

Joint Water and Climate Policy Board Solar Presentation

October 25, 2021

Duke Energy Florida

DUKE ENERGY®

Agenda

- Introductions
- Solar Market – Present and Future
- Thoughtful Site Selection
- Landscaping and Setbacks
- The Importance of Being Good Neighbors
- Collaboration Goals
- Questions

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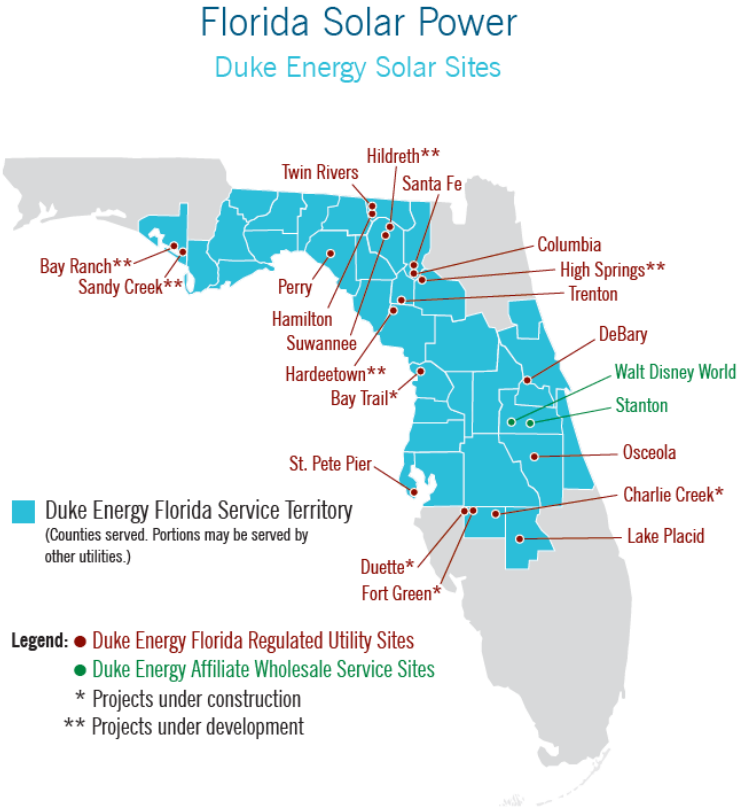
Duke Energy Florida: Solar Power Plants

- In 2020, 19.2 GW came online in the United States
- 5.7 GW were installed in the first 2 quarters of 2021

Santa Fe (1Q 2021)

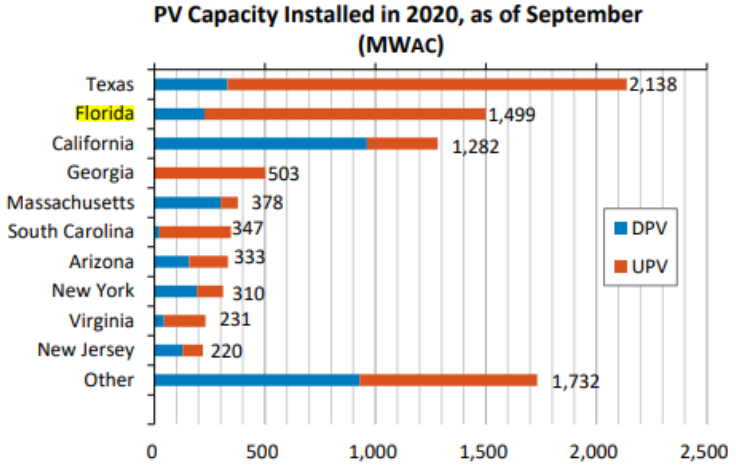


Duke Energy Florida: Present and Future

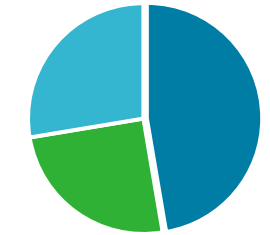
Florida will be ranked 2nd in new solar;

Florida ranked 3rd in total solar by state

- 700 MW to be completed by 2022
  - 7 sites in service
  - 3 sites under construction
- 750 MW to be completed 2022 - 2024
  - $1B investment
  - 10 sites
- Post 2024
  - More Florida solar coming



Solar Capacity 2020-2021



Data Source: Wood Mackenzie

Thoughtful Site Selection

Evaluate Development Market

- Prospecting
- Early Development
- Advanced Development
- Construction
- Operations (30+ years)

Santa Fe Solar Power Plant

Prospecting

- Transmission study
- Landowner outreach
- Desktop environmental screening

Early Development

- Land lease/purchase
- Interconnection request
- Environmental field work
- Permitting review/consultation
- Receive initial interconnection results
- Desktop environmental screening

Advanced Development

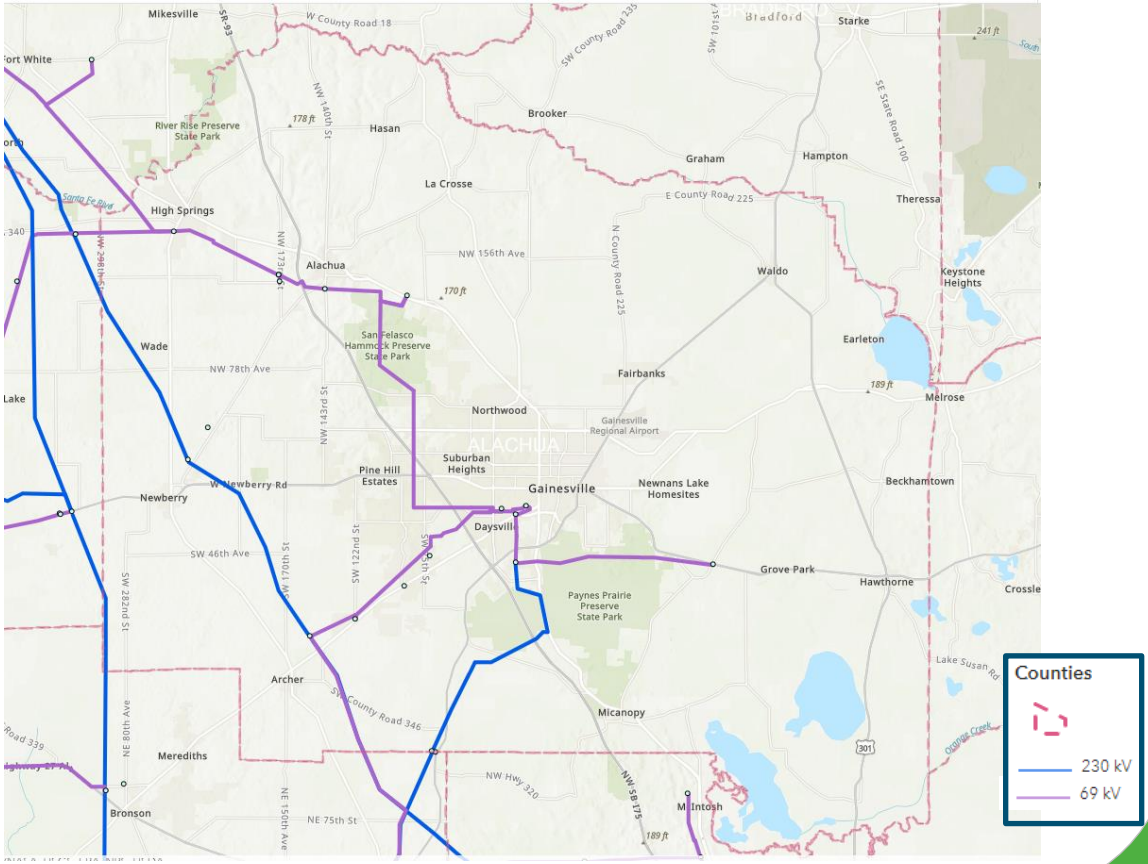
- Generator Interconnection Agreement (GIA)
- State/Local permitting applications
- Community outreach
- Detailed construction estimates

Construction

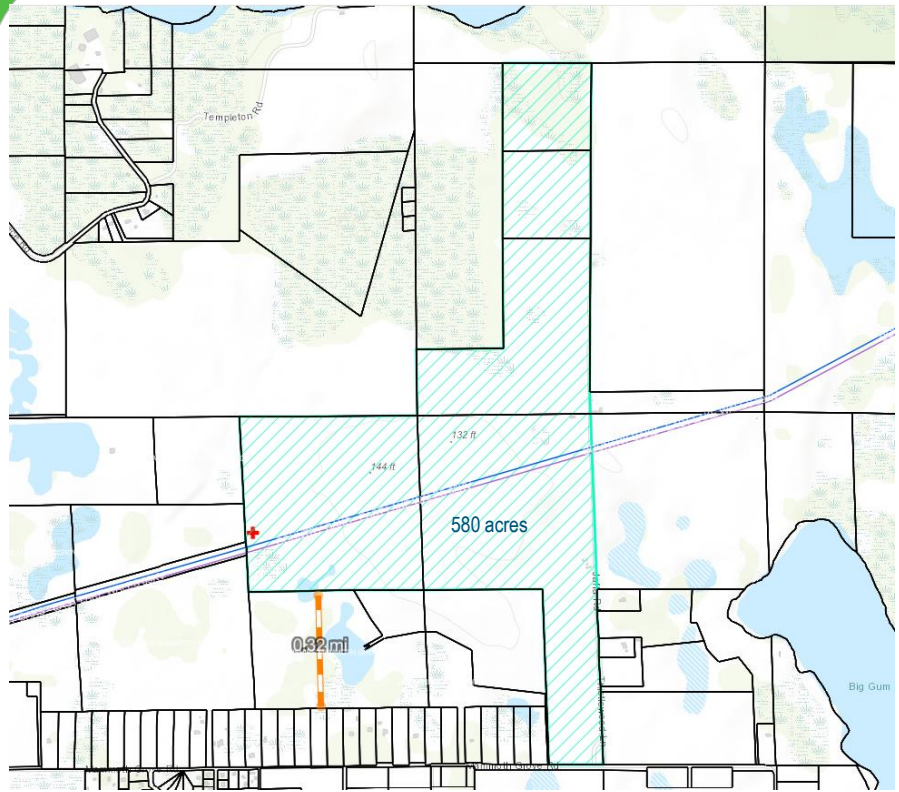
- Signed GIA
- All permits received
- Additional Community Outreach
- Final site plan approvals obtained

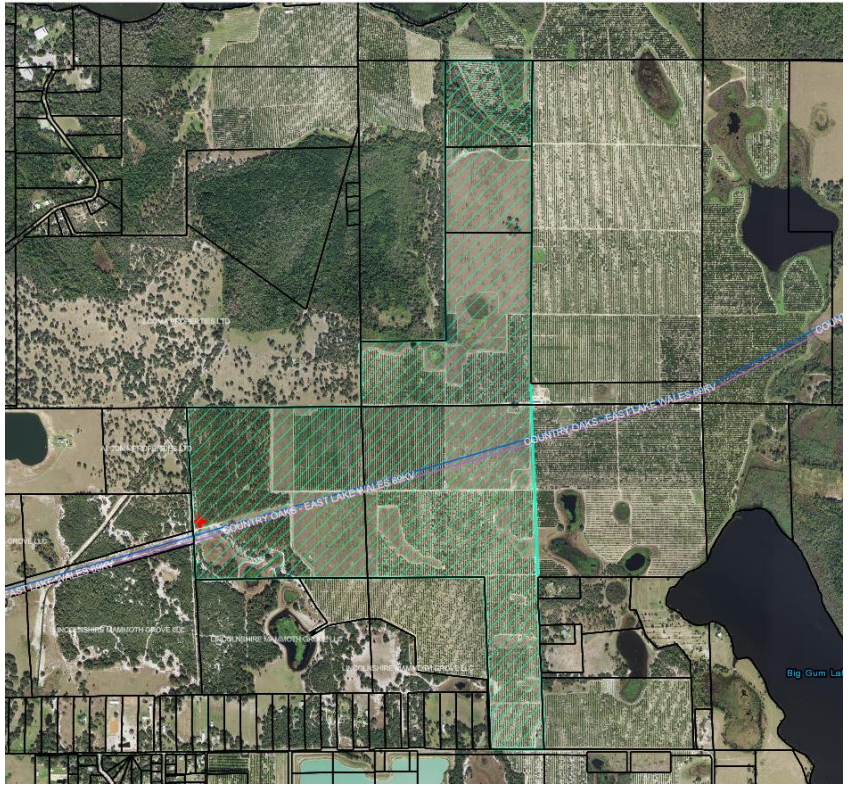
Thoughtful Site Selection

- Adjacent to Transmission
- Minimum of 500 usable acres
- Minimal wetlands
- Avoid flood plains
- Minimal tree clearing
- Willing Landowner



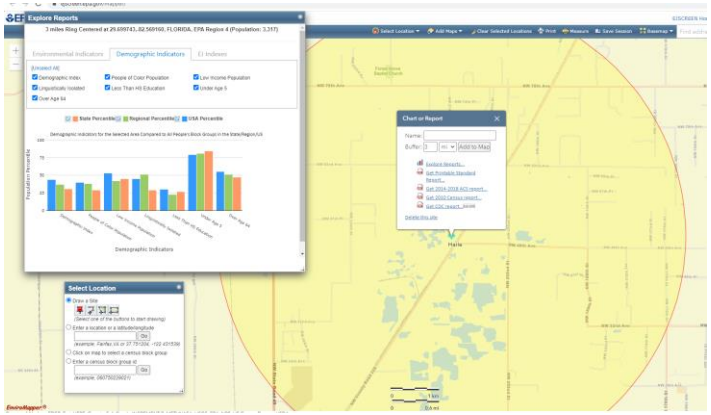
Example Site Prescreening





Additional Site Investigative Work

- Cultural/Historical Assessments
- Wildlife
- EPA Environmental Justice Screening
  - https://ejscreen.epa.gov/mapper/
- Land Use
- Conservation Area
- Natural Resources
- Wetlands Delineation



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

Selected Variables	Value	State		EPA Region		USA	
		Avg.	%tile	Avg.	%tile	Avg.	%tile
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	7.8	8.11	27	8.57	14	8.55	27
Ozone (ppb)	32.6	31.9	47	38	15	42.9	5
NATA* Diesel PM (µg/m³)	0.206	0.556	7	0.417	<50th	0.478	<50th
NATA* Air Toxics Cancer Risk (risk per MM)	36	33	79	36	50-60th	32	70-80th
NATA* Respiratory Hazard Index	0.52	0.49	63	0.52	50-60th	0.44	70-80th
Traffic Proximity and Volume (daily traffic count/distance to road)	77	550	27	350	43	750	30
Lead Paint Indicator (% pre-1960s housing)	0.046	0.11	56	0.15	40	0.28	27
Superfund Proximity (site count/km distance)	0.045	0.13	35	0.083	56	0.13	39
RMP Proximity (facility count/km distance)	0.14	0.79	20	0.6	32	0.74	26
Hazardous Waste Proximity (facility count/km distance)	0.11	0.81	18	0.91	20	5	15
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	4.1E-05	0.61	77	0.65	59	9.4	50
Demographic Indicators							
Demographic Index	27%	41%	31	37%	37	36%	44
People of Color Population	23%	46%	29	39%	38	39%	40
Low Income Population	30%	35%	45	36%	42	33%	53
Linguistically Isolated Population	0%	7%	29	3%	51	4%	45
Population with Less Than High School Education	5%	12%	27	13%	23	13%	30
Population under Age 5	9%	5%	84	6%	81	6%	79
Population over Age 64	15%	20%	47	17%	51	15%	55

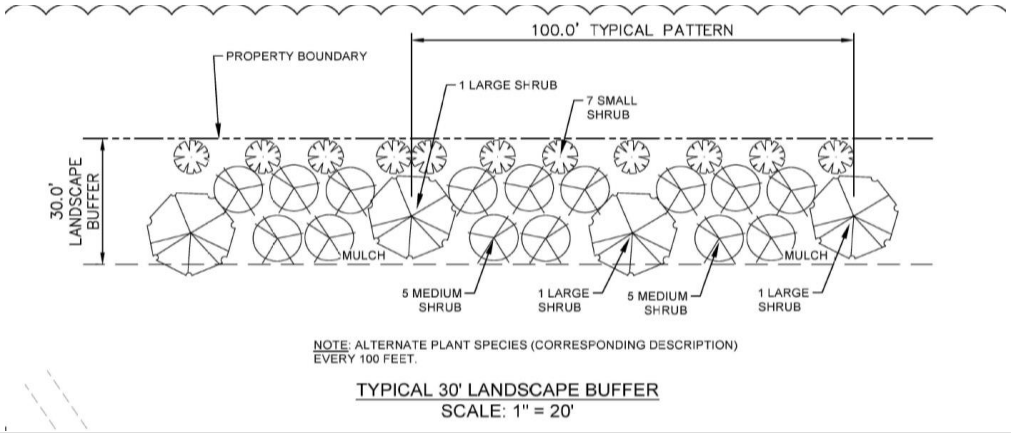
*The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

Landscaping and Setbacks

- Utilize setbacks and existing vegetation where possible or plant new vegetation that will grow to be 80% opaque

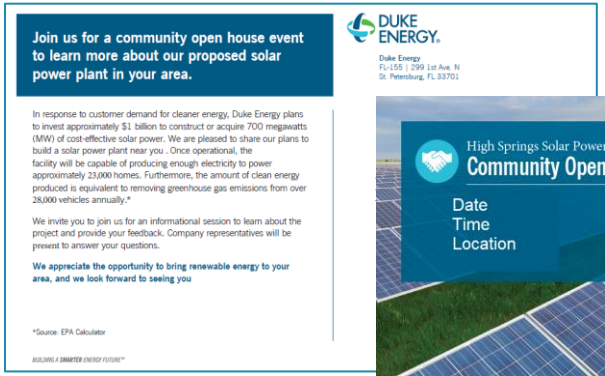
Landscaping and Setbacks

- DEF projects in operation or under construction
  - Setbacks
    - 50’ – 150’ from property line to arrays
    - Inverter setback minimum of 300’ from adjacent property line
  - Landscaping
    - 20’ – 50’ (within the setback) at 80% opacity within 5 years
    - Utilization of existing vegetation, where possible



Being Good Neighbors = Communication

- Multi-faceted Communication Plan
  - Workshops/Open houses
  - Public Presentations
  - Small Group Meetings
  - One on One Outreach
  - Project Websites
  - Outreach hotline
  - Letters and Post Cards



Being Good Neighbors = Addressing Concerns

- Stormwater Management
- Vegetation Management
- Solar Panel Safety
- Tree Conservation
- Social Justice
- Pollinators
- Noise Control
- Heat Island Effect
- Water Use
- Wetland Protection
- Protecting Species Management
- Springs Protection

- Decommissioning Commitments
- Historical Site Assessments
- Project Maintenance and Frequency
- Municipal Resources

Collaboration Goals

- **Utility Contribution**
  - Property tax revenue - **30 years** minimum
  - Creation of up to **200 local jobs during construction**
  - Utilizes **little to no public resources** (trash collection, police, education, water/sewer, etc.)
  - **Stimulates local economy** throughout construction period
  - Constructed, owned and operated by **responsible company**
  - Supports **environmental vision** of community

City/County Contributions

- Willingness to work together on requirements that promote community needs and are cost effective
- Promoting a greener future and supporting renewable development
- Open and supportive dialog
- Tax incentives

Together, Advancing Solar in Florida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Duke Energy Florida: Solar Projects

Debary (2020)

Columbia (2020)

Sante Fe (2021)

Disney (2016)*

Twin Rivers (2021)

St. Pete Pier Parking Canopy (2019)

**Owned and operated by an affiliate of Duke Energy*

Post Operation – Project Decommissioning

Modules

- Shipped to an existing site or salvaged
- Over 90% of a solar panel is recyclable
- Remaining disposed off in accordance with local requirements

Inverters/ Cables/Racking

- Cables and electrical equipment (inverters) deemed no longer necessary are removed and recycled by approved recycling facilities
- Racking is comprised of steel, and are recycled by an approved metals recycler

Land Use

- Following removal of equipment, site is returned to its initial condition
- Site is tilled to restore sub-grade materials
- Biodiversity is maintained as part of vegetation management plans

**Decommissioning process ranges between 2-6 months*