

Special Meeting: Hydrogen Production, Transportation, and Infrastructure Task Force

Oklahoma Association of Electric Cooperatives, Oklahoma City, OK

Monday, October 18, 2021

9:30 a.m.

Notice was posted online with the Secretary of State on October 7, 2021. Public notice was also posted at the Secretary of Energy and Environment Office and at the Oklahoma Association of Electric Cooperatives on Thursday, October 13, 2021 at 9:30 a.m.

PRESENT

Secretary Kenneth Wagner – Chairman

Senator Kim David – Co-Chair

Representative Mark McBride – Co-Chair

Representative Brad Boles – House Energy Chairman

Dr. Tomas de la Ruiz – University of Oklahoma

Secretary Tim Gatz – Department of Transportation

Director Julie Cunningham—Oklahoma Water Resources Board

Amy Walton – Oklahoma Center for Advancement of Science & Technology

Brandy Wreath – Oklahoma Corporation Commission

Brent Kisling – Department of Commerce

Secretary Wagner called the meeting to order at 9:37 a.m., confirmed proper posting of the meeting notice, ensured the presence of a quorum. Secretary Wagner moves to approve meeting minutes from October 18, 2021. Representative McBride motioned to approve the meeting minutes and Senator David seconded the motion.

1. Amsterdam/Germany Delegation Trip Update

Secretary Wagner announces the members of the delegation who attended the recent trip to Amsterdam and Germany, as well as the collaborative meetings attended during the trip. Foreign counterparts included OGE (not the Oklahoma utility) and RWE. Secretary Wagner adds that Germany has elected to cease all nuclear power generation by 2022 due to the nuclear incident in Fukushima, which constitutes 30% of their current power generation. Secretary Wagner mentions their dedication to eliminating carbon by 2040 in Germany. Secretary Wagner mentions his biggest takeaway is that they move 100% of hydrogen via pipeline, which remains an impediment to hydrogen implementation in the United States. Secretary Wagner adds that Oklahoman hydrocarbon pipelines are key to hydrogen implementation in our state. Secretary Wagner acknowledges there was great desire to collaborate on the trip despite having many differences.

Secretary Wagner introduces Senator David. Senator David reiterates the differences between Germany and the USA—primarily Germany's reluctance to depend on natural gas to achieve their environmental goals. Senator David mentions that Oklahoma's

natural gas is a benefit to Oklahoma towards reaching our hydrogen goals over the long term. Senator David mentions Germany is focusing on hydrogen as fuel for buses and trucks, but still using 100% electric for their cars, which is not practical for larger vehicles due to distance restrictions. Senator David mentions the importance of seizing the moment to capitalize on our hydrogen efforts due to the federal government's focus on implementing hydrogen as a fuel source.

Representative McBride mentions Germany has zero oil and gas production, which makes them reliable on other nations and that their energy costs are four times higher than in Oklahoma. Representative McBride states hydrogen is a great resource for Germany due to their over-reliance on renewable energy.

Dr. Diaz de la Rubia mentions that every country in the European Union (EU) has a hydrogen strategy and partners with the EU to implement those strategies. Dr. Diaz de la Rubia mentions that Germany must import their hydrogen via pipeline from other nations like Spain, Greece, and Norway due to their difficulty in producing large quantities domestically. Dr. Diaz de la Rubia states 100% of the pipelines in Germany are being retrofitted to transport hydrogen instead of hydrocarbons. Dr. Diaz de la Rubia acknowledges that Germany will be closing its coal-burning power plants over the next several years. Dr. Diaz de la Rubia discusses vehicular manufacturers switching to hydrogen-based assembly methods like "green steel," which drives higher prices for consumers.

Brent Kisting mentions that Germany is no longer producing fertilizer and echoes the sentiments of the other attendees of the delegation trip.

Secretary Wagner mentions Louisiana's Director of Energy Jason Lanclos joined the delegation on the trip and Oklahoma's complementary opportunities and problems with Louisiana. Secretary Wagner further adds there is a possibility of a multistate effort to attract a hydrogen hub to Oklahoma. Secretary Wagner mentions Louisiana's decarbonization efforts.

Secretary Wagner introduces Matt Newman. Matt Newman discusses collaborative efforts between government, industry, and other parties to produce winning results for our state. Matt Newman discusses PSI rates in hydrogen refueling stations which is a high rate of PSI. Matt Newman mentions the keynote speaker at his last subcommittee meeting from Plug Power.

Secretary Wagner initiates updates from the previous subcommittee meetings.

2. Subcommittee Updates

a. Production

The production subcommittee is represented by Representative Brad Boles; and Director Julie Cunningham, Oklahoma Water Resources Board. In summary, the production subcommittee meeting discussed the following:

Director Julie Cunningham mentions the of Water for 2060 Act, reiterates Senator David's comments about getting started now to prepare for the future. Director Julie Cunningham indicates the subcommittee created a five-page white paper on existing water resources and comprehensive water plan, which summarizes supply and demand every ten years for the next fifty years. Director Julie Cunningham addresses water availability, distribution, quality, distribution, and legality for candidate water basins for hydrogen generation. Director Julie Cunningham discusses capacity for current water providers. Director Julie Cunningham mentions water quality and treatment, timing components, nature of streamflow, reliability, storage capacity and a JS system that can be layered with water supply reliability and distribution for large and small facilities. Director Julie Cunningham indicates there is interest in recycled water and brackish waters for hydrogen production. Dr. Diaz de la Rubia mentions wind farms capabilities in the hydrogen generation process. Secretary Wagner mentions cooling tower water as a potential source of water for production of hydrogen. Dr. Diaz de la Rubia research on hydrolysis from natural gas and the lack of industrial scale processes. Secretary Wagner reiterates multistate collaborations between state universities. Matt Newman mentions wastewater treatment plant water being used in electrolyzers.

b. Distribution and Infrastructure

The distribution and infrastructure subcommittee is represented by Tim Gatz, Secretary of Transportation; and Brandy Wreath, OCC. Secretary Gatz and Brandy Wreath identified opportunities from the subcommittee meeting, which included:

Secretary Gatz discussed opportunities with fueling stations and reviewing federal requirements for alternative fueling stations. Secretary Gatz addresses hydrogen fueling stations requirements to receive Federal Highway Administration (FHA) designation for hydrogen ready corridors. Secretary Gatz mentions alternative fuel facilities with CNG and EV, as well as air quality standards, are important for the FHA designation. Secretary Gatz says development of the team and collaboration with multistate coalition which would factor in heavily in federal designation. Secretary Gatz mentions public-private partnerships with preexisting fueling stations. Secretary Gatz says long haul trucking factors into designation, as seen with CNG and increased weights in truck weight due to larger fuel tanks, will come into play with the federal designation. Secretary Gatz states GIS is important for realizing constraints and possibilities.

Brandy Wreath mentions blending and the renewal of request for safety concerns for blending into pipelines. Brandy Wreath mentions collaboration with ODOT and upstream and downstream partners and proprietary information for group projects.

Brandy Wreath addresses electric generation through GIS for generation regarding electric generation sites.

Secretary Wagner addresses carbon capture and primacy issues for Class 2 drinking water and Class 6 for sequestering carbon in underground storage facilities and the permit process through the EPA. Secretary Wagner indicates primacy applications were approved for Wyoming and South Dakota under the Trump Administration. Secretary Wagner indicates this is a slow process that took seven years for Wyoming. Secretary Wagner states in the history of the EPA, primacy has been issued four times, and only two have been injected in the State of Illinois. Secretary Wagner indicates this is a political process, rather than a technical process due to certain parties thinking hydrogen is a continuation of the hydrocarbon industry. Primacy is not a consideration unless the EPA has fully adjudicated and studied the matter on its own. Secretary Wagner says entering into a workshare agreement to dedicate resources more expediently can result in positive outcomes with EPA. Secretary Wagner indicates EPA staff does not have necessary resources for quick approval of adjudication. Secretary Wagner does not believe primacy is the most effective path forward. Secretary Wagner introduces the Economic Opportunities, Taxation, and Incentive Subcommittee.

Matt Newman addresses the lack of carbon tax in the United States and nonattainment status in Oklahoma City. Matt Newman introduces Amy Walton, Director of Strategic Initiatives, OCAST.

c. Economic Opportunities, Taxation, and Incentives

The economic opportunities, taxation, and incentives subcommittee is represented by Brent Kisling, ODOC; and Amy Walton, OCAST. The subcommittee discussions included:

Amy Walton addresses the classification of production manufacturing and using that as a manufacturing facility and classifying it as such, which keeps it in line with refineries which are also classified in the manufacturing sector. Amy Walton says we need to take into consideration whether hydrogen production will be included at the point of refueling or a stand-alone production facility under the manufacturing classification. Amy Walton mentions qualifying hydrogen production facilities for all existing Oklahoma incentives, e.g., quality jobs, manufacturing exemptions, and new product development. Amy Walton states by putting hydrogen companies under the manufacturing classification allows the companies to receive incentives Oklahoma already permits.

Amy Walton states on the fueling taxation side that road tax could be charged at the point of refueling. Amy Walton further states market uses were discussed through the lens of transportation, e.g., aerospace and defense, as well as high heat

manufacturing like steel, glass, boilers, railroads, barges, and buses. Amy Walton mentions fertilizer manufacturing, energy storage, and microchip manufacturing were also discussed. Byproducts like carbon have an opportunity for revenue generation, e.g., selling carbon for the food industry and selling space for carbon storage in abandoned wells in the SCOOP and STACK areas.

Matt Newman reintroduces Amy Walton to present on the most recent Off-takers and Market Uses Subcommittee. Amy Walton indicates she combined her comments for the Economic Opportunities, Taxation, and Incentives subcommittee and Off-taker and Market Uses Subcommittee.

d. Off-takers and Market Uses

The off-takers and market use subcommittee is represented by Matt Newman and Amy Walton, OCAST.

Amy Walton mentions her comments for the Off-takers and Market Uses subcommittee were presented with her previous comments during the Economic Opportunities, Taxation, and Incentives Subcommittee portion of the meeting.

Matt Newman states his market use comments were discussed during the Amsterdam/Germany Delegation Trip Update portion of the meeting.

The next subcommittee meeting has been scheduled on November 9, which is also the draft report day. Public comment will be included in the final report. The next task force meeting will be tentatively scheduled on Tuesday, November 16, due to the Legislature convening for Special Session on Monday, November 15.

3. Public Comment

Matt Newman asks for all speakers to keep remarks limited to 2-minutes and opens the floor for comments, ideas, and thoughts to the audience.

Eric Pollard, Association of Central Oklahoma Governments—one of two or three states doing regional planning on air quality. Two years ago we were in a rough spot on potentially violating ozone standards, but have corrected after two seasons. Draft of this study on cost of going out of attainment is going to be available to the board at the end of the month. The study identifies nine to fifteen million dollars as the cost associated with a nonattainment designation. Full disclosure, it is a speculative study. Lots of partners in the room OG&E, ONG, ODOT, and Commerce, so there is more to come. Good way to drive it home, there are lots of voluntary actions already taking place around the state. Trying to focus on clean transportation to keep us in attainment status, hydrogen will be part of that moving forward.

Matt Newman states this was an Oklahoma study and the costs associated with it, and that Tulsa is doing a similar nonattainment study.

Secretary Wagner indicates most people do not understand the costs associated with nonattainment status and a possible future session could be had to address this outside the confines of the Hydrogen Taskforce. Secretary Wagner believes we have been fortunate to not have a nonattainment status in Oklahoma. Matt Newman shares Secretary Wagner's sentiment.

Phil Sutter is curious about how we are going to pay for this? Oklahoma Building Authority or tax credits to do a project? The IRS, 45Q, \$3,000 per...?

Secretary Wagner: They are getting ready to change that to \$85/ton in the infrastructure bill. The question, as I understand, is you're asking how we pay for it. The state, as Amy talked about, certainly is not the federal government and cannot pass an infrastructure bill like the federal government. Our incentives tend to pay for themselves over time and are revenue positive. Fueling infrastructure is a good example of that. The federal incentives are going to come on a production tax credit and investment tax credit in hydrogen in addition to 45Q which is carbon capture. It has existed for seven years now, but the IRS just provided guidance late last year, so nobody knew how it would work. The incentive from a dollar standpoint is updated. You're seeing both an extension of the timing, due to prior to any extension all debt investment had to be deployed and there had to be actual construction by 2023 completed, which under EPA permitting guidelines was unrealistic. I think you'll see a host of incentives for hydrogen that are different from the 45Q tax credit. The state, we are here, Secretary Mueller says it best—we are not here to create jobs, we are here to create the environment and regulatory framework, tax framework, incentive framework so private partners can come into our state and create jobs. Not to mention the highway infrastructure to attract them here.

Matt Newman—to add to Secretary Wagner's comments, there are about eighty bills proposed in DC addressing hydrogen that add to that 45Q tax...We already have a state that is friendly to manufacturing, as Secretary Mueller mentioned.

Secretary readdresses the possibility of a morning session on November 16, but might be later in time due to the upcoming Special Legislative Session and the Thanksgiving Holiday.

Meeting was adjourned at 10:44 a.m.