Pumped hydro storage honduras

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The map presents the 10,000 seasonal pumped hydro storage projects with the lowest energy storage costs in USD/MWh, at a resolution of 7,5 mins, including the impact that the storage in the SPHS has on the hydroelectric dams downstream the SPHS plant. The total number of projects developed by the model is 5.1 million.

The dots in the interactive map presents the center of the upper reservoir dam. Click on a dot to see details on the main components of the project and costs details. Green dots represent cheep projects and red dots represent more expensive projects.

All projects are designed with a 1 GW generation/pumping capacity. The install capacity of SPHS plants is usually higher than in daily and weekly PHS projects, due to the longer tunnels and shorter heads. Thus, the plants might have small installed capacities of 100 to 400 MW and operate in seasonal storage cycles, with small daily and weekly fluctuations.

This is the only mapping effort of global potential for SPHS plants. All projects are open cycle and the lower reservoir is in a major river with at least 100 m3/s average flow. SPHS plants are advisable in rivers that have seasonal flow variations and the needs for energy storage are complementary with the needs to regulate the flow of the river.

The reference of the model used to develop the seasonal pumped hydro storage projects is show below. Please refer to the paper for more details on the model methodology, results and discussion. The paper is open source and free to download.

Hunt, J.D., Byers, E., Wada, Y. et al. Global resource potential of seasonal pumped hydropower storage for energy and water storage. Nature Communications 11, 947 (2020). https://doi /10.1038/s41467-020-14555-y

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