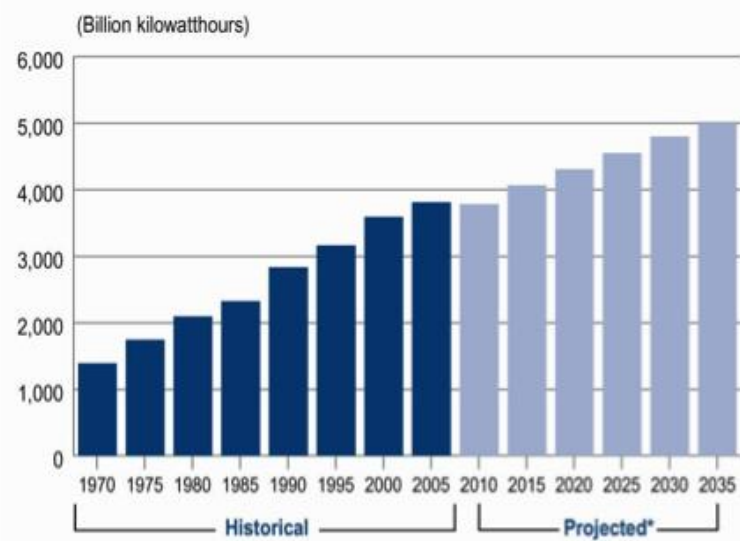


# Powering Prosperity in Florida



# Increased demand for electricity

Demand for Electricity Is Projected  
To Increase 30% by 2035



\*Electricity demand projections based on expected growth between 2008 and 2035.

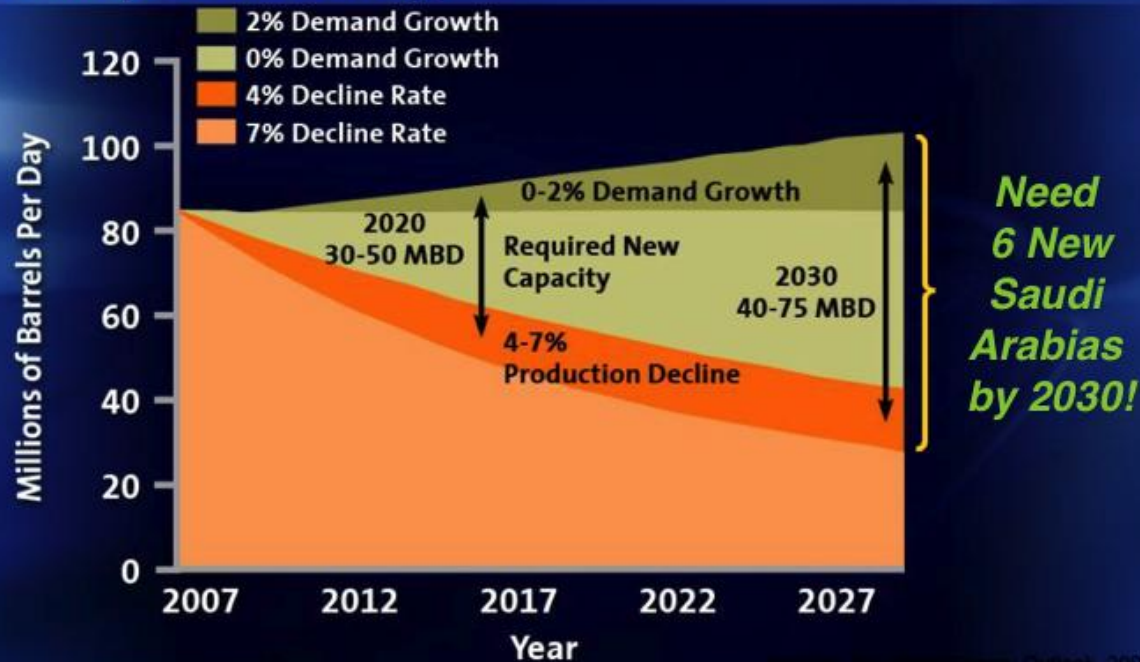
Source: U.S. Department of Energy, Energy Information Administration, Annual Energy Review and Annual Energy Outlook 2010, April 2010, Table A8-Electricity Supply, Disposition, Prices, and Emissions (Reference Case).

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# Data: Energy Information Agency

## *Future Petroleum Demand*

Petroleum supplies 35% of the world's energy and 96% of transportation energy



# Fundamental Objectives

- ▶ Fuel Diversity
  - Florida is top heavy on natural gas
  - May be 70% reliant on natural gas end of decade
  - Need fuels other than natural gas
- ▶ Price and Regulatory Stability
  - Natural gas a swung \$3/mmbtu to \$11/mmbtu
- ▶ Energy and Economic Security
  - Decrease reliance on foreign fuels
- ▶ Affordability
  - Energy efficiency – less than “supply-side” option

# (1) Fuel Diversity: Palm Beach Potential

- ▶ Palm Beach County perfectly positioned to be a global leader in biomass and biofuels
  - Florida is the Saudi Arabia of biomass
  - Florida ~9% of US biomass
  - Palm Beach is second richest agriculture county in US
  - 12 month growing season
- ▶ Existing skilled agriculture workforce & academic infrastructure
  - Scripps, University of Florida and Palm Beach State College
  - USDA regional offices
- ▶ Solar Manufacturing/Riviera Beach:
  - Global Energy United located in Virginia
  - Expanding to Florida if policy promotes solar

# (2) Stability: Current Barriers or Obstacles

- ▶ Policy and Permitting
  - Great need to incentivize approval process
  - Federal mandates and financial incentives promoting biofuels, but permitting roadblock
  - Eg., Ag Oil: biodiesel facility denied “with prejudice”
- ▶ Education and Understanding
  - Biofuels are often cheaper and cleaner than petroleum
  - Never closed a beach or fought a war over biofuels
  - Midwest ethanol still good; invest in midwest than middle east
  - Per capita, we are growing more corn than ever before

### (3) What can the private and public sector (city/county/state) do to capitalize on that potential?

- ▶ Government must provide certainty
  - Consistent policy from administration to administration
  - Regulatory stability
- ▶ How to achieve regulatory stability?
  - Public – Private Partnerships mitigate risk to investors
  - Municipal bonds tied into Federal loan guarantees, grants, and tax incentives
  - Soft landing coordinator
- ▶ Public Relations: “Branding” – Promote locally grown fuels like Florida grown agriculture
- ▶ Removes sales tax on biofuels

# Government Mandates

- ▶ **Federal Renewable Fuel Standard (RFS2; 75 FR 14670)**
  - Clean Air Act Section 211(o); (40 CFR Part 80)
  - 7.5 MGY by end of this year (2012)
  - 36 BGY by year 2022
    - 21 BGY projected from advanced biofuels – cellulosic
    - EPA authorized the use of E15% for 2001 cars and newer
- ▶ **Florida Renewable Fuel Standard**
  - E-10 standard in place since Dec. 31, 2010
  - Applies to almost all retail gas sold
  - \***Permitting:** “one stop shop” and expedited for Florida biofuels and other renewables

# Florida Infrastructure Since 2008

- ▶ Feedstock infrastructure:
  - FL richest state in the nation for biomass
  - Already growing energy cane, sorghum, jatropha, eucalyptus, camalina, canola
- ▶ Real Infrastructure:
  - Kinder Morgan pipeline connecting Tampa to Orlando
  - State-of-the-art blending facilities at FL ports
- ▶ Vehicles and public fueling stations
  - ~600,000 FFVs
  - 44 E85 stations across 34 cities
  - Over 40 more 85 stations recently funded

# Local Projects

- ▶ **Florida Crystals (FC)**
  - Home to one of world's largest biomass plant; largest in North America
  - Fuel from FC's crops and biomass waste
  - Powers sugar operations and 60,000 homes
- ▶ **LS9**
  - Cellulosic ethanol process in Okeechobee
  - Using waste biomass to produce 100,000 gallons
- ▶ **INEOS**
  - Cellulosic process in Vero
  - Using waste biomass for fuel and electricity
- ▶ **Genuine Biofuels**
  - Biodiesel facility in Indiantown; CEO resident WPB
  - Using waste grease
  - Running up to ~6MPY
- ▶ **Ag Oil**
  - Biodiesel crushing and blending facility planned in Palm Beach County
  - Using Jatropha: nut providing natural oil
  - County denied permit "with prejudice"

# Florida BioEnergy Projects

- ▶ Solid Waste Authority of Palm Beach
  - Increased capacity from 2,500 tons per day to over 5,500 TPD by 2014
  - Doubled energy output; located off Jog road
- ▶ St. Lucie County–Renewable Energy Project
  - Fuel: Municipal Solid Waste (MSW)
  - Process: Plasma Arc Gasification
  - Power Production: 18 MW
  - Location: St. Lucie County
- ▶ American Renewables Gainesville Renewable Energy Center–Bio–Energy Production
  - Contract with Gainesville Regional Utilities (GRU)
  - Fuel: Woody Biomass
  - Process: Fluidized Bed Boilers
  - Power Production: ~100MW
  - Location: GRU Deerhaven Generation Station

# Okeelanta Overview: Renewable Energy

- ▶ New Hope Power Partnership – largest biomass cogeneration plant in North America
- ▶ Receives 900,000 tons of wood waste annually
- ▶ Produces electricity to power 60,000 homes and our operations
- ▶ Conserves 1 million barrels of oil per year
- ▶ Creates 2,400 truck trips per month



# Six Projected Production Facilities: ~270 MGY

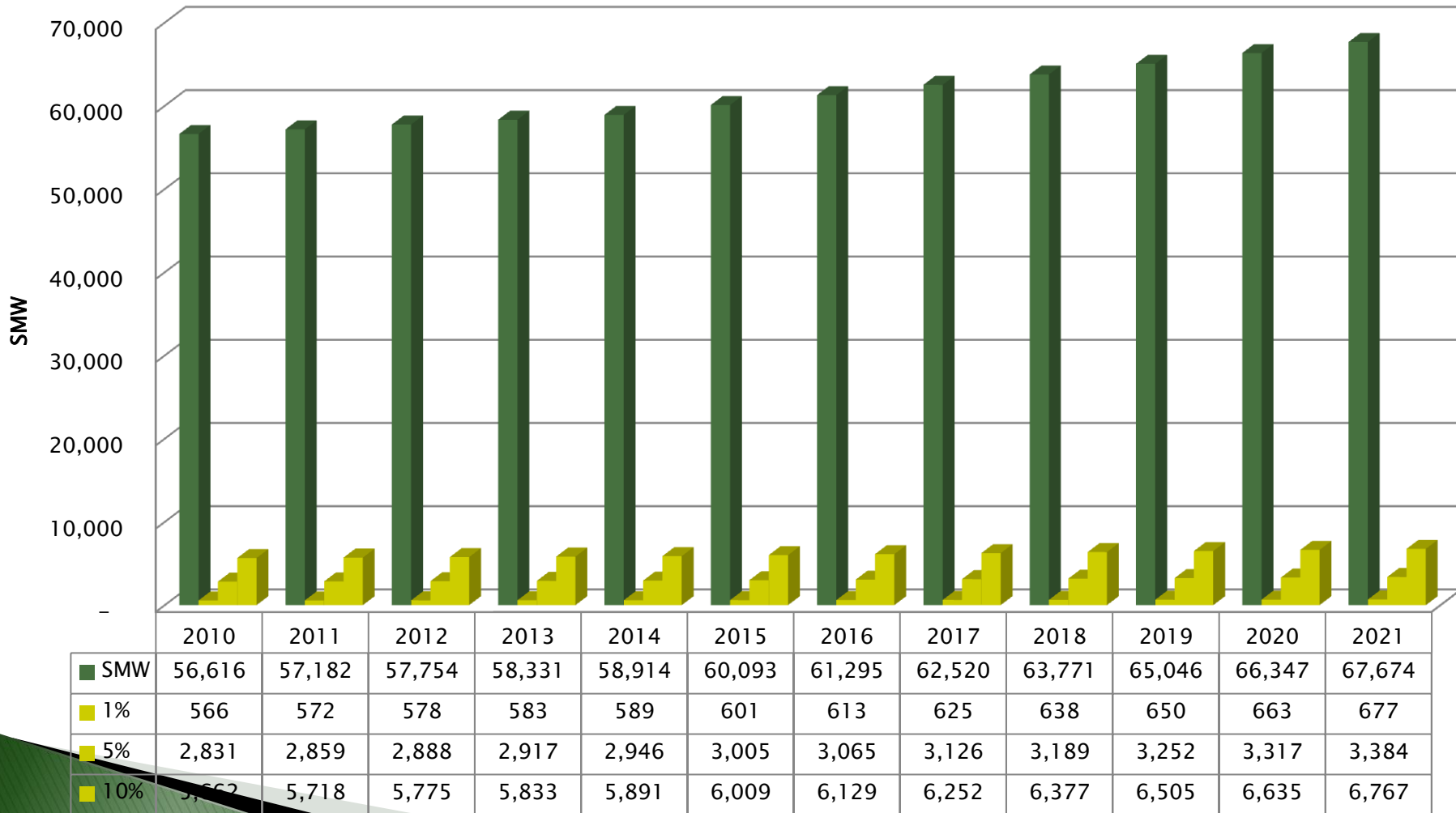
- ▶ ***Southeastern Renewable Fuels***
  - Application filed mid-March
  - sweet sorghum to produce 22 MGY ethanol and 30 MW electricity
- ▶ ***INEOS New Planet Bioenergy,***
  - Recently broke ground February 2011
  - waste biomass to produce 8 (up to 50) MGY ethanol and electricity
- ▶ ***BP Biofuels***
  - Permit issued 3/22/2010; under construction
  - (energy cane and forage sorghum to produce 40 MGY ethanol)
- ▶ ***University of Florida Ethanol Testing Facility,***
  - 165KGY ethanol and organic acid
- ▶ ***Coskata, Inc., and U.S. Sugar Corp.,***
  - Cellulosic ethanol from bagasse; 100 MGY
- ▶ ***US Envirofuels***
  - Sugarcane to ethanol; ~40MGY and 5MW
- ▶ ***Vision/FL, LLC,***
  - sweet sorghum to ethanol, 30 MGY and 50 MW of electricity

# Four Biodiesel Production Facilities

- ▶ ***SmartFuels, Lake County*** –
  - Permit issued 12/4/2009
  - waste vegetable oil to produce 2.74 MGY biodiesel
- ▶ ***Agri-Source Fuels, LLC, Dade City, Pasco County***
  - Permit issued 10/1/2009
  - not producing yet; animal fats and plant oils (12 – 60 MYG)
- ▶ ***Clean Fuel Lakeland, LLC, Lakeland, Polk County,***
  - Permit issued 7/18/2008
  - (not producing yet; vegetable oil/animal feedstock to produce 18.25 MGY biodiesel)
- ▶ ***Genuine Biofuels, Indiantown,***
  - 3MGY biodiesel (currently producing/uses waste grease)

# Florida Projected Electric Capacity

## Florida Generation Capacity – Forecasted 2010–2021



[www.facebook.com/pages/Florida-Bioenergy-Association/](http://www.facebook.com/pages/Florida-Bioenergy-Association/)



**Florida Bioenergy Association**

BIOFUELS. BIOMASS. BIOENERGY.