FILE

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PUCO EXHIBIT FILING

Date of Hearing: 4/25/2017

Case No. 16-1852-EL-SSO, 16-1853-EL-AAM

PUCO Case Caption: In the Matter of the Application of Ohio Power Company for Authority to Establish a Standard Service Offer Pursuant to R.C. 4928.143 in the Form of an Electric Security Plan; In the matter of the Application of Ohio Power Company for Approval of Certain Accounting Authority

2017 APR 27 PM 3:28

List of exhibits being filed:

Roberts Exhibit 1

Reporter's Signature: Karen Sue Gibson

Date Submitted:

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BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO

- - -

In the Matter of the Application of Ohio Power Company for Authority to Establish a Standard Service Offer Pursuant to R.C. 4928.143 in the Form of an Electric Security Plan.	:	Case No. 16-1852-EL-SSO
In the Matter of the Application of Ohio Power Company for Approval of Certain Accounting Authority.	:	Case No. 16-1853-EL-AAM

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PROCEEDINGS

before Ms. Sarah Parrot, Attorney Examiner, and Ms. M. Beth Trombold, Commissioner, at the Public Utilities Commission of Ohio, 180 East Broad Street, Room 11-B, Columbus, Ohio, called at 12:30 p.m. on Tuesday, April 25, 2017.

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PUBLIC HEARING - COLUMBUS

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EXHIBIT

1 Roberto

PUCO POWERFORWARD AND GRID MODERNIZATION (TESTIMONY)

Prepared and submitted by: UpGrade Ohio, Appalachian Renewable Energy Consumer Cooperative (ARECC), Athens Energy Institute, and the Appalachian Ohio Sierra Club

BUILDING THE FREEWAY TOWARDS LOCAL, DECENTRALIZED, AND RESILIENT ENERGY GRIDS

The PUCO's emerging opportunity is to create fair and open access to the grid as an energy highway for a diverse set of energy generators, including DERs, distributed energy storage, and the advent of electric transportation for all Ohio energy consumers.

To chart a path forward for future grid modernization, as put forth by the PowerForward initiative, the PUCO could adopt three basic principles equivalent to those adopted in "Smart Rate Design for a Smart Future", prepared by the Regulatory Assistance Project (Montpelier, VT):

THESE PRINCIPLES INCLUDE:

1. A customer should be able to connect to the grid for no more than the cost of connecting to the grid.
2. Customers should pay for grid services and power supply in proportion to how much they use these services and how much power they consume.
3. Customers who supply power to the grid should be fairly compensated for the full value of the power they supply.

Following this strategy, we've prepared *A Community Approach to Grid Modernization: 5 Key Priorities,* will highlight how a new regulatory regime can work to ***localize the grid*** to improve energy resiliency.

A COMMUNITY APPROACH TO GRID MODERNIZATION: 5 KEY PRIORITIES

1. Support for Microgrids:

- Define microgrids and nanogrids in Ohio
- Allow non-utility sale of electricity
- Simplify interconnect rules
- Allow greater access to electric utility data for microgrid installation, zoning, and planning
- Allowing community microgrids to cross roads (city/county/township)

Recommended resource: "DISTRIBUTED SOLAR AND STORAGE - ICEF ROADMAP 1.0", Bloomberg New Energy Finance, December 9, 2015.

2. **Community Solar:**

- Support for Virtual Net Metering
- Allow on-bill financing and payment
- Support for low-income community solar

Recommended resource: "Integrating Photovoltaic Generation", University of Texas at Austin, Energy Institute, January 1, 2016.

3. **Electric Vehicles (EV):**

- Integrate EVs into grid modernization
- Use Transactive Grid technologies to facilitate EV integration, charging, and automation
- Support equitable distribution of EV infrastructure

Recommended resource: "Expect the Unexpected: The Disruptive Power of Low-carbon Technology", Carbon Tracker and the Grantham Institute at Imperial College London, February, 2017.

4. **Battery Storage:**

- Remove barriers that prevent behind-the-meter resources such as battery energy storage from providing multiple, stacked services to the electricity grid
- Require that distributed energy resources (including storage) be considered as alternative, potentially lower-cost solutions to problems typically
- addressed by traditional "wires" investments and/or centralized peaking generation investments.
- Across all markets, require utilities to use a standardized, best-fit, least-cost benefit methodology that compares energy storage providing a full suite of stacked services with incumbent technologies.

Recommended resource: "The Economics of Battery Energy Storage: How Multi-use, Customer-sited Batters Deliver the Most Services and Value to Customers and the Grid", Rocky Mountain Institute, October 2015.

5. **Advanced Meter Infrastructure:**

- Assure data security in the deployment of Smart Meters
- Support Appliance automation with data security
- Support Transactive grid capability to support locally generated and/or stored power to access local and regional markets and serve ancillary functions for the grid.

Recommended resource: "A Troubling Trend in Rate Design: Proposed Rate Design Alternatives to Harmful Fixed Charges", Southern Environmental Law Center, December 2015.