

*Welcome*



Clark County Department of Aviation  
McCarran International Airport

**Energy Master Plan Update**

Nov. 17, 2009



# Program Motivation



- For the 2009/2010 fiscal year, the Department of Aviation's electrical utility budget is approximately **\$16.7 million** systemwide.
- The Public Utilities Commission recently approved rate increases that affect large commercial users.
- The PUC's actions have the potential to double the Department's electrical expenditures this year.
- Decreased passenger traffic has resulted in reduced revenue collection at McCarran and general aviation airports.

The PUC rate increases occurred in July and October. Residential users were given a break, but their savings were made possible by raising charges on commercial users.

## Program Motivation (Cont.)



- Terminal 3 will bring additional infrastructure including a main building, central utility plant and parking garage. These will create new demand for power -- and new opportunities to go green.
- The airport is environmentally conscious, with multiple green initiatives already in place.
- The proposed changes would reduce Department of Aviation equipment's life-cycle maintenance and use costs.

# Approach



- Improved utility load management
  - Utilize most efficient chillers and boilers
  - Avoid concurrent start-ups in peak hours
  - +/- 4 degree temperature adjustments
  - Consolidating meters to get best rates
- Strategic upgrades of building controls
  - Increased automatic operation of systems to promote efficiency
  - Improved air handler mixing of inside and outside air
- Increased focus on renewable energy
  - Build 1 mw solar plant atop T3 garage to maximize tax incentives
  - Affix mounting clips atop T3 rooftop for future solar panel additions

T-3 and NV Energy overall redundancy plan compliance

Taking a hard look at rate structures and avoid concurrent startup

Optimization of staff/system operating procedures

Metering and trend analysis on Chillers and Boilers

# Program Investment



- Total Investment:  
**\$26.9 million**

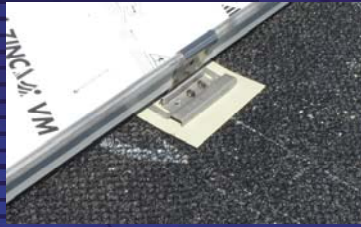
- Building efficiency project estimated at \$20.7 m
- Renewable energy project estimated at \$6.2 m
  - Hard construction investments of approx. \$23.7
  - Integration investments of approx. \$3.2 m

Examples of Building Efficiency improvements:

- \* Improved control over the air handlers that mix the inside and outside air within the terminals
- \* The ability to analyze which equipment is most- or least-efficient within the Central Utility Plants; knowing this will allow Facilities to optimize the most-efficient equipment
- \* Exercising the generators only during peak periods to maximize that power, while carefully avoiding any “bumps”

Integration investments would include the costs of software, programming and associated soft costs.

## The Payoff



- Anticipated annual utility cost reduction of \$5.4 million
  - This amount would increase annually should utility costs rise
- Based on today's rates, a program Return on Investment would require only 5 years.
- Approximately \$500,000 in Conservation and Renewable Energy rebates, credits and incentives are available to support this effort.

## *Environmental Friendliness*



- The completed program would reduce carbon dioxide emissions by approximately 24,718 metric tons each year.
- That's equal to:
  - The emissions produced by 4,642 automobiles
  - The emissions of electricity generation needed to power the average consumption of 3,514 homes

Estimated time to complete program is 18 months.

Bob's figures were based upon the reduced energy consumption as well as the added electricity generated via the on-site solar plant.

*Thank You*



Questions & Answers

