

TECHBRIDGE MICROGRID CHALLENGE

TO ENABLE MICROGRID ADOPTION



The TechBridge Challenge is an open innovation and technology development platform for industry clients from Fraunhofer. The Challenge process consists of four stages—Design, Search, Select, Accelerate—to identify, evaluate, and further develop game-changing technologies that can solve industry challenges.

Shell GameChanger engaged TechBridge to run an innovation challenge on Microgrids due to our expertise in the area and our experience doing validation work for startups. The goal: to identify technologies that could enable broad adoption of microgrids for resiliency and distributed generation. The TechBridge team constructed a call to startup companies, performed extensive outreach, engaged Fraunhofer domain experts to select the most promising candidates, and performed a validation project for the winning company. The winning company used the project findings to gain traction from both investors and potential customers, while Shell used the results to inform its strategy around distributed generation investments.

“The Fraunhofer CSE TechBridge award gives us an incredible opportunity to commercialize this microgrid technology, which otherwise might take years.”

Deanna Bebb, President, XTRLs International
TechBridge Microgrid Challenge Winner

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DESIGN

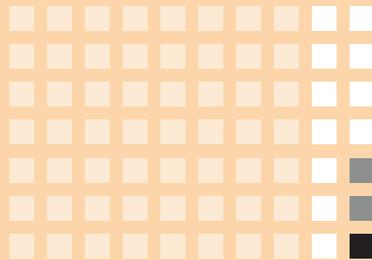
Together with the Sponsor, TechBridge set Challenge constraints, and determined the overall timeline and developed the Challenge problem statement:

WHAT TECHNOLOGIES WILL ENABLE THE BROAD ADOPTION OF MICROGRIDS?

SEARCH

TechBridge performed outreach through 1000+ channel partners (universities, incubators, accelerators, regional organizations) and received over:

70 APPLICANTS
FROM 15 COUNTRIES 7 U.S. STATES



TechBridge presented an overview summary of all applicants (including technology, market, stage, key challenges) to the Sponsor, and recommended 14 applicants to move onto Evaluation Round 1.

Interviews determined the key priorities for de-risking the 14 technologies. 3 applicants were selected from Evaluation Round 1 to a deeper review in Round 2.

SELECT



Shell selected the applicant technology of highest interest: XTRLs International, a San Diego-based startup.

XTRLs had developed a microgrid controller that enables facile integration and intelligent management of microgrid assets and loads. However, XTRLs had not built a model to quantify the energy savings opportunity for a given user deploying their smart controller.

ACCELERATE

WHAT WE DID: TechBridge designed and Fraunhofer domain experts executed a project to simulate the impact of XTRLs' technology in an industrial setting, quantifying the sizes and sources of revenue streams and cost savings that could result from an industrial user employing the new controller.

HOW WE DID IT: We started with the load profile of a typical industry power plant, and designed a simulation that calculated energy costs over the course of a year for the same facility, both with and without the new control technology. The study required detailed knowledge of industrial facilities and processes, as well as smart grid control and integration practices.

THE RESULTS: The project culminated in a report detailing the value streams accessible via integration of the new product, and described how an industrial user could achieve savings. We showed that a typical facility incorporating the new technology would experience an overall facility cost reduction of 6% due to reduced demand and import charges, as well as revenue from exported power.