



Hawai'i Natural Energy Institute Research Highlights

International Support

Laos Solar Pilot Auction

OBJECTIVE AND SIGNIFICANCE: Under an APRESA Award from the Office of Naval Research (see “[Asia Pacific Regional Energy System Assessment](#)” project summary) and in partnership with Clean Power Asia (CPA), HNEI’s Grid Systems Technologies Advanced Research Team (Grid**START**) supported Laos’ first market-based competitive solar pilot auction. Utilizing its experience in procuring and interconnecting solar projects in Hawai‘i and abroad, and analysis of the transmission and distribution system infrastructure and operations in Laos, Grid**START** assisted in drafting interconnection grid codes and developing the power purchase agreement (PPA) structure and terms for the solar pilot auction.



Figure 1. Rooftop solar PV array in Luang Prabang, Laos.

BACKGROUND: While Laos has abundant hydropower and is a net exporter of electricity during the wet season, it imports electricity during the dry season. Furthermore, the share of hydropower for electricity generation is expected to decline to around 77% by 2040 from 85% in 2015, according to EREA. Instead, the share of coal-fired power plants is expected to rise. An increase in deployment of alternative energy such as solar PV, which Laos has a high potential for, would help offset the CO₂ emission increase.

Under the cooperation framework agreement on August 8, 2017, the Lao Ministry of Energy and Mines (MEM) and CPA agreed to work closely on the exploration of grid-connected solar PV and other variable/intermittent energy resources, including the design and implementation of a Solar Pilot Auction (SPA) to secure PV projects from independent power producers (IPP). The pilot auction not only would help pave the way towards more transparent and cost-effective power procurement from IPPs, which used

to be conducted through bilateral negotiation but would also strengthen the country’s energy security.



Figure 2. Flag of Laos, PV panels, and Windmills.

PROJECT STATUS/RESULTS: Grid**START** delivered technical interconnection requirements and power purchase agreement terms. Both documents were consolidated in an auction announcement package submitted to the Institute of RE Promotion (IREP), MEM, on September 30, 2020, for proposal to the Lao National Assembly.

Based on this work, Électricité du Laos (EDL), the Laos grid operator, requested extended support from Grid**START** to develop interconnection grid codes for distributed PV and utility-scale solar and wind projects, a foundational need to enable uptake of solar and wind resources into the Laos power grid. This work is described in more detail in the “[Technical Interconnection Requirements for Solar and Wind Projects in Laos](#)” project summary.

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