



# Charting A Course Towards a Preferred Energy Future

## Integrated Resource Planning



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## Presentation Overview

- Background on Integrated Resource Planning
- Overview of the Utility Grid



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## We are all concerned when there is a shortage of electricity

### Power shortage blackout is averted

*Low demand stops outages from a cut in reserve capacity*

By Robert Shikina  
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Oahu residents escaped a series of threatened blackouts last night due to a shortage of reserve electricity-generation capacity.

At about 5 p.m., HECO asked residents to reduce power consumption to avoid cutting electricity to customers in Central, Windward and East Oahu from 5 to 9 p.m., and recorded lower-than-expected energy demands as the night wore on.

HONOLULU STAR-BULLETIN / TUESDAY, NOVEMBER 8, 2005

### HECO asks public to cut back usage

By Gary T. Kubota  
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Fearin, too much demand could cause an electrical outage, Hawaiian Electric Co. is asking Oahu residents to reduce consumption of electricity during the peak hours of 5 to 9 p.m. weekdays.

The firm said nearly one-third of 19 generating units are

either out of service or operating below normal capacity that provide service to the 290,000 business and residential customers.

Hawaiian Electric spokesman Jose Dizon said yesterday the firm is operating on "very tight" reserve margins and the situation could take a week or longer before returning to normal.

Dizon said two HECO power

units and a trash-to-energy HPOWER unit were operating at one-half to three-quarters of normal capacity due to problems encountered over the weekend.

He said two other HECO units were already out of service for repairs and scheduled maintenance, and an additional HECO unit was shut down this weekend for emergency maintenance.

"It's just a bunch of different

things that happened, and they happened at the same time," Dizon said.

Dizon said residents can help by turning off their air conditioners, delaying their hot water showers and minimizing their cooking activities.

Residents are also being asked to minimize their use of washers and dryers during the peak hours.



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## We need to ensure that we meet our energy needs reliably, sustainably, and affordably for years to come



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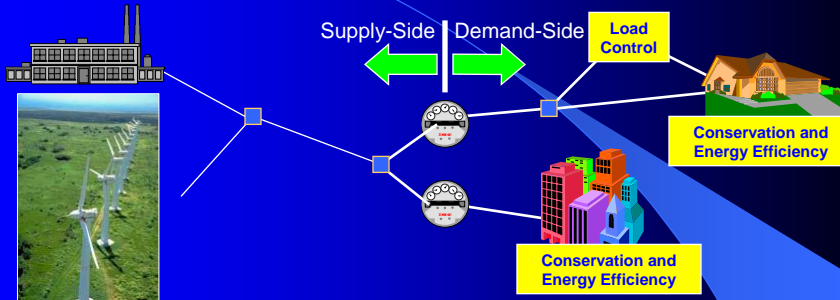
## Integrated Resource Planning is the process we use to plan for our energy future

- It's about developing an array of solutions
- It's combining conservation, energy efficiency, renewables, and combined heat and power with central power plants
- While balancing critical issues such as
  - Our culture, the State economy, fuel diversity, population growth, lifestyle, and cost



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## What are resources?



Supply-side resources may be:

- utility or non-utility
- firm or as-available
- renewable or conventional

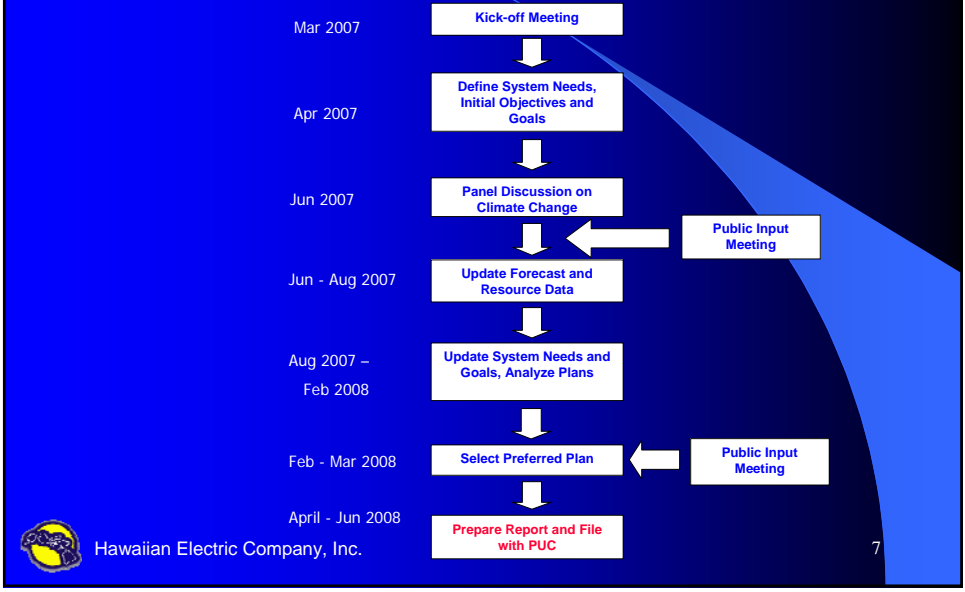
Demand-side resources may be:

- utility or non-utility
- energy efficiency programs
- load management programs



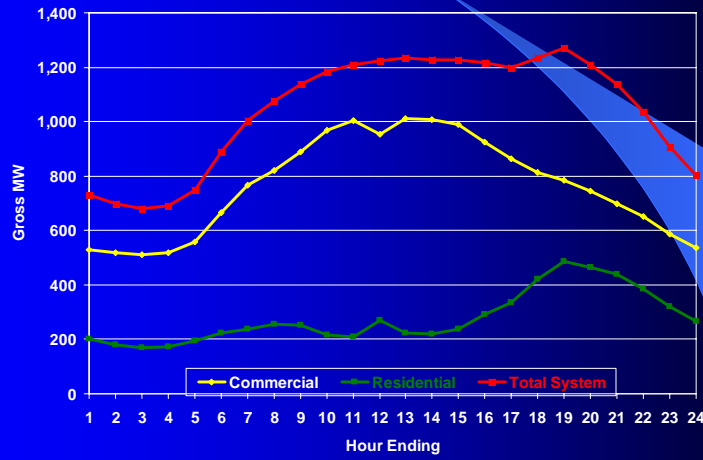
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# High-Level Process Flowchart

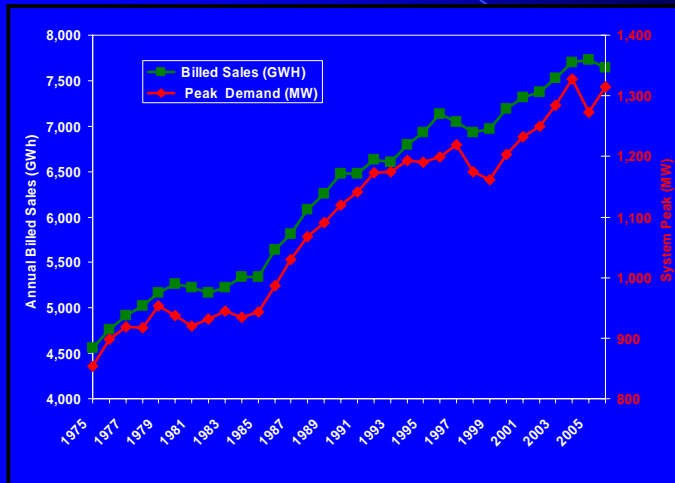


# System Load Profile

*The evening peak is driven by residential customers*



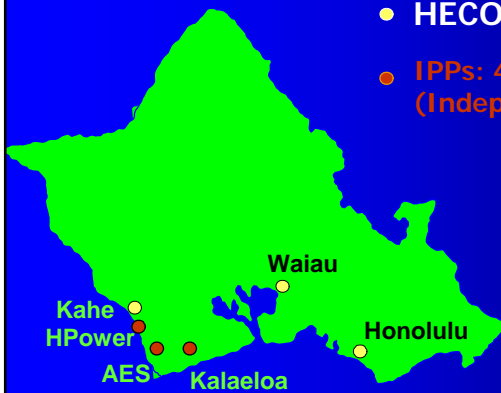
## Electricity Usage Has Been Increasing



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## Power Generation Who Produces Oahu's Energy?



- HECO Power Plants: 60%
- IPPs: 40%  
(Independent Power Producers)

- Total Capacity = 1697 MW
- HECO Capacity = 1263 MW
- IPP Capacity = 434 MW
- Record Peak Load = 1315 MW
- Reserve Margin = 30.0%



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## HECO Demand-side Management Programs

- Residential and commercial programs
- Total-to-date system peak reduced by 82 MW
- Over 22,000 solar water heaters installed



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In the end, we hope to chart a course towards a preferred energy future for Oahu that



- considers the need for energy in the long and short term
- results in an optimal mix of resources
- is sensitive to our island needs
- meets your electricity needs safely, reliably and at reasonable cost to you



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And we want to do it with your help

- Keep the community informed
- Seek public input
- Work with our public advisory group



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## Contact Information

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# Integrated Resource Planning Background

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