



NASA/FPL Renewable Project: Space Coast Next Generation Solar Energy Center

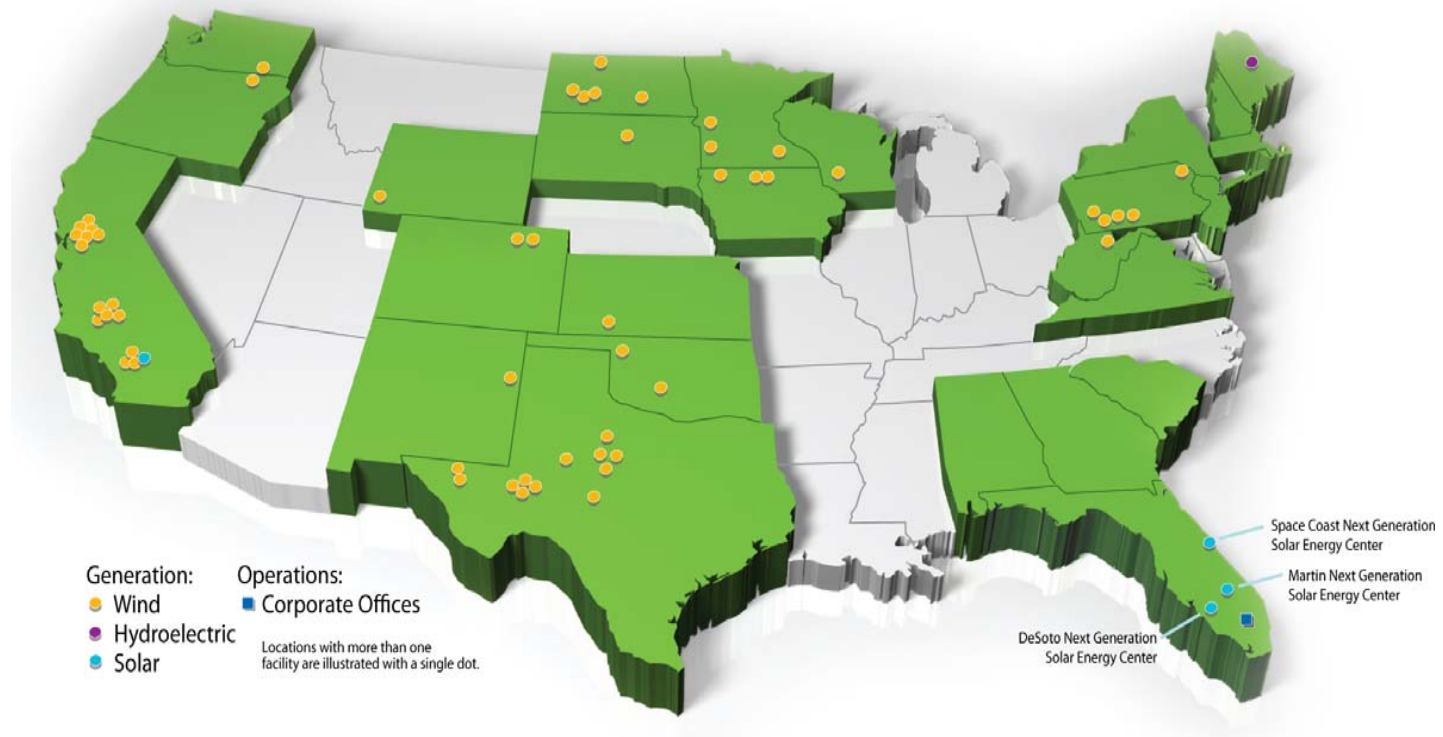
***Biloxi, MS - FUPWG
April 5-6. 2009***

Gene Beck
Corporate Manager, Governmental Accounts

Mark Hillman
Executive Account Manger

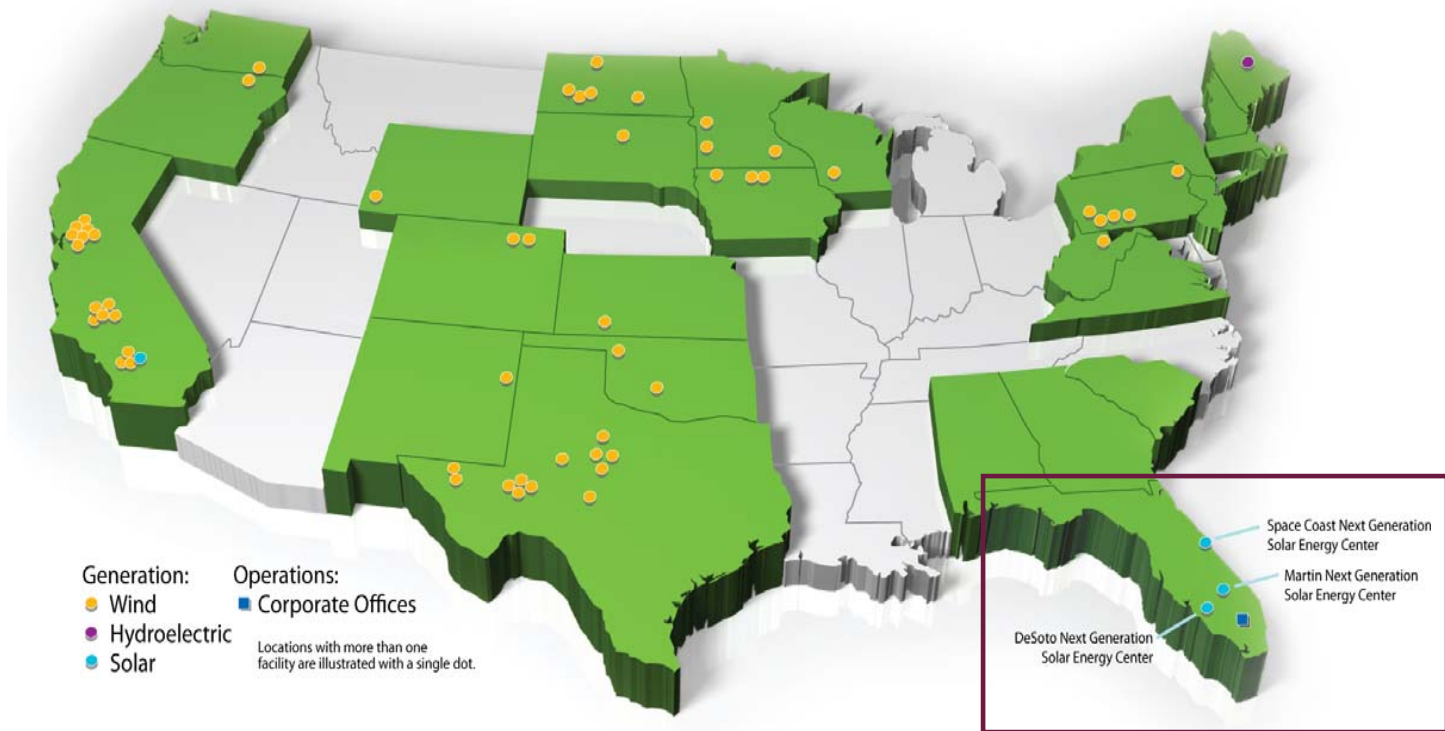
With over \$9 billion already invested, FPL Group is the world leader in renewable energy

FPL Group's renewable energy portfolio



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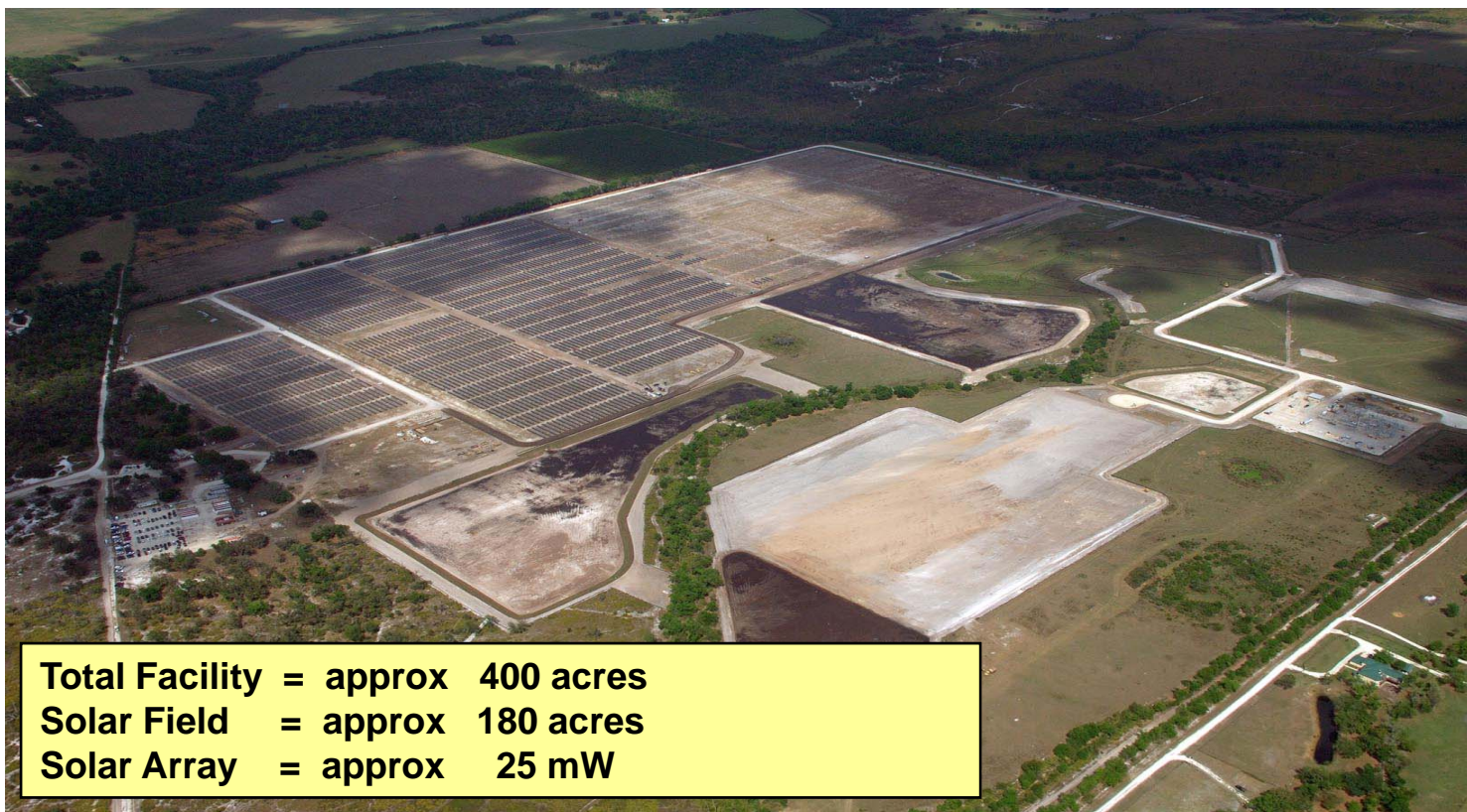
FPL has started construction on the world's first hybrid energy center in Martin County

Martin Next Generation Solar Energy Project



Construction is well underway at what will be the nation's largest solar PV facility

DeSoto Next Generation Solar Energy Project



Total Facility = approx 400 acres
Solar Field = approx 180 acres
Solar Array = approx 25 mW



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Desoto Next Generation Solar Energy Center

Image # 90325 2227
Date 03.25.09



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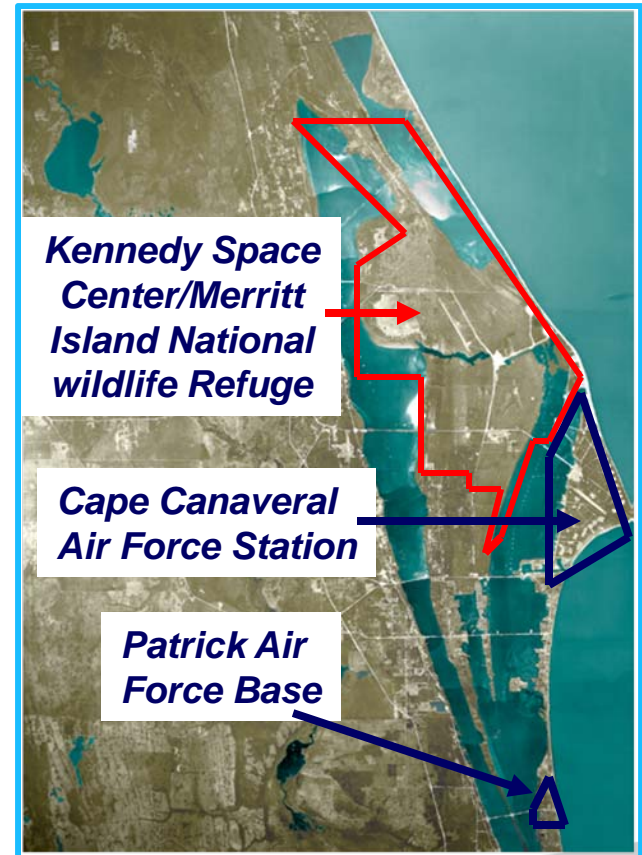
Overview

- Demographics
- Why Renewables on the Space Coast
- Establishing/Executing the Way Forward
 - Enabling Legislation/MOU/EUL
- Project Specifics/Challenges
- Recap & Keys to Success

Space Coast Next Generation Solar Energy Center

Demographics

- Florida's Space Coast: 160,000+ Acres of Federal Land between:
 - 45th Space Wing
 - Patrick AFB
 - Cape Canaveral AFS
 - Kennedy Space Center
- KSC Land Management: Joint effort w/NASA & Dept of Interior (FWS)



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Why Renewables on the Space Coast

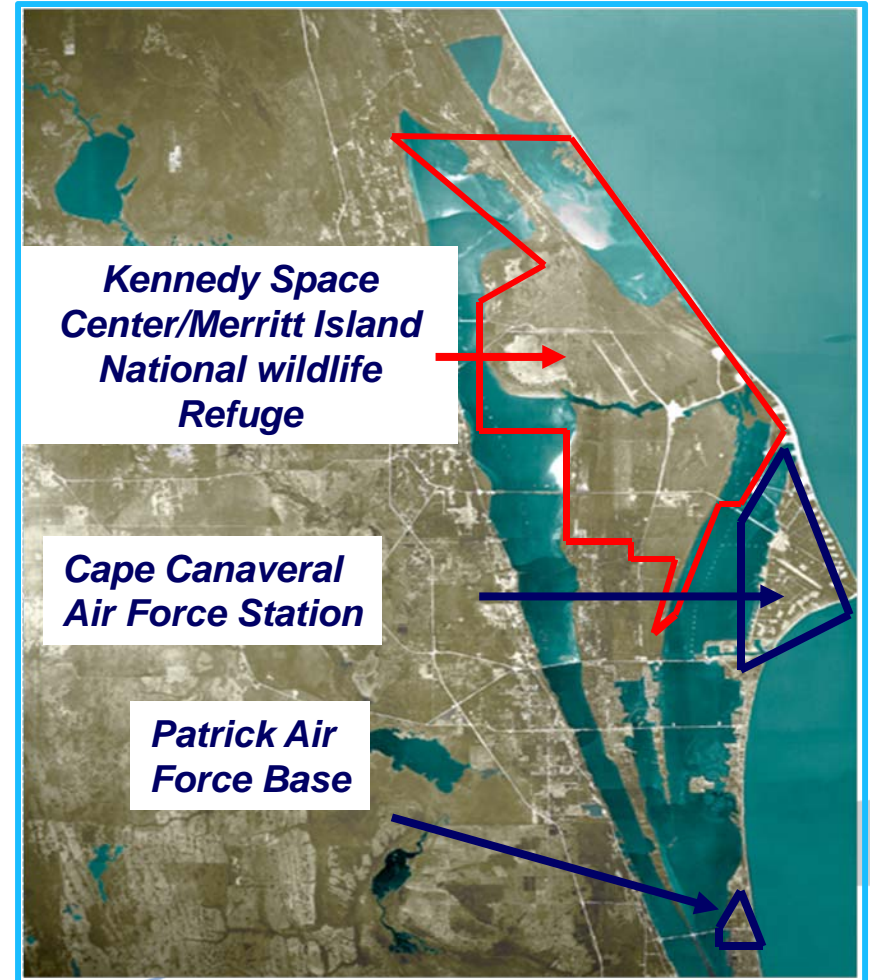
- Growing Interest in Renewable Technologies
- Vast amounts of available land;
 - 700 acres of Orchard Leases
- Operational/Mission Changes: Shuttle >> Constellation
 - Manpower Reductions
 - Expand KSC Business Opportunities
- NASA has history and experience with using Renewables
- Long/Strong Project Partnership with NASA and FPL



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Why Renewables on the Space Coast

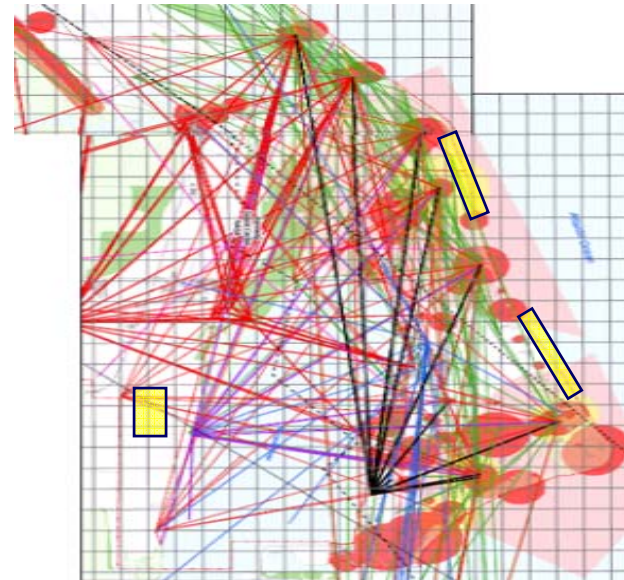
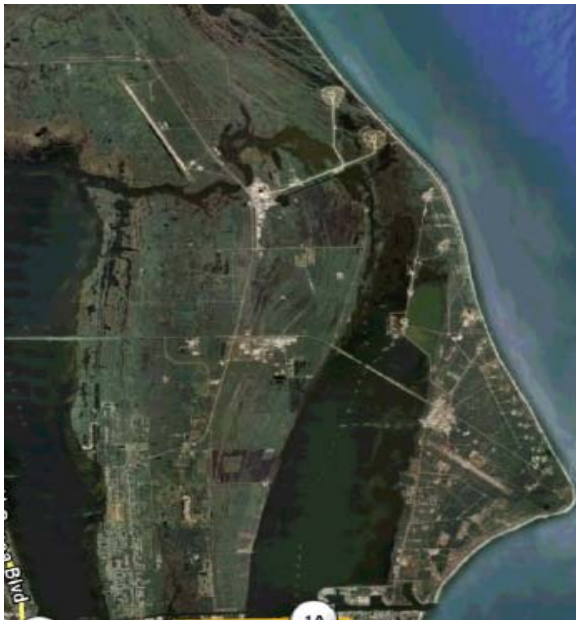
- Wind Turbines were 1st Choice
 - Cost \$/kW
 - Smaller acres/kW
 - Space Coast has best, although not great wind
- Renewable proposal verbally presented to AF and NASA
 - Go forth to investigate
 - No well-defined support team or local advocates
- First challenge is siting



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Why Renewables on the Space Coast

- Operational issues pushed project from CCAFS to KSC
- FWS/Avian issues/timing muted wind project @ KSC..for now

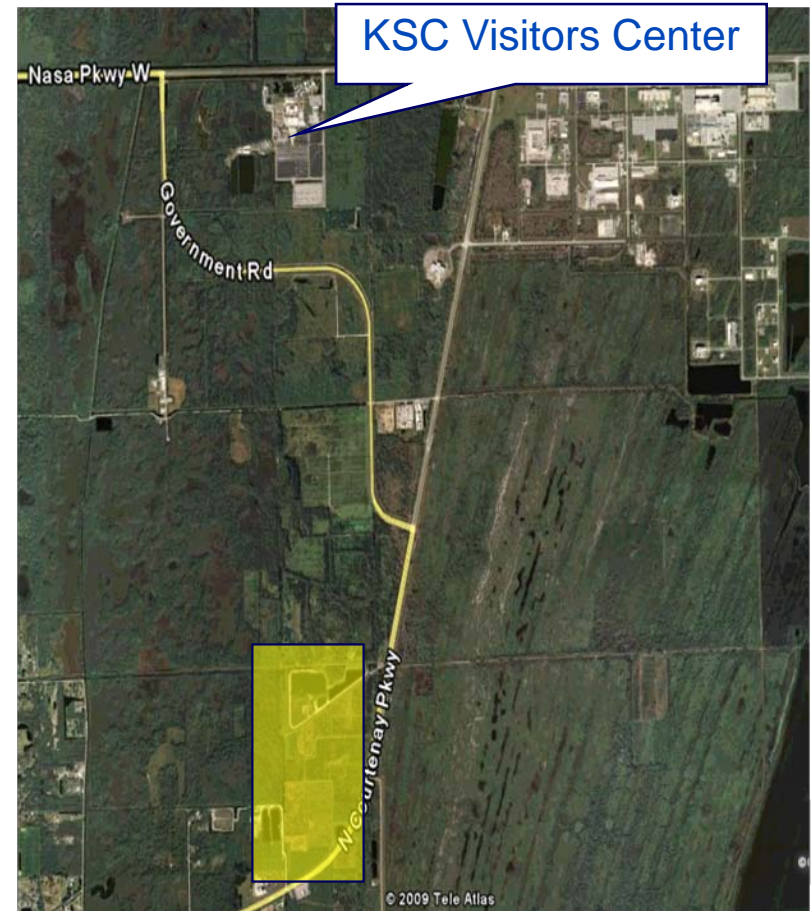


Composite Constraints: LOS for Radar, Communication, Optics, Command, etc

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Establishing/Executing the Way Forward

- Positive Impact of Wind effort:
 - Defined core support group in NASA/KSC
 - Identified renewable project site w/minimal operational impacts
 - Identified “hot” environmental buttons
- Next 6-8 months of Negotiations
- Dec 07: NASA/FPL MOU for Renewable Energy Project Plans Involving Land Use and Facilities Development



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Establishing/Executing the Way Forward

- MOU; Dec 2007..The KEY Document
 - Defined numerous potential opportunities
 - Solar PV: 10 MW site on approx 50 acres
 - Biomass or utilizing waste streams for energy production
 - Wind demonstration project
 - Defined the NASA/FPL Partnership; assured Management Support
 - Provided team goals and attitude
 - Obstacles were challenges/opportunities; not roadblocks



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Establishing/Executing the Way Forward

- KSC and Ames identified as EUL (Enhanced Use Lease) demo centers. (PL 108-7, Sec 315);
 - “Consideration” authorized @ FMV (till Dec 08)
 - Cash, services, use by NASA or ..
 - Maintenance, construction of facilities...
- EUL/Project Goals:
 - NASA:
 - Locally Benefit from FPL Partnership (construction vs cash)
 - Does not want to operate and maintain PV system
 - No out-of-pocket costs; maximize PV output
 - FPL:
 - Meet Governors’ Private-Public Partnership goals
 - Easily tied to FPL system
 - Maximize outreach, strengthen relationship, realize synergies



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Establishing/Executing the Way Forward

- NASA/FPL agree to appraised value, lease term and siting
 - 100 acres earmarked for PV
 - Phase 1 = 60 acres @ 30 years
 - FPL-Owned 10 mW PV
 - \$6.3M of ‘Consideration’
 - Construct/O&M of NASA-owned PV
 - Approx. 1 mW
- EUL Signed June 2008
 - Allows for Phase II (40 acres) under existing terms/considerations

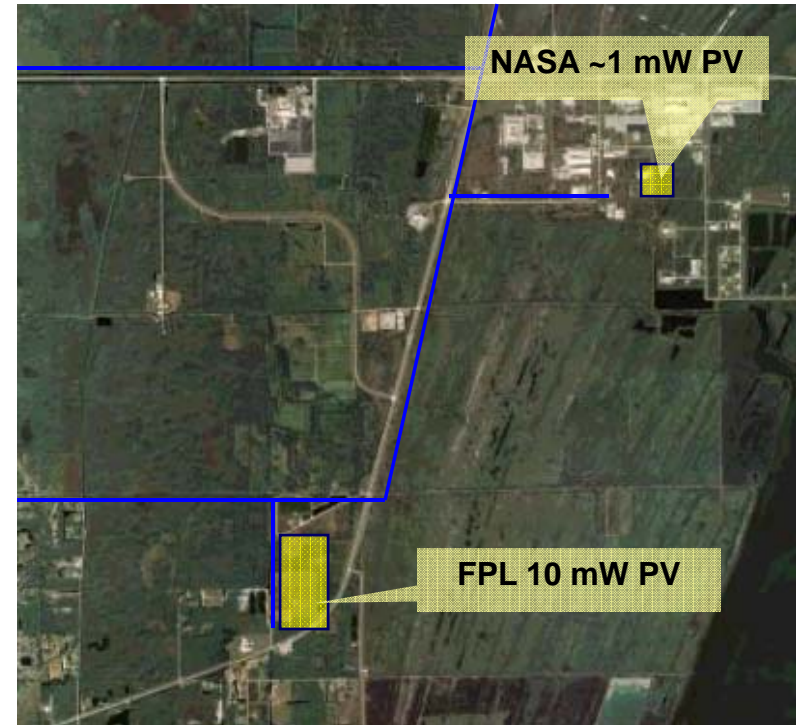


FPL Vice President and Chief Development Officer Eric Silagy (right) signs the agreement with NASA for the Space Coast Next Generation Solar Energy Center at Kennedy Space Center (KSC) as KSC Project Manager Jim Ball (l) and KSC Associate Director for Engineering and Technical Operations Michael Wetmore look on. The 10-MW photovoltaic solar facility is one of three solar power plants that will help make Florida the second-largest supplier of utility-generated solar power in the nation.

Space Coast Next Generation Solar Energy Center

Project Specifics/Challenges

- Groundbreaking 27 May
- Construction: 1 Jun 09
- NASA PV ECD: 30 Sep 09
 - 990 kW DC (900 AC)
- FPL PV ECD: March 2010
 - 10 MW



— FPL Transmission System

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Project Specifics/Challenges

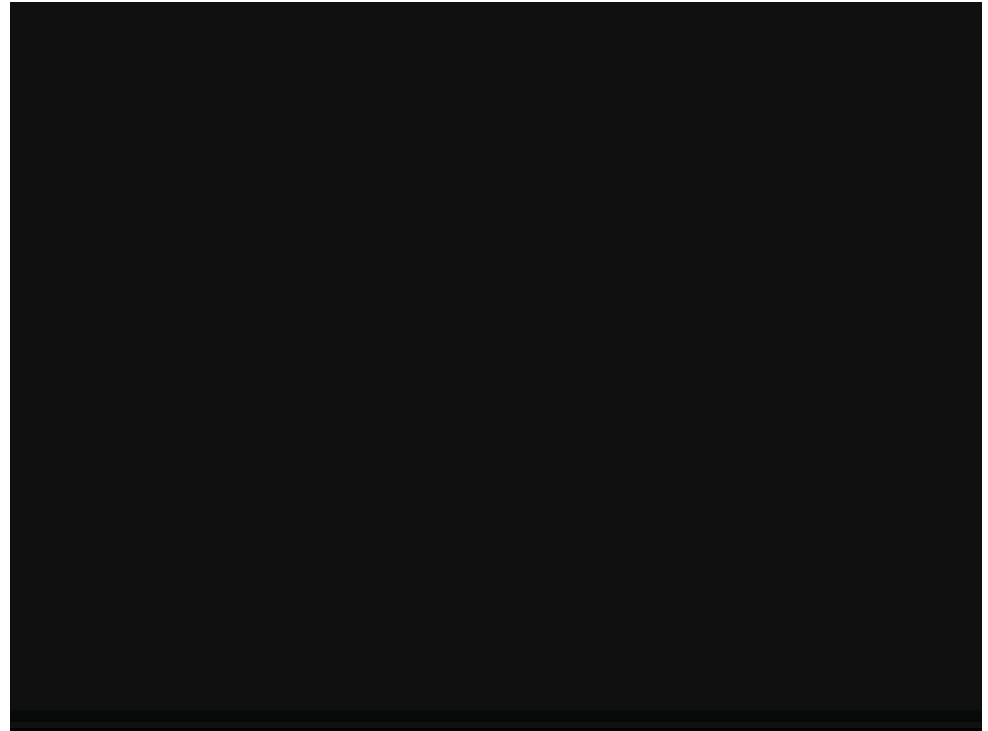
- NASA-owned 990 kW PV Site
 - Clean, grubbed site
 - Construction: 1 Jun 09
 - ECD: 30 Sep 09
 - NEMA 4X; due to corrosive environment
 - 130 mph wind standard
- Output feeds directly into NASA-owned distribution system
- Remotely monitored output



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Project Specifics/Challenges

- FPL-Owned PV Site
- Construction Start -1 Jun 09
 - Clear/Grub Orange Grove
 - Substation Expansion
 - July 09-Feb 10
- ECD: March 2010
- 10 MW
- Feeds directly into FPL Transmission system



Space Coast Next Generation Solar Energy Center

Recap/Keys to Success

- #1 Focused Team; KSC Center Director – FPL VP/CDO
 - Jim Ball, KSC Spaceport Development Manager
 - Mario Busacca, KSC Environmental Manager
 - Harry Plaza, KSC Energy Manager
- #2 Lucky Coincidences
 - Massive upcoming KSC mission changes/downsizing
 - Desire to broaden business opportunities @ KSC
 - FL Public Service Commission Authorizing 110 mW of Renewable in '08
- #3 Focused Team:



Space Coast Next Generation Solar Energy Center

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