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Public Utilities Commission of Nevada
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November 10, 2020

Ms. Trisha Osborne
Assistant Commission Secretary
Public Utilities Commission of Nevada
1150 East William Street
Carson City, Nevada 89701-3109

RE: Docket No. 18-09008

Dear Ms. Osborne:

These Comments are being filed by Nevada Power Company d/b/a NV Energy ("Nevada Power") and Sierra Pacific Power Company d/b/a NV Energy ("Sierra Pacific" and, collectively with Nevada Power, "NV Energy" or the "Companies"), the Energy Web Foundation (EWF), and Blockchains LLC (Blockchains) (collectively referred to as the "Submitters") in response to Procedural Order No. 3 issued by the Public Utilities Commission of Nevada ("PUCN") on October 29, 2020 in the above-referenced docket. Herein, we provide an update regarding the Proof of Concept ("POC") pilot project proposed in the letter filed with the PUCN by the Submitters most recently on July 15, 2020.

In response to the PUCN's request for a description and status update of the project, the proposed POC pilot plan is to utilize a blockchain-enabled smart meter to automatically and securely record generated PEC data to an Energy Web Chain (a public, open-source, enterprise-grade blockchain ("EW Chain")). The goal is to prove the feasibility and benefits of a blockchain-based system to automatically register and certify portfolio energy credits ("PECs"). Through the use of smart contracts or a computer program or transaction protocol to automatically execute, control and document actions and events, and integrated software, the POC pilot will also test blockchain enabled smart meters as a means to track the generation of PECs, to prove the origin and amount generated, and to facilitate the sale, transfer and retirement of digital PECs.

Description

The POC pilot solution aims to show how the blockchain and digital identity enabled solution supports the entire lifecycle of PECs: the **registration** and approval of assets and their owners; the **certification** and **tracking** of PECs; the **sale** and **transfer** of PECs; and the **retirement** of PECs. The overall concept is to automate significant portions of the process and create a full audit trail of the entire lifecycle of a PEC on an immutable, tamper-free distributed ledger. As part of the POC, a blockchain-enabled smart meter will be added to a small sample of existing rooftop solar generation systems, to relay the daily generated kilowatt hours (kWh) directly to the blockchain, in this instance the EW Chain. The generation system will be registered by the user through an application, on a smart phone or other device, and a second party verifier on the EW Chain with a unique digital identity. Once registered, the PECs from the generation asset will be certified for use on the EW Chain through either the blockchain-enabled smart meter, or for those assets that would not be constructed with a blockchain-enabled smart meter, through user input verified on the EW Chain based on engineering estimates. The method of certification would be tagged on the EW Chain for easy verification on metered versus engineered estimates of available PECs. As part of the POC, the number of PECs available during the demonstration and with what customer will be available to the utility for purchase as needed. Once sold to the utility, the transfer of ownership of the PECs would be recorded on the EW Chain. From there the utility would then retire the PECs, which would also be tracked on the EW Chain. Once operational, the POC should be able to demonstration these functions within minimal time frame.

Status
Currently, Blockchains is working closely with smart meter manufacturer Sensus, a Xylem brand to integrate its Incubed ("IN3") client computer program on a smart meter. Blockchains has provided a new version of IN3, tailored to fit the metering infrastructure, which is in use in Nevada. Necessary parts of the solution were changed to suit the used technology (ported to C+) and components were rearranged to fit into the smart meter and "gateway." EWF has provided a custom design of Energy Web Origin for the pilot where users will be able to register their systems using a desktop or mobile device.

Blockchains has also developed a preliminary financial model around the economics related to the pilot as part of the POC which includes an evaluation of the costs and benefits of the pilot blockchain solution compared to the existing NVTREC and WREGIS systems. We anticipate blockchain technology offers promising benefits in terms of process and cost efficiency for all participants in Nevada's energy value chain. The model includes inputs for existing metrics, related market data, and current operational expenses to deliver accurate results. The Submitters are currently working to populate the necessary model input data which will be needed to show the cost benefit.

Solution
The pilot demonstrates how a blockchain and digital identity enabled solution works for residences or small and medium size businesses. One part of the solution is a blockchain-enabled smart meter. For a smart meter to be blockchain-enabled (in this case, for use on the EW Chain), the Incubed client software is installed on the metering device and on further metering infrastructure that connects it to the blockchain to transmit data. This will be integrated with an EW Origin-based solution, an open-source blockchain-based software development toolkit for PEC issuing, tracking and trading. At selected Nevada residences the blockchain-enabled smart meters will be installed and the renewable energy generating assets (solar rooftop) and their owners will register on the EW Chain registry. The PUCN can easily approve or reject these assets via a user-friendly user interface web application. As approved assets generate energy, smart meter readings will be reported daily to the solution and proof of the measurements will be written to the EW Chain. The generated kilowatt-hours can be viewed within the web application. Proof of renewable generation can (automatically) be transferred into PECs.

For those existing systems that are not retrofitted with blockchain-enabled smart meters, the blockchain based solution will still provide automation to a currently time-consuming process. The legacy rooftop solar system will still need to be manually registered to receive a digital identity and anchored on the EW Chain. However, as energy is generated on these systems, system owners will be able to record their run time on the same web application used by systems with blockchain enabled smart meters.

Goals, Objectives, Costs
Goals: The project will test a digitized PEC tracking and trading solution that covers the full lifecycle, including system registration, data collection directly from smart meters, PEC certification, and direct PEC trading. The public blockchain distributed ledger technology solution will create an automated and trust-less process to simplify customer registration of their renewable energy systems, certify renewable energy output as PECs, track the balance and activity of their account, transfer their PECs to other system users and retire PECs to meet Nevada's Renewable Portfolio Standard ("RPS").

Objective: PEC tracking and trading solution using public blockchain technology–the EW Chain–in order to provide a simplified and cost-effective alternative for the general public, providers of electric service and regulators.

Anticipated costs: The costs of the POC are minimal and generally consist of employee labor hours by each of the Sponsors. NV Energy and EWF have committed employees to work on the project and coordinate activities. The EW Chain is a public enterprise-grade blockchain platform open to all utilities, users and devices. Blockchains has agreed to cover costs for smart meters to be used with their IN3 software client and any other cash costs associated with the project.

Timeline for Delivery of Next Steps

Blockchains is currently working with the smart meter manufacturer, Sensus, to fully integrate the IN3 client to create a blockchain-enabled smart meter for collecting PEC data. Completion of this work is planned for February 2021. As a next step, NV Energy's metering department will coordinate with Blockchains and the smart meter manufacturer to determine the best integration strategy. The team anticipates being able to deploy the minimal solution software to the EW Chain for the IN3 Client to test and validate communication between the software and blockchain in February 2021. Next steps will include validation of cybersecurity requirements and testing and validating PEC tracking to ensure accurate measurement in March of 2021. EWF will also customize the user interface built on its Energy Web Origin platform. They will modify the Energy Web Origin Issuer module for the PUCN to manage PEC certification and issuance to then enable the Energy Web Origin Exchange module to trade PECs manually and automatically. As part of the POC, the team will evaluate the costs and benefits of the pilot blockchain-based solution compared to the existing NVTREC and WREGIS systems.

The Submitters look forward to the opportunity to provide the Commission and Stakeholders with an update on the POC to develop solutions for tracking and certifying Nevada portfolio energy credits in the November 13, 2020 workshop.

Submitted this 10th day of November, 2020.

NEVADA POWER COMPANY D/B/A NV ENERGY SIERRA PACITIFIC POWER COMPANY D/B/A NV ENERGY

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CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing filing of **NEVADA POWER COMPANY D/B/A NV ENERGY AND SIERRA PACIFIC POWER COMPANY D/B/A/ NV ENERGY** in Docket No. 18-09008 upon the persons listed below by electronic mail:

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DATED this 10th day of November, 2020.

/s/Lori Petersen
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