

# Restoring Gainesville's Solar Airport Terminal

10/8/07

Thirty years ago, our airport terminal was constructed as a solar energy collector. That novel system, engineered by Dr. Erich Farber, was long ago damaged by freeze and never restored. Now is the time to restore a solar energy system, a solid-state Photovoltaic (PV) system, to this landmark public building.

For some years past GRU explored a cooperative project to achieve this. But the major planning initiatives on the overall interior of the terminal and the passenger loading/security operations were placing great demands on the GACRA Board at that time. Faced with mixed signals from the Airport Authority, last year the City of Gainesville defunded that GRU initiative.

We believe that the Airport Authority Board should take action now, concurrent with the realization of the long-term improvements to the terminal, to restore the solar initiative and expeditiously inaugurate a solar system on the airport terminal roof.

## An Achievable Goal

The critical first step is to install within **ONE YEAR** a ballasted PV array across the passenger loading/pickup zone roof system (Phase One). By this simple and non-invasive step (the existing roof would have zero (0) penetrations) we would:

1. "Create the space," in the public eye by temporarily and quickly augmenting the current flat-roof structure to conform with the architectural lines of the historic terminal building, i.e., the solar collector slant of the roof. This initial array may be augmented later in the project.
2. Inaugurating this preliminary system (Phase One) will serve to generate public interest and goodwill to support the subsequent expansion of the modular PV System across the intrinsic solar power mounting structure of the main terminal building.
3. Recent and coming internal changes in the terminal will be "showcased" in tandem with the restoration of the building's functional historic nature as an integrated solar-energy facility of remarkable lifespan [1970's - 2000's].
4. GRU and its owners, the citizens of Gainesville, will greatly benefit as people visit their airport, with the new Phase One PV Solar array facing prominently on the loop road.

Federal and State grants may be pursued to ensure that all levels of government have the opportunity to participate in the fuller project. But Phase One must not be delayed by these longer-term financial considerations. We can do Phase One **now**, with discretionary financing, as a partnership of the Gainesville Alachua County Regional Airport Authority, the City of Gainesville and GRU, with an invitation to the University of Florida to also participate.

The cost of Phase One to GACRA should be nominal, principally some staff time in the collaboration and coordination with airport operations.

## Conclusion

Restoring the solar terminal to our public heritage, restoring the solar energy collection roof system with a modern practical PV system, affords us the flexibility of a gradual, modular expansion of a solar photovoltaic array.

The critical opportunity is to launch this collaboration by installing, within **ONE** calendar year, the cornerstone of the project: Phase One, an arrangement of ballast-installed PV panels across the front of the passenger loading (flat) roof structure at the front of the terminal. We expect the public response to this installation to generate great interest, support and goodwill to all of the participating entities. The Airport Authority should take the lead, and see that this happens.

We request that the Board of the Gainesville Alachua County Regional Airport Authority contact the City of Gainesville and GRU to express their strong support for this expedited project, and commit to restoring our community's premier public solar facility, the Gainesville Regional Airport's solar energy terminal building.

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## Still a Gap to Close

### (2009 \$ - No Additional Grants)

- Estimated PPA Rate           \$150/MWh
  - to 3rd Party Financing
  - O & M Expenses
  - 3<sup>rd</sup> Party Profits
- Avoided Fuel Cost           \$60/MWh
- Difference                   \$90/MWh



## Funding Mechanisms

### (2009 \$ - No Additional Grants)

Mechanism	Customer Impact
Set up a Sinking Fund (Collected over 24 months)	\$0.20 per meter per month
<u>or</u>	
Pass Through as Fuel Cost* (over 20 years)	\$0.015 per month (effect on Residential Bill - 950KWh)
<u>or</u>	
Add to Customer Charge (over 20 years)	\$0.03 per month



\*.000015 \$/kWh

# Recommendation

City Commission select a funding mechanism  
and  
authorize the General Manager to negotiate  
and execute a contract not to exceed:

\$0.25 per meter per month for two years

or

\$0.05 impact on residential bill for 20 years

