



## HEARTWOOD GROUP, INC.

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9/8/17

Macky McCleary  
Administrator  
RI Division of Public Utilities and Carriers

Re: Advanced Grid Capabilities

Dear Administrator McCleary,

I am writing in response to your questions and request for stakeholder feedback on Advanced Grid Capabilities. While some of these comments repeat suggestions I have made in other portions of the grid transformation stakeholder process, I hope they are helpful to include here in the forum focused on creating an information rich grid of the future.

Underlying my comments is the fundamental view that the regulated monopoly distribution company should have only one very limited and narrow function - keeping electricity delivery as reliable and low cost as possible while providing a platform for independent service providers of all kinds to deliver energy and energy related services. Allowing the regulated monopoly to provide services beyond their natural monopoly functions stifles innovation and is unfair to both ratepayers and to independent service providers.

The transition being discussed in this portion of the grid transformation process is both critical and daunting. While eager to see ratepayers enjoy the benefits of a modern platform grid, I am wary of moving too quickly and spending huge amounts of ratepayer funds for limited information technology capacity that might be obsolete before it is fully implemented. I am even more wary of seeing investments approved that will further lock the monopoly distribution company into providing services outside their essential and natural monopoly function.

This discussion should start with acknowledgement of current realities. Utility billing and information systems have proven to be hugely over expensive and very limited in their capacity to adapt. As one example of their lack of adaptability, it has taken well over a decade for the first of New England utilities to incorporate net metering credits into their billing systems and most utilities are still doing all those bills on spreadsheets by hand.

Under the current utility business model, utilities are strongly encouraged to overspend on metering and information systems. So, it is great to see this discussion happening concurrently with that of transforming the utility compensation system. Any new or additional utility investment in information technology should only be undertaken in the context of performance based compensation for meeting goals defining the success of those new systems.

Key to the success of this effort will be clearly envisioning the goals for a future platform grid that enables innovation while also contemplating all the ways that success might be hindered by the inappropriate design of the new system. Your challenge in this endeavor is both seizing emerging opportunities while avoiding fairly clearly looming pitfalls.

All of the functions listed on your spreadsheet of August 20<sup>th</sup> are important capacities to enable in the 21<sup>st</sup> century grid. Very few of them should be provided by the distribution company. Any of the capabilities listed in your spreadsheet that can be provided through independent service providers should be provided by independent service providers.

The metering and communication system enabled by the grid transformation should create a secure and trusted very low cost digital market place over which all kinds of transactions can be enabled, transacted, recorded, credited and compensated essentially in real time. Many people are looking at technologies like blockchain to provide that capability. It is likely a bit too early today to implement such a system. At the same time, with such transformative capacity clearly on the near term horizon, it would be foolish of regulators to allow ratepayers resources to be squandered on widespread implementation of a new energy information system without such capabilities. A good summary from Rocky Mountain Institute of where things stand with energy and blockchain can be found at: [rmi.org/news/blockchain-reimagining-rules-game-energy-sector/](http://rmi.org/news/blockchain-reimagining-rules-game-energy-sector/)

Utility ownership and control of advanced metering stifles innovation and emerging energy services and subjects ratepayers to risk of technology obsolescence. Advanced metering can provide significant customer benefits like demand response, load scheduling, and integration of customer sited and off site distributed energy resources. Specialized meters can best enable these and other energy services. Not all customers will want the same services and it is thus impossible to optimize one size fits all metering. For this critical reason, deployment of advanced metering should be provided by independent service providers rather than by the utility.

Meters should be a tool that distributed energy resource providers of all kinds can provide in ways that optimize their own services and the value that customers choose to purchase from them, without having to double meter. Independent meter providers could be required by the PUC to provide critical information for the distribution system, as identified by the utility and the PUC, and to meet ANSI C-20 standards for meter quality, accuracy, durability and functionality. By standardizing meter critical data interfaces, the PUC can assure that information from those meters be compatible with distribution company billing systems as well as providing other specified system benefits, along with the specialized services provided by the supplier of the meter.

In order to transition to a competitive meter market place, a significant port of the current utility “customer charge” could be shifted to paying for metering services that customers choose. The PUC could hold a bidding process on some regular interval for providers of default metering services.

Regarding the communications network that meters and other energy services devices communicate over, the internet should be able to provide appropriate bandwidth and security without creating a specialized standalone network just for utilities. Access to the internet by wire or through cellular and or wireless mesh networks should provide adequate options both for the distribution utility and for all the other parties that would need to access the meter data. It is likely that such a system could provide a rich stream of real time bidirectional data for relatively little more than the cost of the utility collecting just monthly data today for most customers.

As a ratepayer funded monopoly, any system data, aggregate data and other information collected by the distribution utility should be considered and treated as public information and made easily accessible,

easily usable by the public without charge. Data such as heat maps, existing feeder maps and information on feeder and substation protection systems should be publicly available to help lower the cost of developing independently owned energy facilities.

Any customer level data collected should be considered owned by the customer and provided free of charge to that customer and to any third parties the customer may designate.

Data regarding energy pricing, demand, power quality, etc. should be provided in real time in standardized machine-readable formats back to all customer sites in order to enable new services and innovative new ventures.

Thank you for considering this feedback.

A handwritten signature in blue ink, appearing to read 'F. Unger', is positioned above the printed name.

Fred Unger  
President