

# SOLAR AND WIND AMERICAN SAMOA



Can American Samoa develop wind power? American Samoa is exploring opportunities for both offshore and onshore wind power generation. In 2022, federal legislation opened offshore waters around the U.S. territories (including American Samoa) to wind power development.



Is American Samoa a renewable country? American Samoa's energy sector relies almost entirely on imported fossil fuels, although renewables represent a small but growing power system contribution. The territory possesses substantial solar energy resources, as well as wind and biomass resource potential.



Does American Samoa have a geothermal energy plan? The 2016 American Samoa Energy Action Plan identifies some geothermal resources, but none of these are viable for commercial electricity generation. The 2016 plan instead emphasizes the development of wind and solar power (Ness, Haase, and Conrad 2016). American Samoa is exploring opportunities for both offshore and onshore wind power generation.



Does American Samoa have energy issues? Although energy burdens pose a real challenge in American Samoa, the territory is working to advance energy justice. For example, the Territorial Energy Office provides home energy efficiency programs to help reduce energy costs for low-income households.



How much solar power does American Samoa have? Of the 5 MW of ASPA's grid-connected solar PV capacity, 4.1 MW is utility scale and 900 kW is distributed across rooftops. American Samoa's smaller islands are moving toward a combination of solar, batteries, and diesel generators.

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How does American Samoa generate electricity? Some of its islands generate electricity from solar energy. 5,6 Pago Pago, one of the deepest natural harbors in the South Pacific, is among the territory's most important assets. It receives the imported petroleum products that American Samoa depends on to meet almost all of its energy needs. 7,8



The average hourly wind speed in American Samoa is essentially constant during July, remaining within 0.2 miles per hour of 14.8 miles per hour throughout. For reference, on July 28, the windiest day of the year, the daily average wind speed is 15.0 miles per hour, while on March 8, the calmest day of the year, the daily average wind speed



The solar day over the course of the year 2023. From bottom to top, the black lines are the previous solar midnight, sunrise, solar noon, sunset, and the next solar midnight. The day, twilights (civil, nautical, and astronomical), and night are indicated by ???



Wind and solar opportunities have been identified as two of the renewable energy strategies in the American Samoa Strategic Energy Plan. The plan, which was a collective effort of the American Samoa Renewable Energy Committee chaired by outgoing TEO Acting Director Tim Jones, notes that the islands of Olosega and Ta'u in Manu'a have a cost



October Weather in Pago Pago American Samoa. Daily high temperatures are around 86°F, rarely falling below 83°F or exceeding 89°F. All other weather data, including cloud cover, precipitation, wind speed and direction, and solar ???



1 ? HILO, Hawaii???USDA Rural Development State director Chris Kanazawa announced \$35.5 million in total investments to Banana Solar LLC, and Mana Solar, LLC, both located in American Samoa. The projects will help develop renewable energy systems to provide power for people

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on Tutuila Island and support community efforts to rely on clean energy.

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In 2016, the American Samoa Renewable Energy Committee set a goal to meet 50% of American Samoa's energy from renewable energy resources by 2025 and 100% by 2040, primarily with solar energy. In 2022, per capita electricity consumption in American Samoa was about 30% of the U.S. average.



American Samoa This profile provides a snapshot of the energy landscape of American Samoa, the southernmost territory of the United States. American Samoa's residential electricity to explore wind, solar PV, and geothermal potential on Tutu-ila, and considered the feasibility of supplying the Manu'a



A small island in American Samoa is making the switch from diesel generators. the Nature Conservancy completed a \$1.2 million solar and wind project on Palmyra Atoll, about 1,000 miles south



Tesla has announced their solar panels are nearly entirely powering the island of Ta'u in American Samoa. The island used to depend entirely on imported diesel fuel for its electricity, but a new initiative has seen the islanders build a 1.4-megawatt microgrid that absorbs and stores solar power for all their energy needs.

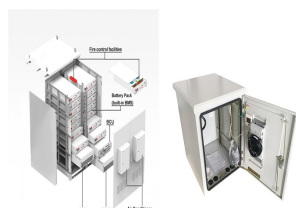


Weather History in American Samoa American Samoa. Solar elevation and azimuth over the course of the year 1966. The black lines are lines of constant solar elevation (the angle of the sun above the horizon, in degrees). Hourly Wind Speed in 1966 in American Samoa Link. Download. Compare. Averages. History: 1970 1969 1968 1967 1966



The solar day over the course of July 2023. From bottom to top, the black lines are the previous solar midnight, sunrise, solar noon, sunset, and the next solar midnight. The day, twilights (civil, nautical, and astronomical), and night are indicated by the color bands from yellow to gray.

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American Samoa COUNTRY INDICATORS AND SDGS TOTAL ENERGY SUPPLY (TES) Total energy supply in 2021 Renewable energy supply in 2021 100% Oil Gas Nuclear Coal + others Renewables Hydro/marine Wind Solar Bioenergy Geothermal Renewable share 100%. Generation in 2022 GWh % Non-renewable 130 97 Renewable 4 3 Hydro and marine 0 0 ???



The average hourly wind speed in American Samoa is gradually decreasing during September, decreasing from 14.9 miles per hour to 14.0 miles per hour over the course of the month. For reference, on July 28, the windiest day of the year, the daily average wind speed is 15.0 miles per hour, while on March 8, the calmest day of the year, the



5 ? HILO, Hawaii, Dec. 16, 2024 ??? USDA Rural Development State Director Chris Kanazawa today announced \$35.5 million in total investments to Banana Solar LLC, and Mana Solar, LLC, both located in American Samoa. The projects will help develop renewable energy systems to provide power for people on Tutuila Island and support community efforts to rely on ???



The average hourly wind speed in American Samoa is decreasing during November, decreasing from 12.5 miles per hour to 11.3 miles per hour over the course of the month. For reference, on July 28, the windiest day of the year, the daily average wind speed is 15.0 miles per hour, while on March 8, the calmest day of the year, the daily average



The island of Ta'u in American Samoa, located more than 4,000 miles from the West Coast of the United States, now hosts a solar power and battery storage-enabled microgrid that can supply nearly 100 percent of the island's power needs from renewable energy. This provides a cost-saving alternative to diesel, removing the hazards of power

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The territory possesses substantial solar resources and wind and biomass resource potential. Planned renewable power projects include utility-scale solar photovoltaic (PV) and wind generation with battery storage systems. American Samoa is the only U.S. territory in the southern hemisphere. American Samoa faces similar climate and energy



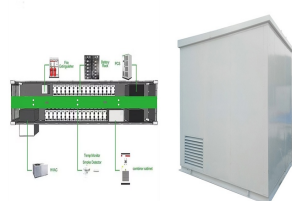
February Weather in Pago Pago American Samoa. Daily high temperatures are around 87°F, rarely falling below 84°F or exceeding 90°F. All other weather data, including cloud cover, precipitation, wind speed and direction, and solar flux, come from NASA's MERRA-2 Modern-Era Retrospective Analysis . This reanalysis combines a variety of wide



American Samoa: Many of us want an overview of how much energy our country consumes, where it comes from, and if we're making progress on decarbonizing our energy mix. Renewable energy here is the sum of hydropower, wind, solar, geothermal, modern biomass and wave and tidal energy. Traditional biomass ??? the burning of charcoal, crop



Climate and Average Weather Year Round in Pago Pago American Samoa. The climate in Pago Pago is hot, oppressive, windy, and overcast. All other weather data, including cloud cover, precipitation, wind speed and direction, and solar flux, come from NASA's MERRA-2 Modern-Era Retrospective Analysis . This reanalysis combines a variety of wide



American Samoa Laura Leddy and Alicen Kandt National Renewable Energy Laboratory Suggested Citation Leddy, Laura, and Alicen Kandt. 2024. substantial solar energy resources, as well as wind and biomass resource potential. Planned renewable power projects include utility-scale solar photovoltaic (PV), wind, and battery storage



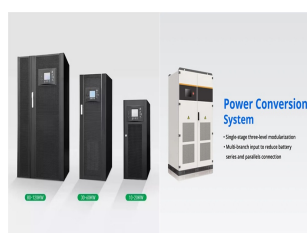
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Climate and Average Weather Year Round in T??funa American Samoa. The climate in T??funa is hot, oppressive, windy, and overcast. All other weather data, including cloud cover, precipitation, wind speed and direction, and solar flux, come from NASA's MERRA-2 Modern-Era Retrospective Analysis . This reanalysis combines a variety of wide-area



A wet day is one with at least 0.04 inches of liquid or liquid-equivalent precipitation. The chance of wet days in American Samoa varies significantly throughout the year. The wetter season lasts 7.5 months, from October 8 to May 26, with a greater than 40% chance of a given day being a wet day. The month with the most wet days in American Samoa is January, with an average of ???



Several tropical islands have already embraced hybrid solar-wind systems as a sustainable energy solution. One notable example is the island of Ta'u in American Samoa, which installed a microgrid with solar panels and battery storage, supplemented by a wind turbine.



American Samoa? In 2015 EPA awarded ASPA a DERA grant of \$42,200 for a similar solar-storage system on the Island of Ofu, which is also part of the Manu'a islands. This system includes 250 kilowatts (kW) of solar and 750 kW hours of a battery energy storage system with a 150 kW backup diesel generator to provide 80% renewable energy.



The solar day over the course of the year 2022. From bottom to top, the black lines are the previous solar midnight, sunrise, solar noon, sunset, and the next solar midnight. The day, twilights (civil, nautical, and astronomical), and night are indicated by ???

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The average hourly wind speed in American Samoa is essentially constant during January, remaining within 0.1 miles per hour of 11.0 miles per hour throughout. For reference, on July 28, the windiest day of the year, the daily average wind speed is 15.0 miles per hour, while on March 8, the calmest day of the year, the daily average wind

114KWh ESS



October Weather in Pago Pago American Samoa. Daily high temperatures are around 86°F, rarely falling below 83°F or exceeding 89°F. All other weather data, including cloud cover, precipitation, wind speed and direction, and solar flux, come from NASA's MERRA-2 Modern-Era Retrospective Analysis . This reanalysis combines a variety of wide



November Weather in Pago Pago American Samoa. Daily high temperatures are around 86°F, rarely falling below 83°F or exceeding 89°F. All other weather data, including cloud cover, precipitation, wind speed and direction, and solar flux, come from NASA's MERRA-2 Modern-Era Retrospective Analysis . This reanalysis combines a variety of wide



Now, the island runs on a completely renewable microgrid that meets 100% of residents' energy needs through solar power and battery storage. In 2016, the founders of Maui, Hawaii-based company Mana Pacific helped design and implement Ta'u's solar-energy microgrid composed of over 5,300 solar panels.



This means that the island can stay powered for three full days without the sun shining and absorb enough solar energy in 7 hours of sunlight to top the pack back to 100 percent capacity. Tesla Powerpacks. American Samoa Economic Development Authority funded the project, and after a year of construction, it launched the solar array this week.