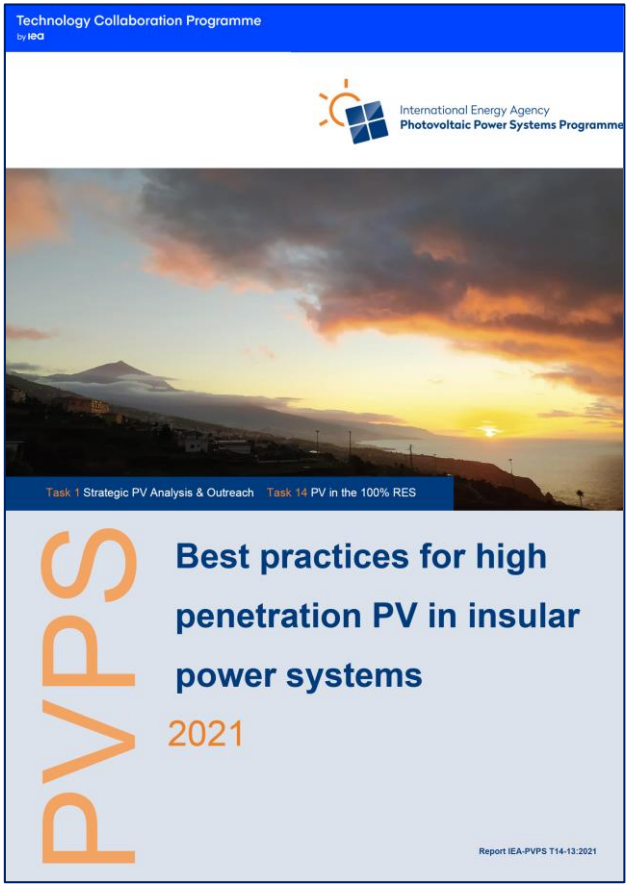
IEA PVPS

Task-14

New Report released



Summary (definition)

- This report defines **insular power systems** as territories that are geographically defined by conditions that makes interconnections with large power systems unattractive economically compared to alternatives based on the combination of endogenous energy, storage systems, and power electronics.

Summary (case study)

- Coober Pedy (Australia)
- Easter Island (Chile)
- El Hierro (Spain)
- Galápagos (Ecuador)
- Kauai (US)
- King Island (Australia)
- Maniitsoq City (Greenland – Denmark)
- Maui (US)
- Nii Jima and Shikin Jima (Japan)
- Tenerife (Spain)

Summary (key findings)

- When deploying renewable technologies, performance specifications should take into account the likely future state of the insular power system, which may include greatly reduced conventional generation.
- All new renewable generation should be required to be capable of continuing to operate during (riding through) large voltage and frequency transient events, including fast rates of change of frequency.
- Small-scale distributed generation that is not under direct utility control can be more beneficial if equipped with the ability to autonomously respond to voltage and frequency events in a way that helps stabilize the system.
- Large-scale renewable generation should be capable of providing grid stabilizing services such as voltage regulation and fast frequency response in coordination with the local TSO. In systems where non-synchronous generation may in the future exceed 80% of instantaneous load at times, grid-forming capability should be considered for system relevant new generation.
- Maintaining an emphasis on grid resilience during all phases of planning, design, deployment and operation of large-scale renewable systems is critical to assure cost effective, reliable and efficient customer service and system response.

Thank you

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