

**GOVERNMENT OF PUERTO RICO
PUBLIC SERVICE REGULATORY BOARD
PUERTO RICO ENERGY BUREAU**

IN RE: VIABILITY STUDY FOR THE
POTENTIAL USE OF HYDROGEN AS AN
ALTERNATIVE SOURCE OF ENERGY IN
PUERTO RICO

CASE NO.: NEPR-MI-2022-0006

SUBJECT: Resolution to initiate
Administrative Procedures and to schedule
Technical Workshops

RESOLUTION AND ORDER

I. Introduction

Puerto Rico's Electrical System has a huge dependency on fossil fuels. Over seventy per cent (70%)¹ of the electric power generated in Puerto Rico derives from oil. There are many public and private efforts to decrease our dependency on fossil fuels by adding solar and wind power projects, as well as other initiatives, to the Puerto Rico generation fleet. "Every year the cost of oil increases, and it is estimated that it will continue to rise. On the other hand, the excessive use of energy sources derived from oil contributes to the volatility of energy costs in our jurisdiction and to the phenomenon of climate change that so worries Puerto Ricans."² "The Government of Puerto Rico therefore has the obligation to create the necessary conditions so that future generations can progress and develop in a healthy environment, while creating the necessary tools to stabilize energy prices and new sources of economic development."³

Hydrogen is a clean fuel that, when consumed in a fuel cell, produces only water. Hydrogen can be produced from a variety of domestic resources, such as natural gas, nuclear power, biomass, and renewable power like solar and wind. These qualities make it an attractive fuel option for transportation and electricity generation applications. It can be used in cars, in houses, for portable power, and on many more applications⁴. Hydrogen used as a fuel, could have many applications, including hydrogen fuel cell trucks, fuel blending for heat and power generation, green hydrogen for mobility solutions (heavy duty equipment, passenger cars, heavy trucks, and buses), aviation fuel, energy storage and others. Hydrogen has emerged as a potentially valuable and integral solution in a decarbonized energy future. Hydrogen is an energy carrier that can be used to store, move, and deliver energy produced from other sources. In brief, hydrogen fuel and hydrogen applications could also help to decrease Puerto Rico's dependency of fossil fuels and to increase the resilience and stability of the Electrical System.⁵

The Bipartisan Infrastructure Law ("BIL"), enacted as the *Infrastructure Investment and Jobs Act of 2021* (Public Law 117-58), continues the authorization of the national surface transportation legislation, and appropriates \$550 billion for new infrastructure investments. The BIL supports a variety of alternative fuel vehicle ("AFV") and advance vehicle technology through grant programs, **studies, technology standards, loans, research and development**, fleet funding, and other measures. BIL includes provisions to increase investment in electric vehicle supply equipment ("EVSE"), **alternative fuel infrastructure**,

¹ At year 2010 it was "approximately seventy percent (70%)". See the Statement of Reasons, Act No. 82-2010 as amended, known as the *Public Policy Energy Diversification through Sustainable and Alternative Renewable Energy in Puerto Rico Act*, ("Act 82-2010"). Compared to Power Generation Data from PREPA Web page on December 1st 2022: 35% Bunker, 0% Diesel GT, 15% Diesel CC, 31% LNG, 13% Coal, 6% Renewables. That is equal to 94% fossil fuels. Available at <https://aeepr.com/es-pr/Paginas/NewGen/FuelDetail.aspx>. Last visited December 14, 2022.

² Statement of Reasons of the Public Policy on Energy Diversification by Means of Sustainable and Alternative Renewable Energy in Puerto Rico Act ("Act 82-2010").

³ *Id.*

⁴ Department of Energy, Office of Energy Efficiency & Renewable Energy, *Hydrogen Fuel Basics*, <https://www.energy.gov/eere/fuelcells/hydrogen-fuel-basics> (last visited, December 13, 2022)

⁵ *Id.*



electric vehicle (EV) batteries, **electricity grid upgrades**, and light-, medium-, and heavy-duty zero emission vehicles("ZEV").⁶

The Governor of Puerto Rico, Pedro R. Pierluisi, through Executive Order OE-2022-0022⁷ mandates any agency of the Government of Puerto Rico that works directly or indirectly in the generation, transmission, or distribution of electrical energy, in the reconstruction and revitalization of the electrical system, as well as in the regulation and supervision of the Energy Public Policy, to consider hydrogen combustion as a source of renewable energy⁸ when evaluating any project for the consideration of the entities.⁹

The Energy Bureau of the Puerto Rico Public Service Regulatory Board ("Energy Bureau") is the regulatory entity responsible for overseeing and ensuring the full execution and implementation of the Puerto Rico Energy Public Policy.¹⁰ In accordance with Act 57-2014, the Energy Bureau is responsible, among other duties, for establishing and implementing the regulatory actions to guarantee the capacity, reliability, safety, efficiency and reasonability of electricity rates of Puerto Rico.¹¹ The Puerto Rico Energy Public Policy establishes that every consumer may have a reliable, stable and excellent electricity service.¹² The Energy Bureau has the duty and responsibility to take all necessary regulatory actions to guarantee reasonable electric services rates¹³.

The Energy Bureau has the power and duty to conduct periodical studies and investigations on energy generation, transmission, distribution, use, and consumption, by using oil and/or its byproducts such as fuel, natural gas, renewable energy sources, waste conversion, and any other mechanism or technology that may be used as energy resource to determine the energy needs of Puerto Rico during any period.¹⁴

II. Viability Study for the potential use of hydrogen as an alternative source of energy in Puerto Rico

The Energy Bureau **INFORMS** that it has acquired the professional services of Velerity, LLC. ("Velerity") to conduct the study. As such, the Energy Bureau **DESIGNATES** Velerity as the company in charge of conducting this study to: (i) identify the potential role for hydrogen as a source of renewable energy in Puerto Rico, (ii) identify the potential challenges in the implementation of hydrogen as a power source, and (iii) establish a hydrogen roadmap that includes public policy and partnerships to advance the implementation initiatives ("Study").

The Study will include:

- Task 1 - Establish Project Timeline, Goals, Objectives, and Outcomes
- Task 2 - Situation Assessment and Foundational Project Information
- Task 3 - Identify and Characterize Potential Roles for Hydrogen
- Task 4 - Select and Perform Detailed Analysis of Selected Hydrogen Applications

⁶ US. Department of Energy-Energy Efficiency and Renewable Energy, Alternative Fuels Data Center, *Bipartisan Infrastructure Law (Infrastructure Investment and Jobs Act of 2021)*. Available at: <https://afdc.energy.gov/laws/infrastructure-investment-jobs-act> (last visited, December 13, 2021).

⁷ Orden Ejecutiva Núm. 2022-0022, *Orden Ejecutiva del Gobernador de Puerto Rico, Hon. Pedro R. Pierluisi a los fines de reconocer la combustión de hidrógeno como fuente de energía renovable en Puerto Rico*, March 24, 2022, p. 3. <https://basecero.ogp.pr.gov/apex/f?p=161:15> (last visit, December 13, 2022)

⁸ Hydrogen (or hydrogen combustion) is not a "source of renewable energy", but an energy carrier. When produced using renewable energy, hydrogen can be used to reduce emissions in power production, transportation, and industrial applications.

⁹ *Id.*, p. 5.

¹⁰ See the *Puerto Rico Energy Transformation and RELIEF Act*, Act No. 57-2014, as amended ("Act 57-2014").

¹¹ Article 6.3(c) of Act 57-2014.

¹² Article 1.2(l) of Act No. 17-2019, known as the *Puerto Rico Energy Public Policy Act*, ("Act 17-2019").

¹³ Article 6.3 (c) of Act 57-2014

¹⁴ Article 6.3 (z) of Act 57-2014.



Task 5 - Prepare Implementation Plan and Resources
Task 6 - Prepare and Present Detailed Final Report

Virtual Technical Workshops will be held the following dates:

Event	Date	Time (AST)	Topics/Tasks
Virtual Technical Workshop No. 1	January 10, 2023	10:00am – 2:00 p.m.	<ul style="list-style-type: none">• Introduce hydrogen strategy initiative.• Provide background on hydrogen relative to initiatives around the world and hydrogen basics.• Present Puerto Rico assets relative to producing and using hydrogen on the island.• Have participating organizations provide their priorities, feedback and perspectives.
Virtual Technical Workshop No. 2	February 7, 2023	10:00am – 2:00 p.m.	<ul style="list-style-type: none">• Present findings in terms of the potential roles for hydrogen.• Present results of analysis of potential roles of hydrogen on the island, considering prioritization relative to screening criteria and economics.• Encourage input on the part of the stakeholders.
Virtual Technical Workshop No. 3	March 7, 2023	10:00am – 2:00 p.m.	<ul style="list-style-type: none">• Present hydrogen strategy recommendations and implementation plan.• Encourage review and input on the part of the stakeholders.

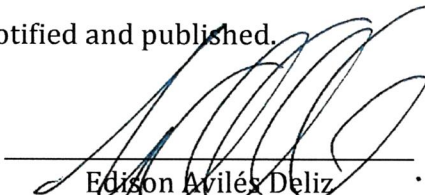
The Technical Workshops will be held remotely via Microsoft Teams platform and livestreamed via the Energy Bureau’s YouTube Channel. All **people interested in participating in the Technical Workshops, must request access on or before 2:00pm of the day before each scheduled Technical Workshop**, by (i) emailing to secretaria@jrsp.pr.gov; or (ii) contacting the Energy Bureau’s Clerk at (787)523-6262.

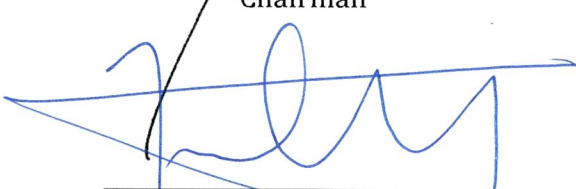
III. Conclusion

As part of its ministerial duties and Act 17-2019, through this Resolution and Order, the Energy Bureau **INITIATES** the instant proceeding to identify the potential role for hydrogen as a source of renewable energy in Puerto Rico, identify the challenges in the implementation of hydrogen as power source, establish a hydrogen roadmap that include public policy and partnerships to advance the implementation initiatives.

The Energy Bureau **ORDERS** PREPA and LUMA to attend each Virtual Technical Workshop and participate of this proceeding and cooperate with Velerity in any request required to complete the Study.

Be it notified and published.


Edison Avilés Deliz
Chairman


Ferdinand A. Ramos-Soegaard
Associate Commissioner


Lillian Mateo Santos
Associate Commissioner


Sylvia B. Ugarte Araujo
Associate Commissioner



CERTIFICATION

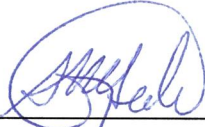
I hereby certify that the majority of the members of the Puerto Rico Energy Bureau has so agreed on December 21, 2022. I also certify that on December 21, 2022, a copy of this Resolution and Order was notified by electronic mail to josue.colon@prepa.com; jmarrero@diazvaz.law; kbolanos@diazvaz.law; yahaira.delarosa@us.dlapiper.com; ivan.garau@us.dlapiper.com; Elias.sostre@aes.com; jesus.bolinaga@aes.com; cfl@mcvpr.com; ivc@mcvpr.com; notices@sonnedix.com; leslie@sonnedix.com; victorluisgonzalez@yahoo.com; tax@sunnova.com; jcmendez@reichardescalera.com; r.martinez@fonroche.fr; gonzalo.rodriguez@gestampren.com; fortiz@reichardescalera.com; jeff.lewis@terraform.com; mperez@prrenewables.com; cotoero@landfillpr.com; geoff.biddick@radiangen.com; hjcruz@urielrenewables.com; carlos.reyes@ecoelectrica.com; megan.semiao@longroadenergy.com; tracy.deguise@everstreamcapital.com; agraitfe@agraitlawpr.com; h.bobea@fonrochepr.com; ramonluisnieves@rlnlegal.com; hriviera@jrsp.pr.gov; info@sesapr.org; yan.oquendo@ddec.pr.gov; acarbo@edf.org; pjcleanenergy@gmail.com; nicolas@dexgrid.io; javrua@gmail.com; JavRua@sesapr.org; lmartinez@nrdc.org; thomas.quasius@aptim.com; lionel.orama@upr.edu; noloseus@gmail.com; aconer.pr@gmail.com; wilma.lopez@ddec.pr.gov; gary.holtzer@weil.com; ingridmvila@gmail.com; rstgo2@gmail.com; agc@agcpr.com; presidente@ciapr.org; cpsmith@unidosporutuado.org; jmenen6666@gmail.com; CESA@cleanegroup.org; acasepr@gmail.com; secretario@ddec.pr.gov; julia.mignuccisanchez@gmail.com; professoraviles@gmail.com; gmch24@gmail.com; ausubopr88@gmail.com; carlos.rodriguez@valairlines.com; amaneser2020@gmail.com; acasellas@amgprlaw.com; presidente@camarapr.net; jmarvel@marvelarchitects.com; amassol@gmail.com; jmartin@arcainc.com; eduardo.rivera@afi.pr.gov; leonardo.torres@afi.pr.gov; carsantini@gmail.com; imolina@fedalcaldes.com; LCSchwartz@lbl.gov; thomas@fundacionborincana.org; cathykunkel@gmail.com; joseph.paladino@hq.doe.gov; adam.hasz@ee.doe.gov; Sergio.Gonsales@patternenergy.com; Eric.Britton@hq.doe.gov; energiaverdepr@gmail.com; Arnaldo.serrano@aes.com; gustavo.giraldo@aes.com; accounting@everstreamcapital.com; mgrpcorp@gmail.com; jczayas@landfillpr.com; Jeanna.steele@sunrun.com; mildred@liga.coop; rodrigomasses@gmail.com; presidencia-secretarias@seguros multiples.com; cpsmith@cooperativahidroelectrica.coop; maribel@cooperativahidroelectrica.coop; apoyo@cooperativahidroelectrica.coop; larroyo@earthjustice.org; flcaseupdates@earthjustice.org; gguevara@prsciencetrust.org; hriviera@jrsp.pr.gov; contratistas@jrsp.pr.gov; agraitfe@agraitlawpr.com; rstgo2@gmail.com, pedrosaade5@gmail.com, rolando@bufete-emmanueli.com; notificaciones@bufete-emmanueli.com; rhoncat@netscape.net; Marisol.Bonnet@hq.doe.gov; ernesto.rivera-umpierre@hq.doe.gov; info@icsepr.org; john.jordan@nationalpfg.com; info@marinsacaribbean.com; aconer.pr@gmail.com; pathart@ge.com; contratistas@jrsp.pr.gov; Laura.rozas@us.dlapiper.com; renewableenergy@me.com; rcorrea@prfaa.pr.gov; JGOB@prepa.com; israel.martinezsantiago@fema.dhs.gov; jcintron@cor3.pr.gov; gsalgado@cor3.pr.gov; mario.hurtado@lumapr.com; wayne.stensby@lumapr.com; Ashley.engbloom@lumapr.com; Legal@lumapr.com; jorge.flores@lumapr.com; breanna.wise@lumapr.com; energia@ddec.pr.gov; Francisco.Berrios@ddec.pr.gov; isabel.medina@ddec.pr.gov; oabayamon@yahoo.com; quinonesporrata@qaclaw.com; equinones@qaclaw.com; vcandelario@qaclaw.com; direxec@ciapr.org; gnr@mcvpr.com; guillermo.gil@aerostarairports.com; gabriel.sanabria@aes.com; ramon.jimenez@acueductospr.com; Anais.rodriguez@drna.pr.gov; tjplocek@gmail.com; mcarretero@cor3.pr.gov; mriccio@cor3.pr.gov; jose.maeson@crowley.com; alvin.romanlugo@aae.pr.gov; fgberrios@fortaleza.pr.gov; osanchez@agricultura.pr.gov; clf@mcvpr.com; operations_vp@piapr.org; jose.merheb@ddec.pr.gov; dalvarado@prpa.pr.gov; cr.tejera@ddec.pr.gov; camarapr@camarapr.net; pirulgonzalez@agricultura.pr.gov; eilvelez@dtop.pr.gov; executivevp@prma.com; hector.rivera@terrenos.pr.gov; lassus_j@jp.pr.gov; tplocek@seacosystems.com; tjplocek@gmail.com; lfeliciano@ads.pr.gov; info@aae.pr.gov; agustin.irizarry@upr.edu;



luis.rodriguez89@upr.edu; JARiollano@prpa.pr.gov; ydiaz@fortaleza.pr.gov;
amarilysrosario@drna.pr.gov; molinif@gmail.com; julio.cintron@crowley.com

I also certify that today, December 21, 2022, I have proceeded with the filing of the Resolution and Order issued by the Puerto Rico Energy Bureau.

For the record, I sign this in San Juan, Puerto Rico, today December 21, 2022.



Sonia Seda Gaztambide
Clerk

