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**DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM**

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**HAWAII STATE ENERGY OFFICE RELEASES ALTERNATIVE FUELS,  
REPOWERING AND ENERGY TRANSITION STUDY**

*Study Recommends New Power Plant, Import of Liquefied Natural Gas as a Bridge Fuel*

**FOR IMMEDIATE RELEASE**

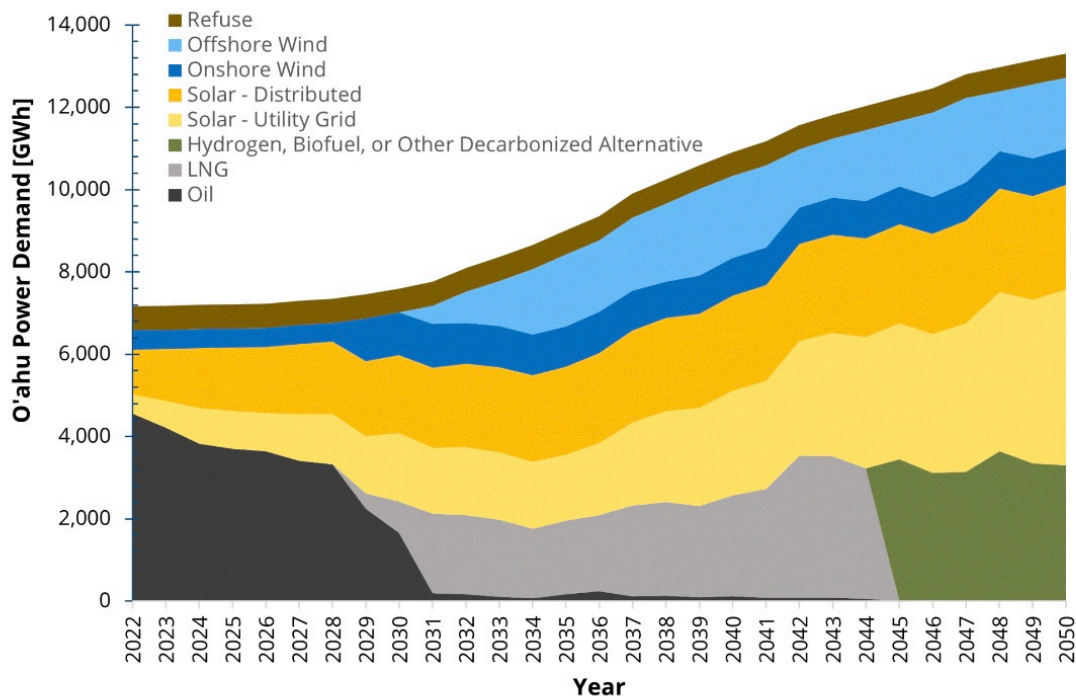
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HONOLULU — The Hawaii State Energy Office has released a comprehensive Alternative Fuels, Repowering and Energy Transition Study that proposes an updated Hawaii energy transition strategy to improve electricity affordability and grid reliability, accelerate renewable energy adoption and support national security.

The study analyzes low-carbon fuels and repowering options to meet the state’s Renewable Portfolio Standard (RPS) targets and mitigate oil price volatility that is so damaging to Hawai’i’s economy in the aftermath of the Maui wildfires.

In this analysis, all alternative fuels were on the table. The fuels considered included methane/liquid natural gas (LNG), hydrogen, biomethane, biodiesel, e-methane, hydrogen, e-ammonia, e-diesel and e-methanol. HSEO and third-party consultants developed an evaluation matrix that served as a decision-making framework to compare alternative fuels based on technological maturity and commercial viability, cost-effectiveness and lifecycle carbon intensity.

“Viable pathways exist that allow for the rapid replacement of costly and carbon intensive residual oil, offering cost savings to ratepayers while strictly adhering to our RPS targets,” said Chief Energy Officer Mark Glick. “The addition of highly efficient power generation and bridge fuels like natural gas can save money while the state transitions to the most viable firm renewable energy options as they become economical.”



*O’ahu future power demand by generation technology under a bridge fuel transition. Increased power demand is primarily driven by the adoption of electric vehicles.*

## **Mitigating Liability Risk and Addressing Power Plant Reliability**

In recent months, Hawaiian Electric has taken significant actions to reduce uncertainty around its financial situation and the impact of wildfire litigation on customers. However, the downrating of Hawaiian Electric's credit rating after the tragedy has increased the cost of debt financing for the utility and independent power producers, challenging the financing of future renewable energy projects and necessary capital expenditures to continue moving the energy transition forward.

### **Key Findings**

The results of HSEO's evaluation of fuels and power plant upgrades based on the criteria of technological maturity, commercial viability, cost-effectiveness, and lifecycle carbon intensity are summarized below:

- Land availability and other factors indicate that local energy supply is insufficient to meet both current and forecasted demand. Accordingly, some energy imports will persist for both the electric and transportation sectors even after Hawai'i satisfies the 100% RPS.
- The current Hawaiian Electric grid and development plans have high carbon emissions primarily due to substantial reliance on Low-Sulfur Fuel Oil (LSFO) as well as powerplant inefficiency.
- Planned thermal capacity projects are critical to ensure grid reliability and will provide some improved powerplant efficiency; however, HSEO asserts that proposed and current Stage 3 and Integrated Grid Plan (IGP) thermal projects will likely result in one of two outcomes: either (1) higher electricity prices if biofuels are available and the PUC approves their costs, or (2) continued reliance on liquid oil-based fossil fuels, such as LSFO or ultra-low sulfur diesel.
- Power plants can be converted, and a new power plant can be built to run on natural gas supplied by a Floating Storage Regassification Unit (FSRU) and associated gas infrastructure.
- LNG emerged as the near-term fuel with the potential to cost-effectively reduce the state's greenhouse gas emissions during the transition to economywide decarbonization in 2045, but more analysis is needed to quantify a range of potential benefits and to identify how those benefits can be maximized to residents at the appropriate level of infrastructure buildout.
- Policy guardrails will be necessary to ensure that lower carbon fuels, such as LNG, will enable economywide decarbonization by 2045, not distract from it. There is a narrow, but beneficial path for the inclusion of LNG in the energy portfolio. Its build-out should not allow for backsliding on the RPS.

With the planned re-use of LNG infrastructure for a hydrogen transition in 2045, the study indicates the incremental levelized cost of energy will be reduced by between 2.1 percent and 14.6 percent with LNG acting as a potential hedge against oil price volatility until a fully renewable grid can be realized.

The import of LNG, as an alternative to LSFO, could result in as much as 38% to 44% reduction in lifecycle carbon intensity when used in more efficient power plants. Natural gas can be used as a replacement for residual oil until it is phased out completely by 2045, as local production of biodiesel is accelerated and technology advances for the import of green ammonia and hydrogen.

### **Next Steps**

HSEO has initiated a period of public outreach as legislators consider the consequences of maintaining the status quo or proceeding to further development and engineering design studies, integrating feedback from the community and utility stakeholders including Hawaiian Electric, Hawai'i Gas and Par Hawai'i.

While HSEO's findings suggest that using LNG on O'ahu could lead to cost and carbon savings, the analysis depends on certain key assumptions and risks including acceptance by regulators and Hawaiian Electric, environmental review, permitting and aggressive project timelines.

In releasing the study, the Chief Energy Officer emphasized that continued development of solar, wind, battery storage, and other renewable power generation sources must vigorously occur in tandem with a fuel transition to ensure Hawai'i has a diverse energy portfolio. The new energy strategy can attract needed capital to strengthen grid reliability, stabilize costs, and increase affordability for Hawai'i ratepayers.

References:

[Alternative Fuels, Repowering and Energy Transition Analysis: Main Report](#)

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