



U.S. Virgin Islands: Facing Challenges Head-On

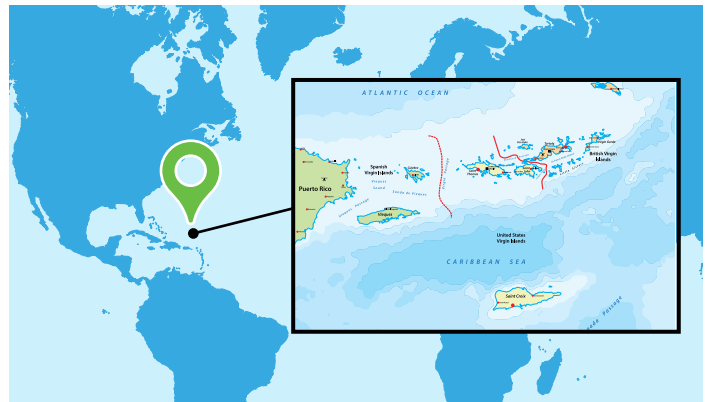
The U.S. Virgin Islands (USVI)—located in the Caribbean just east of Puerto Rico between the Caribbean Sea and the north Atlantic Ocean—is composed of three main islands: St. Croix, St. John, and St. Thomas. USVI is confronted with high electricity costs and poor power system reliability, compounded by natural threats like hurricanes, failing infrastructure, and a strained local workforce. Two hurricanes caused widespread damage to power infrastructure in 2017.

To combat these challenges, USVI is capitalizing on federal funding opportunities to build a significantly more robust power and water system, paving the way for a brighter and more resilient future.

Overview

- Land area: **136 square miles¹**
- Population (approximately): **87,000**
- Median household income (U.S. dollars): **\$40,408**
- Total fuel consumption (average, 2018-2021): **245,000,000 gallons**
- Percent of fuel use for power generation versus other uses (average, 2017-2021): **38%**
- Fuel for power generation: **23% diesel, 77% liquid petroleum gas**

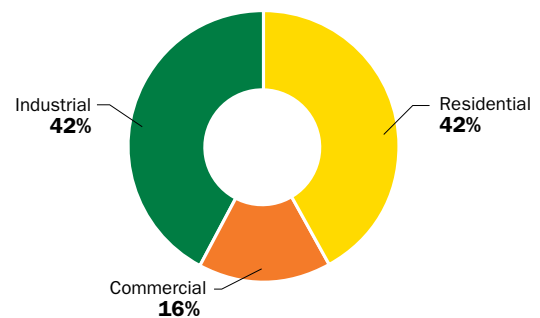
Location



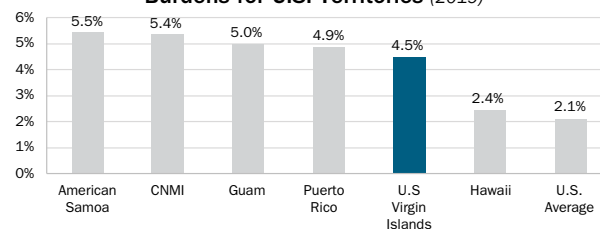
Power Sector

Total power sales (2022):	622 gigawatt-hours (GWh)
Installed thermal capacity (2023):	258 megawatts (MW)
Utility PV installed capacity (2023):	9.2 MW or 2%-3% of electricity sales
Peak demand (2023):	105 MW
End-use sectors (2022):	42% residential, 42% industrial, 16% commercial
Average electricity rates (2023):	\$0.41/kilowatt-hour (kWh) (residential) \$0.47/kWh (commercial)
Estimated average annual residential electricity spending:	\$1,817

2022 Energy Sales Composition



Approximate Baseline Home Electricity Burdens for U.S. Territories (2019)



¹ https://www.corporateservices.noaa.gov/finance/docs/AOD/LIST_OF_US_TERRITORIES.pdf

Targets

30% peak generation from renewable energy by 2025

Transportation Sector

Total registered private vehicles: <i>(approximately)</i>	70,564
Electric vehicles:	227 <i>(less than 0.5%)</i>

Policies, Programs, and Incentives

- Act 7075 (2009) requires 30% of Virgin Islands Water and Power Authority's (VIWAPA's) peak generating capacity from renewable energy by 2025; calls for expansion until reaching over 50%; promotes energy efficiency, efficient transportation, and solar water heating
- Act 7075 Net-metering: 15 MW cap reached in June 2017; program closed to new applicants
- Temporary Net Energy Billing policy (2021): Allows compensation for exports from customer-owned renewable energy at 75% of VIWAPA's avoided fuel cost
- VI Code Title 12, Sec. 1130 requires purchase of energy-efficient equipment and solar water heating for government-funded residential facilities
- VI Code Title 12, Sec. 1129/1130 requires USVI Energy Office to establish an energy-efficient fleet management plan and purchase the most fuel-efficient vehicles that meet their needs
- GO FLEET: Formalizes goal to transition USVI's government to electric-vehicle fleet and develop policy, regulatory, and programmatic strategies for broad adoption.

Challenges

- Dual concerns of high costs of electricity and poor power-system reliability
- Exposure and vulnerability to extreme tropical storms
- Workforce constraints hinder rebuilding and system hardening
- VIWAPA's financial issues include unpaid bills, rate tariff structures not sufficiently covering operating costs, and increasing customer self-generation
- Planned renewable energy projects are much greater than system loads.

Opportunities

- Strong solar and wind resources with potential for cost-effective renewable power generation
- VIWAPA plans to add about 90 MW of photovoltaics (PV) and 46 MW of wind power through a combination of federal funds and long-term contracts with independent power producers
- Federal Emergency Management Agency (FEMA) has funded significant undergrounding and hardening of distribution infrastructure
- Funding from U.S. Department of Housing and Urban Development and FEMA is enabling investment in new conventional generation, microgrids, and battery energy storage systems.

For Additional Information

- U.S. Virgin Islands Water and Power Authority: <http://www.viwapa.vi>
- U.S. Virgin Islands Energy Office: <https://energy.vi.gov/>
- U.S. Virgin Islands Energy Baseline Report: <https://www.nrel.gov/docs/fy24osti/88770.pdf>