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South Florida



The MetroPCS South Florida Fuel Cell Project

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FCC 8 Hour Mandate

- The Katrina Panel
- The FCC Mandates 8 hours of backup
- Exceptions allowed, but not defined





The Problem

- High call volumes =
 - High power consumption
 - Space constraints
- Power consumption approaching 15KW
- Rooftop sites and the weight issue
- 140 Mph Wind Load requirement
- 8 Hour put on hold, but moving forward anyway





The RFP

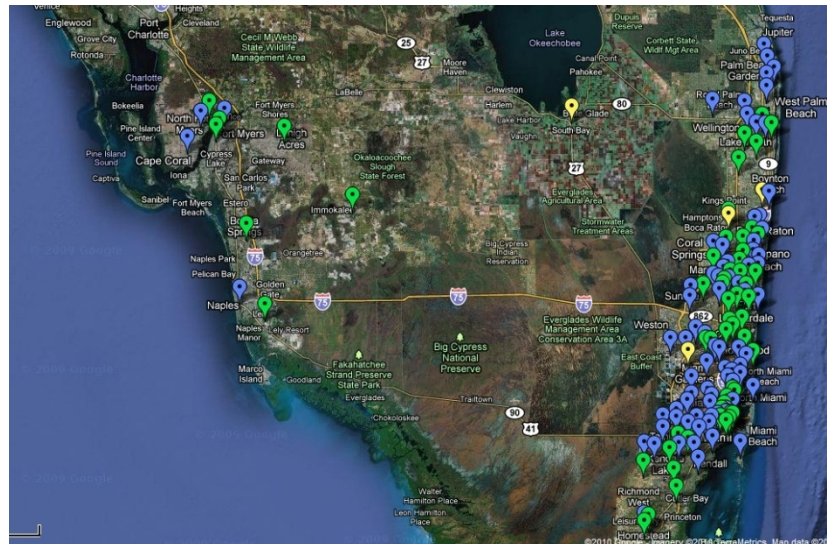
- Requirements:
 - Must fit in two 26" x 26" spaces
 - Must provide 15KW of nominal power
- 140 candidates identified
- Altery Systems awarded contract
- 356 hydrogen systems purchased for 140 sites





The Project

- One of the largest (if not the single largest) deployment of fuel cells in the world today
- Educating the jurisdictions
- Getting the first permit through
- Moving candidates to friendlier jurisdictions
- You want me to put a lightning rod where?





The Refueling Questions

- Fill in place or bottle swaps?
- Rent or purchase bottles?
- 6 and 9 bottle steel tank configurations
- What about the rooftops?
- Creating a bottle swap process





Ongoing Maintenance and Configuration

- Alarmed at 40% fuel capacity
- Typical cost for maintenance and refueling have been low (\$571 per site for 2010)
- Power outages have been primary contributor to fuel consumption
- Quite and seamless integration
- Generators have been considerably more expensive and significantly less reliable (\$1,024 per site during 2010)
- Run times have been exceptional
- Worked with Alteryg to train local contractors:
 - Repair / reconfigurations
 - Refueling and maintenance
- Completed 40+ reconfigurations without incident





Going Forward

- Plan to evaluate hose reel system for fill in place refueling of rooftops
- Exploring the possibility of a conversion to a dual voltage fuel cell that will support both CDMA and 4G LTE requirements
- Scalability and tank configurations
- Cell site power requirements have declined
- More tax incentives please
- Technician feedback

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Questions?

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