NEWS & UPDATES

Newsletter for the GRID DATA Repository
and BetterGrids Foundation, Inc.

In this Edition	Page(s)
A new 9500 Node Test System	1
SGDX Update	2
New Model Submissions	2
Volunteer Spotlight	3
2022 Performance Goals and Progress	3-4
Usage Statistics	4
Webinars	5

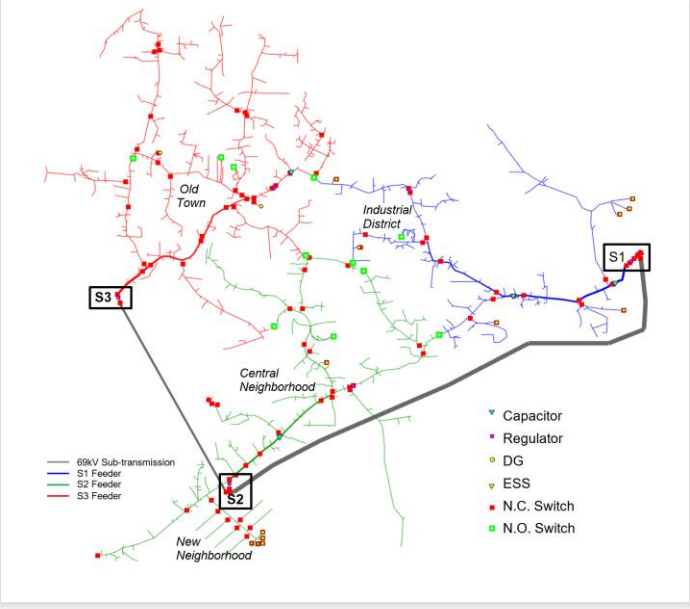
A New 9500 Node Test System

BetterGrids would like to highlight the new 9500 Node Test System that was created as part of a DOE project and in conjunction with the IEEE Power and Energy Society Test Feeders Working Group (https://cmte.ieee.org/pes-testfeeders/).

The model is an extension of the widely used IEEE 8500 Node Test Feeder. It is a full-size model representative of a single utility distribution circuit with multiple feeders. It was developed specifically to support distribution system simulation with realistic operational scenarios. It includes many elements highly desired by the research community including behind the meter rooftop PV and utility scale Distributed Energy Resources (DERs). Also of significance is that the model is being published in Common Information Model (CIM) format intended to help support widespread adoption by utilities, vendors, universities and research institutions.

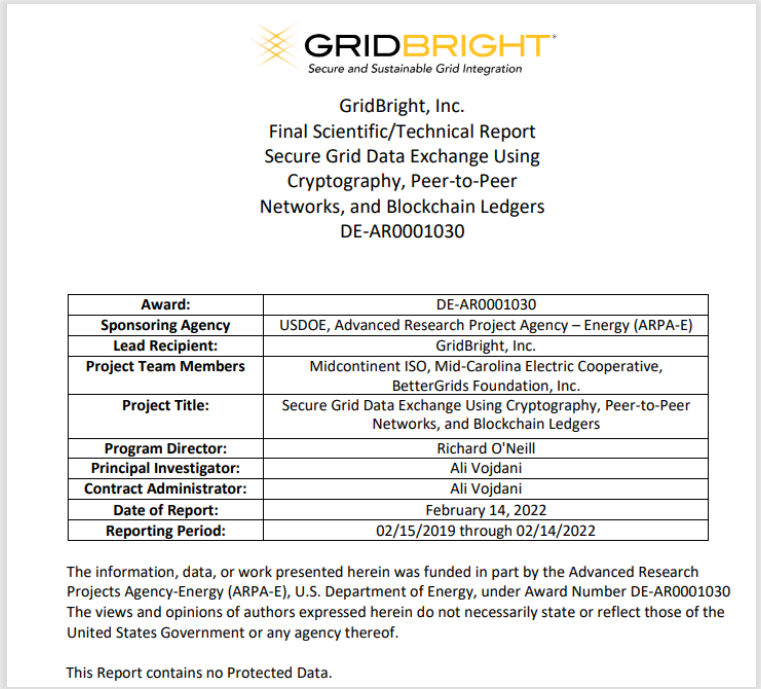
Currently the model is open for review and comment at https://cmte.ieee.org/pes-testfeeders/temporary/ .

Once officially published, the model will be published through the IEEE PES test feeders working group and also included in the BetterGrids repository. More information including the paper that describes the model in more detail can be found on the review page noted above.



9500 Node Rendering by Alexander Anderson, PNNL

SGDX Update!



GRIDBRIGHT
Secure and Sustainable Grid Integration

GridBright, Inc.
Final Scientific/Technical Report
Secure Grid Data Exchange Using Cryptography, Peer-to-Peer Networks, and Blockchain Ledgers
DE-AR0001030

Award:	DE-AR0001030
Sponsoring Agency	USDOE, Advanced Research Project Agency – Energy (ARPA-E)
Lead Recipient:	GridBright, Inc.
Project Team Members	Midcontinent ISO, Mid-Carolina Electric Cooperative, BetterGrids Foundation, Inc.
Project Title:	Secure Grid Data Exchange Using Cryptography, Peer-to-Peer Networks, and Blockchain Ledgers
Program Director:	Richard O'Neill
Principal Investigator:	Ali Vojdani
Contract Administrator:	Ali Vojdani
Date of Report:	February 14, 2022
Reporting Period:	02/15/2019 through 02/14/2022

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This Report contains no Protected Data.

The DOE Secure Grid Data Exchange (SGDX) project is complete and closed. Software from the project is now available as open source on DOE CODE.

Accomplishments Included:

- Collaborated with CAISO, MCEC, MISO, NV Energy, Xcel Energy, and ZGlobal, to successfully demonstrate the application of GRIDEON® to several use cases related to grid resiliency and sustainability.
- Created a white paper on a proposed encryption standard for the utility industry: OpenCIP. Special thanks to our contributors: Ken Anderson, ACKS Advisory services; Michael Brown, NV Energy; Peter Klauer, CAISO; Ruchi Rajasekhar, MISO; Tom Williams, WECC; Zac Canders, DataCapable; and Ziad Dassouki, ATCO; and GridBright Team members: Ali Vojdani, Travis Rouillard, and Terry Nielsen.
- Created a set of opensource NDA's for the exchange of grid data. These NDAs are posted on BetterGrids.org.

New Model Submissions

Model	Source
• Multiple US GIS Datasets	• Oak Ridge National Lab
• Multiple Synthetic data models: Mid-Atlantic 25k bus model, 80k bus eastern and western US interconnected, Austin grid, etc.	• Texas A&M
• GO competition models: 2000 bus, 10k bus, 30k bus, PMU test case, etc.	• Multiple sources
• Datasets from ARPA-E Perform	• Texas A&M

New Spotlight Feature!

The BetterGrids Foundation would like to spotlight the innovations and support of the BetterGrids Foundation going forth in each newsletter. These areas could include: Volunteer, User and Partner Spotlights. We look forward to sharing these unique contributions with the BetterGrids Community. Let us know if you are interested in being featured. Thank you for your interest and contributions to BetterGrids!

Volunteer Spotlight

Alexandra "Sascha" von Meier very recently retired from her position as adjunct professor in the department of electrical engineering and computer science at UC Berkeley, director of electric grid research at the California Institute for Energy and Environment, and faculty scientist at the Lawrence Berkeley National Laboratory. Her research has focused on the application of novel sensing, analytics and control strategies to facilitate the integration of distributed energy resources in the electric grid. Sascha looks forward to finally finishing the second, expanded edition of her popular textbook, *Electric Power Systems: A Conceptual Introduction,* and being an independent consultant.

2022 Performance Goals

The Board of Directors met on April 28, 2022 and approved the following performance goals for 2022.

BetterGrids Foundation 2022 Performance Improvement Goals (PIGs)

Area	Metrics	Baseline (2016)	2017	2018	2019	2020	2021	2022 Threshold	2022 Goal
Repository	Number of registered accounts	0	120	299	386	496	659	600	700
	Number of items in the repository	0	291	413	454	469	499	500	550
	Number of downloads per year	0	3900	143565	1464	1606	2352	1700	2000
Marketing	Number of committee members (i.e., "Community Volunteers")	0	55	>56	60+	66	67	60	70
Self-Funding	Annual revenue from value-added services ($)	0	0	0	0	5000	5000	0	0
	Annual revenue from fundraising ($)	0	10000	10000	10000	5000	5000	10000	15000
	Annual expenses ($)	0	4268.35	585	298	2933	8538	35000	30000
Strategic	% Strategic PIGs completed	NA	81	60	90	95	90	80	90
	Not measured yet	Baseline						Below Threshold	Above Threshold

Technical Committee Meetings

On August 5th, 2022, we hosted our summer Technical Committee Meeting. Highlights include discussion of new models, updated usage statistics, reviewed goals and discussed action items needed to fulfill our 2022 goals.

2022 Goal Progress

As of mid-August, we have had success in working towards the completion of our goals. Here's our update:

	2022 Strategic Goals	Performance
1	Create a BetterGrids Webinar Series and Deliver 6 Educational Webinars	To date, we have hosted 2 successful Webinars in January and March, and plan to host the next one on September 8th. We will finish out the year with 3 more.
2	Increase Community Engagement in BetterGrids Forum to 25 Registered Users	We are continuing to try figure out creative ways to engage users in the forum. We have added a link to a recent white paper to the forum in hopes of garnering discussion through the forum.
3	Conduct a formal Fundraising Campaign	We have created a formal fundraising letter and have sent it out to a couple of potential donors. A new fundraising page has been added to the BetterGrids website.
4	Perform 6 new Outreach Events	We continue to connect with members of BetterGrids and have promoted BetterGrids in IEEE working groups and in small group discussions at Distributech.
5	Increase the number of BetterGrids Partners to 6	In progress

BetterGrids Usage Statistics

We continue to grow as can be seen on the chart below. We are hopeful that we can add a Forum Usage statistic to this graphic by the next newsletter.

Metric	Q4/17	Q2/18	Q4/18	Q2/19	Q4/19	Q2/20	Q4/20	Q4/21	Q2/22
Model Contributors	6	9	16	19	24	25	26	28	29
Registered Accounts	120	207	299	317	378	410	496	648	748
Model Collections	13	13	13	13	14	14	14	14	15
Distinct Models	291	314	413	441	448	454	469	504	567
Model Files	817	881	1015	1269	1289	1308	1395	1439	1567
Models Total Sizes (Mb)	615	2988	4741	4787	6130	6670	10701	10703	11603

Industry Outreach – Webinars

We kicked off our 2022 goals by hosting 2 webinars featuring several industry experts. More are scheduled over the next few months. We have publicized these on BetterGrids.org, PowerGlobe, LinkedIn, and other relevant channels.

Renewable Dispatch – In the Cloud

Summary: Renewables, Dispatch and Cloud in the same sentence might strike you as an oxymoron. The BetterGrids Foundation sponsored a Webinar highlighting recently completed GridBright R&D by the team of industry leaders who made it happen. You will find the link to the recording on the BetterGrids.org Website.

647 Researchers, 45 Countries, One BetterGrids

Summary: BetterGrids provides grid research teams with cloud-hosted repositories to support online collaboration between geographically dispersed universities, labs, vendors, and utilities. The BetterGrids SaaS solution is the perfect turnkey option for securely sharing grid models, test cases, results, documents, and software versions through the project lifecycle. Industry professionals from Berkeley, NREL, 1898 & Co., and GridBright shared the innovative ways they partnered with BetterGrids. They also explained how YOU can contribute, use and collaborate using the BetterGrids Repository. You will find the link to the recording on the BetterGrids.org Website.

Utility Emergency Management – In the Cloud (Upcoming: September 8, 2022)

Summary: The "Storm" Clouds of Resiliency. Clouds are not just about storms anymore. Cloud technology is the foundation for the next generation of utility-specific emergency management–all hazard, continuous, and enterprise-scale common operating picture. These "storm" clouds elevate the reach and depth of emergency management to become a keystone for utility grid resilience. Register at https://www.bettergrids.org/webinar-utility-emergency-management-in-the-cloud

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Community Engagement Coordinator

Nancy Nielsen has been engaged as a contractor to coordinate BetterGrids' community engagement processes. Please contact her with any suggestions for Webinar Ideas, Forum questions, and ideas for engagement, or if you'd like to volunteer or contribute to BetterGrids. She can be reached at: Nancy.Nielsen@GridBright.com.

Thank you for your continued interest in the BetterGrids Foundation and BetterGrids Grid Data Repository. Please reach out on the Forum ***https://db.bettergrids.org/forum/forums/list.page*** *if you'd like to discuss a particular topic in depth. We'd love to hear from you!*

Stay Current

Stay up to date on the Repository progress and BetterGrids
by following us at LinkedIn, Twitter, or at our website www.BetterGrids.org