

Playbook Lesson Learned Phase 3: Project Preparation

U.S. Virgin Islands Establishes Interconnection Standards to Clear the Way for Grid Interconnection

The Energy Development in Island Nations (EDIN)-U.S. Virgin Islands (USVI) pilot project offers a valuable example of how to translate technical analysis to an effective, efficient regulatory and policy environment that facilitates the integration of renewable energy into the existing electricity system.

Faced with electricity prices more than four times higher than the U.S. average, USVI Gov. John P. de Jongh Jr. set an aggressive goal in February 2010 to reduce the territory's almost total dependence on fossil fuel 60% by 2025. To achieve that goal, the governor and the EDIN-USVI project partners, including the U.S. Department of Energy and the U.S. Department of the Interior, the USVI government, Virgin Islands Energy Office (VIEO), and the Virgin Islands Water and Power Authority (WAPA), were committed to developing the territory's renewable energy resources and increasing its energy security. But there were a variety of hurdles to overcome.



A 448-kW PV system installed at the Cyril E. King Airport on St. Thomas in April 2011. *Photo by Adam Warren, NREL 18953*

Challenge

According to the VIEO, a lack of clearly defined interconnection procedures was among the most significant challenges for those working to install renewable energy systems in the territory. This is a challenge many communities face as they begin implementing long-term clean energy strategies and initiatives. In the USVI, the ad-hoc policies and standards that were in place were confusing and cumbersome, resulting in a high level of frustration that discouraged individuals and businesses from investing in renewable energy systems and projects.

To address this issue, the EDIN-USVI project team sought assistance from an objective party with the technical expertise needed to inform the development of transparent provisions and standard agreements designed to facilitate the timely, predictable, and cost-effective interconnection of renewable energy systems. To increase the speed and scale of renewable energy adoption, the USVI needed to clear the way for the integration of renewable energy generation onto the grid while maintaining the safety, reliability, and power quality of the electricity distribution system.

Solution

The EDIN-USVI team turned to Keyes, Fox & Wiedman, a law firm with deep expertise in renewable energy regulatory policy and interconnection standards, to perform an in-depth analysis of the territory's interconnection procedures and make recommendations. To inform its work, the firm worked closely with a renewable energy working group composed of private citizens, VIEO employees, WAPA employees and board members, private

solar developers, and National Renewable Energy Laboratory technical advisors. It also leveraged the experience of others, including California and Hawai'i, drawing upon their lessons learned and the procedural models they have developed (specifically the Federal Energy Regulatory Commission's Small Generator Interconnection Procedure, California's Rule 21, and Hawai'i's Rule 14H) for grid interconnection.

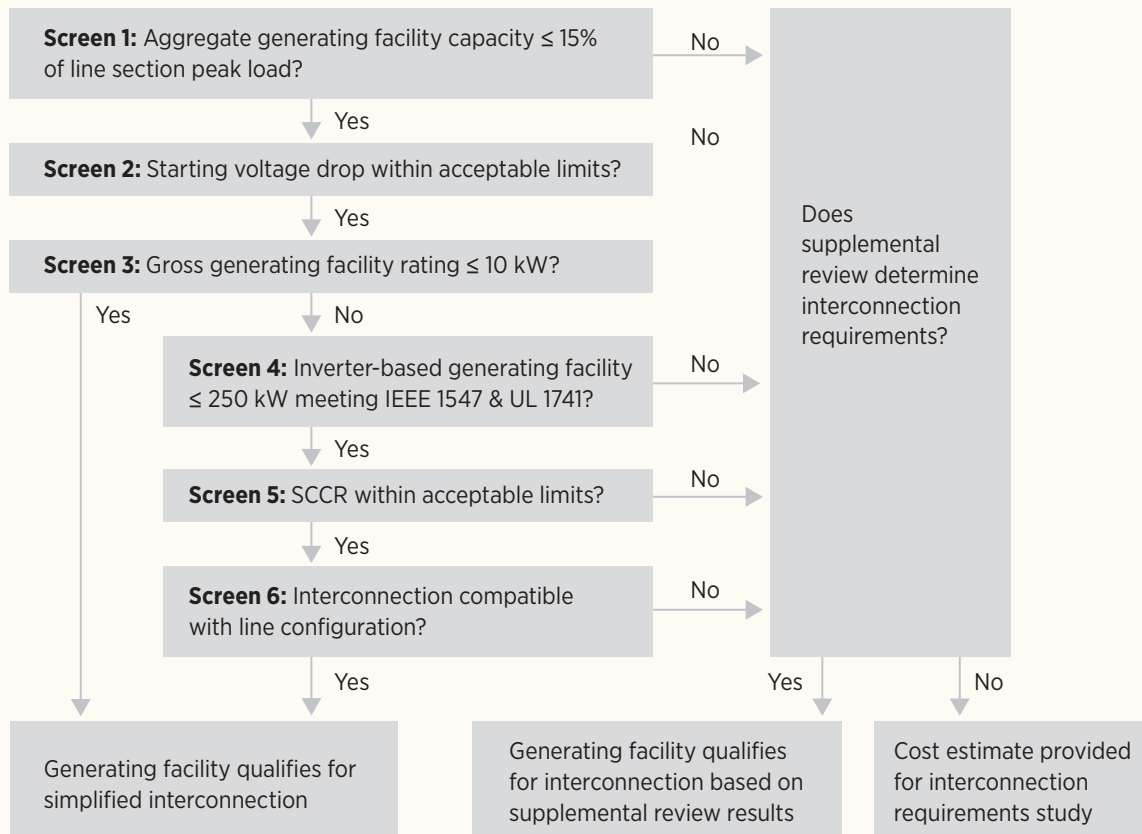
In April 2010, the firm presented the working group with a draft interconnection policy and interconnection agreement along with justification and examples supporting its recommended policies and rules, including:

- Provide multiple review levels for different system sizes and types
- Establish timelines
- Remove unnecessary technical requirements
- Provide interconnection rules that apply to all system types and fuel sources
- Include a simple dispute resolution procedure

Among the specific components of the draft interconnection procedures were:

- Timelines for each step
- Review screens
- Supplemental review requirements
- Study process
- Standard applications and agreements.

Proposed USVI Screen Criteria Process Flow



The working group shared the report’s findings with a diverse set of stakeholders at a public meeting to ensure balance between the needs of the utilities, developers, and renewable energy offtakers. This collaborative process resulted in the establishment of a clear, well-defined, and streamlined interconnection process that contributed significantly to increasing the speed and scale of renewable energy deployment in the USVI. By August 2014, the territory had reduced its fossil fuel use by 20%, and St. Croix was on track to produce 25% of its power from solar and wind.

“In 2014, renewable energy projects for residential and commercial customers tied into the electric grid reached 5 megawatts on St. Croix and 10 megawatts in the St. Thomas/St. John District,” said VIEO spokesperson Don Buchanan. “The utility has almost completed a 4 megawatt solar installation on St. Croix. It is expected to be online by November. The peak megawatt usage on St. Croix, population 50,000, is now about 39 megawatts.”

Key Takeaways

Clean energy policies and regulatory measures play a key role in advancing island clean energy goals. The establishment of a clear and well-defined interconnection policies and procedures has been a significant factor in the success USVI has achieved in pursuit of its 2025 goal. The USVI tapped into outside technical expertise and leveraged model interconnection standards developed by similar communities to develop a draft interconnection procedure, and then it worked collaboratively with local stakeholders and project partners to ensure that the procedure it ultimately adopted would encourage and promote renewable energy development without compromising the safety and reliability of the electricity distribution system.

Key lessons learned for USVI interconnection standards include:

- Seek assistance from legal and technical experts with experience in grid interconnection issues to inform the development of interconnection standards.
- Leverage the experience of communities pursuing similar clean energy goals, drawing upon the lessons they have learned and the models they have developed.
- Work collaboratively with key stakeholders to incorporate their insights and ideas, and strive to achieve balance in addressing their diverse interests and needs.
- Develop a website that clearly communicates essential information about interconnection standards and streamlines the process for users.

“What we’re attempting to do is integrate a very large portion of renewable energy into our system. Think of it as a pilot for how to integrate renewables as a large proportion of the grid.”

—Karl Knight, Director, VIEO; WAPA board member

This lesson learned is one of many provided in the Energy Transition Initiative Islands Playbook—an action-oriented guide to help island communities successfully initiate, plan, and complete a transition to a clean energy system and eliminate dependence on imported fuels. See the full Islands Playbook at www.eere.energy.gov/islandsplaybook.

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The Energy Transition Initiative leverages the experiences of islands, states, and cities that have established a long-term vision for energy transformation and are successfully implementing energy efficiency and renewable energy projects to achieve established clean energy goals. Through the initiative, the U.S. Department of Energy and its partners provide government entities and other stakeholders with a proven framework, objective guidance, and technical tools and resources for transitioning to a clean energy system/economy that relies on local resources to substantially reduce reliance on fossil fuels.