MINUTES OF THE MEETING
OF THE
ASSEMBLY COMMITTEE ON GROWTH AND INFRASTRUCTURE

Eighty-First Session
March 11, 2021

The Committee on Growth and Infrastructure was called to order by Chair Daniele Monroe-Moreno at 1:32 p.m. on Thursday, March 11, 2021, Online. Copies of the minutes, including the Agenda (Exhibit A), the Attendance Roster (Exhibit B), and other substantive exhibits, are available and on file in the Research Library of the Legislative Counsel Bureau and on the Nevada Legislature's website at www.leg.state.nv.us/App/NELIS/REL/81st2021.

COMMITTEE MEMBERS PRESENT:

Assemblywoman Daniele Monroe-Moreno, Chair
Assemblyman Howard Watts, Vice Chair
Assemblywoman Tracy Brown-May
Assemblyman John Ellison
Assemblyman Glen Leavitt
Assemblyman C.H. Miller
Assemblywoman Sarah Peters
Assemblyman Tom Roberts
Assemblywoman Shondra Summers-Armstrong
Assemblyman Jim Wheeler
Assemblyman Steve Yeager

COMMITTEE MEMBERS ABSENT:

None

GUEST LEGISLATORS PRESENT:

Assemblyman Gregory T. Hafen II, Assembly District No. 36

STAFF MEMBERS PRESENT:

Katie Siemon, Committee Policy Analyst
Devon Kajatt, Committee Manager
Joan Waldock, Committee Secretary
Cheryl Williams, Committee Assistant

OTHERS PRESENT:

Andrew LePeilbet, representing Military Order of the Purple Heart; and Chairman, United Veterans Legislative Council
Tony Yarbrough, State Legislative Deputy, Veterans of Foreign Wars, Department of Nevada; and Secretary, United Veterans Legislative Council
Fred Wagar, Deputy Director of Operations, Department of Veterans Services
Sean Sever, Administrator, Division of Management Services and Programs, Department of Motor Vehicles
Rose McKinney-James, Managing Partner, McKinney-James and Associates
Robbie Orvis, Director, Energy Policy Design, Energy Innovation
Zack Subin, Senior Associate, RMI

Chair Monroe-Moreno:
[Roll was called. Committee rules and protocol were explained.] Today we will hold one bill hearing, on Assembly Bill 179, and we will enjoy a presentation.

Assembly Bill 179: Revises provisions relating to special license plates. (BDR 43-144)

Assemblyman Gregory T. Hafen II, Assembly District No. 36:
Assembly District 36 encompasses parts of Clark, Lincoln, and Nye Counties. I am here to present Assembly Bill 179 for your consideration.

I will share some background information provided by the Department of Veterans Services. There were approximately 263,000 veterans living in Nevada in 2020. Between 105,000 and 120,000 of those veterans were over the age of 65. Another 700-plus described themselves as homeless.

In 2013, the Legislature created the Interagency Council on Veterans Affairs within the Department of Veterans Services to identify and prioritize the needs of veterans, service members, and their families; to study and coordinate efforts at all levels and branches of the government to meet these needs; and to make recommendations to the Governor and Legislature biennially to address these through legislation or policy. In both the 2017 and 2019 reports, the Council recommended efforts to improve access to education, employment, health care, and mental health services for not only veterans and servicemen, but also their families and caregivers. While parking fees may not represent the most significant barrier to accessing any of the services and supports I mentioned, they do represent a barrier nonetheless. Waiving parking fees for veterans, service members, and their families and survivors may improve their access to needed services that may, in turn, improve their quality of life.

I will provide a summary of the bill as written. Existing law allows special license plates for each family member of an individual who was killed in action or who later died as a result of injuries sustained in active duty in the Armed Forces of the United States. As originally introduced, A.B. 179 would exempt these individuals from payment of any

parking fees, including parking meters, charged by the state or other local body. Veterans with service-connected disabilities and recipients of the Purple Heart medal are also provided this exemption if they display the appropriate license plate on their vehicles.

I would like to draw your attention to a conceptual amendment I have proposed [Exhibit C]. It has been uploaded to the Nevada Electronic Legislative Information System along with two letters of support [Exhibit D and Exhibit E]. The bill's original language included Gold Star license plates and fallen military license plates. The amendment adds decorated license plates Nevada currently has that were not included. These include Purple Heart recipients; Pearl Harbor survivors; and the Congressional Medal of Honor, Silver Star, Bronze Star, and combat-distinguished recipient plates. There are not many of those license plates out there. There are 24 fallen military license plates in the state as of January 2021. The largest portion of the license plates included in this amendment, for Pearl Harbor recipients, totals just over 1,200 license plates. Nevada has over a million registered vehicles, so the Pearl Harbor recipients account for 0.12 percent of vehicles registered. This seems like a very small group; however, Gold Star and fallen military have made the ultimate sacrifice for our nation and our state. Our Purple Heart recipients and our other decorated military have made a huge sacrifice. This will help show our appreciation to their families and them for what they have done.

In conclusion, Nevada has been waiving fees for several of the decorated plates since 1977. In 2015, the exemption for waiving parking fees was expanded to include disabled Purple Heart veterans. The intention of A.B. 179 is to extend this exemption to all decorated license plates and family members of the Gold Star and fallen military. Fred Wagar, the Deputy Director of Programs and Services, Department of Veterans Services; and Sean Sever, Administrator [Division of Management Services and Programs] at the Department of Motor Vehicles (DMV), are available to answer any questions you may have.

Chair Monroe-Moreno:
A few members have questions.

Assemblywoman Brown-May:
I commend your efforts to recognize our veterans, Gold Star families, and those who have given their lives to support our country. I come from a military family, so I sincerely appreciate having the opportunity to recognize the good work they have done to give us the freedoms that we enjoy today.

I have a question about the bill that might be more appropriate for Mr. Sever. You talked about the number of plates. Are parking fees an issue that has come up? Is it a pervasive issue? Are there a lot of fees? Are there people who cannot park in certain areas because of accessibility issues? I am curious to know where this came from originally.

Assemblyman Hafen:
Thank you and your family for their service. This came from friends and neighbors. Both are Purple Heart recipients, and both are considered disabled veterans. They have Purple

Heart plates on their vehicles. They were under the impression that, as disabled veterans, they could receive free parking. Both went to the airport and parked for a week. When they returned, they each had a $100 parking bill. They brought this to my attention. I was happy to bring this bill forward to ensure they get free parking when they go to the airport or other places where cities, counties, or the state may charge for parking.

Chair Monroe-Moreno:
In your answer, you mentioned the airports. Have you spoken with anyone at McCarran International Airport or Reno-Tahoe International Airport about this bill? Do you know what their position is on the bill?

Assemblyman Hafen:
I have not spoken to them directly; however, we have received the fiscal notes from all the different agencies from counties and cities. All the fiscal notes have come back at zero.

Chair Monroe-Moreno:
If someone looked at this, they would think about parking in the city if you were shopping downtown or something like that. I am not sure they would think of the airport. You might want to have a conversation with them to see what their position is before this bill goes to work session. It may be different from the city or the county. They have their own airport authorities.

Assemblyman Leavitt:
I think this is a good thing for veterans. I request to be added as a sponsor.

Assemblyman Hafen:
I am happy to add anyone and everyone who would like to be a sponsor.

Assemblyman Ellison:
I like this bill. Anything we can do to help our veterans is important. My colleague who spoke earlier said we owe a lot to our veterans—our freedom, our freedom of speech, this building. Some cities and counties have parking lots that are privately owned. How would you handle that? Would you tell veterans this would not apply at privately owned lots? I have seen several privately owned parking lots in Las Vegas.

Assemblyman Hafen:
I am one who believes in leading by example. I hope private facilities would follow the state's example and would offer and extend the same benefit to decorated veterans. Obviously, we would not mandate that. As far as outreach is concerned, I have talked with the Department of Veterans Services and DMV about helping to spread the word. The DMV informed me that as soon as the bill is passed and approved, they would update their website to ensure the information is there as they currently list the plates exempted from parking fees. It should be a small and easy adjustment for them to make. The Department of Veterans Services and a number of veterans' organizations have offered to use email blasts and social media to get the word out.

Assemblyman Ellison:
In the future, if this bill passes, you might want to consider extending this to Nevada law enforcement officers who sacrificed their lives for us.

I would like to be a cosponsor on this bill.

Chair Monroe-Moreno:
Are there any other questions from members of the Committee?

Assemblywoman Peters:
Thank you for bringing this bill. As most people know, my husband is a combat veteran. We are one of the lucky families. He is whole, for the most part, but my heart goes out to families who did not get their family members home in one piece. I would also like to be added as a cosponsor.

Assemblyman Hafen:
It would be an honor.

Chair Monroe-Moreno:
I do not see any other members with questions. I am the child of military veterans, and my father suffered long-term consequences from his service to our country. I thank you and any other members of this Legislature who recognize the sacrifices that so many of our family members and our constituents have made to ensure we have the freedoms we enjoy in this country—for this generation and for us. Is there anyone in the queue who wishes to testify in support of Assembly Bill 179?

Andrew LePeilbet, representing Military Order of the Purple Heart; and Chairman, United Veterans Legislative Council:
I represent the combat-wounded veterans and Purple Heart recipients in the state of Nevada, as well as the 70,000 disabled American veterans. I am the current chair of the United Veterans Legislative Council for Nevada. We support A.B. 179, especially when you consider that our Gold Star families have paid the most difficult price in losing their loved ones. This is a small recognition to a small group in our state that is loyal and patriotic. I believe there are only about 180 plates for Gold Star families today.

As for the combat-wounded veterans, I am a Purple Heart recipient. I know many Purple Heart recipients in the state. They shed their blood on the battlefields of the world in service to the United States. This is a small honor to help them get to their doctors' appointments and to park when it is sometimes difficult for them. The groups I represent endorse A.B. 179 and support its passage.

Chair Monroe-Moreno:
Thank you for calling in with your comments and for your service to our country. Do we have any callers in opposition?

Tony Yarbrough, State Legislative Deputy, Veterans of Foreign Wars, Department of Nevada; and Secretary, United Veterans Legislative Council:
I represent nearly 9,000 members of the Veterans of Foreign Wars in the Department of Nevada. I also represent close to half a million members of the United Veterans Legislative Council as officer and past chairman. United Veterans Legislative Council is an organization of all the veterans' organizations throughout the state of Nevada. It includes all veterans, active-duty military, National Guard, families, and advocates statewide. I am sure many of you have veterans in your family histories and may have some direct experience of active-duty military service. As we move forward, please remember them and their families' sacrifices, their commitment to serve our country, and how proudly you support them. We want to do the very best for them. I am in full favor of A.B. 179. What we are asking for from this Committee is a very small price to pay to honor and respect our veterans and the sacrifices they have made.

Chair Monroe-Moreno:
Thank you for calling, and thank you for your service to our country. I believe you were calling in support of A.B. 179. The minutes will reflect that. Are there any callers in opposition? [There were none.] Are there any callers in neutral?

Fred Wagar, Deputy Director of Operations, Department of Veterans Services:
I am here to testify in neutral on A.B. 179. As we heard, A.B. 179 would provide an exemption of parking fees for vehicles with license plates issued by the Department of Motor Vehicles to family members of persons killed in the line of duty or died as a result of injuries while on active duty in the Armed Forces. Nevada Department of Veterans Services contacted the DMV to determine how many of these specialized license plates were issued in the state. There have been 197 Gold Star family license plates issued. As there was a fiscal note provided by only one county, we also requested the number of specialized license plates issued in that county. The total was 106 Gold Star family specialized license plates issued for that county.

Sean Sever, Administrator, Division of Management Services and Programs, Department of Motor Vehicles:
Assemblyman Hafen reached out to us on this bill. We are neutral on this bill. It has an indirect impact on the DMV as we make the license plates. As was mentioned, we will do some social media posts to get the word out, and we will make some website changes.

Assemblyman Watts:
We received information on the Gold Star family plates. For the amendment provided by the bill's sponsor, what is the total number of plates affected? What percentage of license plates would that be?

Sean Sever:
I will get that information for you.

Assemblyman Watts:
In the fiscal notes on this bill, including those by local government entities, it seems they could not estimate. The City of Las Vegas estimated 10 percent. Having the information in percentage form may help when this is evaluated for potential fiscal impact from the public entities that have parking fees.

Sean Sever:
I will get that to you as soon as I can.

Chair Monroe-Moreno:
There are no others wishing to testify as neutral. Are there final remarks from the bill's sponsor?

Assemblyman Hafen:
Thank you for having me here this afternoon. I want to address Assemblyman Watts' question. There are approximately 1,500 license plates out of 1,052,571 registered vehicles in the state of Nevada, which equates to roughly 0.15 percent of all registered vehicles. Those are rough numbers, but I am sure the DMV can provide the exact numbers. I am thankful for all our veterans and for everything they have done.

Chair Monroe-Moreno:
That will bring us to the Rocky Mountain Institute (RMI) presentation.

Rose McKinney-James, Managing Partner, McKinney-James and Associates:
I am pleased to join you today. I appreciate your invitation to introduce my colleagues from RMI and Energy Innovation. I am a former commissioner with the Public Service Commission. I was honored to serve as the first director of your Department of Business and Industry. I was the Chief Executive Officer of the CSTRR [Corporation for Solar Technology and Renewable Resources], one of Nevada's earliest efforts to support the commercial deployment of our vast renewable resources. Over the course of many years, it has been my privilege to work with the Nevada Legislature as an advocate for advancing policies supporting clean energy and climate. The work that has been undertaken by this Committee and its predecessors has resulted in significant investment in the deployment and development of renewable resources in Nevada. We are now recognized as a leader in that space. As such, I think it must be acknowledged that we have made remarkable progress. I hope you will agree that we need to sustain this momentum and advance the policies necessary to support continued success in this area.

One of my constant challenges as an advocate has been to effectively identify and embed the necessary data and analytics required to support the various policy proposals that have come

before you. Last session, we were able to secure former Governor Bill Ritter, the director of the Center for the New Energy Economy at Colorado State University. He came and addressed the Committee and provided additional resources to individual legislators.

It is said that what gets measured gets done. To provide the Legislature with the benefit of additional expert guidance, it is my pleasure to introduce Robbie Orvis and Dr. Zack Subin. Mr. Orvis is the Director of Energy Design at Energy Innovation, an energy policy think tank. He leads Energy Innovation's modeling and analysis using the Energy Policy Simulator. He is an expert on energy policy design, having worked with dozens of policy makers in the United States and abroad to estimate policy impacts. He is also coauthor of *Designing Climate Solutions: A Policy Guide for Low-Carbon Energy*. Mr. Orvis will be joined by Dr. Zack Subin, a senior associate in the U.S. Program at RMI, formerly known as Rocky Mountain Institute, which is an independent, nonprofit organization focused on energy and climate. Dr. Subin previously led energy system PATHWAYS analysis for states and utilities at the San Francisco-based consultancy Energy and Environmental Economics, Inc. He studied energy policy and conducted global climate science research at the University of California, Berkeley, and Princeton University.

Thank you for the opportunity to share this presentation. I will turn it over to them and invite any questions you may have when they have concluded.

Robbie Orvis, Director, Energy Policy Design, Energy Innovation:
I will share a presentation [Exhibit F], then show some of the results from our modeling. Today we are sharing a new tool we have developed for Nevada—the Energy Policy Simulator—that allows us to model deep decarbonization of the Nevada economy, looking at different policies and how they can contribute to emissions reductions. The Energy Policy Simulator is a real-time model of emissions and economic impacts [page 2, Exhibit F]. It allows those who use it to build policy scenarios and to look at the combined impact of different policies on emissions and economic impacts like jobs and gross domestic product (GDP) output. The model, available online at nevada.energypolicy.solutions, is free, public, and open-source. Shortly, we will explore the model online with some of our preliminary findings. The model is based entirely on publicly available data from sources like the U.S. Energy Information Administration, the National Renewable Energy Laboratory, and a handful of national labs across the United States. The model has been peer-reviewed by national labs, universities, and partner organizations. For the Nevada Energy Policy Simulator, we coordinated and received input from the Division of Environmental Protection within the State Department of Conservation and Natural Resources and other state stakeholders in building out policy scenarios.

The Energy Policy Simulator is available in many states and for eight countries, including the United States, China, India, and Indonesia [page 3]. We currently have models covering California, Nevada, Colorado, Minnesota, and Virginia. There are forthcoming models in another half dozen or so states. All these models are publicly available and accessible online.

I will give an overview of how the Energy Policy Simulator works [page 4]. We start by taking energy and service demand—things like passenger travel or demand for heating and cooling in buildings—from other models to serve as our baseline when we look out to 2050. We then take in information on current and future costs and prices for things like electric cars, solar panels, natural gas power plants, and so on. This is incorporated into the model in a "business as usual" projection out to 2050. We then start layering on policies. We have hundreds of policy options available in the model. When all those are layered on, we develop a policy scenario. We compare the policy scenario to the "business as usual" scenario to derive policy impacts like changes in emissions and cost.

The Energy Policy Simulator is an economy-wide model, so it covers the three main demand sectors—transportation, buildings, and industry and agriculture [page 5]. It has an electricity sector which builds and dispatches power plants to meet electricity demand. We also track use of district heat and hydrogen where that is used in decarbonization scenarios. We have what is called "carbon capture and sequestration," a technology that captures carbon dioxide emissions from power plants and industrial processes and stores the carbon. We have a whole set of properties on fuels where we track things like fuel trade and prices. A part of the model lets us look at research and development breakthroughs and how changes in costs or efficiencies of technologies would impact our scenarios. We track emissions from land use, land-use change, and forestry.

There are hundreds of different outputs in the model, but one of the most important is pollutants. We track four greenhouse gases, but we also track other pollutants associated with health impacts such as particulates, sulfur oxides, and nitrogen oxides. Using that information, we can estimate changes in health outcomes such as avoided premature mortality from air pollution and morbidity-related outcomes, which are things like avoided asthma attacks, hospital admissions, and so on.

The model also has a detailed accounting of cash-flow changes, how people pay more or less money in response to a policy. We can use that information to estimate impacts to jobs and GDP within the state of Nevada as a result of statewide policies.

The Nevada Energy Policy Simulator is publicly available to help Nevada flesh out its climate strategy [page 6]. It is worth mentioning that the tool was noted in the State Climate Strategy as one model that could be used to evaluate the state's priorities.

I will walk through the web tool to show you some of our preliminary findings [page 8]. The tool is available online now. This is the landing page [nevada.energypolicy.solutions]. I am going to click on "Enter Simulator" to start running the tool. [He proceeded to give a demonstration of how to use the tool.] The tool is running in real time on the server. We are looking at emissions of carbon dioxide equivalent (CO2e), which is all greenhouse gases. We are looking at the total, including land-use emissions in Nevada. We have a red line which is our new scenario. There is a black line for business as usual, but it is underneath the red line because we have not added any additional policies. The red line is meant to include legislated policies as of 2020, so things that are goals, ambitions, or targets are not included

in this scenario by default. There are over 200 different pieces of information we could look at in the online tool, but I am not going to go through them all. If you were interested in what the different sectors contribute to emissions in Nevada, one of the graphs shows emissions of CO2e by sector. The transportation sector is the largest individual sector. There are two other large contributors—electricity and industry—followed by buildings, and so on. There is also more information on the electricity sector, the transportation sector, and so on. The main way you work with the tool is to evaluate what different policies will do to emissions. You do that on the left-hand side of the web page. Policies are organized by sectors. For example, in the transportation sector you would find things like an electric vehicle sales standard or an electric vehicle subsidy. You can turn policies on or off or turn on multiple policies. They will all record, and the graph will update in real time to show the impacts of your policy scenarios.

I would like to highlight a few of our findings for Nevada. First is that without additional policies, we find that Nevada's greenhouse gas emissions will remain relatively constant or are likely to grow through 2050. To hit some of the state targets, additional action is needed.

I will show one example scenario we have included in the model, which is called "U.S. 1.5." This is a downscaled version of a national scenario for the United States that reflects policy ambition aligned with meeting the targets outlined by the Intergovernmental Panel on Climate Change for what is needed for a safe climate in the future. It includes about 20 different policies, all of which are combining to drive down emissions. This tool can tell us the contribution of different policies to emissions reduction. The top line of the chart is business as usual; the bottom line is our new emissions trajectory. The area in between is filled in with colored wedges, the colors corresponding to sectors of the economy. Red is transportation; aqua is buildings; golden yellow is electricity; blue is industry; green is land use; and orange is hydrogen supply. We see that no single policy across the entire economy can cut emissions to the deep emissions levels we are talking about. The other thing we can see is there are certain policies that do a lot of the work in this scenario. One of those is a clean electricity standard, which is the large yellow wedge. Another would be electrifying building heating, space heating, and water heating in the building electrification wedge. Electrifying vehicles is done through an electric vehicle sales standard and making sure that in industry we are electrifying end uses where possible or switching away from fossil fuels to cleaner options. Another graph shows something similar which is how cost-effective these different policies are. We are seeing that, on average, this policy package is cost-effective, with a handful of policies resulting in costs savings. These are things that improve the efficiency of newly sold technologies, for example, like vehicle fuel efficiency standards.

We also find significant economic benefits from this policy scenario. I will show the change in jobs. We find that transitioning to a low-carbon economy does not eliminate jobs; it actually is a large job creator. We see about 5,000 jobs being created per year because of this policy scenario. The reason is transitioning to a low-carbon economy requires building and deploying a lot of new technology. Those are things that create jobs. We similarly find growth in state GDP in this scenario. In particular, there is growth of about $800 million per year by 2050. We also have associated human health benefits. We find that implementing

this policy would avoid more than 500 premature deaths per year by 2050 as a result from avoided air pollution, as well as benefits to other health indicators such as avoided asthma attacks. We find more than 16,000 avoided asthma attacks per year by 2050. All this information is available in this online tool. It is free to use. All the data is available as well. With that, I will stop and see if there are any questions.

Chair Monroe-Moreno:
Members, do you have any questions for the presenter?

Assemblyman Watts:
This is an interesting tool. I look forward to spending some time using it. It is great to see that you analyze financial impacts as well as other impacts, like health. I have a question about the social cost of carbon pollution. You briefly touched on cost-effectiveness. Does that include the financial costs of avoided health impacts like deaths, hospitalizations, and things like that? Could you speak to that? Would you elaborate on the difference between actual cost savings from efficiency and cost savings from avoiding some of the consequences of the pollution itself?

Robbie Orvis:
Yes, we include that information. I did not show it, but we have what are called "monetized social benefits." Those are the monetized values of the avoided climate damages at the social cost of carbon and avoided premature mortality. For that, we use the Environmental Protection Agency's (EPA) "Value of a Statistical Life," which is how the EPA values avoided premature mortality in regulatory impact analyses. That information is included. What I presented was just the actual economic fuel and capital costs savings. If you add in the social benefits as well, the policy scenario becomes even more positive in terms of benefits and costs savings.

Assemblyman Watts:
Thank you for that. I know we are short on time, and there is a lot to this model. I saw an exhibit with your research note [Exhibit G]. Would you provide more background on that?

Robbie Orvis:
The research note includes the findings related to the 1.5°C scenario we just covered in more detail. It also discusses some of the key assumptions and sector-level findings in the tool as well.

Assemblyman Leavitt:
When you were going through your scaling and you talked about job creation and GDP increase, is that a net gain? Inherently, there will be some jobs lost if you transition to a different way of doing things. There would also be some GDP loss. I was curious if your model took that into consideration when you are talking about job creation. Is that a net gain? Would it be a net wash? Would it be a decrease when you take all those factors into consideration?

Robbie Orvis:
Yes, the jobs and GDP impacts are net. Within the tool itself, we have 25 different sectors where we track employment and GDP changes. The value you are seeing there—that 4,500—is net of all the job gains in certain parts of the economy as well as job losses in other parts of the economy.

Assemblyman Leavitt:
Is that the same with the GDP projections?

Robbie Orvis:
Yes, that is correct. It is both for the jobs and the GDP, all of which come out of what is called an "input-output model" that is in our tool. That model tracks net changes across the different sectors in determining both job and GDP changes.

Assemblywoman Summers-Armstrong:
You showed us a graph on new electric vehicles purchased. Would you go back to that and give us some foundational information like how many vehicles are you proposing are being replaced per year? What is your basis? How are you coming up with this?

Robbie Orvis:
That graph showed sales of different types of vehicles. In the policy scenario that I showed, we are not looking at preemptively removing people's cars; we are just looking at how people's purchases of new cars change when they are ready to purchase new cars. The policy that we have modeled is a sales standard model. When people go to a dealership to buy a new car, that policy would change the types of cars available and their cost in order to meet statewide standards, similar to other ZEV [zero-emission vehicle] standards in some states around the country.

Assemblywoman Summers-Armstrong:
I would like to clarify that you are doing a one-for-one. If we sell, on average, so many trucks per year in a particular price range, you are doing a one-for-one of what is available and how many trucks could be purchased in that price range with available technology and stock that is available in a comparable model electric vehicle. Is that correct?

Robbie Orvis:
That is correct. That policy phases in, so it is not that tomorrow 100 percent of vehicles sold would have to be electric. We phase it in to allow time for more options for those vehicles to become available. In this policy scenario, by 2035, 100 percent of new light-duty vehicles sold will be electric, but it is phased in between now and 2035.

Chair Monroe-Moreno:
Members, are there any other questions? [There were none.] I have a few questions. This seems like it will be a fun tool to play with, especially for someone who is not a scientist or a guru in this area. It seems like an easy tool to navigate. As new policies come out and new technologies come on board, what is your plan to update the information?

Robbie Orvis:
That is a question we are asked a lot. This tool is a work in progress. As anyone who has worked on software knows, you are never actually done. You are continually improving and redeveloping. We continue to add new policies as they come up, and we continue to add new technologies as they come up. When we started developing this tool in 2012, even then the technology options available were very different. Since then we have continuously added new technologies and policies. We have a process for soliciting ideas and requests to the tool. We revisit that semiannually and roll out new features, including both technologies and policies based on what is needed and what is available.

Chair Monroe-Moreno:
Have you taken into account the expected cost reductions for things such as battery storage? This tool is free now. Will it remain free?

Robbie Orvis:
The tool is free and open source. It will remain so. One of the main things we do at Energy Innovation is to produce these tools and make them free and available to the community. That will always be the case.

Regarding your question about costs, the model includes cost declines for things like batteries, solar panels, onshore and offshore wind. Offshore is obviously less important in Nevada. The model includes cost declines for all of those new technologies. Those are based on a mix of the global deployment and projected deployment of those things as well as how policies affect deployment of those technologies in Nevada. If policies would accelerate deployment of certain technologies, that can drive the cost down further in later years.

Chair Monroe-Moreno:
Thank you.

Assemblyman Ellison:
I appreciate some of the questions that came up. One was about tracking vehicles. I do not know how many years it will take for bigger trucks to come on board. You might have battery-powered trucks, but the batteries would have to hold a charge from here to Salt Lake City. Do you have any idea how long it would take before that type of system could be in operation?

Robbie Orvis:
We follow the lead of the California Advanced Clean Trucks rule. The California Air Resources Board has done quite a bit of research looking at different technology options for heavy-duty trucking. The state's goal is that 100 percent of sales of heavy- and medium-duty trucks will be zero-emissions vehicles by 2045. In our modeling, we have assumed that timeline for those vehicles.

Assemblyman Ellison:
Apparently, you have a lot of knowledge in this. Do they have any idea of what distance a zero-emissions truck could travel by that time? There are a lot of large pickups, 250s and 350s, diesels or regular trucks that carry loads like tractors or pull trailers. Will the technology for semis come up to speed for them to travel long distances? Will that happen by 2045?

Robbie Orvis:
I am not an expert on heavy-duty electrification as are some of the folks at the Air Resources Board. I would defer to what other experts in the field think is possible. Given the research I have seen from groups like the Air Resources Board, I feel those technologies are likely to become available. My colleague, Dr. Subin, may have some thoughts on that.

Zack Subin, Senior Associate, RMI:
I would echo my colleague's comments. I would also note there are some other options besides purely electric for some of the bigger trucks. For instance, there is research into having hydrogen fuel cell trucks as a different option.

Assemblyman Ellison:
That is a good idea. Thank you.

Assemblywoman Peters:
Thank you for this tool. It is fascinating and amazing. Is there access to your assumptions available on the tool? Is there a list of the assumptions you made for your different policy models?

Robbie Orvis:
That information is included. There is a file regarding Energy Policy Simulator assumptions. It includes all the major assumptions in our scenarios as well as identification of the key data sources we used. We used hundreds of data sources, but there are a few in particular that are especially important and critical. Those are outlined in that document.

Assemblywoman Peters:
Could you send that out to us so we would have quick access to it?

Robbie Orvis:
I would be happy to do that.

Chair Monroe-Moreno:
I do not see any members with questions. Thank you for your presentation. Did you have anything you wanted to say to wrap this up, Ms. McKinney-James?

Rose McKinney-James:
I am grateful for the opportunity. I appreciated all of your questions. We have a basis for ongoing conversations. Thank you, again. I look forward to seeing you sometime soon.

Chair Monroe-Moreno:
Thank you all for joining us and sharing what will be a fun tool for many of us.

That brings us to the last item on our agenda—public comment. May we have our first caller for public comment? [There was no one.] Members, I will see you here next Thursday [March 18, 2021]. This meeting is adjourned [at 2:33 p.m.].

RESPECTFULLY SUBMITTED:

_____
Joan Waldock
Committee Secretary

APPROVED BY:

_____
Assemblywoman Daniele Monroe-Moreno, Chair

DATE: _____

EXHIBITS

Exhibit A is the Agenda.

Exhibit B is the Attendance Roster.

Exhibit C is a proposed conceptual amendment to Assembly Bill 179, dated March 11, 2021, presented and submitted by Assemblyman Gregory T. Hafen II, Assembly District No. 36.

Exhibit D is a letter submitted by Thomas R.E. Waters, Private Citizen, Pahrump, Nevada, in support of Assembly Bill 179.

Exhibit E is a letter submitted by Steve Cottrell, Private Citizen, Boulder City, Nevada, in support of Assembly Bill 179.

Exhibit F is a copy of a PowerPoint presentation titled "Modeling Deep Decarbonization in the Nevada Energy Policy Simulator," dated March 11, 2021, presented and submitted by Robbie Orvis, Director, Energy Policy Design, Energy Innovation.

Exhibit G is a document titled "New Nevada Modeling Shows Achieving State Climate Goals and 1.5°C Alignment Could Add $700 Million to State Economy by 2030," submitted by Robbie Orvis, Director, Energy Policy Design, Energy Innovation.