lack of smart meters is problematic for WCSD because with no access to real-time data, energy management, especially
for rate schedules that include demand charges, is nearly impossible. (Ex. 40A at 2, 5.)

225. WCSD further recommends that the Commission direct SPPC to make real-time, fifteen-minute interval data available to all “summary billed” ratepayers. As a “summary billed” ratepayer, WCSD receives one summary bill for payment purposes for its 129 facilities with 395 SPPC meters. SPPC’s software does not allow “summary billed” customers to have access to the My Account program and thus does not have access to real-time data. Without access to real-time data, WCSD is unable to effectively manage its demand profile to ensure the most efficient use of energy. Access to such data will allow WCSD and other “summary billed” customers to explore options to control demand and associated charges. (Ex. 40A at 6.)

**NV Energy Rebuttal Position**

226. NV Energy disagrees with WCSD. Through the RenewableGenerations program, over 500 ratepayers billed under a current three-part rate structure made similar decisions to WCSD to install NEM systems, all without the data from AMI that WCSD insists must be available. SPPC’s records indicate that WCSD has 230 active metering points and that all but 74 have already been upgraded to a smart meter and presently record in fifteen-minute intervals. The upgrades on the remaining meters are ongoing, with a scheduled completion date of March 31, 2016. (Ex. 85A at 3-4; Tr. at 849-851.)

**Commission Discussion and Findings**

227. The Commission finds that this issue is moot because the new NEM rates do not include a demand charge component at this time.

**VIII. ROOFTOP SOLAR INDUSTRY JOBS**

**Staff Position**

228. Staff states that caution should be employed when referencing employment
figures for the solar industry in Nevada. The Solar Foundation ("TSF") provides an oft cited employment figure of 5,900 persons at the end of 2014 for Nevada's solar industry. The figures are based on an annual census conducted by The Solar Foundation. However, it is a national census, not a state census. The census includes jobs from a variety of solar businesses, many of which would not be affected by NEM tariff changes while others are not solar businesses at all.\footnote{The list of Nevada companies included a number of large utility-scale solar developers as well as Southwest Gas Corporation, Western Nevada Supply Company, and the Commission. (Ex. 81 at Attachment AC-5; Tr. at 721-724.)} Also, the employment numbers are not stated in full-time equivalent units, and there is no other study to confirm the claimed employment. The Solar Foundation was unable to provide Staff with any granular data when asked for more detailed state information and the state specific data regarding the state employment estimate. Staff also requested more detailed state-specific employment statistics from both TASC and SEIA for each solar company in their respective memberships. Both TASC and SEIA objected to providing that information, even by aggregated category. (Ex. 81A at 2-7).

**Commission Discussion and Findings**

229. The information and testimony presented by Staff regarding the employment figures for Nevada's solar industry indicates that the figures cannot be reasonably relied upon as an estimate of the number of solar jobs in Nevada or the number of jobs that could potentially be impacted by this Order. Further, no corroborating information from other sources was identified. No party to this proceeding provided any material support for the notion that a change in the NEM rates and tariffs would result in the loss of nearly 6,000 solar jobs. TASC and SEIA's objections to providing information that would help confirm or refute the figures for rooftop solar jobs in Nevada are perplexing.
230. All arguments of the parties raised in these proceedings not expressly addressed herein have been considered and either rejected or found to be non-essential for further discussion in this Order.

THEREFORE, it is ORDERED that:

1. The Application of Nevada Power Company d/b/a NV Energy in Docket No. 15-07041 is APPROVED AS MODIFIED by this Order.

2. The Application of Sierra Pacific Power Company d/b/a NV Energy in Docket No. 15-07042 is APPROVED AS MODIFIED by this Order.

Compliances:

3. Within seven days of the effective date of this Order, Nevada Power Company d/b/a NV Energy shall file with the Commission revised tariff sheets consistent with this Order.

4. Within seven days of the effective date of this Order, Sierra Pacific Power Company d/b/a NV Energy shall file with the Commission revised tariff sheets consistent with this Order.

5. The Regulatory Operations Staff shall review the above-referenced revised tariff sheets for consistency with the Commission’s Order. The revised tariff sheets shall become effective upon the completion of the Regulatory Operations Staff’s review.

Directives:

6. In a future general rate case, Nevada Power Company d/b/a NV Energy shall study and account for the costs and benefits of higher penetration of net energy metering systems on its distribution systems and include the results when completed to assist in determining whether rates need to be further modified for net energy metering ratepayers.

7. In a future general rate case, Sierra Pacific Power Company d/b/a NV Energy
shall study and account for the costs and benefits of higher penetration of net energy metering systems on its distribution systems and include the results when completed to assist in determining whether rates need to be further modified for net energy metering ratepayers.

8. In its next general rate case, Nevada Power Company d/b/a NV Energy shall recommend (with additional support) what portion of transmission and generation demand costs should be shifted (tilted) between the basic service charge and volumetric commodity rate.

9. In its next general rate case, Sierra Pacific Power Company d/b/a NV Energy shall recommend (with additional support) what portion of transmission and generation demand costs should be shifted (tilted) between the basic service charge and volumetric commodity rate.

10. In its next general rate case, Nevada Power Company d/b/a NV Energy shall recommend whether time-of-use rates for net energy metering ratepayers should continue to be opt-in, opt-out, or mandatory in the future.

11. In its next general rate case, Sierra Pacific Power Company d/b/a NV Energy shall recommend whether time-of-use rates for net energy metering ratepayers should continue to be opt-in, opt-out, or mandatory in the future.

12. Failure to comply with the compliances and directives in this Order may subject Nevada Power Company d/b/a NV Energy to administrative fines pursuant to Nevada Revised Statute 703.380 and/or revocation of the underlying relief granted as appropriate.

13. Failure to comply with the compliances and directives in this Order may subject Sierra Pacific Power Company d/b/a NV Energy to administrative fines pursuant to Nevada Revised Statute 703.380 and/or revocation of the underlying relief granted as appropriate.

14. The Commission may correct any errors that have occurred in the drafting or
issuance of this Order without further proceedings.

By the Commission,

PAUL A. THOMSEN, Chairman

ALAINA BURTENSHAW, Commissioner

DAVID NOBLE, Commissioner and Presiding Officer

Attest:
TRISHA OSBORNE,
Assistant Commission Secretary

Dated: Carson City, Nevada

(SEAL)