Cooperative Research and Development Agreement (CRADA) Final Report

Report Date: 12/16/2024

In accordance with Requirements set forth in the terms of the CRADA, this document is the CRADA Final Report, including a list of Subject Inventions. It is to be forwarded to the DOE Office of Scientific and Technical Information upon completion or termination of the CRADA, as part of the commitment to the public to demonstrate results of federally funded research.

Parties to the Agreement: Lawrence Berkeley National Laboratory and Synapse Energy Economics, Inc.

CRADA number: FP00017759

CRADA Title: IRP Best Practices: 2023 Edition

Responsible Technical Contact at Berkeley Lab: Juan Pablo Carvallo

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Sponsoring DOE Program Office(s): Office of Electricity

LBNL Report Number: LBNL-2001635

OSTI Number: *[SPO to complete]*

Joint Work Statement Funding Table showing DOE funding commitment:

DOE Funding to LBNL	$100,000.00
Participant Funding to LBNL	$0
Participant In-Kind Contribution Value	$100,000.00
Total of all Contributions	$100,000.00

Provide a list of publications, conference papers, or other public releases of results, developed under this CRADA:

Report titled "Best Practices in Integrated Resource Planning: A guide for planners developing the electricity resource mix of the future."

Webinar for NASEO with the same title to be held on January 6th, 2024

Webinar with the same title to be held on January 9th, 2025

Provide a detailed list of all subject inventions, to include patent applications, copyrights, and trademarks:

None

Executive Summary of CRADA Work:

This CRADA produced a guide that offers best planning practices for electricity systems undergoing a major transition, but that also contains a wealth of practical guidance to develop technically sophisticated, clearer, more effective, and state-of-the-art electric utility resource plans. The paper is based on a thorough examination of over fifty recent integrated resource plans, in addition to the hands-on experience of both LBNL and Synapse in reviewing these for regulatory and business purposes. The paper benefited from an extensive stakeholder review process that produced over 800 comments and edits from over 40 industry leaders, grounding the paper and ensuring the effectiveness of these materials.

The guide is for resource planning professionals and stakeholders involved in resource planning processes. This diverse group includes utility personnel tasked with conducting resource planning and making investment decisions, state regulatory commissions that develop planning guidance and oversee the resource planning process, and stakeholders that represent a wide range of interests—utility consumer advocates, environmental groups, industrial customers, local governments, independent power producers, and many others.

Summary of Research Results:

The paper was developed using an incremental approach by identifying a structure with key topics early on and then assigning these topics to the three core researchers involved – one from LBNL and two from Synapse. Another LBNL staff performed numerous internal reviews as they paper evolved and supported the development of an effective document.

The project SOW was organized based on the core topics that the paper covered. Each task corresponded to one core topic; all of the tasks were developed satisfactorily, especially after stakeholder input was taken into account to further refine the core topics and augment the number of best practices. The report as finished includes 50 best practices and is one of the most comprehensive guides for integrated resource planning available.

The project only deviated in its timeline, as the depth and breadth of the best practices included and the examples required to support them grew with the paper's evolution and the stakeholder review process. Necessary no cost extensions were obtained by both parties to the CRADA to ensure meeting of funder demands.

This best practices paper did not produce technology transfer or similar activities. A potential extension of this work involves the development of a community of practice that groups utility

planners, PUC staff, consultants, researchers, academics, and others involved in different aspects of IRP to share experiences and identify emerging and aspirational best practices as they evolve over time.