

The screenshot shows the OSTI.GOV website interface. At the top, there is a navigation bar with links for 'Submit Research Results', 'Search Tools', 'Public Access Policy', 'Data Services & Dev Tools', 'About', 'FAQs', and 'News'. Below this, the page title is 'Smart-DS: Synthetic Models for Advanced, Realistic Testing: Distribution Systems and Scenarios'. There are tabs for 'Full Record' and 'Similar'. On the left side, there is a 'CONFERENCE:' section with a 'View Conference' button. Below that, there is a 'OTHER AVAILABILITY' section with a note about document availability. Further down is a 'SAVE / SHARE:' section with options to export metadata and save to a library. The main content area is titled 'Abstract' and contains the following text: 'The National Renewable Energy Laboratory (NREL) in collaboration with Massachusetts Institute of Technology (MIT), Universidad Pontificia Comillas (Comillas-IIT, Spain) and GE Grid Solutions, is working on an ARPA-E GRID DATA project, titled Smart-DS, to create: 1) High-quality, realistic, synthetic distribution network models, and 2) Advanced tools for automated scenario generation based on high-resolution weather data and generation growth projections. Through these advancements, the Smart-DS project is envisioned to accelerate the development, testing, and adoption of advanced algorithms, approaches, and technologies for sustainable and resilient electric power systems, especially in the realm of U.S. distribution systems. This talk will present the goals and overall approach of the Smart-DS project, including the process of creating the synthetic distribution datasets using reference network model (RNM) and the comprehensive validation process to ensure network realism, feasibility, and applicability to advanced use cases. The talk will provide demonstrations of early versions of synthetic models, along with the lessons learnt from expert engagements to enhance future iterations. Finally, the scenario generation framework, its development plans, and co-ordination with GRID DATA repository teams to house these datasets for public access will also be discussed.' Below the abstract, there is an 'Authors:' section listing: Krishnan, Venkat K, Palmintier, Bryan S, Hodge, Brian S, Hale, Elaine T, Elgindy, Tarek, Bugbee, Bruce, Rossol, Michael N, Lopez, Anthony J, Krishnamurthy, Dheepak, Vergara, Claudio, Domingo, Carlos Mateo, Postigo, Fernando, de Cuadra, Fernando, Gomez, Tomas, Duenas, Pablo, Luke, Max, Li, Vivian, Vinoth, Mohan, and Kadankodu, Sree. At the bottom, there is a 'Publication Date:' field with the value '2017-08-09'.

<https://www.osti.gov/biblio/1375108>

Title:

Smart-DS: Synthetic Models for Advanced, Realistic Testing: Distribution Systems and Scenarios

Authors:

Krishnan, Venkat K, Palmintier, Bryan S, Hodge, Brian S, Hale, Elaine T, Elgindy, Tarek, Bugbee, Bruce, Rossol, Michael N, Lopez, Anthony J, Krishnamurthy, Dheepak, Vergara, Claudio, Domingo, Carlos Mateo, Postigo, Fernando, de Cuadra, Fernando, Gomez, Tomas, Duenas, Pablo, Luke, Max, Li, Vivian, Vinoth, Mohan, and Kadankodu, Sree.

Abstract:

The National Renewable Energy Laboratory (NREL) in collaboration with Massachusetts Institute of Technology (MIT), Universidad Pontificia Comillas (Comillas-IIT, Spain) and GE Grid Solutions, is working on an ARPA-E GRID DATA project, titled Smart-DS, to create: 1) High-quality, realistic, synthetic distribution network models, and 2) Advanced tools for automated scenario generation based on high-resolution weather data and generation growth projections. Through these advancements, the Smart-DS project is envisioned to accelerate the development, testing, and adoption of advanced algorithms, approaches, and technologies for sustainable and resilient electric power systems, especially in the realm of U.S. distribution systems. This talk will present the goals and overall approach of the Smart-DS project, including the process of creating the synthetic distribution datasets using reference network model (RNM) and the comprehensive validation process to ensure network realism, feasibility, and applicability to advanced use cases. The talk will provide demonstrations of early versions of synthetic models, along with the lessons learnt from expert engagements to enhance future iterations. Finally, the scenario generation framework, its development plans, and co-ordination with GRID DATA repository teams to house these datasets for public access will also be discussed.

Subject:

24 POWER TRANSMISSION AND DISTRIBUTION; synthetic distribution system datasets; standard scenarios; public data for distribution; grid data; reference network model