Renewable Energy Update

28th Annual Environmental Permitting Summer School
July 24, 2014
Current Climate and Outlook for Renewable Energy

U.S. Renewable Energy Supply
quadrillion British thermal units (Btu)

Note: Hydropower excludes pumped storage generation. Liquid biofuels include ethanol and biodiesel. Other biomass includes municipal waste from biogenic sources, landfill gas, and other non-wood waste.

Source: Short-Term Energy Outlook, July 2014.
Current Climate and Outlook for Renewable Energy

Figure 82. Renewable electricity generation capacity by energy source, including end-use capacity, 2011-2040 (gigawatts)
## State of Florida - Existing Renewable Resources - 2013

<table>
<thead>
<tr>
<th>Renewable Fuel Type</th>
<th>Summer Net Capacity (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Fill Gas</td>
<td>40</td>
</tr>
<tr>
<td>Municipal Solid Waste</td>
<td>466</td>
</tr>
<tr>
<td>Biomass</td>
<td>415</td>
</tr>
<tr>
<td>Solar</td>
<td>178</td>
</tr>
<tr>
<td>Hydro</td>
<td>63</td>
</tr>
<tr>
<td>Waste Heat</td>
<td>308</td>
</tr>
<tr>
<td>Wind</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,470</strong></td>
</tr>
</tbody>
</table>

Source: 2013 FRCC Regional Load & Resource Plan, TYSP Utilities Data Responses
# State of Florida - Planned Renewable Resource Additions - 2023

<table>
<thead>
<tr>
<th>Renewable Fuel Type</th>
<th>Summer Net Capacity (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Fill Gas</td>
<td>12</td>
</tr>
<tr>
<td>Municipal Solid Waste</td>
<td>125</td>
</tr>
<tr>
<td>Biomass</td>
<td>470</td>
</tr>
<tr>
<td>Solar</td>
<td>359</td>
</tr>
<tr>
<td>Hydro</td>
<td>0</td>
</tr>
<tr>
<td>Waste Heat</td>
<td>0</td>
</tr>
<tr>
<td>Wind</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>966</strong></td>
</tr>
</tbody>
</table>

Source: 2013 FRCC Regional Load & Resource Plan, TYSP Utilities Data Response
Established Renewable Energy Projects

- Biofuel
- Biomass
- Solar
Established Renewable Energy Projects:
Examples- Solar

FPL’s DeSoto Solar Energy Center
- 25 MW Capacity
- Opened in 2009 as largest solar photovoltaic plant in the country
- 90,500 solar panels

FPL’s Martin Solar Energy Center
- 75 MW Capacity
- Largest Solar Thermal Plant in the East
- First Hybrid Solar Facility to connect to Combined-cycle Natural Gas Plant
- In-service in 2010
- 190,000 mirrors
Recent/Under Development

Renewable Energy Projects

- Biofuel
- Biomass
Recent/Under Development Renewable Energy Projects

- Gainesville Renewable Energy Center, Gainesville
- Palm Beach Renewable Energy Facility Number 2, Palm Beach County
- INEOS New Planet Bio Energy, Indian River County
- LS9, Okeechobee County
- Central Power & Lime, Hernando County
- U.S. EcoGen, Polk County
- Harvest Energy Garden, Orlando
- Southeast Renewable Fuels, Hendry County
Current Climate and Outlook for Renewable Energy

• **State Policy**

• **Federal Policy**
  – 2014 Farm Bill
  – Military
  – Department of Energy
  – GHG and Climate Change Regulation
    • RFS2;
    • PSD and Biogenic CO₂;
    • Electric Utility Regulations

• **Market Factors**
  – Cost of Renewable Energy vs. Traditional Fuels
  – Demand for increased generation
Florida Renewable Energy Policy
2012 HB 7117

• Added renewable energy factors for the Florida Public Service Commission to consider in evaluating utility 10-year site plans
• Repealed provisions for renewable portfolio standard
• Appropriated $250,000 for an independent evaluation of the Florida Energy Efficiency and Conservation Act
Florida Renewable Energy Policy
2012 HB 7117

• Reinstated biofuels sales and use tax exemption for four years
• Reinstated the renewable energy production credit
• Reinstated the renewable energy technologies investment tax credit
• Directed DACS to prepare an annual assessment of renewable energy tax credits
Florida Renewable Energy Policy
2013 Legislative Session

- SB 320 – repealed 2008 Renewable Fuel Standard Act that requires most gasoline in the state to include approximately 10% ethanol
- HB 579 – exempted natural gas from fuel tax for five years providing an incentive for natural gas vehicles
- SB 1472 – nuclear cost recovery
- HB 1083 – underground natural gas storage
Florida Renewable Energy Policy
2014 Legislative Session

• HB 7147 –
  • clarifies DACS must promote all forms of renewable energy; not just solar
  • authorizes DACS to appoint representative to Southern States Energy Board
  • provides for DACS to post information on alternative fueling and electric charging stations
  • eliminates Solar Energy Rebate Program (not funded since 2010)
  • provides local governments with access to federal grants through Qualified Energy Conservation Bond program
Florida Renewable Energy Policy

2014 Legislative Session

• HB 825 – proposing tax breaks for businesses that install solar panels; died in subcommittee

• HM 243 – urging Congress to repeal the Renewable Fuel Standard; died in committee

• HJR 695 – proposing constitutional amendment to provide that an entity exclusively producing renewable energy is not a “public utility”; died in subcommittee
Florida Renewable Energy Policy

Most States Have Renewable Portfolio Standards

States with Renewable Portfolio Standards (mandatory) or Goals (voluntary), January 2012

- Standards
- Goals
Current Climate and Outlook for Renewable Energy

• State Policy

• Federal Policy
  – Military
  – 2014 Farm Bill
  – Department of Energy
  – GHG and Climate Change Regulation
    • RFS2;
    • PSD and Biogenic CO$_2$;
    • Electric Utility Regulations

• Market Factors
  – Cost of Renewable Energy vs. Traditional Fuels
  – Demand for increased generation
2014 Federal Farm Bill

• Last farm bill approved in 2008; generally expired in September 2012, but Congress passed extensions while unable to pass new bill

• New farm bill finally signed into law in early 2014; generally in place through 2018

• 5-year spending projection is $489 billion
  – Approximately 99% for nutrition, crop insurance, conservation, and commodity programs
  – Approximately 1% for all other programs, including rural development, research and extension, forestry, energy, and others
2014 Federal Farm Bill
Energy Highlights

• Biorefinery Assistance Program
  – encourages cellulosic biofuel technologies and renewable chemical/biobased product manufacturing
  – $100 million for 2014 and $50 million for 2015 and 2016;
    $75 million in discretionary funding per year for 2014-2018

• Repowering Assistance Program
  – encourages existing biorefineries to use biomass for heat and power
  – $12 million for 2014; $10 million in discretionary funding per year for 2015-2018
2014 Federal Farm Bill

Energy Highlights

• Biomass Crop Assistance Program (BCAP)
  – promotes production of cellulosic biofuels to meet Renewable Fuel Standard mandates; provides funding for crop and woody biomass production and collection harvest, storage, and transportation
  – $25 million per year; 10%-50% required to be spent for collection, harvest, storage, and transportation (versus production)
2014 Federal Farm Bill

Energy Highlights

• Bioenergy Program for Advanced Biofuels
  – encourages production of advanced biofuels
  – $15 million per year; $20 million per year in discretionary funding

• Biomass Research and Development
  – supports advanced research to improve bioenergy
  – $12 million over five years; $20 million in discretionary funding per year
2014 Federal Farm Bill

Energy Highlights

• Rural Energy for America Program (REAP)
  – grant process for renewable energy system and energy efficiency projects; process now tiered by cost, higher cost is subject to more comprehensive application and evaluation process
  – $50 million per year; $20 million in discretionary funding per year
Current Climate and Outlook for Renewable Energy

• State Policy

• Federal Policy
  – Military
  – 2014 Farm Bill
  – Department of Energy
  – GHG and Climate Change Regulation
    • RFS2;
    • PSD and Biogenic CO₂;
    • Electric Utility Regulations

• Market Factors
  – Cost of Renewable Energy vs. Traditional Fuels
  – Demand for increased generation
Questions?

Douglas Roberts, Attorney
Hopping Green & Sams, P.A.
119 South Monroe Street
Tallahassee, Florida 32301
(850) 222-7500
RobertsD@hgslaw.com
HGSLaw.com