The Governor's Committee on Energy Choice

Draft Report of Findings & Recommendations

July 1, 2018

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Jeremy Susac, Vice President of Government Affairs, Lennar Ventures

Jennifer Taylor, Esq., New Economy West Consulting

Daniel Witt, Senior Manager of Business Development and Policy, Tesla

Paul Anderson, Director of the Governor's Office of Economic Development (*ex officio*)

Angela Dykema, Director of the Governor's Office of Energy (*ex officio*)

Joe Reynolds, Chairman, Public Utilities Commission of Nevada (*ex officio*)

Committee Support Staff

Matt Morris, Legislative Director
Office of Governor Brian Sandoval

Kirsten Van Ry, Deputy Chief of Staff
Office of Lt. Governor Mark Hutchison

Robin Isaacs, Management Analyst
Governor's Office of Energy

Pat Malloy, Administrative Assistant
Governor's Office of Energy

Laura Wickham, Management Analyst
Governor's Office of Energy

Caroline Bateman, Deputy Attorney General
Office of the Nevada Attorney General

Rosalie Bordelove, Deputy Attorney General
Office of the Nevada Attorney General

Stephanie Mullen, Executive Director
Public Utilities Commission of Nevada

Melanie Sheldon, Program Officer
Governor's Office of Economic Development

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Pam Robinson, Policy Director, Office of Gov. Brian Sandoval
Kate Krolicki, Harvard University
Kyle Connors, Harvard Kennedy School of Government
Skyler Cordrey, University of Pennsylvania
Breanna Switzler, UNLV Boyd School of Law
Starr Litton, NV Legislative Counsel Bureau

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Executive Summary

At the General Election on November 8, 2016, Nevada's voters approved Ballot Question 3, the Energy Choice Initiative ("ECI"). ECI is a proposed amendment to the Nevada Constitution that would require that, "Not later than July 1, 2023, the Legislature shall provide by law for provisions…to establish an open, competitive, retail electric energy market," and that "[e]lectricity markets be open and competitive so that all electricity customers are afforded meaningful choices among different providers, and that economic and regulatory burdens be minimized in order to promote competition and choice in the electric energy market." The amendment would effectively require Nevada to transition from its current structure in which its primary electric utility is vertically integrated, to a new system in which electricity providers compete in a restructured, competition-based marketplace. In order for ECI to become law, Nevada's voters must approve the proposed constitutional amendment a second time at the 2018 General Election.

Following initial voter approval of ECI, Governor Brian Sandoval announced during his January 2017 State of the State Address a plan to "Create by Executive Order the Governor's Committee on Energy Choice [to] help prepare us for the complicated changes that lay ahead if Nevadans approve [ECI]." The Governor signed Executive Order 2017-03, establishing the Governor's Committee on Energy Choice, on February 9, 2017, three days after the start of the 79th Regular Legislative Session. Executive Order 2017-03 required the Committee to "[i]dentify the legal, policy, and procedural issues that need to be resolved, and to offer suggestions and proposals for legislative, regulatory, and executive actions that need to be taken for the effective and efficient implementation of [ECI]." This Executive Order was amended shortly after the conclusion of the legislative session to require the Committee to additionally study whether ECI's proposed constitutional amendment would have an effect on specific renewable energy policy proposals, namely renewable portfolio standards and the development of community solar gardens.

The Energy Choice Committee was initially comprised of 25 members representing a broad coalition of community stakeholders and perspectives, including state legislators, executive agency directors, commercial electricity customers, private sector industry representatives, state regulators and consumer advocacy representatives, organized labor representatives, and representatives from Nevada's rural electric co-operatives. The Committee first met on April 26, 2017, and concluded its work on June 18, 2018. Committee Chairman Mark Hutchison organized the Committee into five Technical Working Groups to engage in particularized studies of specific issues relating to ECI and the restructuring of electricity markets. Between April of 2017 and June of 2018, the Committee and its working groups met more than 30 times and heard from dozens of policy experts from

Nevada and from around the nation. This report constitutes the findings and policy recommendations adopted by the Committee as a result of this extensive deliberative process.

Some of the prominent issues that are implicated by the potential passage of ECI were outlined in Executive Order 2017-03. In order to thoroughly examine these issues, the Committee was organized into five Technical Working Groups comprised of five committee members each. The working groups were assigned specific topics relating to the issues contained in the Executive Order, as follows: Technical Working Group on Open Energy Market Design and Policy; Technical Working Group on Consumer Protection; Technical Working Group on Innovation, Technology, and Renewable Industry Development; Technical Working Group on Generation, Transmission, and Delivery; and Technical Working Group on Ratepayer and Investor Economic Impacts. Each working group conducted public meetings, heard presentations related to their assigned topics and issues, and subsequently presented a report and recommendations for approval by the full Committee.

In September of 2017, the Committee voted to request that the Public Utilities Commission of Nevada (PUCN) open an investigatory docket to examine specific issues related to ECI. In particular, the Committee requested the docket be opened to ensure that a robust and transparent study was conducted regarding technical issues requiring extensive expertise and experience in energy and electricity market regulation. The Committee requested that the PUCN open the docket based on the agency's ability to devote the necessary resources and technical expertise that a full study of these issues would require. The PUCN subsequently opened docket #17-10001 to study the issues requested by the Committee pertaining to ECI, and in April of 2018, issued a final report of findings after unanimously approving the report. The PUCN's *Energy Choice Initiative Final Report* was then presented to the Committee in May.

While the PUCN conducted its public workshops and investigation, the Committee's Technical Working Groups (TWGs) also held public meetings during which presentations were offered by technical and policy experts and other stakeholders. Each working group ultimately adopted a set of recommendations based on the information they received, and those recommendations were then presented to the full Committee. The Committee unanimously approved all of the recommendations that were presented by the technical working groups dealing with their respective assigned topics.

The TWG on Open Energy Market Design proposed four recommendations. The TWG on Open Energy Market Design recommended that Nevada join an existing Independent Systems Operator (ISO) with an already existing wholesale market located in close proximity to the State, presumably the California ISO (CAISO). The TWG on Open Market Design also recommended that any contract or arrangement with CAISO or another neighboring ISO should ensure that Nevada retains its own authority with regard to certain key aspects of regulating the wholesale market – including retention of popular programs like energy efficiency and net metering. With regard to a retail market structure, the TWG recommended that the Governor and State Legislature form a

joint committee to further examine options for a retail market, inclusive of a provider of last resort (POLR) and net-metering. The TWG also recommended that the PUCN be empowered to establish POLRs for back-up electric service in each area of the State open to competition.

The TWG on Innovation, Technology, and Renewable Energy proposed five recommendations addressing the potential impacts of a restructured energy market on currently existing renewable energy programs, including renewable portfolio standards, community solar programs, and net metering. The TWG recommended that policymakers implement ECI in a manner that conditions market participation on alignment with Nevada's existing policy goals with regard to renewable energy technology development. The TWG further recommended that any competitive retail market policies adopted to implement ECI should be consistent with programs that advance the use of renewable energy and clean technology. Finally, the TWG recommended the creation and funding of pilot projects to develop renewable energy technology that may provide meaningful choice for Nevadans, that policies be considered which promote regulatory flexibility for offering incentives for "smart" energy technology, and that all proposed policies for implementing ECI be evaluated in consideration of positioning Nevada as a net exporter of energy.

The TWG on Generation, Transmission, and Delivery proposed three recommendations addressing issues related to resource adequacy and planning reserves, reliability "must-run" units, and expanding export/import transmission capacity. The TWG recommended that the PUCN continue to address resource adequacy and planning reserve requirements through the existing integrated resource planning process. In addition, the TWG recommended that NV Energy, as the incumbent utility provider, identify "must-run" generation units (a unit that ensures grid reliability under certain circumstances such as transmission outage), and identify the costs for eliminating the conditions necessitating "must-run" status for these units. The TWG recommended that these costs be recovered at the ratepayer level. Finally, the TWG recommended further study of transmission import and export capacity to determine whether additional expansion is required in order to join a wholesale market such as CAISO.

The TWG on Consumer Protection proposed fifteen policy recommendations. These recommendations addressed the need for effective and comprehensive consumer education efforts, particularly for small business and residential customers. Additionally, the Consumer Protection TWG offered recommendations for ensuring that customers are able to make accurate comparisons of essential terms of service among potential providers, as well as recommendations for protecting customer data and privacy, updating Nevada's unfair and deceptive trade practices statutes, and discouraging excessive costs.

The TWG on Investor and Consumer Economic Impacts approved a single recommendation: that the State Legislature commission further investigation into stranded assets and transition costs as soon as practicable, should ECI be approved in November. The Economic Impacts TWG concluded that issues related to stranded assets and

divestiture implicate questions that are among the most challenging to address. Based upon the information presented to the TWG, as well as prior studies conducted by the Nevada Legislative Counsel Bureau and the April 2018 PUCN Investigatory Report, the Economic Impacts TWG recommended that the State Legislature commission further study of the stranded assets, transition costs, and divestiture issues.

On May 9, 2018, the Committee voted to approve all recommendations presented by each of the technical working groups. ***[APPROVAL OF ECONOMIC IMPACTS RECOMMENDATION IS PENDING….]***

This report provides a summary of the information that was presented to the Committee and discusses in detail the Committee's findings and policy recommendations for potential legislative, executive, and regulatory action that may be required if ECI is approved at the November 2018 General Election. In the event that Nevada's voters choose to amend the Nevada Constitution and adopt ECI, requiring a transition to a restructured electricity market, policymakers will be confronted with important decisions regarding consumer protection, the selection of an organized wholesale market, the appropriate steps and processes for divesting incumbent utility providers of generation assets, and the impacts of a new competitive electricity market on the development of renewable energy infrastructure, to name a few. This report is not a discussion of the merits or advisability of ECI and neither encourages nor discourages passage of the initiative. It is intended to provide policymakers with an initial framework that will help to formulate a successful transition plan and facilitate future policy discussions surrounding the implementation of ECI, should the initiative be approved.

COMMITTEE ON ENERGY CHOICE POLICY RECOMMENDATIONS

If ECI is approved by Nevada voters at the 2018 General Election, the Committee on Energy Choice recommends the following:

Open Energy Markets Design

1. WHOLESALE MARKET RECOMMENDATION: Successful implementation of a restructured energy market for Nevada should include, but not be limited to, joining or contracting with an existing Independent Systems Operator (ISO), with a deep, liquid, and robust market, located in close geographic proximity to the State of Nevada, and already integrated with Nevada and neighboring western states.
2. WHOLESALE MARKET RECOMMENDATION: Nevada's interstate contract with the neighboring ISO shall retain Nevada's ability to control Nevada's own fuel mix, retain popular demand-side programs – like energy efficiency and net metering – and provide future governors and legislators with the legislative flexibility and power to make further changes to ensure consumer protection.
3. RETAIL MARKET RECOMMENDATION: The Governor and the Legislature should create a joint committee to address specific legislative and/or regulatory actions needed for a competitive retail electricity market inclusive of providers of last resort and net metering. The newly-created committee should be administratively housed in the PUCN and have dedicated PUCN staff to assist the committee with legislative recommendations no later than the start of the 2021 Legislative Session.
4. PROVIDER OF LAST RESORT (POLR) RECOMMENDATION: Successful implementation of a restructured energy market for Nevada should include, but not be limited to, ensuring the PUCN has the necessary power to establish POLRs for back-up electricity service in each area of Nevada open to competition. The policy of POLR service shall serve as a necessary safety net for customers whose chosen retail energy provider is unable to offer or continue electricity service. The POLR service should be intended as temporary service, and used only under rare circumstances. These circumstances should be defined by state law no later than the conclusion of the 2021 Legislative Session.

Investor and Ratepayer Economic Impacts

1. The Legislature should, as soon as practicable, commission further study and investigation of the issues implicated by divestiture, particularly calculating, allocating, and recovering stranded asset costs and other transition costs, including but not limited to costs arising from impacts to the incumbent utility, the workforce, and other aspects of implementing a restructured market.

Innovation, Technology, and Renewable Energy

1. The Committee encourages the Governor, Legislature, and regulatory agencies and organizations to implement the Energy Choice Initiative in a manner that conditions market participation on retail offerings that align with Nevada's existing goals for renewable energy, energy efficiency and technology, and that do not harm Nevada's current programs, statutes, and regulations, including but not limited to, renewable energy requirements, energy efficiency, subsidized services for low-income customers, net metering as set out in A.B. 405 (2017), and storage.
2. The Committee encourages the Governor and the Legislature to adopt competitive retail market policies that do not impede progress and innovation in current and future technologies, and to develop and promote innovative policies and programs that advance the use of renewable energy and clean technology.
3. The Committee encourages the Governor and the Legislature to consider the creation or funding of incubators or pilot projects for innovative technologies that may provide meaningful choice for Nevadans.
4. The Committee encourages the Governor and the Legislature to consider policies that promote regulatory flexibility for incentives and renewable energy programs that offer pilot programs to integrate "smart" energy technologies that support distributed generation, storage, and other clean energy advances, including policies that could promote transportation innovation such as green fleets and the use of electric vehicles for storage and distributed generation, and to revisit the topic of community solar gardens during the 2019 Legislative Session.
5. The Committee encourages the Governor and the Legislature to evaluate all proposed policies and programs in consideration of positioning Nevada to be a net exporter of energy.

Generation, Transmission, and Delivery

1. The PUCN should continue to address resource adequacy and planning reserve requirements through the existing Integrated Resource Planning process until an organized, open, competitive market is established by the Legislature.
2. NV Energy should identify must-run generation units and provide multiple options to eliminate the condition(s) giving rise to the must-run status along with the estimated cost and timeframe for implementation of each option provided. Construction costs should be recovered through ratepayers.
3. Transmission import and export capacity will need to be studied to see if additional expansion is necessary to join a wholesale market such as CAISO or SPP.

Consumer Protection

1. The Nevada Legislature, in collaboration with the PUCN and stakeholders, should amend the Consumer Bill of Rights to address issues related to Energy Choice, ensuring adequate protections

exist to safeguard against the complaints and issues that have arisen in other restructured markets. In amending Nevada's Consumer Bill of Rights, other similar statutes in restructured markets should serve as model legislation.

2. Customer education initiatives should include explanations of the fundamental components of restructuring, in multiple languages, to ensure that non-English speaking customers are equipped with the information and tools necessary to participate in a restructured market and are not penalized by the switch to a restructured market.
3. Customer education initiatives should clearly explain potential impacts on prices, consumer protections, and low-income programs under a restructured market.
4. Customer education initiatives should clearly explain customer risks, rights, and responsibilities.
5. Customer education initiatives should leverage the ability of community organizations in developing messaging and executing education strategies for low-income, elderly, non-English speaking, rural, small business, and other communities and constituencies who may require particularized educational assistance that is uniquely tailored to their needs.
6. The Legislature should examine strategies to ensure that comprehensive customer education initiatives are appropriately funded.
7. The Legislature and/or PUCN should consider adopting a model Terms of Service Disclosure Form which all retail energy providers must use in order to participate in the restructured market.
8. The model Terms of Service Disclosure Form should require standardized methods of disclosure of essential terms such as price, contract length, additional fees, dispute, complaint, and collections practices, and the like.
9. The Legislature should examine NRS 603A to identify any provisions which may need to be amended to ensure that security of personal customer information is maintained in a restructured, competitive energy marketplace and set directive policy for the oversight of rules for managing data privacy and data exchanges with regard to ratepayer data.
10. The Legislature, in collaboration with the PUCN and stakeholders, should follow the examples of other states and require a notification of "switching" from retail providers to customers, as a way to identify and stop "slamming" and "cramming" practices. Without such notification, customers may not be aware their provider was switched.
11. Third-party retail marketers should be prohibited, as in other states that have had problems with such entities inadequately informing or misleading customers, which contributed to the "slamming/cramming" problem, particularly where compensation for third-party marketers is based on "sign-ups." Third-party marketers can also make it difficult to deal with complaints/problems as they are not an actual provider, meaning that liability and remedies issues can become more complicated.

Third-party marketers may also "disappear," rendering regulatory oversight of unfair behavior difficult.

12. Nevada should consider prohibiting door-to-door sales and/or telephonic solicitation, as these are often used by third-party marketers, creating problems related to misleading or misinforming customers, high-pressure sales tactics, "slamming/cramming," and the like.
13. The Legislature should examine both NRS 598 and NRS 598A to identify any provisions of the State's Unfair Trade Practices Act and Deceptive Trade Practices Act which may need to be amended to ensure that retail market participants do not engage in unfair or deceptive trade practices, and that adequate penalties are in effect for participants who do engage in such practices.
14. Variable rate contracts should be prohibited as they create enormous confusion for customers and can easily lead to problematic contracts for customers who then end up paying more.
15. The Legislature, in collaboration with the PUCN and stakeholders, should consider capping fees, especially related to enrollment, and prohibit disenrollment fees, as residential ratepayers may end up paying excessive fees for lower rate contracts in the hopes such contracts may save them money. Disenrollment fees have been used in other states as a means of preventing customers from switching to lower-cost providers or their preferred choice.

HISTORICAL BACKGROUND OF ELECTRICITY MARKET RESTRUCTURING IN THE U.S. AND NEVADA

Up until the late 20th century, electricity service in the United States was provided by electric utilities that had been granted exclusive franchises for specific service areas. Under this regulatory structure, an electric utility was granted an exclusive franchise by the state to provide service at rates that were then regulated at the state level by a utility commission.[1] When Congress passed the Federal Power Act in 1935, regulatory authority over electric service was divided between the federal government and the states, with the federal government responsible for regulating the interstate transmission of electricity and the wholesale purchase and delivery of electricity, while states retained authority to regulate retail sales of electricity within their respective states. Under this system of regulation, commonly referred to as the "regulatory compact," public interests in reliability and affordability with regard to electricity service were balanced with ensuring a reasonable return on investment for the electric utility, including the recovery of costs deemed to be "prudent and reasonable." The utility was most often "vertically integrated," meaning that the generation, transmission, and distribution of electric power were all performed by the same entity.[2] Nevada currently retains the "vertically integrated" model, as explained by the Public Utilities Commission of Nevada (PUCN).[3] Further elaborating on "what the current retail electric service looks like in Nevada," the PUCN defined "vertically integrated" as referring to "a utility that owns all levels of the supply chain: generation, transmission, and distribution," further explaining that in Nevada, "a utility is given a monopoly over electric service in a specific area," and "the utility's obligation to serve demand in a defined service territory at regulated rates comes with the monopoly."[4]

During the 1990s, a number of states began efforts to modify or restructure the traditional system of regulating vertically integrated electric utilities, and transitioned from the "regulatory compact" model to market-based, competitive models. A number of factors contributed to this regulatory shift. Among these factors were the lessons from deregulation of other national industries, including the airline, trucking, railroad, and telecommunications industries. Other factors, both political[5] and economic, including high retail electricity rates, low natural gas prices, and the development of new technologies with the potential for reducing electricity prices

[1] For a more detailed discussion of the history of the electric industry in the United States, see generally Nevada Legislative Counsel Bureau, Bulletin No. 97-11, *Competition in the Generation, Sale, and Transmission of Electric Energy* at 3-12 (1997).
[2] Jeff Lien, U.S. Department of Justice Economic Analysis Group Antitrust Division, *Electricity Restructuring: What has worked, what has not, and what is next* at 2 (2008).
[3] See *PUCN Energy 101: Presentation to the Governor's Committee on Energy Choice*, Presentation by PUCN to the Governor's Committee on Energy Choice at 6-7 (April 26, 2017).
[4] *Id.* See also, generally, Meeting Minutes and Public Comments at 4 (April 26, 2017).
[5] Matthew H. Brown & Richard P. Sedano, Nat'l Council on Elec. Policy, *A Comprehensive View of U.S. Electric Restructuring with Policy Options for the Future* at vii (2003).

additionally contributed to the transition away from the traditional model.[6] By the middle of the decade, a movement toward restructuring electricity markets had generated momentum around the country: "[b]y 1995, a majority of state legislatures recognized that electric industry restructuring was a political issue that they would soon have to face. The forces advocating for change were strong. They included large customers looking for lower prices, power marketers looking for business opportunities, and in some cases, electric utilities hoping for higher earnings."[7]By 2001, nearly half the states in the nation, including Nevada, had enacted legislation to implement restructured, competitive power markets.[8]

Policy developments at the federal level also contributed to the movement toward restructuring electricity markets, especially with regard to the establishment of a regulatory framework governing the wholesale electricity market and ensuring reliability of the nation's bulk power system. In particular, passage of the Public Utility Regulatory Policies Act (PURPA) in 1978, the Energy Policy Act (EPAct) in 1992, and Orders 888 and 2000 issued by the Federal Energy Regulatory Commission (FERC) provided a regulatory framework for the movement toward more competition in electricity markets. In its *Report to Congress on Competition in Wholesale and Retail Markets for Electric Energy*, the Electric Energy Market Task Force established by the EPAct described PURPA and EPAct as examples of federal "steps to facilitate competition in the electric power industry to overcome perceived shortcomings of traditional cost-based regulation," concluding that federal policies "have sought to strengthen competition but continue to rely on a combination of competition and regulation."[9]

While the features of each individual state's restructuring efforts were distinct, reflecting unique circumstances, needs, and the priorities of individual states, common aspects, challenges and general approaches to restructuring efforts were also evident. The history of state efforts to restructure energy markets shows that inherent in any shift from the traditional regulatory model to a competitive system are common issues to be addressed and questions to answer. These commonalities stem from shared experiences in transitioning from the same original regulatory model. As noted above, the most common model under the traditional regulatory scheme for electricity markets involved the "vertically integrated" utility, a single provider performing generation, transmission, and distribution. The transition away from this common model in nearly every state required that the incumbent utility separate the generation function from its transmission and distribution functions in order to allow other providers to compete in the market.[10] In addition, most state efforts to restructure their electricity markets and move from a regulated monopoly system to a competitive market involved a transition period, often requiring

[6] Mathew H. Brown, Nat'l Conf. of St. Legislators, *Restructuring in Retrospect* (2001).
[7] Matthew H. Brown & Richard P. Sedano, Nat'l Council on Elec. Policy, *A Comprehensive View of U.S. Electric Restructuring with Policy Options for the Future* at 6 (2003).
[8] Id. at 25
[9] The Department of Justice, Electric Energy Market Competition Task Force, *Report to Congress on Competition in Wholesale and Retail Markets for Electric Energy* at 2 (2006).
[10] Jeff Lien, U.S. Department of Justice Economic Analysis Group Antitrust Division, *Electricity Restructuring: What has worked, What has not, and What is next* at 7 (2008).

mechanisms to stabilize rates and market features to mitigate uncertainties associated with implementing the new system. Moreover, every state that has implemented a restructured market has confronted other cost-related issues associated with how to manage this transition period, and states have implemented varying policies to that end.[11] Other common issues related to restructuring include, as noted, divesting the incumbent utility of generation assets, managing the transition period, allocating and recovering transition costs, ensuring protections for consumers, and establishing default electric service or a provider of last resort (POLR). It is worth noting that to date, states that have implemented restructured markets have done so through policy changes at the legislative and administrative levels.[12]No state has implemented competitive electricity marketplaces or policies associated with restructured markets through a constitutional amendment.[13] If ECI's proposed constitutional amendment is approved, Nevada would be the first state in the nation to provide for a competitive marketplace in its constitution.

As noted above, the State of Nevada was one of many states to explore electricity market restructuring during the 1990s. A brief discussion of Nevada's experience illustrates both the common features of state-led transitions to competitive markets as well as the concerns that led to a general halt of state-led transitions to competitive markets.[14] In 1995, the Nevada State Legislature approved A.C.R. 49, noting the "nation-wide trend toward competition" and affirming that it was in "the best interests of the residents of the State of Nevada to explore the effects of competition in the generation, sale, and transmission of electric energy so as to assess the economic consequences and opportunities associated with such competition." A.C.R 49 directed the Legislative Commission to "Conduct an interim study of the competition in generation, sale, and transmission of electrical energy."[15] Among the issues to be included in this interim study were "quantification and recovery of stranded investments…pricing of transmission and distribution services…unbundling costs and services…commerce clause constraints…the continuing obligations of a utility to serve customers…development and use of renewable resources," and other issues common to most states that were attempting to restructure their electricity markets at the time.

The report by the Legislative Commission that was required by A.C.R. 49 included a discussion of both advantages and disadvantages of market restructuring. The report noted that proponents at the time claimed restructuring would "increase customer choice by giving large and small customers access to multiple suppliers at a lower costs," while opponents at the time maintained that "restructuring will shift costs to small consumers who

[11] Matthew H. Brown & Richard P. Sedano, Nat'l Council on Elec. Policy, *A Comprehensive View of U.S. Electric Restructuring with Policy Options for the Future* at 32 (2003) ("Most states recognized from the outset that they could not expect retail power markets to take off quickly, and that some transition period would be necessary to phase in competition").
[12] See generally the *Report to Congress on Competition in Wholesale and Retail Markets for Electric Energy*. Electric Energy Market Task Force. State Retail Competition Profiles at 137 (2006).
[13] Meeting Minutes for *NCSL Presentation to CEC* (3.7.2018) at 5.
[14] See generally *Historic Overview: Nevada Deregulation in the 1990's.* Presentation by PUCN to the Governor's Committee on Energy Choice (Nov. 7, 2017).
[15] A.C.R. 49 (NV Legislative Session 1995).

cannot effectively contract for alternative sources."[16] The 90-page report ultimately included a single recommendation to the 1997 State Legislature: "The subcommittee recommends that the 1997 Legislature appoint a six-member interim study subcommittee to conduct further investigation into all aspects of restructuring the electric industry."[17] During the 1997 legislative session, the State Legislature passed A.B. 366, which was, as the PUCN noted, the "foundational piece of the restructuring legislature," requiring that "retail access should commence no later than December 31, 1999" while allowing the PUCN the discretion to postpone restructuring.[18]

In August of 1997, the PUCN opened investigative docket #97-8001 which examined issues related to retail competition, and ultimately delayed Nevada's restructuring efforts. Governor Kenny Guinn would later delay Nevada's restructuring effort even further. As the PUCN explained, "Governor Kenny Guinn announced the delay of opening the electricity market in Nevada until no later than September 1, 2001" and appointed a "bipartisan panel to develop a long-term strategy and report its findings." The panel recommended that "only large commercial customers be allowed to participate in retail choice until electricity market prices stabilized in the west."[19] By spring of 2001, Nevada's restructuring efforts were indefinitely halted through the passage of A.B. 369 and A.B. 661, which returned electric utilities to vertically-integrated, regulated utilities under the traditional scheme.[20]

Two somewhat related developments during 2000 and 2001are typically cited as the reasons behind some states abandoning their efforts to restructure electricity markets.[21] During the summer of 2000, an energy crisis gripped the western region of the United States leading to large-scale blackouts and significant electricity price increases. In addition, the Enron scandal, which broke during the fall of 2001, drew national attention to abuses of the deregulated energy marketplace by bad actors and spurred political backlash that also contributed to a general halt in market restructuring.[22] In its 2006 *Report to Congress*, the Electric Energy Market Task Force asserted that "The meltdown of California's electricity markets and the ensuing Western Energy market crisis of 2000-2001 are widely perceived to have halted interest by states in restructuring retail markets. Since 2000, no additional states

[16] Nevada Legislative Counsel Bureau, Bulletin No. 97-11, *Competition in the Generation, Sale, and Transmission of Electric Energy* at 16-17 (1997).
[17] Id. at 58.
[18] AB 366 (NV Legislative Session 1997).
[19] See generally *Historic Overview: Nevada Deregulation in the 1990's.* Presentation by PUCN to the Governor's Committee on Energy Choice at p. 22 (Nov. 7, 2017).
[20] Id. at 23.
[21] See generally Public Utilities Commission of Nevada, *Energy Choice Initiative Final Report*, Investigatory Docket No. 17-10001 at 16-18 (April 2018).
[22] Amy Abel, et al. Congressional Research Service. *Electric Utility Restructuring: Maintaining Bulk System Reliability* at 3 (February 2005) ("The collapse of Enron is another indicator to some that restructuring of the electric utility industry could result in a loss of reliability. Enron's bankruptcy did not result in blackouts anywhere in the United States; however, some of Enron's trading practices in California may have contributed to blackouts during that state's energy crisis").

have announced plans to implement retail competition programs, and several states that had introduced such programs have delayed, scaled back, or repealed their programs entirely."[23]

The experiences of states that have continued operating under a restructured electricity market have been mixed, and evaluations of the perceived successes or shortcomings of restructuring efforts are inconclusive. In general, there is some consensus that in states that have implemented restructured markets, the benefits of competition have been most obvious within the wholesale markets and affect mostly large-scale industrial consumers, while competition at the retail level has not significantly benefited small-scale and residential consumers.[24] As reported to Congress by the Electric Energy Market Task Force, "[i]n most profiled states (Illinois, Maryland, Massachusetts, New Jersey, New York, Pennsylvania, and Texas), competition has not developed as expected for all customer classes. In general, few alternative suppliers currently serve residential customers. Where there are multiple suppliers, prices have not decreased as expected, and the range of new services often is limited."[25] Another study concludes, "[t]here is substantial evidence that significant efficiencies have been achieved by market restructuring, especially through improved incentives for plant-level operating efficiencies and improved mechanisms for eliciting gains from trade in wholesale trading. However, not all potential benefits of restructuring have been realized, and there is a possibility of further development of market designs."[26]Yet another report concludes, "[s]everal years into the experiment with retail and wholesale competition, it is hard to make solid conclusions…the experiences resulting from state and federal policies have led to the following results: (1) Retail competition has not, for the most part, provided a significant, direct benefit to any but the largest customers…(2) Wholesale competition has led to economic benefits, but both state and federal government officials have a significant role to play in making wholesale markets work better…(3) To a large extent, the major goals of wholesale and retail competition are still elusive."[27] Thus, it is not clear that restructured electricity markets have been conclusively beneficial for all customer classes in the 24 states that have continued to operate under competitive regimes.

Pennsylvania's experience with a restructured electricity market illustrates the potential benefits of switching to a competitive regime and the successes of restructured markets in Pennsylvania are discussed in *A*

[23] The Department of Justice, Electric Energy Market Competition Task Force, *Report to Congress on Competition in Wholesale and Retail Markets for Electric Energy* at 27 (2006).
[24] See *NCSL Presentation to CEC* (3.7.2018) at 16.
[25] The Department of Justice, Electric Energy Market Competition Task Force, *Report to Congress on Competition in Wholesale and Retail Markets for Electric Energy* at 91 (2006).
[26] Jeff Lien, U.S. Department of Justice Economic Analysis Group Antitrust Division, *Electricity Restructuring: What has Worked, What has not, and What is next* at 2-3 (2008).
[27] Matthew H. Brown & Richard P. Sedano, Nat'l Council on Elec. Policy, *A Comprehensive View of U.S. Electric Restructuring with Policy Options for the Future* at vii (2003).

Case Study of Electric Competition Results in Pennsylvania.[28] The study discusses the various benefits of restructured electricity markets in Pennsylvania at both the wholesale and retail levels, and estimates that residential customers obtaining service from a default provider in the competitive market continue to benefit from restructuring. The study asserts that residential customers in Pennsylvania had "the potential to enjoy significant savings as a result of restructuring via the utility-offered default service retail product," because restructuring "required the Pennsylvania Electric Distribution Companies to procure energy and related service from competitive wholesale markets rather than from cost-of-service regulation.[29]" With regard to benefits specifically for residential customers, the study concludes that "the switch to competitive procurement for default service has delivered potential savings for residential customers in the amount of over $68 million per month in 2016, or over $818 million for the 2016 year."[30]

On the other hand, the experience in Massachusetts indicates that consumers, particularly residential customers, in restructured electricity markets may be more vulnerable to higher electricity costs than they would be in a non-competitive market. In March of this year, the Massachusetts Attorney General's Office released a two-year study entitled, *Are Consumers Benefitting from Competition? An Analysis of the Individual Residential Electric Supply Market In Massachusetts*, concluding that "Massachusetts consumers in the competitive supply market paid $176.8 million more than they would have paid if they had received electric supply from their electric company during the two-year period from July 2015 to June 2017."[31] The study also concluded that residents in traditionally underserved communities paid higher rates to competitive suppliers, including "communities with low median incomes, communities with high percentages of households receiving subsidized low-income rates, communities with high percentages of minority households, and communities with high percentages of households with limited English proficiency."[32] Finally, the study asserts that "individual residential customers have suffered large financial losses in the competitive supply market," and recommends that "legislators in Massachusetts consider eliminating the electric supply market for individual residential consumers."[33]

While there is no clear consensus as to the extent to which competitive electricity markets or traditional regulated markets are more or less beneficial to all classes of consumers, it is clear there is vastly more information available on this subject today than was available twenty years ago, when Nevada first considered implementing a competitive electricity market. The general history of electricity markets restructuring and the varying conclusions and experiences from states that have implemented restructured electricity markets illustrate that the prospect of

[28] Christina Simeone & John Hangar, *A Case Study on Electric Competition Results in Pennsylvania: Real Benefits and Important Choices Ahead*, Kleinman Center for Energy (October 28, 2016).
[29] Id.at 33.
[30] Id.
[31] Susan M. Baldwin, Massachusetts Attorney General's Office, *Are Consumers Benefiting from Competition? An Analysis of the Individual Residential Electric Supply Market in Massachusetts* at viii (March 2018).
[32] Id. at x.
[33] Id.

transitioning from a regulated electricity market presents significant questions in a number of critical areas. In order for Nevada to successfully transition from the traditional cost-of-service, "vertically integrated" regulated model to a competitive market system, sound policy decisions must be made regarding wholesale and retail market structure and design, ensuring protections for consumers, calculating and recovering the costs associated with utility divestiture, maintaining renewable energy programs, ensuring electric service reliability, and other important components of electricity generation, transmission and supply. These issues were examined in great detail by the Committee with direct input from a number of states that have experience in restructuring electricity markets, including Pennsylvania, Massachusetts, Texas, Illinois, California, and others. The following sections of this report summarize the experiences and associated information on restructuring as presented to the Committee.

This Committee was tasked by the Governor with identifying the "legal, policy, and procedural issues that need to be resolved, and to offer suggestions and proposals for legislative, regulatory, and executive actions that need to be taken for the effective and efficient implementation of [ECI]."[34] In carrying out this directive, the Committee has solicited input from a number of other states with experience implementing competitive electricity markets. The experiences of other states, along with the lessons learned over the course of the history of electric markets restructuring, should inform any revived effort by Nevada to replace a regulated market system with a competition-based electricity market. These lessons and experiences should guide any potential decision-making process in Nevada so that the successes in market restructuring can be replicated where possible, and the failures can be avoided.

[34] Exec. Order No. 2017-03, *Order Establishing the Governor's Committee on Energy Choice*, Sec. 8 (February 9th, 2017).

OPEN ENERGY MARKET DESIGN SUMMARY OF FINDINGS

The Technical Working Group on Open Energy Market Design and Policy was tasked with examining issues related to the structure and design for both wholesale and retail markets should ECI successfully pass again in November 2018. The TWG on Open Energy Market Design and Policy was also tasked with studying issues and solutions surrounding Provider of Last Resort (POLR) services. Representatives from seven organizations provided presentations to the TWG. Additionally, each member of the Technical Working Group participated in the full Committee on Energy Choice, which was also presented with information pertaining to retail and wholesale market structure.

Wholesale Market Structure

Currently, Nevada's electricity is delivered through vertical integration where the utility is responsible for, and maintains control over, all three levels of power delivery: generation, transmission, and distribution.[35] If approved, ECI would require the Nevada State Legislature to establish an open and competitive energy market. ECI does not specifically require the Legislature to establish an organized wholesale market structure for Nevada[36]; however, discussions, presentations, and the experiences of other states have shown that doing so would be sensible and the plausible first step to establishing the open energy market mandated by ECI.[37] Each state that has deregulated has either established its own organized wholesale market or joined an existing one.[38] These markets are managed by operators known technically as Independent Service Operators (ISOs) or Regional Transmission Organizations (RTOs) which are set up independently of the market participants to ensure the daily functioning, reliability and planning aspects of market operations.[39] Nine market operators currently exist within North America, seven of which are located within the United States, six of which are regulated by FERC, and one of which, Texas, is regulated exclusively by its state regulatory agency.[40]

During Open Energy Market Design TWG meetings and meetings of the full Committee, two primary options were considered for Nevada in choosing an organized wholesale market: creating a Nevada-only wholesale market or joining an existing ISO or RTO. Relative pros and cons emerged from each, depending upon which factors were prioritized.

[35] *See PUCN Energy 101: Presentation to the Governor's Committee on Energy Choice,* Presentation by PUCN to the Governor's Committee on Energy Choice at 6 (April 26, 2017).
[36] See generally, *The Energy Choice Initiative*, Ballot Initiative Petition (February 3, 2016).
[37] Public Utilities Commission of Nevada, *Energy Choice Initiative Final Report*, Investigatory Docket No. 17-10001 at 68 (April 2018).
[38] Id., Matt Griffin &Josh Weber, *Energy Choice: A New Energy Policy for Nevada*, Energy Choice Initiative Presentation to the Governor's Committee on Energy Choice at 6 (April 26, 2017).
[39] *See generally*, John Orr, *Retail Market Potential: Moving from Vertical Integration to Retail Choice*, Constellation's Presentation to the Governor's Committee on Energy Choice (July 11, 2017).
[40] Stacy Crowley, *California ISO: Regional and National Marketplace Presentation*, Presentation by CAISO to the Governor's Committee on Energy Choice at 3 (April 26, 2017).

Creating a Nevada-Only Independent System Operator

Factors influencing the creation of a Nevada-only ISO include, namely, cost, governance, and time. Speakers to the Committee and Open Market Design TWG presented estimates of the costs to establish a Nevada-only ISO to be anywhere from $100 million – $500 million.[41]Although it would also require FERC approval, a Nevada-only ISO would allow the state much greater flexibility in governance issues and structure within the creation of regulatory and legislative designs.[42] Notwithstanding, issues were raised regarding the size of a Nevada only market relative to other ISO/RTOs and its ability to provide the same level of load and fuel diversity to suppliers and end use consumers for potentially greater competition and lower pricing.. Furthermore, the timeline for implementing and ultimately ensuring a robust Nevada wholesale market comes to fruition could run past the 2023 ECI deadline.[43]Finally, the aforementioned factors would be compounded if Nevada chooses to allow the expansion of a Nevada-only ISO to other interested western states.

Joining an Existing Independent System Operator or Regional Transmission Organization

As with creating a Nevada-only ISO, the same factors of cost, governance, and time were discussed. The added issue of geographic proximity was also noted during discussions of the Committee and Open Market TWG in deliberations on joining an existing ISO or RTO. Due to the lack of relative proximity of many of the existing ISO or RTOs throughout the United States along with the lack of adequate physical connectivity – many of the ISO/RTOs were ruled out as realistic or viable options. States with close physical proximity to Nevada were seen as most realistic. For example, due to its location and established market, California's ISO (CAISO) emerged as a practical existing ISO/RTO for Nevada to join during discussions of the Open Market TWG and Committee as a whole.[44] At the outset, estimates provided that the cost of Nevada joining California's ISO would likely be lower than those of establishing a Nevada-only market.[45] Timing for transitioning Nevada to CAISO would depend on

[41]Steve Berberich, *California ISO*, Presentation by CAISO to the Technical Working Group on Open Energy Markey Design & Policy at 9 (July 10, 2017), *See also* Meeting Minutes and Public Comments at 4 (July 11, 2017), and Public Utilities Commission of Nevada, *Energy Choice Initiative Final Report*, Investigatory Docket No. 17-10001 at 79 (April 2018).
[42] Steve Berberich, *California ISO*, Presentation by CAISO to the Technical Working Group on Open Energy Markey Design & Policy at 9 (July 10, 2017),*See also* Meeting Minutes and Public Comments at 4 (July 11, 2017), and Public Utilities Commission of Nevada, *Energy Choice Initiative Final Report*, Investigatory Docket No. 17-10001 at 79 (April 2018).
[43]Carl Monroe & Bruce Rew, Southwest Power Pool, *SPP Wholesale Markets and Retail Markets,* Presentation to the Governor's Committee of Energy at 14 (Aug. 8, 2017), Public Utilities Commission of Nevada, *Energy Choice Initiative Final Report*, Investigatory Docket No. 17-10001 at 79 (April 2018), Lauren Rosenblatt, NVEnergy, *Energy Market Policy,* Presentation to the Governor's Committee of Energy at 11 (July 11, 2017).
[44] Meeting Minutes and Public Comments at 5 (July 10, 2017), Public Utilities Commission of Nevada, *Energy Choice Initiative Final Report*, Investigatory Docket No. 17-10001 at 77 and appendix 1240-1 (April 2018), Lauren Rosenblatt, NVEnergy, *Energy Market Policy,* Presentation to the Governor's Committee of Energy at 11 (July 11, 2017). Presenters and data provided to the Committee and Working Group generally discussed California's Energy Imbalance Market (EIM). Currently, Nevada Rural Electric Association and NV Energy fully participate in California EIM. However, if ECI is adopted, Nevada may need to become a full participant in an ISO.
[45] Public Utilities Commission of Nevada, *Energy Choice Initiative Final Report*, Investigatory Docket No. 17-10001 at appendix 2469 (April 2018) (California ISO provided the following estimates: an initial $250,000 to fund a study Nevada

how quickly governance decisions were determined, in addition to the time required for FERC approval and time to transition operations and technology. In joining CAISO, data was provided that established an estimated timeline of two years for initial integration and up to another year and a half for system simulation.[46] The primary disadvantages of joining CAISO were identified as issues surrounding governance and ensuring Nevada had an opportunity to advocate for its own interests. Currently, CAISO is governed by a Board selected by California's Governor and confirmed by its Legislature.[47] During discussions, CAISO stated its willingness to support Nevada's decision to join; however, any decision of adding Nevada to the market would require action by the California Legislature.[48] Thus, in determining its final recommendation on Wholesale Markets, the Open Market TWG set forth recommendations that focused on the successful implementation of a restructured energy market by way of joining or contracting with an existing ISO within close proximity and also that Nevada should retain the ability to control during the process, despite working with an outside entity.

Retail Market

A retail market is a market in which energy is sold directly to an end user, whether the end customer is residential, commercial or an industrial consumer.[50]A retail energy market as contemplated by the ECI is one in which end users are able to freely choose the retail electric provider in which they purchase their electricity from.[51] Unlike wholesale markets, which are governed by FERC, retail markets are governed by the laws and regulations of the state in which the sale occurs. Various factors have the ability to influence the success of a competitive retail market and were discussed in depth during meetings of the full Committee and the Open Market TWG. These issues include: (1) How to address the integration of energy co-ops, municipal aggregators, and public utility districts; (2) Determining which entity will serve consumers if they do not make a decision to switch (default service provider); (3) What licensing and regulatory requirements will exist for retail energy providers; (4) How best to execute an effective consumer education campaign; (5) How best to effectively exchange data upon

joining CAISO, an upfront cost of $500,000 for Nevada to join, plus any additional costs that may be required to transition technology. Furthermore ongoing annual maintenance fees were estimated to be approximately to be $21-27million)

[46]Public Utilities Commission of Nevada, *Energy Choice Initiative Final Report*, Investigatory Docket No. 17-10001 at 78 (April 2018).

[47]Meeting Minutes and Public Comments at 6 (May 10, 2017).

[48]Meeting Minutes and Public Comments at 5 (July 10, 2017) (At time of drafting, the California Legislature was considering Assembly Bill 813, which would allow for a western regional transmission organization through the expansion and reorganization of CAISO).

[50]Lauren Rosenblatt, NVEnergy, *Energy Market Policy,* Presentation to the Governor's Committee of Energy at 2 (July 11, 2017).

[51]*See generally* Matt Griffin & Josh Weber, *Energy Choice: A New Energy Policy for Nevada*, Energy Choice Initiative Presentation to the Governor's Committee on Energy Choice at 4-8(April 26, 2017).

customer switching and other practical decision points; and (6) How and by whom will customers be serviced and billed.[52]

States that have previously introduced competitive retail markets have addressed the foregoing in an assortment of ways, taking into account their own state's resources, structure and needs, and the goals of the restructured market. Given the intricacies and variables raised by each factor, any decisions will be left to the Nevada Legislature and Nevada's regulatory bodies to determine. Accordingly, with the potential passage of ECI, many of the critical components and the information required to select an appropriate retail market structure remain unknown. Consequently, the Open Markets TWG proposed that the Governor and the Legislature should create a Joint Committee to address the particular legislative and regulatory actions necessary for a competitive retail electricity market inclusive of providers of last resort and net metering.

Provider of Last Resort (POLR) Services:

In addition to examining the wholesale and retail market structures, the Open Market TWG was tasked with determining options for Nevada's POLR services. In each restructured retail market, a POLR serves as an energy customer's reliable fallback when their own retailer is no longer able to provide service. Different states establish providers of last resort services in a variety of ways. For example, options include: soliciting bids from suppliers, assigning or designating a supplier as the POLR, or requiring the incumbent utility or an affiliate to provide POLR services.[53] Being provided with these different options, the Open Markets TWG set forth, and the full Committee unanimously adopted, a recommendation for the state of Nevada which would set up the necessary power providers and entities to support this transition in order to protect consumers and that need for these provisions to be set up through State Law no later than the conclusion of the Legislative Session of 2021.

[52]John Hanger, Former SEC. of Panning & Policy and Pennsylvania PUC Commissioner, Comments to the Governor's Committee on Energy Choice at 2-7 (May 10, 2017), Craig. G. Goodman, National Energy Marketers Association, Presentation to the Governor's Committee on Energy Choice at 11 (February 7, 2018).

[53]*Historic Overview: Nevada Deregulation in the 1990's.* Presentation by PUCN to the Governor's Committee on Energy Choice at 13 (Nov. 7, 2017), Public Utilities Commission of Nevada, *Energy Choice Initiative Final Report*, Investigatory Docket No. 17-10001 at 804 (April 2018).

INVESTOR AND RATEPAYER ECONOMIC IMPACTS SUMMARY OF FINDINGS

The long history of electricity markets restructuring and the experiences of the states which have adopted competitive markets demonstrate that the transition from a vertically integrated utility model to a competition-based marketplace questions potential economic impacts to participants in the marketplace. A thorough study of market restructuring must examine these potential economic impacts. Executive Order 2017-03 directed the Committee to specifically address, "[p]reventing ratepayers and investors from possible economic losses associated with stranded investments."[54]Accordingly, the Committee organized a Technical Working Group on Consumer and Investor Economic Impacts to study the issues associated with stranded assets and transition costs. These issues included a transitional structure and rate structure to recover costs of transition and stranded costs, the extent and timing of divestiture of supply assets, a process for divesting utilities of supply assets, the appropriate processes for calculating and recovering stranded costs or benefits, plans to mitigate potential impacts to the workforce, and other issues pertaining to the cost to transition from a regulated system to one based on competition.[55]

The experiences of other states that have implemented energy market restructuring consistently demonstrate that divestiture of incumbent utility assets, "stranded asset" costs and other transition costs are among the most challenging issues associated with market restructuring. Information provided to the TWG on Economic Impacts, as well as published scholarship on the issue and prior research conducted in Nevada, all generally support the conclusion that identifying, allocating, calculating, and ultimately recovering stranded costs associated with divestiture has historically presented significant challenges to states exploring the possibility of market restructuring.

For example, when Texas began its restructuring process after the passage of Senate Bill 7, addressing "stranded assets" issues was one of the chief concerns associated with implementing a restructured, competitive energy marketplace: "[t]he largest problem threatening the smooth transition from a regulatory market to a competitive market is stranded cost recovery. Every state that has deregulated the electric utility industry has grappled with this issue…it is therefore of extreme importance to determine who pays for stranded costs, how stranded costs are calculated, and how stranded costs are collected."[56] When Illinois began its process to implement a restructured market in 1996, the Illinois Legislature established a Technical Advisory Group (TAG) similar to the Committee's Economic Impacts TWG, with a fact-finding role and a directive to develop legislative

[54] Exec. Order No. 2017-03, *Order Establishing the Governor's Committee on Energy Choice*, Sec. 10(D) (February 9th, 2017).
[55] Note - a full list of issues assigned to each Technical Working Group is included in the Appendix.
[56] Natalie Scott, *Implementation of Senate Bill 7: The Implication of Stranded Costs Recovery for Residential Electric Utility Consumers*, 52 Baylor L. Rev. 237, 247 (Winter 2002).

proposals for implementing a restructured market.[57] The Illinois TAG issued a report indicating general agreement on the recovery of at least some of the utilities' stranded costs, but "unfortunately, although not unexpectedly, was not able to achieve consensus on any particular plan."[58]

The Federal Energy Regulatory Commission (FERC), in its landmark Order 888, which helped to pave the way for restructuring of wholesale markets, concluded, "[t]he most critical transition issue that arises as a result of [FERC]'s actions in this rulemaking is how to deal with the uneconomic sunk costs that utilities prudently incurred under an industry regime that rested on a regulatory framework and a set of expectations that are being fundamentally altered."[59] Emphasizing the difficulties that arise with regard to stranded costs issues, the Congressional Budget Office in 1998 stated, "[d]etermining the correct figure for stranded costs, deciding how much of them to compensate, and figuring out how that compensation should be paid are difficult issues, which are slowing progress toward restructuring in many states."[60]

There is a significant body of published scholarship and research surrounding state approaches to stranded costs. One notable published summary of the issue highlights the difficulties associated with stranded assets policy, and touches on general approaches states have taken with regard to stranded costs:

> Because of their magnitude, stranded costs creat[e] a great deal of political tension. The arguments [come] down to fairness and equity compared to economic efficiency…In general, states allowed utilities to recover all or some significant portion of their stranded costs and gave utility commissions guidance as to how to decide what was or was not recoverable…Almost every state legislature chose a definition of stranded costs that referred to costs that were legitimate, net, verifiable, and unmitigated. Utility commissions were left to decide on the exact definitions of those terms.[61]

In Nevada, similar conclusions have been reached regarding the challenges that are inherent in identifying, allocating, and calculating stranded costs. In 1997, the Nevada Legislative Counsel Bureau, in Bulletin 97-11, thoroughly examined the issue of electric markets restructuring, including the specific issues of stranded costs, as required by A.C.R. 49.[62] The LCB's report concluded, "[t]he issue of stranded costs is one of the most important topics in restructuring." Despite the importance of the issue, however, the report concluded that there was no

[57] Ruth K. Kretschner & Robert Garcia, *Recovering Stranded Costs: Not "If", but "How."*, 135 No. 2 Pub. Util. Fort. 34 (January, 1997).
[58] Id.
[59] Transmission Access Policy Study Group v. F.E.R.C., 225 F.3d 667, 683 (D.C. Cir. 2000).
[60] Gail Cohen, Congressional Budget Office, *Electric Utilities: Deregulation and Stranded Costs* at 26-27 (1998).
[61] Matthew H. Brown & Richard P. Sedano, Nat'l Council on Elec. Policy, *A Comprehensive View of U.S. Electric Restructuring with Policy Options for the Future* at 30 (2003).
[62] Nevada Legislative Counsel Bureau, Bulletin No. 97-11, *Competition in the Generation, Sale, and Transmission of Electric Energy* at (1997).

ultimate consensus reached on how to appropriately address stranded costs, as "there were diametrically opposed recommendations about recovery of these costs."[63] Notably, the sole recommendation from the LCB's report was for the 1997 Legislature to "[a]ppoint a six-member interim study subcommittee to conduct further investigation into all aspects of restructuring the electric industry."

Most recently, in its *Final Report on the Energy Choice Initiative*, the Public Utilities Commission of Nevada (PUCN) concluded that "[p]erhaps the most important topic related to potential costs of implementing the Energy Choice Initiative is the issue of divestiture of utility assets and liabilities."[64] The PUCN's report discusses in detail the "spectrum of views regarding divestiture, including whether any of Nevada's public utilities would have to divest of their generation assets and/or long-term power purchase agreements," and notes that analyzing and quantifying stranded costs is made difficult because that it is "not a linear conversation" and by the fact that "market conditions regarding the costs of generating, transmitting, and delivering electricity are constantly changing."[65]

The PUCN's final report on ECI identifies a general range in costs associated with stranded assets: "[t]he cost estimates related to divestiture that the PUCN Workshop Proceeding participants presented ranged from…zero dollars…up to approximately 7 billion dollars," noting that "no participant attempted to monetarily quantify the benefits." The report estimates a total cost of approximately $4.074 billion, inclusive of regulatory and stranded asset costs. [66]

Information presented to the Committee's Economic Impacts TWG should assist in quantifying, identifying, and calculating costs that may be incurred by the state's largest incumbent utility should a competitive market be adopted.[67] Mr. Kevin Geraghty, representing NV Energy, presented an overview of the utility's major assets, including generation assets and the utility's power purchase agreements (PPAs). Mr. Geraghty also discussed potential transition costs (establishing a POLR, creating a customer switching mechanism, and creating a new FERC-approved tariff for transmission operations), potential stranded costs, costs associated with maintaining public policy initiatives, and other costs associated with taxes and fees that NV Energy currently pays but may not pay in a restructured market (estimated at $232.6 million). Testimony to the working group also referenced the divestiture process in New Hampshire and recommended consulting New Hampshire's approach as one option for Nevada.

[63] Id. at 52.
[64] See generally Public Utilities Commission of Nevada, *Energy Choice Initiative Final Report*, Investigatory Docket No. 17-10001 at 39-40 (April 2018).
[65] Id. at 51.
[66] Id. at 50, 66.
[67] See Kevin Geraghty, NV Energy presentation, *SVP, Energy Supply* at slides 13, 14, 18 (June 21, 2017).

Other information submitted by various providers in Nevada also helps in identifying potential economic impacts under a restructured market. The Deseret Power Electric Cooperative presented an overview of Deseret Power's operations and generating assets, and discussed specifically its Mt. Wheeler service area as well as a comparison of utility structures and residential rates. This testimony concluded with the assumptions that if ECI is approved; (1) there is no cost shifting or subsidizing of stranded costs; (2) all utilities and ratepayers are subject to equal stranded costs, and (3) that NV Energy's stranded costs total approximately $7.4 billion, then there could be a 30% increase to the energy component of Deseret Power's rates.[68]The Nevada Rural Electric Association (NREA), pointed out in its presentation that Nevadans for Clean Energy Choices, proponents of ECI, have conceded that if the initiative passes, implementation "[m]ay include economic and orderly divestiture of generation and limits on corporate affiliates serving as Retail Energy Providers."[69] NREA's presentation also identified transition costs for NREA owner-members in a competitive market to include Alternative Power Providers' profit margin (10-15%), unspecified transmission and retail wheeling costs, NREA's existing PPA divestiture/liquidation costs ($1 billion +), and other miscellaneous costs.[70]Finally, the Colorado River Commission of Nevada (CRC) pointed out that the "ECI has raised questions regarding Nevada's ability to continue to benefit from low-cost, renewable federal hydropower" and regarding the "viability of CRC's long-term hydropower contracts."[71] This testimony also included an assertion by CRC representatives that it is not believed CRC would have any stranded assets should ECI be approved.

In short, the questions that arise with regard to divestiture of assets and liabilities, quantifying stranded costs and transition costs, and ultimately the question on how to recover those costs, are difficult questions to answer, with the consensus on the best approach is not arrived at easily. The Economic Impacts TWG included as part of its record of deliberations three pieces of legislation enacted as part of restructuring efforts in California, Ohio, and Texas, as reference materials for the Nevada Legislature to consider in future deliberations related to divestiture, stranded assets, and transition costs issues. The Committee recommends that the Legislature commission further investigation into this issue as soon as reasonably practicable if ECI is approved by voters.

[68] Clay MacArthur, Deseret Power Electric Cooperative presentation, *Nevada Energy Choice Initiative* at 10 (Aug. 17, 2017).
[69] Richard "Hank" James, Nevada Rural Electric Association Presentation to the Working Groups at 10 (Aug. 17, 2017).
[70] Id. at 18.
[71] Jayne Harkins, P.E., Colorado River Commission of Nevada Presentation, *Presentation to the Committee on Energy Choice* at 19 (Aug. 17, 2017).

INNOVATION, TECHNOLOGY AND RENEWABLE ENERGY
SUMMARY OF FINDINGS

Executive Order 2017-03 directed the Committee to address the issue of "[p]romoting innovation and development in Nevada's renewable energy industries."[72] The amended version of this Executive Order directed the Committee to study the additional issues of "[i]ncreasing Nevada's renewable portfolio standards" and "allowing community solar gardens to begin operating in Nevada."[73] The Committee's TWG on Innovation, Technology, and Renewable Energy was tasked with examining how electricity market restructuring may interact with and/or impact (1) energy efficiency programs, (2) demand-side management programs, (3) renewable portfolio standards (RPS), (4) electric vehicles, (5) aggregation programs including community solar, (6) incentives for other technologies of interest, (7) net metering, and (8) blockchain technology. Representatives from nine organizations gave 11 presentations to the TWG, providing members with information on a wide range of topics and from a variety of perspectives. The TWG presented key findings related to the potential impacts of a restructured energy market on currently-existing renewable energy programs, on restructured markets and RPS, the implications of a restructured market regarding community solar programs and net metering, and Nevada's ability to be a net energy exporter. The working group presented five recommendations, each of which the Committee unanimously adopted without revision.

Renewable Portfolio Standard

An RPS is designed to increase renewable electricity production by requiring that a certain percentage of electricity sold to retail customers originate from a renewable source.[74] In 2001, the Nevada Legislature established an RPS that went into effect in 2005, setting minimum renewable requirements that increase over time.[75] Under current law, by 2025, electricity generated from renewable sources must constitute 25% of electricity sales. Presentations to the TWG discussed RPS and some focused, in particular, on the RPS in states with competitive markets. Amanda Levin from Natural Resources Defense Council discussed RPS generally and the interaction of RPS and retail choice. Maria Robinson from Advanced Energy Economy also discussed RPS in restructured states. Anthony Star from the Illinois Power Agency outlined the RPS in Illinois, and Pat Egan from NV Energy discussed NV Energy's compliance with Nevada's current RPS.

In a restructured, competitive electricity market with retail choice, consumers will be able to select an electricity supply product from a range of options. Consumers that value renewable energy may continue to

[72] Executive Order 2017-03 Sec. 10(E).
[73] Executive Order 2017-10 Sec. 1(a) and (b).
[74] U.S. Energy Information Administration, *Today in Energy*, https://www.eia.gov/todayinenergy/detail.php?id=4850 (last visited June 12, 2018).
[75] NRS 704.7821

choose to purchase a product that is partially or entirely renewable (as discussed further below). But, without an RPS, other consumers—because of preferences, cost, insufficient information, or a lack of renewable options—will purchase non-renewable products. Because retail choice allows consumers to choose their own supply, there is no guarantee that, absent state policy, the share of renewables will continue to grow if ECI is approved.

The Committee recommends implementing ECI in alignment with Nevada's existing renewable energy goals, to ensure that retail choice policies are consistent with Nevada's policies on RPS and renewable energy objectives. Evidence from other states demonstrates such a goal can be achieved. For instance, according to the U.S. Energy Information Administration (EIA) data, California, a state with a competition-based market, generated 37 percent of its electricity from renewable sources in 2016, and Illinois, which is also deregulated, has a 25 percent RPS goal by 2025.[76]So long as Nevada maintains its current RPS, it will meet its 25 percent renewable goal by 2025.

If voters approve ECI and Nevada maintains its RPS requirements, the Governor, Legislature, and state regulatory agencies will have a number of issues to consider, including credit qualification, the impact of joining an ISO on the price of credits, which entities are responsible for securing credits, retail supplier marketing, and POLR compliance.

States that have both deregulated markets and an RPS typically require either suppliers, utilities, or agencies to demonstrate RPS compliance by securing renewable energy credits similar to the portfolio energy credits (PEC) used in Nevada today. If ECI is approved and Nevada's RPS remains intact, Nevada will face a number of decisions regarding RPS credits and compliance. First, if Nevada joins CAISO or another balancing authority, it may decide to deem all renewable generators within the balancing authority, including those that are located outside of Nevada, eligible for PECs. Consumers may benefit from such a policy change because suppliers would gain access to additional credits, some of which may be comparatively cheap, lowering compliance costs without forfeiting environmental benefits. On the other hand, the policy change may reduce payments to existing renewable energy generators in Nevada and instead subsidize out-of-state renewable projects with ratepayer funds that previously encouraged development in Nevada.

Nevada policymakers should also bear in mind that joining CAISO may impact the price of PECs and, as a result, the compliance cost associated with meeting the state's RPS goals. California's RPS is divided into "content categories." If Nevada joins CAISO, renewable energy generation in Nevada may fall within California's balancing authority and depending on California's renewable procurement rules, the content category for which

[76] U.S. Energy Information Administration, *Electricity: Detailed State Data*, https://www.eia.gov/electricity/data/state/ (last visited on June 12, 2018).

Nevada's renewable generation projects qualify may change. This could potentially increase the value of the associated credits.[77] In theory, this could benefit renewable energy generation in Nevada by increasing revenues to generators but, at the same time, increase RPS compliance costs borne by ratepayers. If compliance costs are expected to rise significantly, as a result of this change or any other factors, Nevada may consider establishing an alternative compliance structure in which credits can be purchased for a set price, as in Massachusetts. The revenues can fund additional renewable energy development, energy efficiency improvements, or any other activities deemed appropriate by the Governor, Legislature, and state regulators.

If Nevada joins or creates an ISO, the entity or entities responsible for securing credits and the process by which obligations are calculated and credits are secured may change. Options include requiring suppliers or utilities to procure credits, or contracting for credits through a power agency. In Massachusetts, for instance, suppliers are required to secure credits. Utilities provide the Department of Energy Resources (DOER) with each supplier's load. The DOER communicates that information to each supplier and the supplier then purchases RECs to satisfy compliance requirements based on the information provided by DOER.[78] Nevada may consider soliciting input from the balancing authority it joins or creates, utilities, suppliers, and other stakeholders to determine the best policy for the state.

Today, NV Energy customers can choose to go beyond the state-mandated RPS by selecting NV Energy's GreenEnergy Rider. The optional product is supplied partially or entirely with renewable energy, above and beyond what is required by the RPS. If ECI is approved, Nevada may consider requiring all suppliers to offer a product similar to the GreenEnergy Rider that is either partially or entirely renewable. It is important that any such policy explicitly define which credits are eligible to satisfy the stated commitment. Furthermore, Nevada can consider implementing rules regarding products advertised as "green" and go beyond the RPS. These products may be backed by out-of-state RECs that, unbeknownst to customers, may not result in incremental renewable supply. Nevada could consider requiring suppliers to differentiate between different types of renewable products so that customers understand the products that are offered.

If Nevada elects to mandate a POLR, it must decide whether or not that supply will comply with the RPS and, if so, whether or not the requirement should go beyond the RPS. In a number of states, the standard POLR product meets the RPS requirement but consumers can opt-in to a POLR product that exceeds RPS requirements.[79]

[77]California Public Utilities Commission, *33% RPS Procurement Rules*, http://www.cpuc.ca.gov/RPS_Procurement_Rules_33/ (last visited June 13, 2018).

[78] Executive Office of Energy & Environmental Affairs, Department of Energy Resources for the Commonwealth of Massachusetts, *Renewable & Alternative Energy Portfolio Standards Guideline*,https://www.mass.gov/files/documents/2016/08/vu/rps-compliance-basis-guideline.pdf (last visited June 13, 2018).

[79] DPU Electric Power Division, Government of Massachusetts, *Basic Service Information and Rates*, https://www.mass.gov/service-details/basic-service-information-and-rates (last visited June 12, 2018), Public Utilities Commission & Division of Public Utilities and Carriers, State of Rhode Island, http://www.ripuc.org/utilityinfo/electric/narrelecschedule.html (last visited June 12, 2018), Pennsylvania Public Utility

Customer-sited Renewable Energy, Energy Efficiency, and Demand-side Management Programs

In an effort to lower customers' energy bills and mitigate the electricity sector's impact on the environment, Nevada subsidizes (1) customer-sited renewable energy generation[80], (2) investments in energy efficiency[81], and (3) participation in demand-side management programs.[82] These policies are all customer-focused, encouraging individuals to change the way in which they consume electricity. Customer-sited renewable energy generation (e.g., rooftop solar) has the potential to provide customers with cheaper, cleaner electricity than that from the grid. Investments in energy efficiency (e.g., insulation and appliance upgrades) also reduce the amount of electricity that customers purchase from the grid, which lowers customers' energy bills and mitigates the environmental impacts of consumption. Demand-side management programs typically use financial incentives to encourage customers to shift their electricity consumption during periods of peak system demand—when the cost of producing electricity is the highest—to off-peak periods.[83] For instance, payments from a utility or capacity market auction may incentivize customers to participate in a demand-response (DR) program, which allows a grid manager to curb customers' consumption during periods of peak demand. In theory, all three of these programs reduce not only the costs to customers who choose to participate, but total system costs as well, savings which are passed onto all consumers, including non-participants.

Many of the presentations to the TWG delved into these topics. Amanda Levin from NRDC briefly discussed using market-based incentives to encourage investment in both customer-sited renewable generation and energy efficiency. Maria Robinson from Advanced Energy Economy explained that the PUC may "open up new dockets to explore how to incorporate DER [distributed energy resources] into the grid" if Nevada moves from a cost-of-service to market-based ratemaking. Phil Pettingill from CAISO discussed the potential for DER aggregations to participate in wholesale markets as allowed in California since 2015. Pat Egan from NV Energy outlined both the utility's demand-side management programs, including residential air conditioning replacement, smart thermostats, and commercial demand response controls, and its customer-sited renewable energy subsidy program. Jason Burwen from the Energy Storage Association discussed the potential for and value of energy storage, and advocated for allowing storage to compete in deregulated markets on an equal footing with other resources. Chris Neme from the Energy Futures Group discussed the value of energy efficiency, the importance of

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Commission, *Renewable Energy*, http://www.papowerswitch.com/ways-to-save-energy/renewable-energy-resources (last visited on June 12, 2018).

[80] *See generally*, Pat Egan, NV Energy, *Energy Efficiency, Renewable Energy & Public Policy Customer Programs*, Presentation to the Technical Working Group on Innovation, Technology, and Renewable Industries at 7 (October 10, 2017).

[81] Id.

[82] Nev. Admin. Code §704.934 (2017) (Preparation Contents and Submissions of Demand Side Plan; Annual Analyses Regarding Programs for Energy Efficiency and Conservation).

[83] U.S. Energy Information Administration, *Electricity: Electric Utility Demand Side Management*, https://www.eia.gov/electricity/data/eia861/dsm/ (Last visited June 12, 2018).

having a state energy efficiency policy, and the entities that can administer an energy efficiency program in a deregulated market.

Evidence from around the country demonstrates that transitioning to a deregulated market does not necessarily, in and of itself, advance or hinder these customer-focused programs. Other factors, including geography, state policy, the cost of electricity, and political climate, are more important in determining the extent to which customers invest in distributed generation and energy efficiency and participate in demand-response programs. For instance, many of the states with the most successful electric sector energy efficiency programs have competitive markets, including Rhode Island, Massachusetts, and Connecticut.[84] But, a number of fully or partially-regulated states are well-ranked too, including Vermont, Arizona, and Oregon. Similarly, according to EIA data, both regulated and deregulated states rank highest in the country in terms of capacity of small-scale solar installations, the vast majority of which are customer-sited.[85]Hawaii and Vermont, two states that are at least partially regulated, are ranked first and second in the country, and other restructured states, including Massachusetts and New Jersey, fall within the top five.[86]

One of the Committee's central recommendations to the Governor and Legislature is that these customer-focused programs remain unharmed. Evidence from around the country demonstrates that Nevada can continue to successfully implement these programs in a competitive environment, but only if the programs are funded and administered. In transitioning to a competitive electricity market, one of the biggest challenges facing the state may be determining which entities will be responsible for administering these programs.

For instance, there are three entities, broadly speaking, that could administer Nevada's energy efficiency program: utilities, suppliers, and third-party entities. According to Chris Neme, utilities and third-party entities are the most promising options. Utilities serve all customers, have an existing relationship with customers, and have access to customer data. On the downside, energy efficiency is not necessarily part of a utility's core business and, as a regulated monopoly, may not have an incentive to innovate, though that can be mitigated with correctly-aligned financial incentives. And, because Nevada has decoupled electricity sales from utility revenues, the utility would have no perverse incentive to keep consumption high. On the other hand, an independent third-party would

[84] Weston Berg et. al., American Council for an Energy-Efficient Economy, *The 2017 State Energy Scorecard: Report U1710* at 22-23 (September 2017) (According to the American Council for an Energy Efficient Economy's 2016 annual state-by-state energy efficiency ranking. All states were ranked based on their success with energy efficiency programs in the electricity sector in 2016, focusing specifically on savings as a percentage of retail sales).
[85] U.S. Energy Information Administration, *Electricity: Form EIA-861M (formerly EIA-826) Detailed Data*, https://www.eia.gov/electricity/data/eia861m/ (lasted visited June 12, 2018), U.S. Energy Information Administration, *Electricity: State Electricity Profiles*, https://www.eia.gov/electricity/state/ (last visited June 12, 2018) (calculation of the percentage of installed capacity within each that the EIA considers "small PV").
[86] Vermont Official State Website, Department of Public Service, *Electric: Vermont Electric Utilities*, http://publicservice.vermont.gov/electric (last visited June 12, 2018).

also serve all customers, have a singular focus, and innovate in the face of competition, though it would not have an existing relationship with customers or access to customer data initially. Customer-sited renewable energy and demand-side management programs can continue to be successful in a deregulated environment so long as Nevada directs an entity to administer the programs and maintains a funding mechanism for them.

The Committee also recommends that the Governor and Legislature ensure that low-income customers continue to have subsidized access to these services, that Nevada avoid adopting policies that impede technological progress, and that the state consider incubators and pilot projects for innovative technologies, and encourage the adoption of "smart" technologies that support distributed generation, storage, and clean energy. So long as there are funding sources and entities to administer these programs, these objectives are achievable under a restructured electricity marketplace.

Net Metering and Community Solar

Net metering programs encourage the deployment of customer-sited distributed generation through a different channel. Rather than receive an initial payment for installing distributive generation (DG), customers accumulate credits for each unit of electricity produced. Those credits are used to offset the customer's utility bill and, if credits exceed consumption, some programs allow customers to receive a cash payment. Currently, Nevada has a net metering program. Credits are worth a percentage of the total retail rate of electricity, and the value of these credits decreases over time, from 95% to 75% of the retail rate, as more capacity is installed.

Community solar programs take net metering a step further. They are jointly shared by multiple parties, each of which receives credits on their electricity bill for their share of the power that is generated. Community solar allows those who would not typically be able to invest in DG, like renters, condo owners, and those with insufficient financial means to participate in a DG program. Today, community solar is not legislatively enabled in Nevada.

Marta Tomic from Vote Solar discussed the benefits of community solar and community solar in restructured markets. Pat Egan from NV Energy discussed NV Energy's net metering program and Assembly Bill 405 (passed in 2017), which changed net metering in Nevada. Justin Barnes from EQ Research, LLC discussed how retail choice interacts with net metering, including the importance of clear net metering guidelines, and suggested that Nevada retain as much of its current net metering structure as possible if the ECI is approved. The Committee recommends that the Nevada Legislature revisit the community solar and net metering questions during the 2019 Legislative Session.

Electric Vehicles

Transitioning to an electric-based vehicle fleet would bolster Nevada's energy independence, reduce the state's exposure to global energy markets, potentially reduce energy costs, and mitigate environmental impacts. In recent years, the cost of electric vehicles has fallen and the number of available vehicle options has climbed. The Working Group examined how a transition to a competitive market may impact the burgeoning electric vehicle market and heard Pat Egan from NV Energy discuss electric vehicles in Nevada and NV Energy's electric vehicle program.

Nevada has implemented a number of policies to encourage electric vehicle adoption. For instance, Senate Bill 145 provided funding for EV infrastructure[87]. The legislation was driven in part by the fact that, according to a number of studies, Nevada is well-positioned for EV growth. The Committee recommends encouraging the Governor, Legislature, and regulatory agencies and organizations to implement ECI in alignment with Nevada's existing renewable energy, energy efficiency and technology goals. Therefore, energy market deregulation should be implemented in a manner that does not interfere with the development of the electric vehicle market.

If electric vehicle uptake is high, additional generation capacity may be necessary to serve the new load unless consumers charge their vehicles during off-peak periods. NV Energy's time-of-use rate aims to solve that problem by charging customers lower rates during off-peak period and higher rates during on-peak periods.[88] In a deregulated market, suppliers may not offer a similar time-varying-rate (TVR) product or, if they do, they may not advertise it well. Therefore, the legislature may consider ways in which it can encourage or mandate suppliers to provide at least one TVR product to customers with an EV. Similarly, if a POLR is established, the legislature may also consider mandating that electric vehicle customers using the POLR take a TVR.

Storage

Energy storage technologies capture energy for use at a later time. Storage is a valuable service because it allows operators to capture energy during off-peak periods, when the demand for and price of electricity are relatively low, and redeploy that energy during high demand, which results in higher priced periods. Until recently, pumped-storage was generally considered to be the only financially-viable form of grid-scale storage. More recently, other technologies, including lithium ion, lead acid, and other battery types have become more affordable. In an effort to encourage the deployment of energy storage on the grid, in 2017, Nevada added storage to the list of technologies eligible for subsidies under NRS 701B. Senate Bill 145 explicitly allocated $10 million to storage.

[87] S.B. 145 (2017). *An Act relating to energy…creating the Electric Vehicle Infrastructure Demonstration Program.*
[88] Pat Egan, NV Energy, *Energy Efficiency, Renewable Energy & Public Policy Customer Programs*, Presentation to the Technical Working Group on Innovation, Technology, and Renewable Industries at 34 (October 10, 2017).

Two of the presentations, Pat Egan and Jason Burwen, to the Innovation TWG addressed energy storage. Pat Egan from NV Energy discussed storage legislation in Nevada. Jason Burwen from the Energy Storage Association gave an overview of storage, discussed its benefits and the barriers to deployment, and argued for competition in grid planning and procurements, and that storage should be compensated for its full value and be afforded fair and equal access to the grid. The Committee recommends that the Governor and Legislature adopt competitive retail market policies that do not impede progress and innovation of current in future technologies, including storage.

GENERATION, TRANSMISSION, AND DELIVERY SUMMARY OF FINDINGS

Executive Order 2017-03 directed the Committee to address "[t]he need to amend laws governing the generation, transmission, purchase, and delivery of electricity to all Nevadans." Accordingly, the Generation, Transmission, and Delivery TWG was formed and assigned a number of issues pertaining to this topic of electricity markets restructuring. The TWG was tasked with examining infrastructure and other needs to support imports, exports, and renewable energy development, resource adequacy and system planning, policies that will enable Nevada to become a net energy exporter, federal and state land issues associated with transmission and generation development, and other questions pertaining to ISO/RTO governance and alignment with Nevada's energy goals and policies.[89] In examining these issues, the TWG met four times and heard from a number of interested stakeholders, ultimately adopting three recommendations that were approved by the Committee based upon the information presented to the TWG.

Generation, transmission, and delivery (or distribution) are the terms generally used to describe the three major components of the process of supplying electricity to customers. Generation may involve coal, natural gas, solar, geothermal, wind, or other sources of energy, while transmission refers to high-voltage transportation to load centers, and distribution refers to lower-voltage delivery to end-use customers.[90] More specifically, the PUCN defined "transmission" as "the act or process of transporting energy in bulk," and "distribution" as "the system of wires, switches, and transformers that serve neighborhoods and businesses, typically lower than 69,000 volts."[91] The TWG received information from a variety of Nevada-based participants on the issues of how ECI might affect generation, transmission, and delivery.

Resource Adequacy and Planning Reserves

Resource adequacy requirements are governed by the North American Electric Reliability Corporation (NERC).[92] As one study explains, "[a] power system has adequate resources if its supply-and-demand-side resources reliably exceed its loads…[resource adequacy] generally refers to a planning timeframe under which resources' total nameplate capacity must exceed annual peak load by a specified planning reserve margin."[93] The study further explains that the structure of the wholesale market plays a critical role in determining resource

[89] See *TWG Workstream Assignments Document* (7.11.2017) Appendix A-3.
[90] Garrett Weir, Hayley Williamson, Nevada Public Utilities Commission. *Energy 101: Presentation to the Energy Choice Committee* at 6-7 (April 26th, 2017).
[91] Id. at 8.
[92] Amy Abel, et al., Congressional Research Service. *Electric Utility Restructuring: Maintaining Bulk System Reliability*. "Reliability of the electric grid has been defined by NERC in terms of two functional aspects. These include: 'Adequacy' and 'Security'." At 3 (February, 2005).
[93] Matthew J. Morey, et al. *Retail Choice in Electricity: What Have We Learned in 20 Years?* Electric Markets Research Foundation at 51 (Feb. 11, 2016).

adequacy outcomes, "particularly the manner in which resource investors are compensated."[94]Implementation of ECI will require resource adequacy, including required reserves, to exist within the wholesale market region to support market restructuring (i.e. there must be ample generation in the wholesale market area to meet expected loads in the market region served in order to foster competitive wholesale pricing of that generation). If Nevada elects to join an existing organized wholesale market such as the California Independent System Operator (CAISO) or the Southwest Power Pool (SPP), the wholesale market region is that of the organized wholesale market. If Nevada elects to create its own organized wholesale market, the wholesale market region is that of Nevada.

Currently, resource adequacy requirements are being met in the CAISO balancing area.[95] Installed generation capacity is reported at 71,740 MW. Nevada native load peak of 7,961 MW occurred in 2016 (native load is only that of NV Energy affiliates and does not include balancing area loads of rural Nevada utilities, municipal utilities, and 704B customers) and would add approximately 11 percent (excluding reserves) to the CAISO resource requirement. CAISO has processes in place to ensure resource adequacy and would presumably require Nevada electric providers to fund or acquire additional generation capacity to satisfy resource adequacy requirements for their load.

Currently, resource adequacy requirements are also being met for the SPP balancing area as well.[96] Installed generation capacity is reported at 50,622 MW. Nevada native load peak of 7,961 MW occurred in 2016 (native load is only that of NV Energy affiliates and does not include balancing area loads of rural Nevada utilities) and would add approximately 16 percent to the SPP resource requirement. As with CAISO, SPP also has processes in place to ensure resource adequacy and would presumably require Nevada electric providers to fund or acquire additional generation capacity to satisfy resource adequacy requirements for their load.

Building out of new generation requires several years to plan, permit, finance and construct. Development of new baseload or intermediate generation resources within Nevada may not be possible within the available time frame. Buildout of new peaking or utility scale renewable resources may be possible in the time frame available. The decision as to what organized wholesale market Nevada will participate in must be made several years in advance of the effective date of Energy Choice in order to provide time for the organized wholesale market to prepare for and adjust its resource mix for Nevada, or for Nevada to construct additional generation should Nevada elect to create its own organized wholesale market.

[94] Id.
[95] Stacy Crowley, California ISO, *Regional and National Marketplace Presentation*, Presentation to the Governor's Committee on Energy Choice (April 26, 2017).
[96] Carl Monroe & Bruce Rew, Southwest Power Pool, *SPP Wholesale Markets and Retail Markets*, Presentation to the Technical Working Group on Open Markets (August 8, 2017).

Resource adequacy issues in Nevada will be further exacerbated by generation units or purchased power agreements that are not marketable for various reasons including contract terms, cost of generation or age of generating units. NV Energy currently has approximately 6,011 MW of owned generation and 2,930.5 MW in purchased power agreements (including pre-commercial agreements).[97] The two primary electric energy trading hubs available for Nevada markets are currently COB and Mead. The trading hubs serve as a proxy as to current competitive wholesale markets in the region. Generation assets held by NV Energy with bus bar costs above these trading hub prices or purchased power agreements (PPAs) with pricing above these hubs may be difficult to liquidate and will further add to Nevada's resource adequacy issues in the short term. Current pricing at Mead follows in the below table. Of the 61 PPAs identified by NV Energy, all but the Kingston, Mill Creek, Newmont, TMWRF, Techren 2, Hoover, Stillwater PV, NPC_SPCC, and Techren 1 PPAs have pricing in excess of the above Mead trading prices.

MEAD

Quote Date 10/13/2017

Forward Month	On Peak (6x16)	Wrap	7X24
Nov-17	$28.207	$23.281	$26.014
Dec-17	$29.105	$25.079	$27.244
Jan-18	$29.406	$26.852	$28.280
Feb-18	$28.939	$25.659	$27.533
Mar-18	$26.944	$23.139	$25.352
Apr-18	$25.268	$20.382	$23.096
May-18	$25.878	$21.455	$23.928
Jun-18	$35.404	$25.712	$31.312
Jul-18	$43.476	$25.919	$35.359
Aug-18	$42.315	$26.075	$35.505
Sep-18	$32.133	$23.894	$28.288
Oct-18	$28.801	$25.005	$27.209
Nov-18	$27.060	$23.228	$25.354

Of the generation assets owned by NV Energy, its two coal resources - Navajo Generating Station (255 MW) and North Valmy Generating Station (261 MW) - are slated for retirement before or near the effective date of Energy Choice. These retirements will further add to the resource adequacy issues in the short term. Other units which were constructed prior to 1980 and may be difficult to market such as Tracy Unit 3 (1974, 108 MW), Fort

[97] Kevin Geraghty, NV Energy, *SVP, Energy Supply*, Presentation to the Technical Working Group on Economic Impacts (June 21, 2017).

Churchill Units 1 and 2 (assuming must run conditions eliminated) (1968, 226 MW), and Clark Unit 4 (1973, 54 MW).

In addition to other factors, resource adequacy is affected by planning reserves. The concept of planning reserve margins is described by NERC as "…designed to measure the amount of generation capacity available to meet expected demand in the planning horizon. Coupled with probabilistic analysis, calculated planning reserve margins have been an industry standard used by planners for decades as a relative indication of adequacy." [98]Reserves are intended to assure sufficient generation resources are available to meet real-time operating requirements and to avoid the possibility that a load loss occurs no more frequently than one day in 10 years, commonly referred to as the "1-in-10 resource adequacy standard." Reserve margins directly affect reliability of the electric grid and cost of electric service. Reserve margins are established as a percentage of net customer requirements for NV Energy's native load and are 12 percent for NV Energy's customers in southern Nevada and 15 percent for NV Energy customers in northern Nevada. These reserve margins amount to 941 MW of generation in the year 2020, again the equivalent of two large baseload/intermediate generating plants.

Studies need to be completed to determine the adequacy of reserve requirements for Nevada. These studies need to be probabilistic in nature and take into consideration numerous factors including intra-Nevada transmission constraints, transmission import and export limits, and organized wholesale market structure. Under a restructured electricity market should ECI be approved, the regulated utility will no longer be responsible for generation development but will continue to be responsible for the development of transmission and distribution facilities to deliver electricity to consumers within its designated service area. Thus, reserve margins should be appropriate for Nevada specific circumstances.

Reliability "Must-Run" Units

"Must-run" generation units are those generation units that must operate to provide for electric grid reliability under certain conditions. By definition a must run generation unit has no competition, it is the only unit that can be operated to meet/eliminate the condition giving rise to the must-run unit (i.e. transmission capacity overloads and transmission outages). NV Energy has identified several must-run generation stations which, if sold without addressing the must-run condition, could result in anti-competitive behavior by the owners of such stations. These stations include Fort Churchill Generating Station, North Valmy Generating Station, Clark Generating Station and Clark Mountain Generating Station. Anti-competitive pricing by owners of must-run generation units can be eliminated by pricing controls enacted by the organized wholesale market, or by elimination of the must-run conditions through transmission system modification, load shedding or peak clipping that allow competition to occur.

[98] See https://www.nerc.com/pa/RAPA/ri/Pages/PlanningReserveMargin.aspx (Accessed 06.12.18)

Expanding Export/Import Transmission Capacity

Some of the advantages of joining an organized wholesale market include, (a) to participate in economies of scale relating to generation development, (b) to take advantage of load diversity amongst market participants, (c) to minimize overall quantities of reserves held in the market region, and (d) to avail the natural resources of various areas (solar, wind, geothermal) to all participants of the organized wholesale market. To achieve these benefits, sufficient transmission import and export capabilities from Nevada to the overall region served by the wholesale market. The transmission system serving Nevada is electrically connected to all of its surrounding states. However, greatest connectivity from an import/export capacity perspective exists with California and Arizona.[99] This connectivity could support the deployment of the CAISO organized wholesale market into Nevada; however, development of a Nevada only or deployment of an SPP organized wholesale market could also occur with the adoption of interchange policies between adjacent organized wholesale markets as common in organized wholesale markets serving Midwest, East and Northeast regions of the country.

Currently transmission import and export capabilities into Nevada are less than NV Energy's existing native load. Southern Nevada import limits are reported at 5,331 MW and northern Nevada import limits are reported at 1,000 MW. Increasing transmission import and export limitations is currently a multi-year process involving numerous stakeholders including interconnected transmission owners, regional transmission operators, the Western Electricity Coordinating Council, public utility regulatory bodies, local planning commissions, federal land management agencies, land owners, environmental groups, and citizen groups. Until import and export limitations are increased, Nevada based generation serving NV Energy native load is required.

Transmission planning in Nevada currently occurs in a vertically integrated utility environment in which one organization forecasts load requirements; and plans the generation and transmission to meet that requirement. Once approved by the regulatory body, the utility proceeds with development efforts. As pointed out by Pat Woods in his presentation on May 10, 2017, one of the critical components to ensure success of competitive wholesale markets (and by extension ultimately retail markets) is that the region covered by the market must have "robust" transmission infrastructure.

The current process used in Nevada to plan generation and transmission resources is the Integrated Resource Planning (IRP) process. This process is required under both state statutory and administrative code provisions. Under the IRP process, NV Energy files an energy supply plan annually and an IRR every three years with the

[99] Shahzad Lateef & Marc Reyes, NV Energy, *Generation, Transmission, and Delivery,* Presentation to the Innovation TWG (November 7, 2017).

Nevada Public Utility Commission. Much of this process may no longer be applicable to NV Energy in a retail choice environment as they would not serve this function. Using the IRP process, NV Energy historically has built the least-cost transmission option to meet local needs. In an Energy Choice environment transmission must be planned proactively as "highways" to benefit the region covered by the organized wholesale market. This broader approach to transmission planning allows loads to be served and renewable generation options to be developed.

Should ECI be approved, responsibility for planning transmission to support local needs and to eliminate must run generation units may still fall to the utility. Furthermore, under a restructured market system, responsibility for planning transmission to support increases in Nevada import and export capabilities may need to be assigned the regional transmission operator and the organized wholesale market. Additionally, implementing ECI may require that the responsibility to plan transmission to support development of localized wind, solar and geothermal resources be delegated to an existing or new state agency. In a vertically integrated utility model transmission study costs under the existing integrated resource planning process are borne by electric utility rate payers. Transmission study cost responsibility pursuant to ECI will need to be addressed.

Currently, transmission development is funded by the regulated utility's investors who earn a rate of return on that investment once a project is approved by the PUCN. Transmission development in a restructured market may occur in a variety of formats including transmission companies, existing utilities, and state funded projects. One concept used by SPP to allocate the cost of its high voltage lines is identified as the "highway/byway" methodology. Under this concept cost responsibility is allocated based on voltage as follows:

Voltage	Region Pays	Local Zone Pays
300 kV and above	100%	0%
Above 100 kV and below 300 kV	33%	67%
100 kV and below	0%	100%

Texas instituted a program called the Competitive Renewable Energy Zones (CREZ) transmission development. Under CREZ, the Electric Reliability Council of Texas (ERCOT) identified areas of the state best suited for wind development. The Public Utility Commission of Texas then selected those areas as CREZ. ERCOT developed transmission plans to transfer future wind energy from CREZ to loads. A joint venture called Electric Transmission Texas (ETT) was formed to by several companies to construct approved transmission projects. Once a transmission project is constructed the ETT receives a return on its investment through transmission revenues collected by ERCOT. Use of the CREZ process resulted in the development of 18,500 MW of generation in Texas. Texas produces more wind power than any other state. Wind energy accounts for 12.63 percent of the energy generated in Texas.

Supporting transmission investments under a restructured market system can pose a significant challenge, given the multiple parties and jurisdictional issues involved. As the U.S. Department of Justice Antitrust Division has reported, "[m]arket participants with conflicting interests continue to have a say in the transmission planning process, and it can be very difficult to create governance and cost-allocation structures that allow conflicting interests to unify into decisions that will be efficient for the whole. Furthermore, the siting of any large transmission projects can be subject to the regulatory authority of numerous states, and local opposition can be fierce."[100] Nevertheless, provisions of the Energy Policy Act of 2005 that allow FERC to directly permit transmission projects when state approval is delayed, as well as the growing need for inter-regional transmission capacity are factors that should support investments in transmission capacity.[101]

[100] Jeff Lien, U.S. Department of Justice Economic Analysis Group Antitrust Division, *Electricity Restructuring: What has worked, What has not, and What is next* at 10 (2008).
[101] Id. at 11 ("The need for inter-regional transmission capacity is greater now that we have market structures in place to effectively utilize the transmission system").

CONSUMER PROTECTION SUMMARY OF FINDINGS

A number of prominent industries in the United States that began under regulated, non-competitive regimes were subsequently restructured or deregulated and now operate in competitive markets. The airline, banking, mineral, telecommunications, and other industries, for example, began under "tightly regulated" market structures but have, over time, become less regulated.[102] As these industries have undergone restructuring, policies have been adopted to ensure that consumers are protected from bad actors in less regulated competitive markets. As has been the case with these industries that have deregulated, the restructuring of electricity markets also implicates consumer protection issues, and information provided to the Committee should help to guide potential decision-making to ensure consumers are adequately protected under a restructured market in Nevada.

The Committee endeavored to address consumer protections issues under a broad theme of protecting customers from undue rate increases and fraudulent practices.[103] Specific issues related to this area included licensing, market behavior and transactional rules, customer education on the marketplace and their rights, customer complaint and dispute resolution, oversight and rules for managing data privacy and data exchange, low-income customer assistance, and other customer protection policy issues. It is clear from both Nevada's past experience with the prospect of restructuring as well as from contemporary proponents and opponents of restructuring alike, that there is general agreement regarding the need for mechanisms to protect consumers in a competitive electricity marketplace. The Committee's Consumer Protection Technical Working Group presented five key findings pertaining to consumer protection policy, related to consumer education, comparison of terms of service among competing providers, protecting customer data and privacy, modernizing Nevada's unfair and deceptive trade practices acts, and minimizing excessive costs. The working group presented fifteen recommendations related to these areas, each of which the full Committee adopted unanimously without revision.

In 1997, when Nevada first examined the prospect of adopting a competition-based electricity market, consumer protection policies were considered by the Legislative Subcommittee to Study Competition in the Generation, Sale, and Transmission of Electric Energy, as reported by the LCB's *Bulletin 97-11*: "[o]bservers suggested that suppliers of retail power should be licensed and subject to relevant consumer protection laws…proponents indicated that in a competitive environment, consumers need more education and protection against deceptive trade practices and less assistance in the area of economic regulation."[104] More recently, the PUCN affirmed a general consensus that introducing competition in Nevada's electricity marketplace presents new

[102] See generally, David B. Spence, *Can Law Manage Competitive Energy Markets?* 93 Cornell L. Rev. 765, (May 2008).
[103] See generally, *Technical Advisory Committee Workstream Issues Assigned by Chairman* and Committee Meeting Minutes, (July 11, 2017).
[104] Nevada Legislative Counsel Bureau, Bulletin No. 97-11, *Competition in the Generation, Sale, and Transmission of Electric Energy* at 50 (1997).

issues to be resolved in order to protect electricity customers: "[t]he participants are in agreement that a transition from a bundled service monopoly model to a competitive retail market requires a new set of consumer protection measures. The participants also agree that one of the best ways to safeguard customers and to implement a competitive market is through customer education."[105]

Successful Implementation of the Energy Choice Initiative Will Depend on Effective and Comprehensive Efforts to Educate and Inform Customers, Particularly Residential and Small Business Customers

Proponents of market restructuring agree that protecting consumers in a competition-based marketplace is essential in order for a competitive market to function successfully, and that consumer education in particular is a necessary component of consumer protection. According to the National Energy Marketers Association (NEMA), an organization supportive of competitive electricity markets, "[o]ne of the most effective means of protecting consumer[s] is providing them with the choice to do business with whom they want, and to purchase what they want, when they want it, and not to force them to business with any one entity."[106] Illustrating its recognition of the need for consumer protection policies in competitive electricity markets, NEMA has "implemented practical, straightforward and sensible safeguards to protect the consumer," and NEMA members "affirm their commitment to adhere to the principles set forth in NEMA's *Consumer Bill of Rights,"* as well as a "zero tolerance policy for any fraudulent, illegal, or unethical conduct of any employee or agent."[107] NEMA's *Consumer Bill of Rights* recognizes specifically the consumer's right to be provided access to "education on energy, energy conservation, and technology available to help control energy costs."[108] Indeed, consumer education appears to be one of the most accepted consumer protection policies in the context of electricity markets restructuring. In a report commissioned by the United States Agency for International Development, Office of Energy, Environment and Technology, "public education" is included as one of the goals that, "at a minimum, consumer protections policies should foster."[109] And in its report *Retail Electric Competition: A Blueprint for Consumer Protection*, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy concluded that, "a comprehensive public education program should maximize public participation in the implementation of retail competition, minimize customer confusion about the changes being undertaken, and equip *all* customers with the means to participate effectively in the competitive electric market."[110] Thus, there appears to be broad consensus that

[105] Public Utilities Commission of Nevada, *Energy Choice Initiative Final Report*, Investigatory Docket No. 17-10001 at 104 (April 2018).
[106] National Energy Marketers Association, *National Marketing Standards of Conduct* at 2 (2013). See also, Technical Working Group on Consumer Protection Meeting Minutes and Public Comment (Aug. 23, 2017).
[107] National Energy Marketers Association, *National Marketing Standards of Conduct* at 2 (2013).
[108] National Energy Marketers Association Presentation, *Consumer Bill of Rights*, Item 9 (Aug. 23, 2017
[109] U.S. Agency for International Development. The Regulatory Assistance Project, *Best Practices Guide: Implementing Power Sector Reform* at 63 (2000).
[110] U.S. Dept. of Energy, Office of Energy Efficient and Renewable Energy, *Retail Competition: A Blueprint for Consumer Protection* at 17 (Oct. 1998).

consumer protection policies, particularly comprehensive consumer education initiatives, are necessary for a competitive electricity market to function successfully.

The particular emphasis that is placed on consumer education in the context of restructuring electricity markets reflects another general point of agreement, which is that residential consumers appear to be more vulnerable and less likely to participate in a competitive market than other industrial or large commercial consumers. Consumer education initiatives are cited as one component of consumer protection policies that can help to ensure all classes of consumers are able to participate in a competitive market. Presentations to the Committee's Consumer Protection TWG, as well as a number of published studies show that residential customers in restructured markets are overall less likely to select competitive electricity providers while larger and industrial consumers more readily switch to competitive suppliers, and this disparity can be linked to education efforts or the lack thereof. According to West Virginia's Consumer Advocate Office, there is a direct link between the levels of residential consumer participation in a competitive market and the education efforts that are tailored to residential customers.[111] In its presentation to the Committee's Consumer Protection TWG, the West Virginia Consumer Advocate's Office asserted that, "…in most restructured states, the great majority of industrial and large commercial customers will switch to alternative retail generation suppliers, while the majority of residential customers will most likely remain with or return to some type of default service (if available)."[112] This general lack of participation, moreover, can be traced to the quality of education efforts geared toward residential customers. According to the West Virginia Consumer Advocate's Office, "[c]ustomer education is essential," and "the worse customer education is, the more customers will be on default service."[113] Acknowledging that "[t]hose consumers most in need of protection are the small commercial, agricultural, and household/residential customers" due to their "general level of sophistication and their relative economic circumstances," the U.S. Agency for International Development concludes that "[p]erhaps the most effective means of consumer protection is that of public education."[114]

The unique needs of small and residential customers in restructured electricity markets are further reflected by the fact that these classes of consumers generally do not participate in the competitive electricity market to same degree as industrial consumers when given the choice and opportunity to do so. As the National Council on Electricity Policy observes, "[t]he results of [restructuring] laws have shown that, for the most part, competition in the form of distinct choices of electric suppliers has been slow to come to the smallest of consumers, while the larger consumers have received more attention from marketers and generally been able to take advantage of the

[111] Jackie Roberts, West Virginia Consumer Advocate Presentation to the Consumer Protection TWG, *Electric Restructuring in Nevada: Protecting Consumer* (Aug. 23, 2017).
[112] Id. at 10.
[113] Id. at 26.
[114] The Regulatory Assistance Project, *Best Practices Guide: Implementing Power Sector Reform* at 65-66 (2000).

competitive market."[115] Another study supports the finding that, in general, larger commercial customers are better able to take advantage of competitive markets: "A far larger proportion of commercial and industrial customers have switched to alternative providers throughout the United States than have small commercial and residential customers. This indicates that these customers were receiving enough savings by shopping for power to make it worth their time and effort to make the switch."[116]

More recently, a 2008 study by the U.S. Department of Justice Antitrust Division concluded that "[i]n electricity markets, customer choice programs have been slow to develop, particularly at the residential level…where the transaction costs associated with comparing multiple complicated pricing offers might be significant compared to potential cost savings." [117] The study further acknowledges that "[i]n most states, the vast majority of residential customers rely on the default service and there is little switching to alternative retailers." [118]

The disparity between participation rates among small and residential customers as compared with larger customers illustrates that these classes of electricity consumers occupy distinct positions in a competitive market. This distinction further amplifies the need for effective consumer protection policies, particularly with regard to consumer education initiatives for small and residential customers, which can encourage residential and other small electricity consumers to fully participate in a competitive market and help ensure that the benefits of competition are not reserved for larger commercial and industrial consumers. As the State of Nevada Bureau of Consumer Protection presented to the Committee, "[c]ustomer education is critical to energy choice," and "consumers will need to be educated about the competitive market," in order for the restructured market to function.[119]

In Order for Customers to Make Informed Choices in a Competitive Electricity Market, they must be able to Make Accurate Comparisons of Essential Terms of Service among Various Providers

In order for customers to make informed decisions when selecting energy service providers under a restructured market, customers must have access to fair, transparent, and accurate disclosures of essential terms of service, such as pricing, contract duration, environmental impacts, and other important terms of service. Enforceable standards will ensure providers are disclosing such terms of service will be critical in making sure customers are able to make "apple-to-apple" comparisons when choosing their electricity provider under a

[115] Matthew H. Brown & Richard P. Sedano, Nat'l Council on Elec. Policy, *A Comprehensive View of U.S. Electric Restructuring with Policy Options for the Future* at 25 (2003).
[116] Mathew H. Brown, Nat'l Conf. of St. Legislators, *Restructuring in Retrospect* at 25 (2001).
[117] Jeff Lien, U.S. Department of Justice Economic Analysis Group Antitrust Division, *Electricity Restructuring: What has worked, what has not, and what is next* at 12 (2008).
[118] Id. at 13.
[119] State of Nevada, Bureau of Consumer Protection Presentation to the Consumer Protection TWG, *Consumer Protection: Protections from Undue Rate Increases and Fraudulent Practices* at 45-46 (Oct. 18, 2017).

restructured market. The Nevada Bureau of Consumer Protection (BCP) stated during testimony to the Committee that transparency with regard to the contract information provided to customers is essential to "allow consumers to compare costs, contracts, variable rates, etc."[120]As an example of how fair and accurate comparisons can be encouraged at the regulator level, the Nevada BCP highlighted the messaging adopted by the Public Utilities Commission of Ohio (PUCO) which emphasizes disclosure in customer selection of providers: "[w]ith the PUCO's innovative tool, the differences between supplier plans, costs, and contract terms are always right in front of you."[121]

Ensuring accuracy and fairness in disclosing essential terms of service has been identified as an important component of market restructuring since at least 1996, when the National Association of Regulatory Utility Commissioners (NARUC) urged states adopting retail electricity markets to "include enforceable standards of disclosure and labeling that would allow retail consumers to easily compare the price, price variability, resource mix, and environmental characteristics of their electricity purchases."[122]

Proponents of competitive electricity markets agree that it is essential for customers to be able to make accurate comparisons of essential terms of service offered by retail providers. The National Energy Marketers Association's "Consumer Bill of Rights" includes as items 2 and 3, the customer's right to "[a]ccurate price and usage information, from both the utility and competitive energy supplier, that is expressed in simple and straightforward terms," and the right to "[t]erms and conditions written in plain language that set forth contractual obligations for both the consumer and energy supplier." Testimony provided to the Committee from representatives of AARP indicates that accurate price and terms of service information and disclosure is of particular importance for elderly consumers and other vulnerable classes of customers.[123]

Successful Implementation of the Energy Choice Initiative Should ensure that Excessive Costs do not Prohibit Customers from Exercising the Right to Choose a Retail Provider

As stated to the Committee's Consumer Protection working group, the right to choose an energy provider under a restructured energy marketplace "is not an end unto itself.[124]" That is, customers' ability to participate in a competitive retail energy market must be coupled with the ability to choose service providers that offer reliable

[120] Id.
[121] Id. at 50.
[122] U.S. Dept. of Energy, Office of Energy Efficient and Renewable Energy, *Retail Competition: A Blueprint for Consumer Protection* at 20 (Oct. 1998).
[123] Bill Malcolm, AARP Presentation to the Consumer Protection TWG, *Retail Choice and Residential Customers* at 14-16 (Feb. 8, 2018).
[124] Jackie Roberts, West Virginia Consumer Advocate Presentation to the Consumer Protection TWG, *Electric Restructuring in Nevada: Protecting Consumers* at 20(Aug. 23, 2017).

service at reasonable prices. Customers must be able to evaluate and choose providers based upon the value of the service offered. Accordingly, steps should be taken to discourage excessive costs or costs that effectively prohibit a customer from fully exercising the right to choose a provider based upon the value of the service offered. In light of the potential for stranded asset costs and other costs associated with transitioning from Nevada's current system to a competitive market, these considerations related to excessive or prohibitive costs are all the more pressing.[125]

A Competitive Energy Marketplace Must Ensure the Protection of Confidential Customer Data and Maintain Respect for Customer Privacy

Implementation of the ECI will implicate new issues related to protecting customer data, respecting customer privacy, and maintaining confidentiality of records. Such information is particularly valuable in a competitive marketplace in which service providers must attract customers in order to participate in the market and account for marketing to customers as a cost of doing business. Given that studies indicate the costs of marketing to residential customers are generally higher than the costs of marketing to non-residential customers, the value of customer data and personal information is all the more clear.[126]In 1997, the Nevada LCB's report on competitive electricity markets observed that, "[a] major concern in a more competitive environment is access to customer information. To compete equally, marketers need access to consumer purchasing data. However, such access raises questions about proprietary rights to information as well as customer privacy." [127]There must be adequate protections for customers to ensure that their reasonable expectation of privacy and confidentiality is protected, and to prohibit the abuse or misuse of private customer data.

According to the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy, "[s]tates must strike a balance between the need for fair dealings in the use and access to customer information to enable development of a competitive market and customers' reasonable expectation that personal billing and payment information will remain private."[128] The importance of protecting customer privacy was emphasized by the Nevada BCP in its testimony to the Committee, which included a slide dedicated to discussing the need for "oversight of and rules for managing data privacy and data exchange."[129] The PUCN, in its report on the Energy Choice Initiative, echoes the conclusion that, "Nevada will need to strike a balance between customer privacy and

[125] Id.
[126] See Mathew H. Brown, Nat'l Conf. of St. Legislators, *Restructuring in Retrospect* at 16 (2001) ("indications are that the cost of securing individual residential customers is high…since most individual residential customers do not use a great deal of electricity, the returns on the [marketing] investment in securing each customer are small.").
[127] Nevada Legislative Counsel Bureau, Bulletin No. 97-11, *Competition in the Generation, Sale, and Transmission of Electric Energy* at 53 (1997).
[128]U.S. Dept. of Energy, Office of Energy Efficient and Renewable Energy, *Retail Competition: A Blueprint for Consumer Protection* at 33-34 (Oct. 1998). Available at: https://www.energy.gov/sites/prod/files/oeprod/DocumentsandMedia/26116.pdf
[129] State of Nevada, Bureau of Consumer Protection Presentation to the Consumer Protection TWG, *Consumer Protection: Protections from Undue Rate Increases and Fraudulent Practices* at 58-59 (Oct. 18, 2017).

business expediency," in order to implement ECI if it is approved.[130] A balanced approach to protecting customer data in a competitive electricity marketplace was also supported in testimony by the Office of the West Virginia Consumer Advocate. During its presentation to the Committee's Consumer Protection working group, the Office stated that, "the balance between customer privacy and facilitating retail choice will have to be struck in a manner that adheres to constitutional principles, protects customer safety and identity, and is accepted by those whose private data is being released."[131] There is strong consensus, then, that data protection and security with regard to customer privacy are important components of protecting energy consumers in a competitive energy market.

Successful Implementation of the Energy Choice Initiative May Require Amending Nevada's Deceptive Trade Practices and/or Unfair Trade Practices Acts that Respond to and Reflect Changes Attendant to a Competitive Electricity Marketplace

Nevada, along with many other states, has adopted a statute that mirrors federal law prohibiting "unfair methods of competition and unfair or deceptive acts or practices in or affecting commerce."[132] Nevada has enacted both an Unfair Trade Practices Act[133]and a separate Deceptive Trade Practices Act[134]. Nevada's deceptive trade practices statute addresses a wide range of topics, including pyramid schemes[135], door-to-door sales[136], grant-writing services[137]and telecommunication services[138]. One common practice addressed in Nevada's deceptive trade practices statute, is the practice known as "slamming," whereby a customer's service provider changes without the customer's permission[139]. "Slamming" was a prevalent practice among providers in the telecommunications sector after it was restructured, and is potentially a concern for a restructured energy market. According to the Attorney General's Office Bureau of Consumer Protection, so-called "slamming" is among the commonly-reported complaints by customers in restructured markets, along with "billing issues, unexpected or hidden fees, inadequate or false information, high-pressure sales tactics, telemarketing," and others[140]. "Slamming" is one example illustrating that some potential practices specific to retail energy providers in a competitive market, similar to telecommunications service providers, may potentially need to be addressed in Nevada's deceptive trade practices statute should Nevada adopt a competitive electricity marketplace. The Nevada BCP presented testimony

[130] Public Utilities Commission of Nevada, *Energy Choice Initiative Final Report*, Investigatory Docket No. 17-10001 at 100 (April 2018).
[131] Jackie Roberts, West Virginia Consumer Advocate Presentation to the Consumer Protection TWG, *Electric Restructuring in Nevada: Protecting Consumer* at 20(Aug. 23, 2017).
[132] See generally 15 U.S.C. § 45(a)(1) (2012), Nev. Rev. Stat. §§598.0903-9694 (2017).
[133] Nev. Rev. Stat. §598(A) (2017).
[134] Nev. Rev. Stat. §598 (2017).
[135] Nev. Rev. Stat §598.100 (2017).
[136] Nev. Rev. Stat. §598.140 (2017).
[137] Nev. Rev. Stat. §598.535 (2017).
[138] Nev. Rev. Stat. §598.968 (2017).
[139] See Nev. Rev. Stat. §598.969 (2017).
[140] State of Nevada, Bureau of Consumer Protection Presentation to the Consumer Protection TWG, *Consumer Protection: Protections from Undue Rate Increases and Fraudulent Practices* at 40-41 (Oct. 18, 2017).

discussing common customer complaints in competitive electricity markets, and highlighted the need for effective monitoring and oversight of market participants and providers.[141]

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[141] Id. at 39-41

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Appendix A: Full Working Committee Presentations (627 pgs)

A-1: April 26, 2017 - California ISO 1 Presentation to the Committee (16 pgs)
A-2: April 26, 2017 - California ISO 2 Presentation to the Committee (2 pgs)
A-3: April 26, 2017 - Assignments to the Technical Working Groups by Lt. Governor Mark Hutchison (1 pg)
A-4: April 26, 2017 - Energy Choice Initiative: Nevadans for Energy Choice (29 pgs)
A-5: April 26, 2017 - NV Energy: Federal Energy Regulatory Commission Oversight (9 pgs)
A-6: April 26, 2017 - Public Utilities Commission of Nevada (PUCN): Energy 101 (15 pgs)
A-7: April 28, 2017 - PUCN Request for Additional Rate Information (1 pg)
A-7: April 28, 2017 - PUCN Follow-up Request for Additional Rate Information (2 pgs)
A-8: May 10, 2017 - California Public Utilities Commission: Customer and Retail Choice in California (3 pgs)
A-9: May 10, 2017 - Pennsylvania Public Utilities Commission: Comment of John Hanger (8 pgs)
A-10: May 10, 2017 - Pat Wood, Principal of Wood3 Resources: Implementing Electricity Consumer Choice in Nevada (6 pgs)
A-11: July 11, 2017 - Constellation: Retail Market Potential, Moving from Vertical Integration to Retail Choice (18 pgs)
A-12: July 11, 2017 - NV Energy: Nevada's Wholesale Energy Market (18 pgs)
A-13: July 11, 2017 - Technical Working Group Workstream Issues Assigned by Chairman (5 pgs)
A-14: September 13, 2017 - Energy Choice Committee Request for an Investigatory Docket (2 pgs)
A-15: September 13, 2017 - Monitoring Analytics: Market Monitoring in PJM (35 pgs)
A-16: September 13, 2017 - NV Energy: Energy Choice and Considerations for Resource Adequacy (32 pgs)
A-17: October 30, 2017 - Newspaper Form: Notice of Energy Choice Initiative Investigation (16 pgs)
A-18: November 7, 2017 - Analysis Group: Electric Customer Choice & Renewable Energy: Insights from Other States (16 pgs)
A-19: November 7, 2017 - PUCN: Historical Overview: Nevada Deregulation 1990's (23 pgs)
A-20: November 7, 2017 - PUCN: Historical Overview: Nevada Deregulation 1990's Presentation Materials (211 pgs)
A-21: November 7, 2017 - Walmart: Overview of Walmart's Commitment to Renewable Energy, Energy Supply, and Experience in other Competitive States (12 pgs)
A-22: November 15, 2017: Letter to the Committee and the Technical Working Groups (1 pg)
A-23: March 7, 2018 - National Conference of State Legislatures: Energy Choice: State Policy Considerations (20 pgs)
A-24: April 30, 2018 - PUCN: Energy Choice Initiative Final Report: Investigatory Docket No. 17-10001 (126 pgs)

Appendix B: Technical Working Group (TWG) Presentations (1,108 pgs)

TWG on Consumer Protection: Protecting Against Undue Rate Increases and Fraudulent Practices

B-1: August 23, 2017: West Virginia Consumer Advocates: Electric Restructuring in Nevada: Protecting Customers (29 pgs)
B-2: August 23, 2017: National Energy Marketers Association: Consumer Bill of Rights (1 pg)
B-3: August 23, 2017: National Energy Marketers Association: National Standards of Conduct (3 pgs)
B-4: October 18, 2017: State of Nevada: Bureau of Consumer Protection Presentation (80 pgs)
B-5: February 7, 2018: Temporary Appointment to the TWG (1 pg)
B-6: February 8, 2018: AARP: Retail Choice and Residential Customers (22 pgs)
B-7: March 23, 2018: Recommendations for Consumer Protection Workgroup by AARP Nevada (1 pg)
B-8: March 23, 2018: U.S Department of Energy Retail Electric Competition: A Blueprint for Consumer Protection (243 pgs)
B-9: April 20, 2018: Office of the Attorney General: Consumer Protection Issues for Residential Customers in a Restructured Electricity Market (8 pgs)
B-10: April 20, 2018: Susan M. Baldwin, Discussion of Massachusetts Report (16 pgs)
B-11: April 20, 2018: Temporary Appointment to the TWG (1 pg)

TWG on Generation, Transmission and Delivery

B-12: November 7, 2017: NV Energy Generation, Transmission, and Delivery Presentation (25 pgs)
B-13: December 12, 2017: GridLiance Presentation to the TWG (15 pgs)
B-14: December 12, 2017: TriSage Consulting, Nevada Energy Assistance Corporation: Transmission Initiative Routing Study Then and Now (29 pgs)
B-15: January 12, 2018: California ISO, Transmission Planning at the ISO & Overview of Generation-Related Transmission (30 pgs)

TWG on Energy Consumer and Investor Impact: Divesting Asserts and Investments

B-16: June 21, 2017: NV Energy Presentation (39 pgs)
B-17: August 17, 2017: Colorado River Commission of Nevada, Presentation to the Committee on Energy Choice (23 pgs)
B-18: August 17, 2017: Department of Energy, Bonneville Power Administration (1 pg)
B-19: August 17, 2017: Desert Power Electric Cooperative, Nevada Energy Choice Initiative (11 pgs)
B-20: August 17, 2017: Nevada Rural Electric Association Presentation (20 pgs)
B-21: October 17, 2017: NV Energy, Impacts of Energy Choice on Long Term Agreements (15 pgs)
B-22: February 6, 2018: IBEW Local 396 and 1245, Wage Rates, Annual Salary and Benefits for Impacted Workers at NV Energy (18 pgs)
B-23: February 6, 2018: NV Energy, NV Energy Workforce Impacts of Question 3 (7 pgs)
B-24: May 30, 2018: Reference Legislation: California 1996 Legislative Service, Chapter 854 (14 pgs)
B-25: May 30, 2018: Reference Legislation: Ohio Revises Code Section 4928.31-4928.40 (17 pgs)
B-26: May 30, 2018: Reference Legislation: Texas Legislature Section 39.251 (17 pgs)

TWG on Innovation, Technology, and Renewable Energy

B-27: August 9, 2017: NRDC, Renewable Standards: Clean Energy Development & Other Impacts (31 pgs)
B-28: August 9, 2017: AEE Presentation, RPS in Restructured States (10 pgs)
B-29: October 10, 2017: California ISO, Grid Infrastructure and Distributed Energy Resources (12 pgs)
B-30: October 10, 2017: Illinois Power Agency, Overview of the Illinois Power Agency and Changes to the Illinois Renewable Portfolio Standard (11 pgs)
B-31: October 10, 2017: NV Energy, Energy Efficiency, Renewable Energy & Public Policy Customer Programs (68 pgs)
B-32: December 5, 2017: Vote Solar Presentation (17 pgs)
B-33: December 5, 2017: Energy Storage Association: Considerations for Nevada (48 pgs)
B-34: January 23, 2018: EQ Research, LLC, Retail Choice and Net Metering: Issues and Considerations (20 pgs)
B-35: January 23, 2018: Nevada Rural Electric Association Presentation (7 pgs)
B-36: February 6, 2018: Energy Futures Group, Capturing Nevada's Efficiency Potential in a Competitive Retail Electricity Market (7 pgs)

TWG on Open Energy Market Design and Policy: Commercial and Residential

B-37: July 10, 2017: California ISO Presentation to the TWG (10 pgs)
B-38: July 10, 2017: Mothership Energy Group, Nevada Open Energy Market Design and Policy (27 pgs)
B-39: August 8, 2017: Valley Electric Association Presentation to the Working Group (16 pgs)
B-40: August 8, 2017: Southwest Power Pool, Wholesale Markets and Retail Markets (15 pgs)
B-41: August 8, 2017: Nevada Rural Electric Association Presentation (12 pgs)
B-42: August 8, 2017: Southwest Power Pool Presentation (91 pgs)
B-43: February 7, 2018: Southern Nevada Homebuilders Association: Ensuring Consistency and Affordability for New Homes in a Restructured Energy Market (13 pgs)
B-44: February 7, 2018: National Energy Marketers Association, Benefits of Electricity Choice (2 pgs)
B-45: February 7, 2018: National Energy Marketers Association Presentation to the TWG (4 pgs)
B-46: February 7, 2018: National Energy Marketers Association, Average Price of Electricity, annual (1 pg)

Appendix C: Meeting Minutes and Public Comment (322 pgs)

C-1: Meeting Minutes April 26, 2017 - Full Committee on Energy Choice (9 pgs)
C-2: Meeting Minutes May 10, 2017 - Full Committee on Energy Choice (8 pgs)
C-3: Meeting Minutes June 21, 2017 - Energy Consumer & Investor Impact TWG (10 pgs)
C-4: Meeting Minutes June 21, 2017 - Innovation, Technology, & Renewable Energy TWG (3 pgs)
C-5: Meeting Minutes July 10, 2017 - Open Market Design & Policy: Commercial and Residential TWG (7 pgs)
C-6: Meeting Minutes July 11, 2017 - Full Committee (14 pgs)
C-7: Public Comment July 11, 2017 - Sierra Club Toiyabe Chapter: Letter to the Committee on Energy Choice (1 pg)
C-8: Meeting Minutes August 8, 2017 - Open Energy Market Design & Policy TWG (9 pgs)
C-9: Meeting Minutes August 9, 2017 - Innovation, Technology, & Renewable Energy TWG (5 pgs)
C-10: Meeting Minutes August 17, 2017 – Joint Meeting of the Technical Working Group on Generation, Transmission and Delivery, and Technical Working Group on Energy Consumer and Investor Economic Impact (4 pgs)
C-11: Meeting Minutes August 23, 2017 - Consumer Protection TWG (6 pgs)
C-12: Meeting Minutes September 13, 2017 - Full Committee on Energy Choice (9 pgs)
C-13: Meeting Minutes October 10, 2017 - Innovation, Technology, & Renewable Energy TWG (9 pgs)
C-14: Meeting Minutes October 17, 2017 - Energy Consumer & Investor Impact: Divesting Assets & Investments TWG (3 pgs)
C-15: Meeting Minutes October 18, 2017 - Consumer Protections: Protecting Against Undue Rate Increases and Fraudulent Practices TWG (6 pgs)
C-16: Meeting Minutes November 7, 2017 - Full Committee on Energy Choice (10 pgs)
C-17: Meeting Minutes November 7, 2017 - Generation, Transmission & Delivery TWG (6 pgs)
C-18: Meeting Minutes December 5, 2017 - Open Energy Markey Design & Policy: Commercial and Residential TWG (5 pgs)
C-19: Meeting Minutes December 5, 2017 - Innovation, Technology, & Renewable Energy TWG (11 pgs)
C-20: Meeting Minutes December 6, 2017 - Energy Consumer & Investor Impact: Divesting Assets & Investments TWG (3 pgs)
C-21: Meeting Minutes December 12, 2017 - Generation, Transmission, and Delivery TWG (8 pgs)
C-22: Meeting Minutes January 12, 2018 - Generation, Transmission, and Delivery TWG (8 pgs)
C-23: Meeting Minutes January 23, 2018 - Innovation, Technology, & Renewable Energy TWG (9 pgs)
C-24: Meeting Minutes February 6, 2018 - Technical Working Group on Energy Consumer and Investor Economic Impact (14 pgs)
C-25: Meeting Minutes February 6, 2018 - Innovation, Technology, & Renewable Energy TWG (5 pgs)
C-26: Meeting Minutes February 7, 2018 - Open Energy Market Design & Policy: Commercial & Residential (7 pgs)
C-27: Public Comment February 7, 2018 - Solar Energy Industries Association, Renewable Energy Policies and Electric Competition (2 pgs)
C-28: Meeting Minutes February 8, 2018 - Consumer Protections: Protecting Against Undue Rate Increases and Fraudulent Practices TWG (7 pgs)
C-29: Meeting Minutes March 7, 2018 - Full Committee on Energy Choice (28 pgs)
C-30: Public Comment March 7, 2018 - Nevada RTO Options: Letter to the Committee on Energy Choice (1 pg)
C-30: Public Comment March 21, 2018 - White Pine County Board of County Commissioners: Letter to the Committee on Energy Choice (2 pgs)

C-31: Meeting Minutes March 23, 2018 - Consumer Protections: Protecting Against Undue Rate Increases and Fraudulent Practices TWG (7 pgs)
C-32: Meeting Minutes April 19, 2018 - Open Energy Market Design and Policy (6 pgs)
C-33: Meeting Minutes April 20, 2018 - Consumer Protections: Protecting Against Undue Rate Increases and Fraudulent Practices TWG (12 pgs)
C-34: Public Comment April 27, 2018 - Motion for Leave to Submit Reply Comments of Nevadans for Affordable Clean Energy (24 pgs)
C-35: Meeting Minutes May 9, 2018 - Full Committee on Energy Choice (12 pgs)
C-36: Public Comment May 9, 2018 – Garrett Group Presentation (11 pgs)
C-37: Public Comment May 9, 2018 – Garrett Group Reply Materials (21 pgs)
C-38: Meeting Minutes May 30, 2018 - Energy Consumer & Investor Economic Impact TWG **(TBD)**