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## Recruiting Now for the Analytics Research Member Advisory Group (ARR MAG)

### What has changed?

NRECA's Business & Technology Strategies department (BTS) and its Analytics, Resiliency and Reliability Workgroup (ARR) are currently recruiting members for the second 3-year term of the Analytics Member Advisory Group (MAG). The MAG works on issues in analytics, data management and software for utility decision making. The next MAG meeting is planned for November 2018, and we would like to complete recruitment beforehand so that new members can join the group at the meeting. For more information about the research goals, please see the [research plan](#)<sup>1</sup> or contact [David.Pinney@NRECA.coop](mailto:David.Pinney@NRECA.coop).

### What is the impact on cooperatives?

In pursuit of meeting the technology interests and needs of cooperative members, BTS is supported by Membership Advisory Groups (MAGs). These Groups, comprised of nearly 100 cooperative members, provide necessary guidance and expertise to assist BTS in identifying key challenges for cooperatives and in seeking meaningful technology insights to benefit members.

Currently, there are five MAGs focused on unique interest areas:

- Analytics, Resiliency & Reliability
- Distributed Energy Resources
- Generation, Environment & Carbon
- Cyber Security
- Transmission & Distribution Strategies

Each MAG is coordinated by a BTS Principal Investigator and a Program Manager, along with consulting support. Each MAG establishes timely goals and objectives for research projects to be achieved over a 1- to 3-year period and monitors execution of projects. Each group is comprised of a nominal membership of 15. Staff with appropriate technical expertise from voting member cooperatives are eligible and encouraged to serve on a MAG. Information about BTS Work Groups and MAGs can be found on the BTS Work Groups page on <https://www.cooperative.com/programs-services/bts/Pages/default.aspx>

Membership participation is essential to the success of BTS in addressing the most important technology needs of cooperatives today. The Advisors play a paramount role in defining the research projects conducted annually, and are intricately involved in identifying cooperatives' technical needs, identifying cooperatives with best practices, and supporting BTS output to convey research findings to benefit cooperatives nationwide.

### What do cooperatives need to know or do about it?

#### How are MAG Members selected?

NRECA encourages broad participation in the MAGs. Cooperatives around the country have nuances to their operational and technical issues, which can only be effectively represented through diverse MAG

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<sup>1</sup> Appendix A

composition. Expectation is that each MAG Advisor will bring an area of technical expertise to contribute to the MAG, as well as background in technology challenges and applications at their cooperative.

The selection process starts with a nomination from the CEO of a cooperative, describing the candidate's qualifications and MAG interests. A sample nomination letter is available from BTS. Nomination letters are submitted to NRECA's CEO for consideration, with a copy to the BTS SVP and MAG Program Manager. Every effort is made to assure broad geographic representation, a representative and appropriate mix of G&Ts and distribution cooperatives, and a representative mix of CEOs/general managers and appropriate cooperative staff.

### **What is the commitment expected from a MAG Advisor?**

Each member of a MAG is appointed to a three-year term or the life cycle of the MAG, whichever is less, but may be reappointed for an additional three-year consecutive term on the same MAG or a restructured or new MAG as appropriate. Terms run on the calendar year. MAG member expenses are to be covered by sponsoring cooperative organizations.

Typically, each MAG meets in-person twice each year, and by phone and webinars in between. Advisors are provided materials before each meeting, so that they can gather pertinent input from their cooperative and colleagues in the field to actively participate in the meetings. In addition, Advisors are asked to identify cooperative technology needs, determine cooperatives with best practices, and contribute to BTS output of research results for the benefit of member consumers. BTS relies on the MAG members to act in an ambassador role to help convey BTS's work to their cooperative staff and other key stakeholders. In this manner, BTS and the MAGs work together to ensure relevant, timely information on leading technologies to benefit cooperatives.

Cooperatives interested in participating in the ARR MAG can reach out via email directly to [Adaora.Ifebigh@NRECA.coop](mailto:Adaora.Ifebigh@NRECA.coop) for a nomination letter template and information on next steps.

### **Benefits to participating in the MAGs**

NRECA and BTS encourage member participation in MAGs. Through the work of BTS and their supporting MAGs, pertinent industry research has been conducted that otherwise would not be feasible for individual cooperatives to pursue on their own. BTS helps keep cooperatives at the forefront of technology, and represents cooperative interests on a national level. For further information about some of the extensive research by BTS, please visit us on [Cooperative.com](http://Cooperative.com).

### **Contact for Questions:**

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## Appendix A: ARRMAG Research Plan - Research Areas and Products

### Proposed Research Areas

- Analytics
  - Engineering Planning
    - Data-driven models for identifying profitable hardware upgrades.
    - Models and data management for identifying line and transformation losses.
    - Engineering analysis software for interconnection requests and routine maintenance.
    - Simulation software, especially Open Modeling Framework and GridLAB-D, for considering long-range planning of advanced technology: energy storage, distributed generation, electric vehicles, solid state controls, etc.
- Operations
  - Decision support, dashboard and alerting applications for work crews and dispatchers.
  - Inventory management software.
  - Sensors and SCADA.
  - Predictive analytics for autonomous control.
- Business Process
  - Automation in the areas of HR, finance and marketing.
  - Consumer-facing software applications (payment, service notifications, etc.).
- Information Technology
  - Database and software architecture that are adapted to the needs and data volumes of the utility sector.
  - IT interoperability standards, especially MultiSpeak.
  - Cloud hosted and software-as-a-service offerings.
  - IT and OT Convergence.
  - Communications technology, including cooperative owned and leased.
  - Broadband communications for internet, phone and television service to members.
- Reliability
  - Power and service quality metrics calculation and reporting.
- Resiliency
  - Software for improved restoration.
  - Software for improving the mutual aid process.
  - Disaster models for estimating economic and engineering impacts.

### Research Products

For each of the research areas above, research output will include:

- TechSurveillance articles (5-10 page) on current best practices, cooperative success stories, and reports on emerging technology with compelling benefits.
- Reports (30-100 pages) with comprehensive advice on how to plan and deploy new technologies.
- Field demonstrations of new technology accompanied by research reports.
- Software that aids in operations or planning tasks faced by cooperative staff.

- Original research leading to publication in industry standard forums (IEEE).
- Joint research activities—including demonstrations, lab work and research reports—with allied groups (EPRI, NEETRAC, PSERC, DSTAR, CEATI, CURENT, DOE National Labs, etc.) that address cooperative needs.

As is true for all member advisory groups, ARRMAG products are usually available to all cooperatives free of charge on [cooperative.com](http://cooperative.com) or, for work done in partnership, on other websites accessible to all cooperatives.

## Past and On-going Projects

The full collection of past Analytics research is available online on the BTS page to all cooperative staff at [cooperative.com](http://cooperative.com). However, below are examples of Analytics research projects that are in progress or have been completed to date.

- **Dynamic Engineering Analysis – Open Modeling Framework (OMF)** The impact of smart grid technologies, such as networked sensors, distributed generation, and energy storage, varies depending on the distribution feeder. Utilities are faced with several problems in trying to determine the costs, benefits, and system impact of new grid technologies. NRECA developed this analytics platform, which was funded by the U.S. Department of Energy, to enable cooperatives to simulate engineering and financial impacts of grid technologies. Software available at <https://www.omf.coop/>
- **GridLAB-D and OMF Solar Enhancement and Dissemination (GOSED)** This project aims to develop the online analytical tool – the Open Modeling Framework – to model the engineering and financial impact of new solar deployments on distribution feeders. This effort is funded by the Department of Energy. Results incorporated into: <https://www.omf.coop/>
- **Geographic Analysis Performance of Geographic Information Systems (GIS) analysis** for many projects across the association. Past work has included legislative maps to guide grassroots legislative outreach efforts, analysis of the rural broadband landscape, visualization of NRECA employees' engagement with cooperatives. Work is underway to update the America's Electric Cooperative Network map.
- **Load Controls for Energy Storage Applications "VirtualBatteries"** Through a partnership with Pacific Northwest National Laboratory (PNNL), NRECA is creating software that will allow cooperative utilities to estimate what energy storage applications – such as peak demand reduction or asset upgrade deferral – could be served through more precise management of thermostatically controlled loads. The software will also be able to estimate the financial value of these services to the utility, and later stages of the project will create reference control algorithms on top of the Volttron platform.