# GEORGIA POWER ADVANCED SOLAR INITIATIVE (GPASI)

## OVERVIEW OF THE PROGRAM

28th Annual Environmental Permitting Summer School

July 24, 2014

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# Agenda

- Background – Why Solar in GA?
- 2012 Advanced Solar Initiative (ASI)
- 2013 ASI Prime

# LARGEST CAPACITY GENERATION FACILITIES IN THE COUNTRY

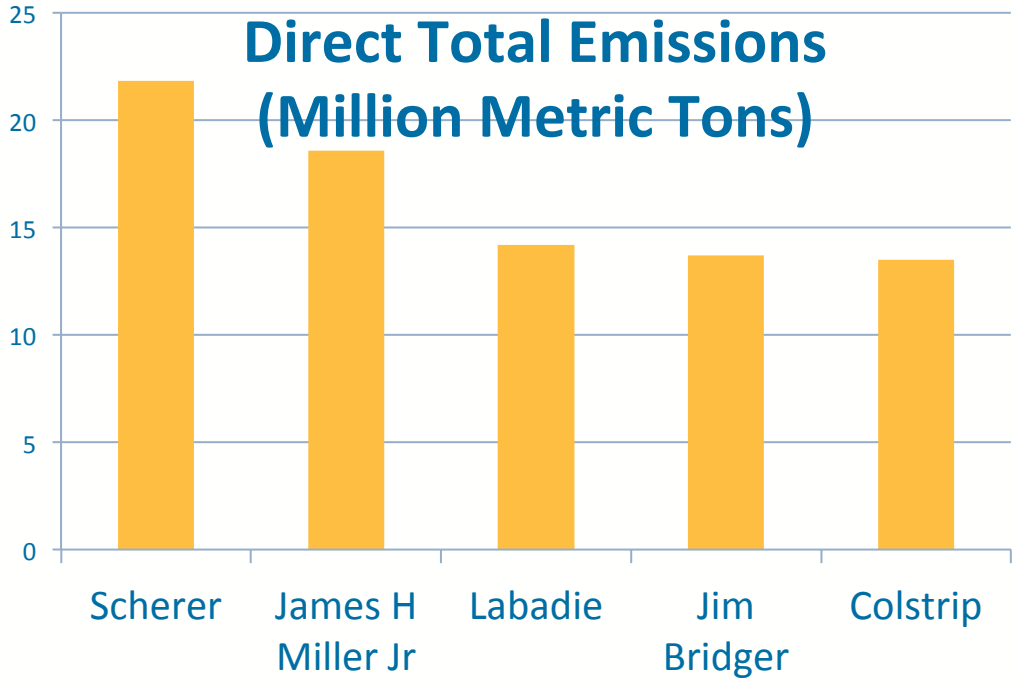
| Rank | Operator Name | Facility Name | Type | State | Summer Capacity (MWs) |
|---|---|---|---|---|---|
| 1 | US Bureau of Reclamation | Grand Coulee | Hydro | WA | 7,079 |
| 2 | Arizona Public Service Co | Palo Verde | Nuc | AZ | 3,937 |
| 3 | Florida Power and Light Co | Martin | Gas | FL | 3,695 |
| 4 | NRG Texas LLC | W A Parish | Coal/Gas | TX | 3,675 |
| 5 | Florida Power and Light Co | West County Energy Center | Gas | FL | 3,669 |
| **6** | **Georgia Power** | **Scherer** | **Coal** | **GA** | **3,406.7** |
| 7 | Florida Power and Light Co | Turkey Point | Nuc/Gas | FL | 3,334 |
| 8 | Tennessee Valley Authority | Browns Ferry | Nuc | AL | 3,309.4 |
| **9** | **Georgia Power Co** | **Bowen** | **Coal** | **GA** | **3,234** |
| 10 | Progress Energy Florida Inc (now Duke Energy) | Crystal River | Nuc/Coal | FL | 3,155 |

# STATES WITH HIGHEST EMISSIONS

Source: EPA, 6/02/2014

| State | 2012 Emissions (million metric tons) | 2012 Energy Output (TWh) | 2012 Fossil Rate (lbs/MWh) | 2012 Fossil, Renewable and Nuclear Rate (lbs/MWh) | 2030 State Goal (lbs/MWh) |
|---|---|---|---|---|---|
| **Texas** | **223.15** | **378.96** | **1,420** | **1,298** | **791** |
| **Florida** | **107.60** | **197.60** | **1,238** | **1,200** | **740** |
| Pennsylvania | 105.83 | 151.46 | 1,627 | 1,540 | 1,052 |
| Ohio | 92.86 | 110.65 | 1,897 | 1,850 | 1,338 |
| Indiana | 91.78 | 105.23 | 1,991 | 1,923 | 1,531 |
| Illinois | 87.19 | 101.44 | 2,189 | 1,895 | 1,271 |
| **Kentucky** | **82.89** | **84.69** | **2,166** | **2,158** | **1,763** |
| **Missouri** | **70.93** | **79.64** | **2,010** | **1,963** | **1,544** |
| **Alabama** | **68.56** | **104.64** | **1,518** | **1,444** | **1,059** |
| **West Virginia** | **65.61** | **71.64** | **2,056** | **2,019** | **1,620** |
| Michigan | 63.38 | 82.40 | 1,814 | 1,696 | 1,161 |
| **Georgia** | **57.02** | **83.80** | **1,598** | **1,500** | **834** |
| **North Carolina** | **53.13** | **71.17** | **1,772** | **1,646** | **992** |
| Oklahoma | 47.86 | 76.07 | 1,562 | 1,387 | 895 |
| Wyoming | 45.36 | 47.28 | 2,331 | 2,115 | 1,714 |
| **Louisiana** | **44.52** | **66.97** | **1,533** | **1,466** | **883** |
| California | 43.73 | 138.04 | 900 | 698 | 537 |
| Colorado | 38.45 | 49.45 | 1,959 | 1,714 | 1,108 |
| Wisconsin | 38.39 | 46.33 | 1,988 | 1,827 | 1,203 |
| **Tennessee** | **37.41** | **43.33** | **2,015** | **1,903** | **1,163** |

# TOP 5 GREEN HOUSE GAS EMITTERS IN 2012




Scherer Power Plant

Source: EPA, September 2013

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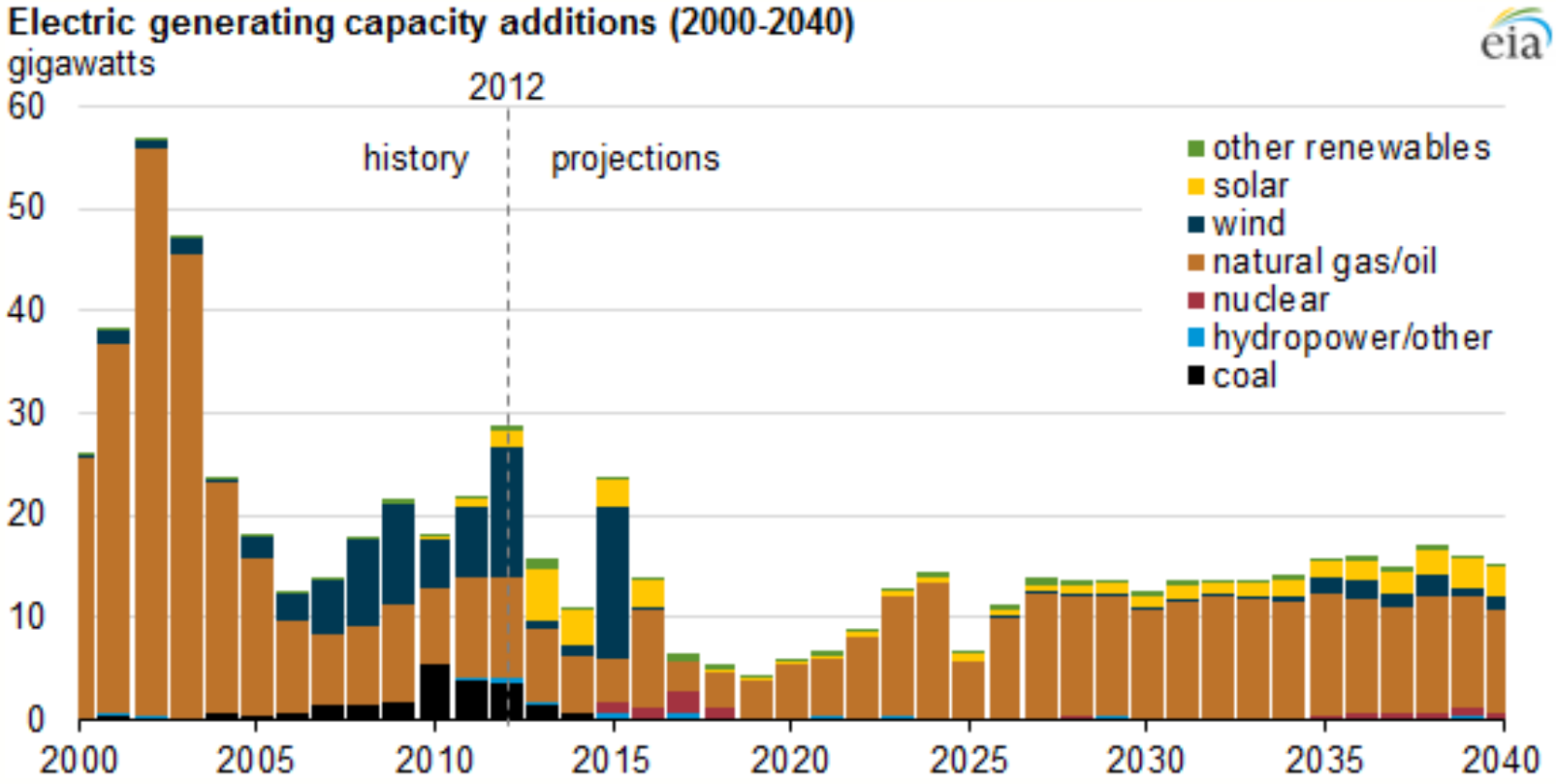
# GENERATION PROJECTIONS




Source: EIA, July 2014

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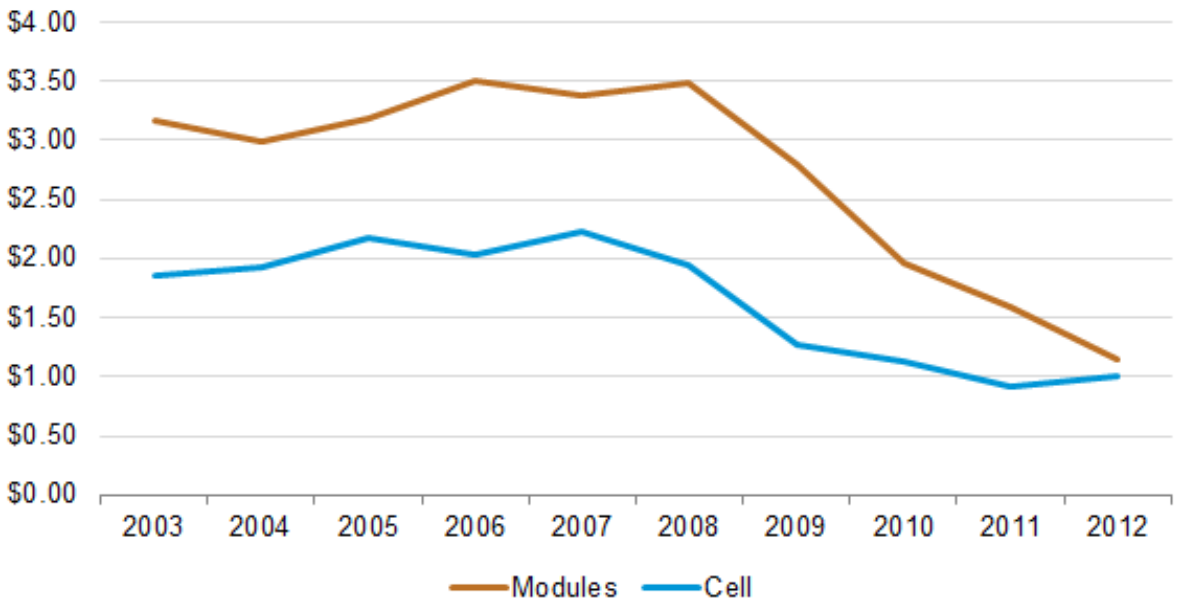
# PRICE OF PV CELLS AND MODULES

Figure 2. Average price of photovoltaic cells and modules, 2003-2012

dollars per peak watt




Source: U.S. Energy Information Administration (EIA), Form EIA-63B, "Annual Photovoltaic Cell/Module Shipments Report."

eia

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# PROS AND CONS TO SOLAR/RENEWABLES IN THE SOUTHEAST

Answer: Vulnerable to climate change and untapped resources

## Advantages

- Clean Energy
- Hedge on Coal
- Compliments Nat Gas
- Large Investments
- ITC
- Public acceptance

## Pitfalls

- No RPS/No Incentives
- Expensive?
- Power Sector Dominated by Large Investor-owned Utilities
- Resource constrained
- Politics

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# 2012 GPASI

- Approved by the Georgia Power Public Service Commission in November 2012
- Contract 210 MW of solar capacity by Dec 2014
- Provide economic growth within the solar industry without upward rate and reliability impacts to consumers

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# TWO PROGRAMS

- Small and Medium Size Scale Purchase Programs
  - Sell distributed solar back to Georgia Power
  - Seeking 45 MW
- Utility Scale RFP
  - Offer developers the opportunity to bring large PV arrays to market through competitive bidding
  - Seeking 165 MW

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# GPASI - PRIME

- Objective - Procure nearly 500 MW of Capacity by end of 2016
  - 70 MW of GPASI
  - 400 MW of GPASI Prime
- Benefits of the RFP Process
  - Bid into one or multiple offerings
  - Creates efficiencies in administrating RFP

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# BIDDING OPPORTUNITIES

- ASI – 70 MW Carry-over
  - No bidder shall submit bids for projects less than 1 MW and greater than 20 MW and prices over $120 / MW
- ASI Prime 2015 – 210 MW
  - Projects not less than 1 MW and no greater than 210 MW
- ASI Prime 2016 – 215 MW
  - Projects not less than 1 MW and no greater than 215 MW

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# SCHEDULING CONSIDERATIONS

- Federal Investment Tax Credit (ITC) decreases from 30% to 10% after 2016.
- Transmission interconnection is a significant obstacle

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# PRICING

- The weighted all-in cost of the projects awarded from 2013 was approximately 8.5 cents per kWh, which is below the 20 year levelized avoided cost projections
- PPA will be for 100% of energy output
- RECs and beneficial environmental attributes may be offered
  - Non-price factor

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# BIDDING

- A non-refundable bid fee of $5,000 or $250 per MW (whichever is greater) is required for each unique bid
- Each bid may be offered into any of the portfolios for which it qualifies
  - ASI, ASI-Prime 2015, or ASI-Prime 2016
- Each bid may offer two pricing alternatives for each portfolio for which it applies
  - Fixed price for the 20 year term
  - A schedule of 20 annual prices

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# RFP SCHEDULE

- Bids and Bidders' Fee Due - April 30, 2014
- Complete Grid Improvement Evaluations of Competitive Tier Sites - August 8, 2014
- Bid Evaluations reviewed with Staff and IE - August 12, 2014
- Short list, Reserve List and Release List Determination - August 14, 2014
- Negotiate and Finalize PPAs - October 3, 2014
- Release of Reserve List Bidders - October 10, 2014
- File Executed PPAs with the Georgia Public Service Commission - October 10, 2014
- Expected Certification Order by GPSC - December 16, 2014
- Required Commercial Operation Date for Resources - 2015 - December 31, 2015
- Required Commercial Operation Date for Resources - 2016 - December 31, 2016

# “THE MONOPOLY COMPANIES CONTROL THE SELLING OF ELECTRICITY NOT THE GENERATION OF ELECTRICITY.” – LAUREN “BUBBA” MCDONALD, GA PUBLIC SERVICE COMMISSIONER

HTTP://WWW.GEORGIAPOWER.COM/ABOUT-ENERGY/ENERGY-SOURCES/SOLAR/ASI/ADVANCED-SOLAR-INITIATIVE.CSHTML

HTTPS://GPASI.ACCIONPOWER.COM/_SOLAR_1401/ACCIONHOME.ASP

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# NUMBER 1 REASON FOR RENEWABLE ENERGY:

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# FOR QUESTIONS

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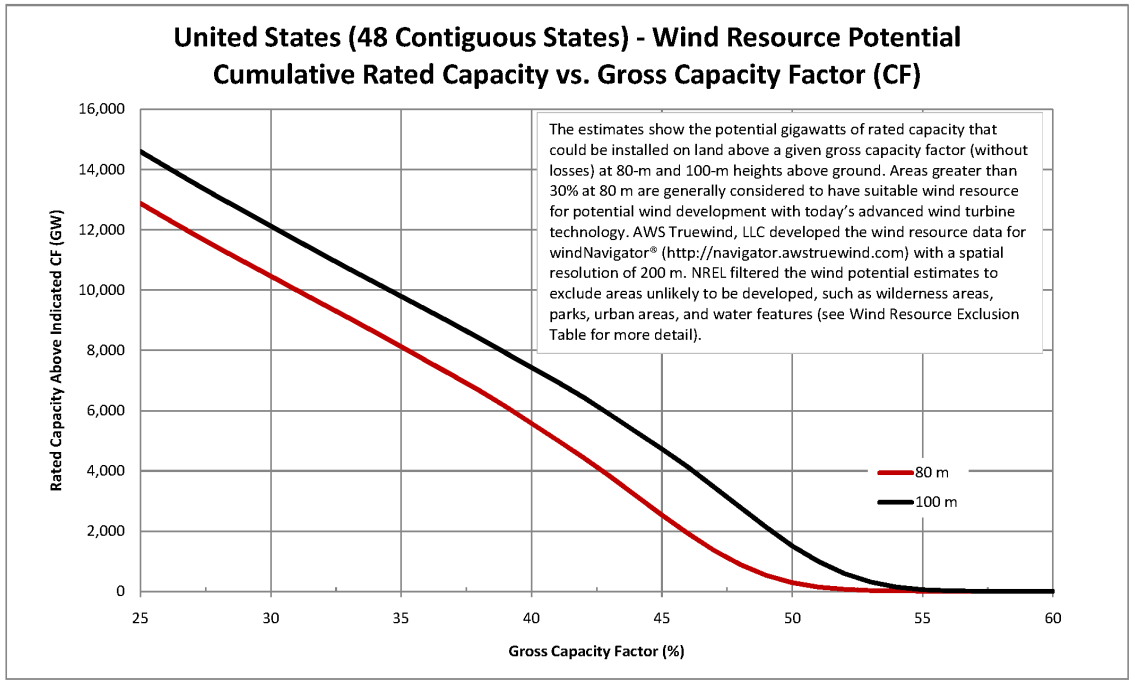
# WIND POTENTIAL IN THE LOWER 48

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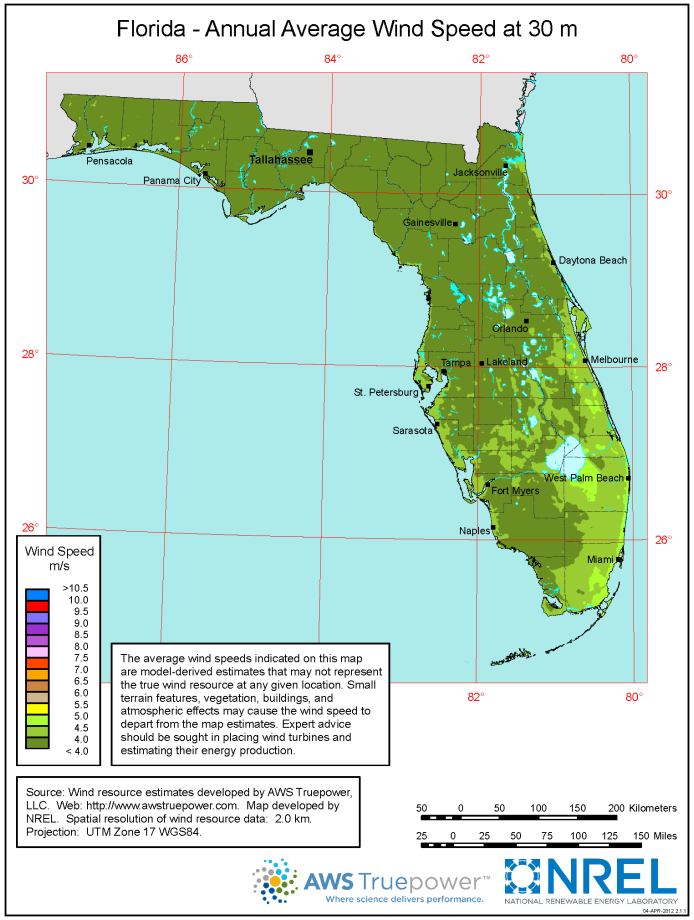
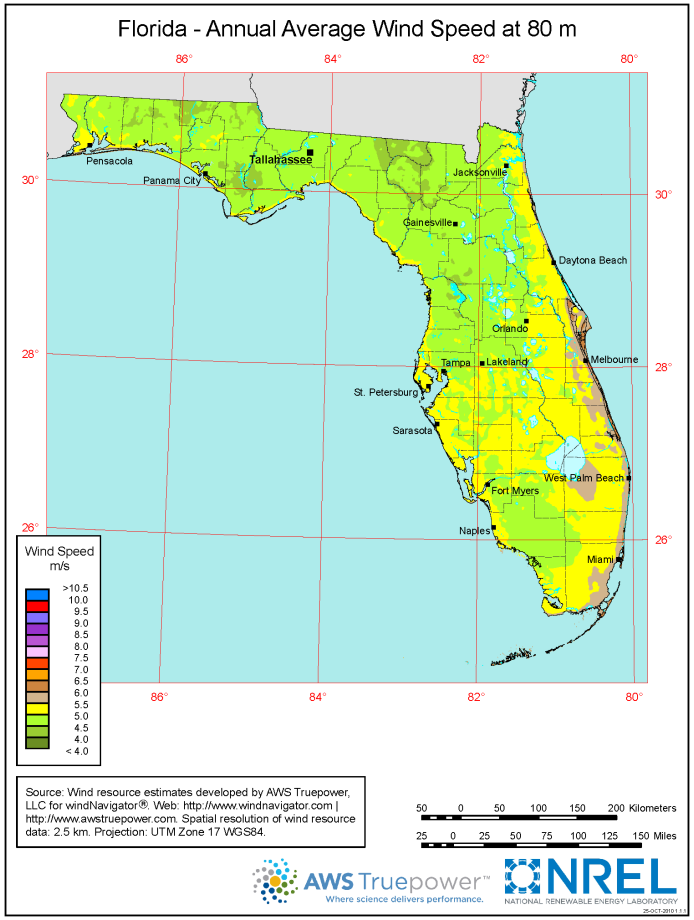
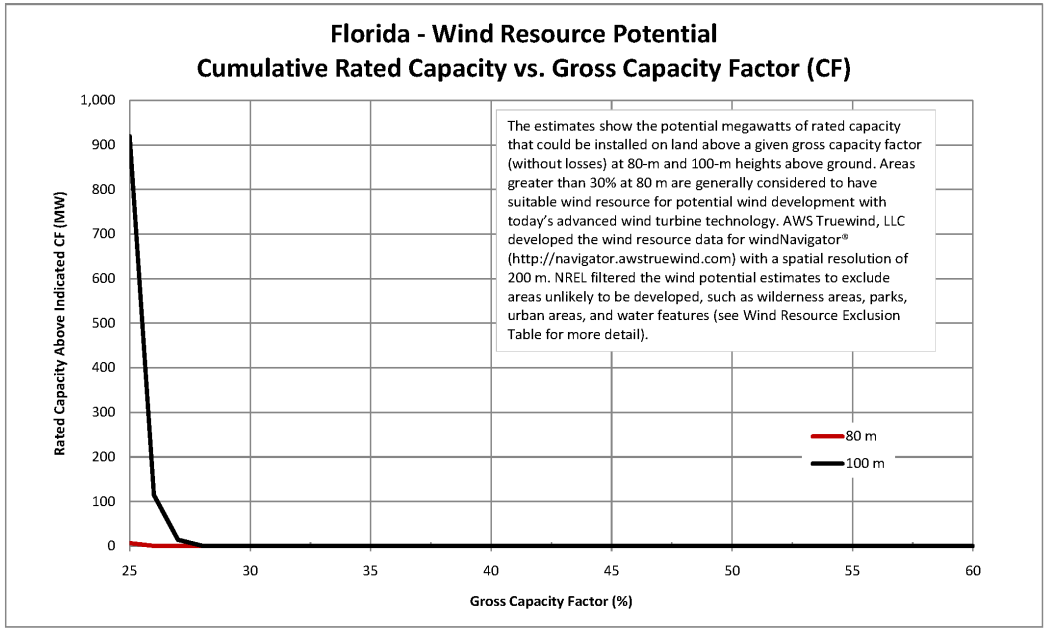
# AVERAGE WIND SPEEDS IN FLORIDA



# WIND POTENTIAL IN FLORIDA

## 80 and 100-meter resolution

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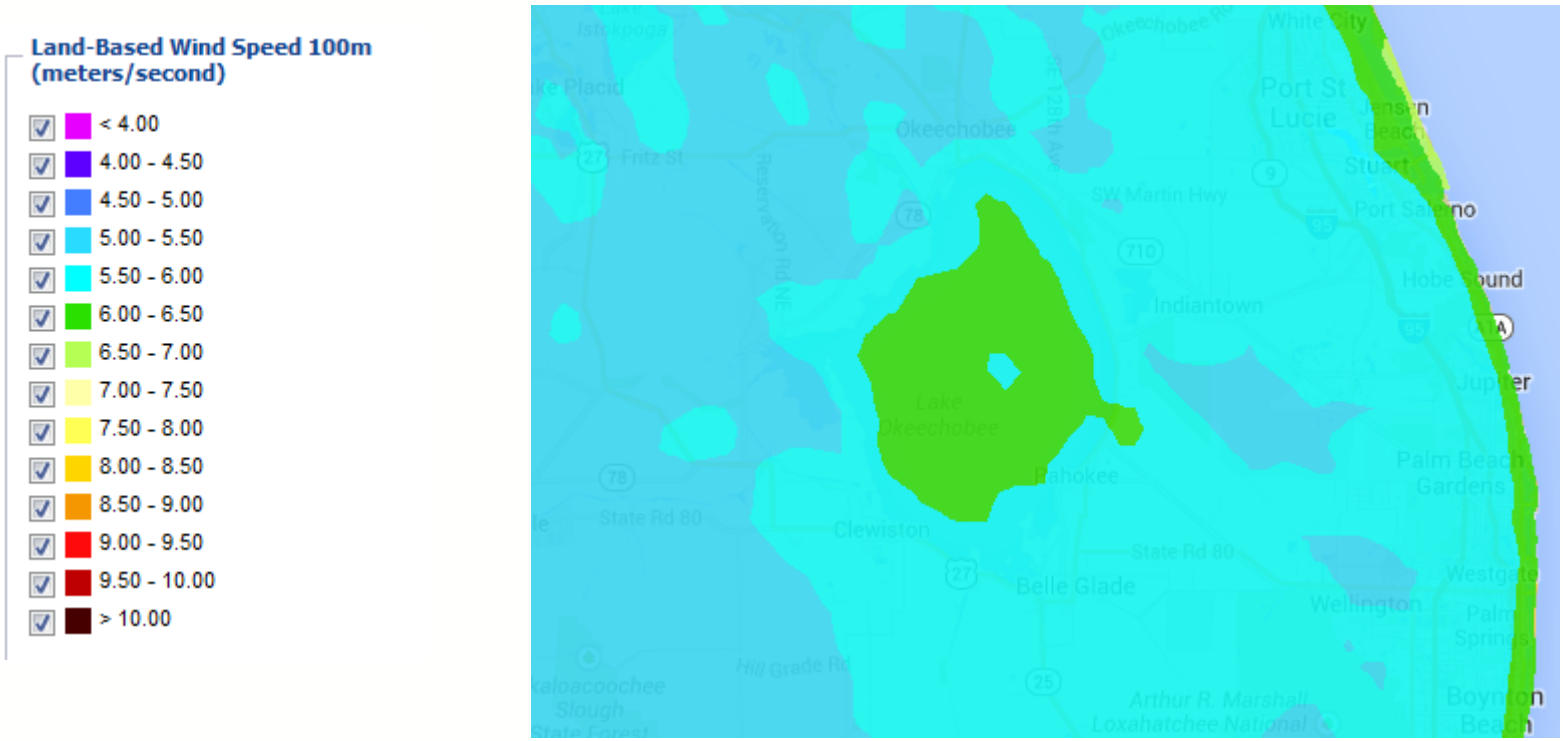
# METEOROLOGICAL TOWERS ARE KEY TO UNDERSTANDING LOCAL WIND PROFILES

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