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Regulation for the Evaluation and Approval of Agreements between Electric Service Companies ("Regulation").

1 message

'ronald leonard' via Comentarios <comentarios@energia.pr.gov> Mon, Nov 23, 2020 at 11:33 AM
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https://energia.pr.gov/wp-content/uploads/sites/7/2020/10/Resolution-NEPR-MI-2020-0014-1.pdf

To start our comments from the RenewableEnergyCoalition.org we want to give Cudo's for putting teeth into the regulation with a penalty of $25,000 per day for inaction but by "any person" do you mean PREPA? Holding review time to 90 days for a supplemental study and projects without supplemental study needed get approval in 45 days is necessary you can kill progress by inaction. We all know that after law 17 was enacted and thousand of small solar systems were installed with a engineered stamped drawing to relive a crisis of "widespread loss of power" and subsequent death and suffering applications for net metering set for years with out response. So regulation with good intentions don't always produce their desired results if reviews have to occur in a timely manner, if they so not a fine must occur or a automatic approval should ensue.

We are troubled by wording in this regulation regarding approval of PPA's not clearly distinguishing the obvious difference between public and private sector needs and possible (unintended) consequences from a clear distinction in oversight needs. We suggest that a regulation oversight review start at 5MW not 1MW because costs and paperwork for smaller projects serve no real public good other than the cause of killing economics and projects moving forward. This of course is with the obvious limit in place of energy supplied being capped in price at the same price 1:1 as that supplied as PREPA. Simply stated the market price of energy usually is a floor to set as a minimum for performance of any "E"SCO agreement. This became apparent in New York where the Public Service Commission essentially enforced that "rule of common sense law" by essentially stating if you don't save ratepayers money you will not be allowed to be a active ESCO in NYS. This occurred after numerous cases documented by AARP and others of bait and switch tactics by those providers that cause many if not most customers paying more for energy after a few months and then being slammed with exorbitant exit fees if they wanted out.

Your section 2.04 states a rigorous process of preventing similar problematic offerings but it then does it by universally requiring individual contract oversight powers assumed by the Energy Bureau reviewing every PPA wether government based or not? This is just unworkable and in many cases unnecessary. On the other hand if there are simply pure ESCO's in the market just reselling energy, have at it regulate and stop corruption! The last thing a burgeoning market needs, with a purported RFP in the works by the end of the year for 1,000MW, is to strangle innovation or market by regulation without purpose, the expertise or staff to implement. Bureaucracy without bounds just presents needless obstacles for reform. If you want to prevent ratepayers being abused just copy NYS ESCO ruling that has been tested in the courts.

The above caution being said we would now like to submit our big picture plan to resolve issues to move forward to the real issue of **"Build Back Better".**
Please accept these comments in the spirit they are submitted to support "Build Back Better" - with its legal goal -100% renewable energy.

Our comments are generally in three sections:

1. PRsolarmap.com - to provide a open process to transition into renewable energy
2. Existing conditions solutions and priority
3. Economic justice grid reliability

Our first proposal introduced almost two years ago has to do with success in NY and the desire to develop a more robust commercial version to the tools first introduced in the NYsolarmap. PR's process of transferring from

a failed, costly, & polluting way of delivering energy must be at the core of making fundamental reforms and change that recognizes economic justice and the fundamental needs of ratepayers wether they are residential or commercial. This process would be live available to everyone free, independent and without special interest control.

Puerto Rico Grid Ready is a concept that was pioneered by City University (CUNY) in New York City with the utility there, ConEd. You can go to nysolarmap.com size a system for your location, do an economic analysis and see if the local grid is capable of adsorbing any power available from the solar system. Determining how many of these rooftops are candidates for commercial-scale solar systems and how this would affect the grid is a challenge. The recent growth of large-scale PV installations on the electric grid resulted in the need to address potentially adverse technical impacts in certain locations. The new version that we want to roll out in NY & PR will have many improvements making it a more useful tool for integrating renewables into an existing grid at scale.

The Proposed PR Grid Ready Solar project aims to reduce the technical and financial barriers for the interconnection of solar PV projects to the grid in the island. For the islands buildings with commercial-scale PV potential there are technical risk factors for grid interconnection, and needed public resources to allow developers to make informed decisions regarding project location and cost. Unfortunately in PR an online map of these possible grid connection that would be specific to each project needs their associated substations capacity's and associated ability to evaluate each site is not available and our proposal is to remedy this with prsolarmap.com. This eliminates any conflict that utility concerns have and makes the process transparent. Even GIS grid data is lacking at PREPA.

By providing smart tools like the Puerto Rico Solar Map multiple solution providers can work in parallel cooperatively transparently building a robust solution for PR. Puerto Rico can be the example of how to plan for the new renewable energy grid. A tool publicly available that accurately depicts progress and the plan for the future will also alley fear and doubt in the future and offers public buy in to the vision for a balanced and green solution. 100% renewable energy is practical and cost efficient.

These resources include a layer that could be on the PR Solar Map showing wether buildings or ground sites may or may not face interconnection issues; a guide to the order of magnitude of costs for typical mitigation strategies; and an overview of short and long-term solutions for medium and low opportunity buildings. We need the support of PREPA to kick start the most active solar sector here and the one with the best solar and concentrated business resource. It is also noted that those commercial users face the second most expensive power in the start and are reaching the limits the utility to provide reliable service. Peak loads are likely getting higher now that energy economy is recovering and they can logically face interruption of power due to weather and local grid events.

Before the storms PR had a nascent and vibrant residential market, but due to the hit the industry took from federal import duties imposed on Solar Panels there was a downturn. This import duty has added, conservatively, $1,000 to the cost of every household installation causing a dramatic pullback in installations. More recently the industry faces two more roadblocks. The interconnection of these systems that were problematic to connect to the grid due to utility foot dragging.

The fragility of the grid itself as was dramatically demonstrated by storm damage and the longest electrical outage that effected more people in the Americas. The response of the industry was dramatic and frankly heroic. Local installers managed to establish thousands of solar & battery installations after the governor issued a emergency order permitting interconnection of systems <25kW. Off grid independent power installations were popular for a time and now we see a settling of the market allowing all types of projects again. The legislature and the governor have wisely proposed the reorganization of the utility to be a provider solely for the distribution of clean power. The distribution system is also proposed to be reformed by establishing a series of micro grids around the island allowing redundancy and storm hardening.

In the process the solar industry sees a need to provide essential services to everyone and do it at a fixed cost thus eliminating likely increases in costs due to fuel or other external issues. The sun & wind are abundant and free resource we need to rely on for a vibrant economic future that includes new jobs and industry.

The map will have multiple resource layers of information:

A 3D LIDAR data of the entire island including grid and critical infrastructure

- Fire Stations
- Emergency Shelter Sites
- Homeless Shelters
- Police Departments
- EMS Dispatch
- Community Health Centers
- Cooling Centers
- Food Distribution Hubs

An analysis tool that enables all ratepayers to site a solar (battery/storage analysis is also contemplated) project provide a robust economic analysis tool based on their design and a instant quick over of grid interconnection for that system.

We expect to provide a more complete list of existing renewable and all other installations of power systems that will then give potential new projects of the existing grid structure and their potential to be add their solution to that location. Our 3D tool contemplates design tools that actually lays out a specific system with all components and can provide shading, typographical or other considerations possibly giving a street level view (with help of other resources) to aid siting/interconnection issues.

We expect to be able to show power assets of all types and graphically present real data including power generation capacity broken down by regional assets, sector capacity (residential, commercial) the intention is to present data like the local cost of solar over the years and by sector in aggregate and will present the status of projects (completed & in Progress). Ratepayers can only make informed decisions of where they chose to get energy if they understand how a change affects them economically and culturally. They need to know that they have choices and that using the clean local resources of Sun, Wind, Hydro, Biomass can carry the day at lest cost. The point is that officials will be able to weigh the choices of achieving 100% renewable energy in an open forum and be fair to everyone wi the transition process.

- List Existing, In Progress & New Projects
- New Disaster Relief Tool Making A Transparent Solution Possible
- Map Grid Repairs, Progress & Outages
- Assess Donations, Solution Providers & Tools To Rebuild
- Identify Critical Needs To Funnel Solutions To
- Provide Communication Between Public & Private Teams
- Provide Installation Analysis Sizing Tools
- Provide A Forum To Evaluate Existing & New Green Solutions
- Plan For The New Grid Solutions

This effort will build on a US Department of Energy funded project that resulted in the launching of the NY Solar Map and Portal. The Map allows planners, end users, and the general public to understand their solar potential with detailed technical and economic calculations and the ability to connect with accredited solar installers. Distinguished from other solar maps, the NY Solar Map and Portal provides consumers with localized information, market statistics and flexible analytics. Consumers, installers and municipal leaders can also access information on resources and programs available in their local community through the 'In Your Area' feature. In partnership with the utility, Con Edison, the map now provides insights in to interconnection costs and requirements through a 'grid ready' tool allowing developers to gain insight in to what the utility may require to permit interconnection of large solar systems on to the grid. Using the same framework as the NY Solar Map, the team could work with Puerto Rico (PR) leadership to create the ability to provide analytics regarding solar potential across the island and also integrate grid side planning and opportunities based on outcomes. Moreover, the opportunity to layer numerous GIS based information would allow the future of the PR grid to be considered holistically.

Technical Background

The core data for the Solar Map is Light Detection and Ranging (Lidar) data which uses light to form a pulsed laser to measure distances to the earth. There are a number of Lidar datasets available today and as part of this effort PR must obtain a dataset showing the situation on the ground today. The Lidar data allows the team to create a 3D image of the area and we are able to layer insolation data to determine the solar potential of an area with shading taken in to consideration. The programming can also include zoning or other requirements when

creating the final algorithm that provides the final solar potential to the end user. Ultimately, as a new grid is being developed or grid repairs occur, solar potential can be considered as part of the core infrastructure design.

Reasoning and Outcome:
By providing smart tools like the PR Solar Map multiple solution providers can work in parallel cooperatively building a robust solution for PR. PR can be the example of how to plan for the new renewable energy grid. A tool publicly available that accurately depicts progress and the plan for the future will also alley fear and doubt in the future and offers public buy in to the vision for a balanced and green solution.

Proposal points:

- Assisting in the post storms LIDAR/GIS Mapping of the island
- Using that data to plot existing and planned resources
- Proposing a integrated solution from multiple providers
- Solving the Capital & Logistical Problems in a Buildout
- Proposing a Public Private Partnership with a united plan
- Using our teams breakthrough research to go 100% green
- Uniting multiple Technologies & Stakeholders Proposals Dealing with big issues like waste, water & power 100% environmentally cleanly

NEW & Better **The solar map on steroids with a complete suite of services:**

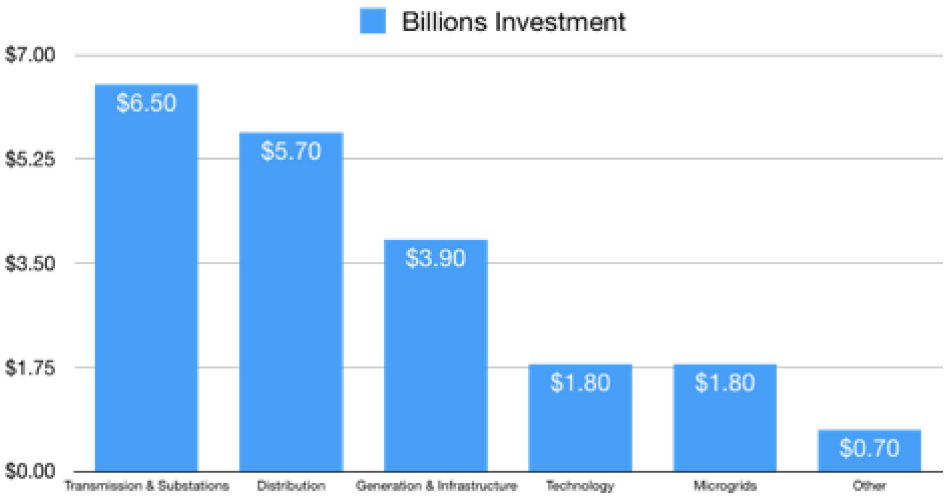
- A updated 3D map combining; LIDAR, street level utility mapping, PV detailed design analysis tool with best in class layout-sizing-stringing-electrical design, coupled to a bankable economic analysis, all linked to a interconnection tool evaluating the viability of the local grid and substation connection
- The map includes a transparent process of rebuild listing active and pending projects, proposed solutions, the state of grid hardening/upgrades
- Like the present NY map a list of physical resources will be tracked with things like shelters and other public critical infrastructure will be available
- The goal is to make the process of the transformation to 100% renewable energy transparent and available to everyone a level playing field

EXISTING CONDITIONS SOLUTIONS/PRIORITY

Our Second Proposal

The second section contemplates the disturbing conditions that exist on the island now with a grid that is unreliable and likely will never reliably serve approximately 200,000 residences in the future.

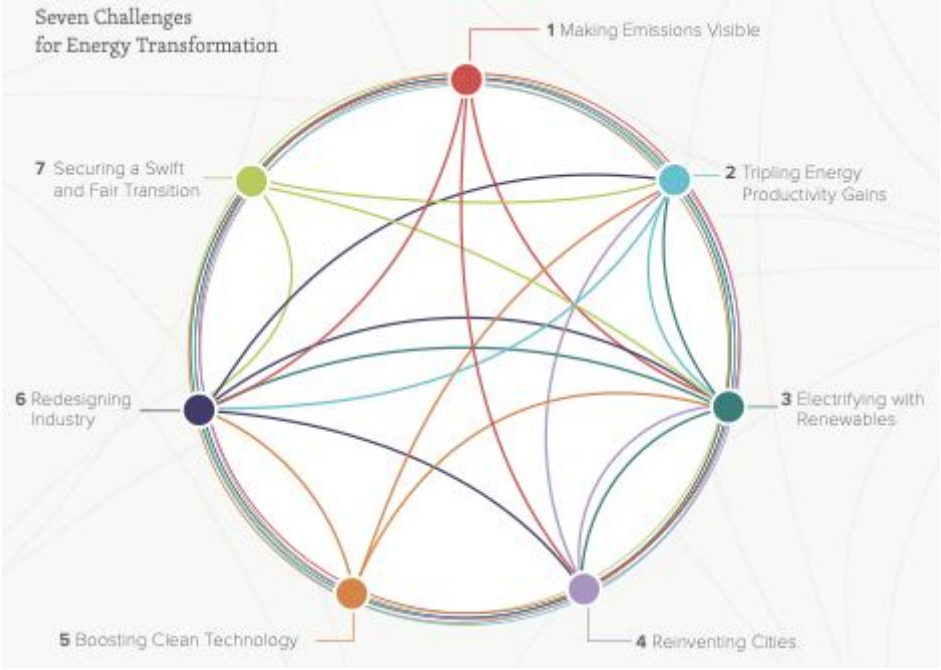
The question is how to transition from PREPA to another form of utility and not burden ratepayers with the crushing debt now or encumbering them with additional stranded assets and continued fossil tied debt for the next half century.



These numbers are frankly astounding and need better better vetting for sustainability, reliability (the USVI has rebuilt its grid 4 times), & conforming to the law in place 100% renewable energy. Total Investment of the Grid Modernization Plan =~$20.3 Billion, is this investment of public funds and debt being done in a truthful open manner without special interests pulling the strings?

If the estimated federal investment to implement the plan is $13 billion and private investment will also fund some of the rebuild a guarantee of this process creating jobs, environmental justice, industry and a commodity that ratepayers will be proud to purchase if the key to transformation that will serve the island and be a shining example of what can be accomplished anywhere.

The comment period extension period is appreciated but does not ally the fears that special interests dominate the process and conclusion. The Rocky Mountain institute and other NGO's propose a more outwardly faced process of change with the goals at the forefront and a plan that forces resource and capital that is needed for investment in the true transformation of the grid possible.

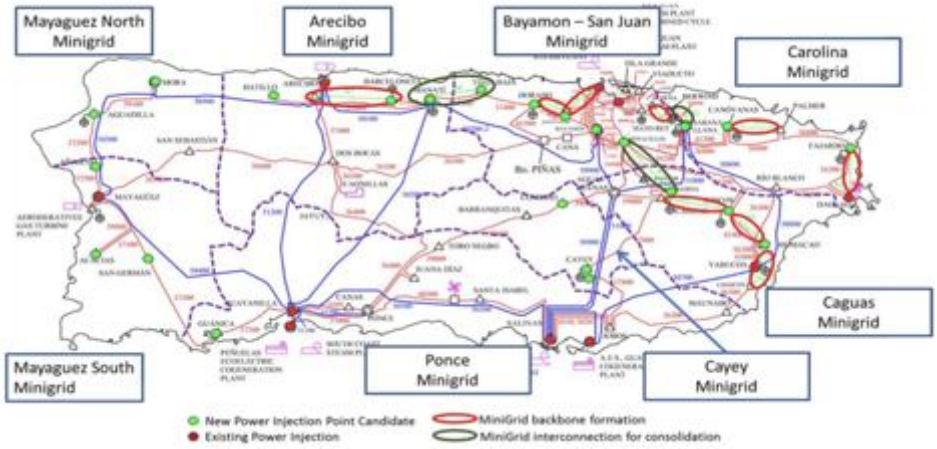


Our Third proposal economic justice grid reliability:

This is based on the fundamental issue can the change be accomplished in the time needed can we see the rule of law return to enable outside resources like capital and technology feel comfortable in the long term commitment to Build Back Better?

Our path forward is to offer a sound footing to stand on to prove 100% renewable energy is not only possible, manageable, quicker, and in fact cheaper than falling back on failed technology that got the island in the trouble it is in now.

We see various proposals that sound nice (like Microgrid, or RFP's to sectionalize the island's transition Roosevelt Roads) but the troubling appearance is that things are being stuck onto a unstable infrastructure to prop it up rather than take the rational step to commit to fundamental reform to make the changes needed to provide a solution that everyone would be proud of.



Minigrids are perceived as an excuse for an unworkable grid and not a solution to renewable energy transition. Many microgrids are not only possible but preferable (for say businesses that need to be provided with reliable power they should be enabled to make that investment or have private funds feel comfortable to move money to the island) but the process must be focused on higher ground. The proposals of committing the island to more fossil fuel infrastructure like compressed natural gas rather than seeking a transition from the billions spent yearly now on Fossil Fuels has to be the core value or the ratepayers will never be served. Our science centered solution is based on pier reviewed papers on the practicality of 100% renewable energy.

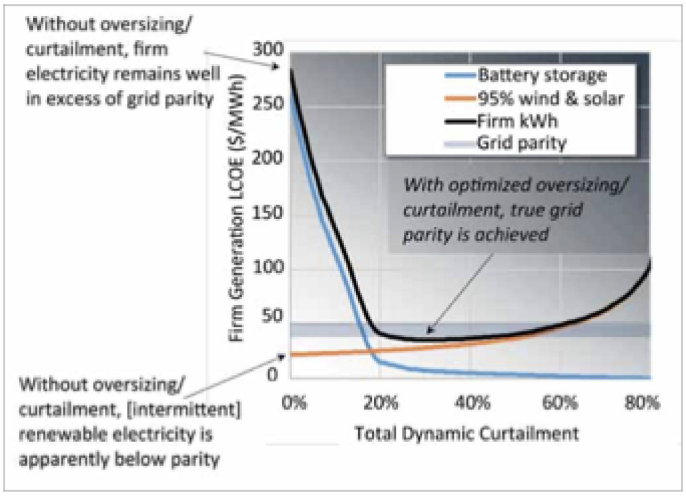


Figure 1. The levelised cost of energy (LCOE) to generate firm renewable electricity for the Minnesota power grid as a function of the fraction of oversized/curtailed renewable energy using utility-scale future (2050) PV, wind and storage cost assumptions

Figure 1 demonstrates the trade off between oversizing of renewable generation and storage. Though the figure demonstrates optimization using future costs, this tradeoff is applicable even at today's prices.

The solid black line represents the LCOE to meet electrical demand 24/365 with an optimized blend of wind and PV, storage and 5% natural gas. This LCOE is the sum of the unconstrained RE+gas LCOE (orange line) and of the battery LCOE necessary to fill all intermittency gaps (blue line). The semi-transparent gray line represents the current [conventional]

An in depth analysis of Island, State or ISO regional grids can reveal the path to renewable energy success. By examining the historical peaks and valleys of utility power needs and matching it with multiple sources of renewable energy that are geared to locally available production/storage, an economical and reliable new grid structure can be created now. This new grid has to be friendly to two way flows of clean energy and allow interconnection of multiple sources of clean energy to coexist. This has been the promise of State/Island utility reforms but is yet to be fully implemented.

An analysis leads to breakthrough insight. If we are going to see real reform in reduction of greenhouse gasses and are serious about the concept of the "electrification of everything" as a method of reducing the dependence of fossil fuel in other areas like Transportation and Heating/Cooling of structures, solutions have to be soundly based on science. In this new study a team led by Dr. Marc Perez brought out an important tool: oversizing of PV systems relative to storage capacity. In an

analysis of matching supply and demand on an hourly basis over the course of a year, Dr. Perez showed how over-building solar relative to energy storage results in lower combined system costs, while creating a system that can provide power 24/7.

The study shows that Minnesota – a northern state with high seasonal solar variation and little hydro – can reach 95% wind and solar at a generation cost of 3.6 cents per kilowatt- hour (KWh). A ongoing study of another Island with a population of 1,000,000 residents is proving the reliability and cost savings of this method for the larger island and population in Puerto Rico.

Please look at the latest slide presentation from Dr. Perez: https://youtu.be/OUpgDsfYhec