



Hawai'i State Energy Office Integrating Resilience Strategies

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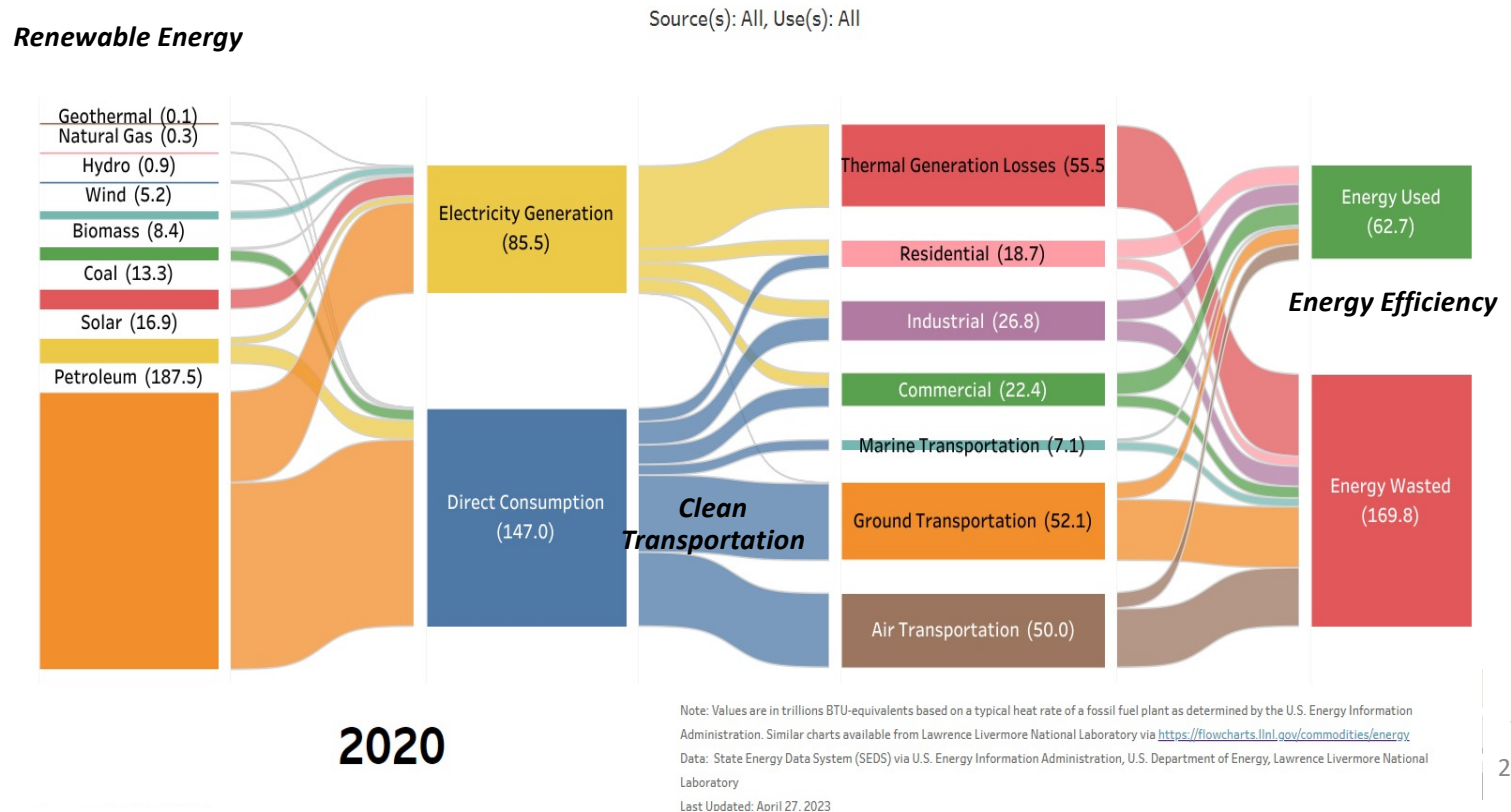
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HSEO: Planning for a Decarbonized Economy

Matching development of RE and total demand across all sectors that creates greatest benefit

Estimated Hawai'i Energy Consumption: Sources and Uses



Statutory Goals

- Promote energy efficiency, renewable energy, and clean transportation
- To achieve a resilient clean energy net-negative carbon economy

Visualize CEI dependencies

HAWAII STATE ENERGY OFFICE **Geospatial Decision Support System (GDSS)**
Centralized tool to explore and query energy infrastructure networks alongside complimentary analyses of vulnerabilities and dependencies.

Infrastructure - Hazards **Dependencies - Insights**

Flow Type Filter

- Select All
- Electricity Connection
- Gas Flow
- Petroleum Flow
- Steam

Link Type

- Electricity
- Gas
- Petroleum
- Steam

Assets

- Select All
- 10" Sand Island Term...
- 15 Craigside
- 6-8-6 Sand Island to ...
- AHI
- AIEA
- AIKAHI

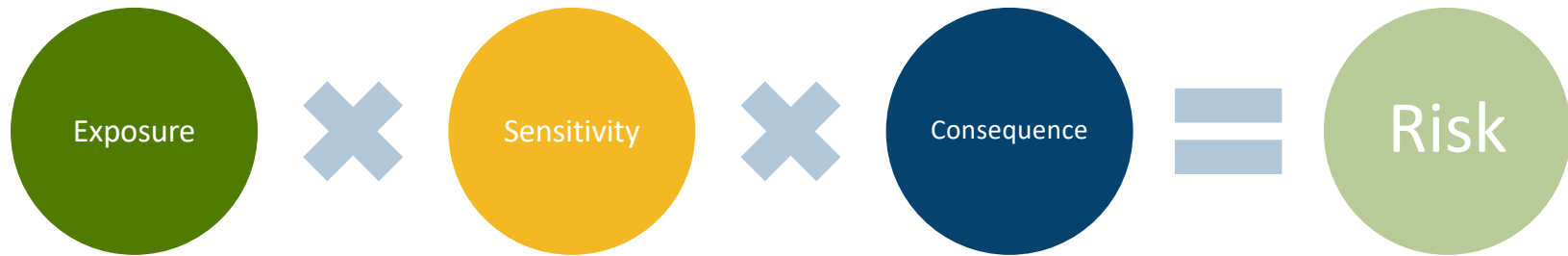
Asset Connections Data

The network diagram illustrates the dependencies of the Barbers Point Par Hawaii SPM. It shows a central node for the SPM connected to several other assets: Barbers Point IES Conventional Buoy Mooring, IES Kapolei Terminal, Kalaeloa Barbers Point (Barge) Harbor, Aloha TFM Terminal, HECO Barbers Point Tank Farm (BPTF), and HECO Kahe Pipeline. These assets are further connected to a larger network of terminals and pipelines, including Honolulu Harbor, Per Hawaii Honolulu Pipeline, IES Oil 1 Pipeline, PBT Honolulu Terminal, HFCC Sand Island Terminal, IES Honolulu Marine Terminal, 10" Sand Island Terminal, Honolulu Airport Terminal, Waiuu, and Kahe.

Asset Map

The map shows the state of Hawaii with various locations marked. A green line highlights the path of the petroleum flow network, starting from the West Coast (Honolulu Harbor, PBT Honolulu Terminal) and moving east through the island to the East Coast (Barbers Point, Aloha TFM Terminal, HECO Barbers Point Tank Farm, HECO Kahe Pipeline). Other locations shown include Lale, Hauula, Wahiawa, Milliani Town, Kailua, Waimanalo, Hawaiian Home Land, Nanakuli, Waipahu, Ewa Beach, and Honolulu.

Risk Assessment Methodology



- Specific to location
- Probability of occurrence on an annual basis, assigned to buckets
- Informed by historic climate data (NOAA, NWS, etc.) in collaboration with the State Hazard Mitigation Plan and probabilistic models

- Specific to asset type
- Can be interpreted as the expected outage duration from exposure to a given threat, bucketed 1-3
- Informed by subject matter experts

- Specific to asset
- Primary consequence represented as lost energy supply from asset outage
- Secondary consequence represented by cost to society of lost supply—our focus with the CLKC dependency analysis
- Informed by analysis of asset and interdependency relation

Aloha