Agenda

Short presentations by FESC Steering Committee members at each university

FAMU Overview, Charles Weatherford
FAU Overview, Camille Coley
FGCU Overview, Joe Simmons
FIU Overview, Osama Mohammed
FSU Overview, Billy Oates
UCF Overview, James Fenton
UNF Overview, John Kantner
USF Overview, Yogi Goswami
UWF Overview, Muhammad Rashid
UF Overview, Canan Balaban (for Sean Meyn)
FESC Outreach – Pierce Jones
Q&A, Open Discussion
Future Plans
Lunch
FESC OVERVIEW
Florida Energy Systems Consortium

Created by Florida Statute in 2008
Purpose is to… Unite Florida energy experts including Florida’s 11 Universities so that the State is a leader in energy research and developing innovative energy systems which will give rise to...

Improved energy efficiency and
Expanded economic development

Strategic Activities
• Research
• Technology Commercialization
• Outreach
• Education

FESC involves more than
• 300 Faculty
• 100 Centers and Institutes
• 200 Companies within Florida
ACTIVITIES AND ACCOMPLISHMENTS
## FESC Funded Research Projects

<table>
<thead>
<tr>
<th>Thrust Areas</th>
<th># of Projects</th>
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<tbody>
<tr>
<td>1: Energy Systems</td>
<td>13*</td>
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<tr>
<td>2: Energy Efficiency and Conservation</td>
<td>11</td>
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<tr>
<td>3: Biomass Energy</td>
<td>13</td>
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<tr>
<td>4: Solar Energy</td>
<td>23</td>
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<tr>
<td>5: Nuclear Energy &amp; Carbon Capture</td>
<td>5</td>
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<tr>
<td>6: Ocean Energy</td>
<td>2</td>
</tr>
<tr>
<td>7: Energy Storage and Delivery</td>
<td>13</td>
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<tr>
<td>8: Energy Policy</td>
<td>17</td>
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<tr>
<td>9. Technology Commercialization (Phase I &amp; II)</td>
<td>15+5</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>91</strong></td>
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* 11 projects counted in other thrust areas
FESC Successes to Date - Research

Leveraged $38 million in state appropriation to obtain $373 million in energy research funding from third parties

Resulting dissemination of over 1000 publications and 1000 presentations – promotes Florida’s energy capabilities and technical leadership helping to attract energy industry and energy funding to FL

Selected Award Examples

- $125M US-India Joint DOE Clean Energy Research and Development Center in Biomass – UF Lead
- Nation’s only university-based Photovoltaic Regional Test Center at UCF, funded by NSF
- US DOE funded FEEDER (Foundations for Engineering Education for Distributed Energy Resources) Consortium (UCF lead with UF and FSU)
- FAU - designated by DOE as one of three National Marine Renewable Energy Centers
FESC Successes to Date – Education

Educated, through their direct involvement in energy-related research and technology projects, over 400 students and post-docs at FL universities

On-line Energy Certificate Program

Over 95 specialized *Industry* Training and Education Events

Workforce Development - Program implementation with Florida Advanced Technological Education Center (FLATE).

- Create State-wide technician educational delivery system
- Developed two energy degree programs
  - Alternative Energy Technologies
  - Industrial Energy Efficiency
FESC Successes to Date - Outreach

Focus on Energy Efficiency

• Target the general public & built environment
• Collaborate with the home builders and construction industry
• Partner with utilities to implement performance-based demand side management

Demand Management Much More Cost Effective Than Expanding Supply

Developed information for public

• Over 50 Fact Sheets prepared to help Florida citizens better conserve and increase energy efficiency

Conducted continuing education programs
Content-Rich Web Site: floridaenergy.ufl.edu/

Also communicate with FESC network through monthly newsletter, in addition to biannual reports, e-mails, telecons and other meetings.
FESC Successes to Date - Technology Commercialization

FESC Technology Commercialization Program
• Funding of early stage market research/business plans – Phase I
• Matching funds for companies to leverage their R&D budgets – Phase II

Startup Companies – 26 companies formed based on university developed technologies
Technology Licensed – 89 licenses
Invention Disclosures – 376 submitted

• Job Growth
  – Across all diverse aspects of emerging energy technologies
• Creates value chain ecosystem
  – Involving companies, suppliers, customers, academics, research partners, consultants
In Conclusion…

- FESC has highly leveraged the state funding and linked Florida universities with Florida energy industry
  - Gives Florida a competitive advantage

- Increased awareness nationally/internationally of FESC and its leadership role
  - MOU with BioFuelNet (BFN) Canada
  - BFN links Canadian universities industry to collaborate in energy R&D

We look to build on the current momentum FESC has established
FUTURE DIRECTIONS
FESC Workshop

- FESC Annual Workshops were combined with the Florida Energy Summit in 2012 and 2013
- FESC will host a Florida Energy Workshop on May 12-13, 2014
  - Research-focused
  - Hilton Hotel, Gainesville FL
  - On-site expenses will be covered, including hotel expenses for up to 150 faculty/students
Strategic Thrusts

1. Developing Florida’s Biomass Advantage for Renewable Fuels

2. State of Florida Opportunities for High Impact Solar Energy Research

3. Enhancing Energy Efficiency and Conservation

4. Smart Grid and Energy Storage

5. Marine Energy for Power Generation

6. Nuclear Energy
State Funding Request

• FESC Bridge funding (50/50 cost shared by VP of UF) was approved by Commissioner Putnam

• Recurring funding request package has been submitted to the State through the Office of Energy
  – Administration, Education and Outreach Support - FESC
  – Research and Technology Commercialization – reside at Office of Energy and FESC will be responsible for technical oversight

• Office of Energy will establish matching program. FESC will assist in managing this program.
Energy Research Funds Requested

$500,000 - $1,000,000
Technology Commercialization Support
• Develop commercially-applicable, new technologies through university/industry partnerships
• A minimum of 1:1 cost sharing provided by a Florida industry partner

$1,500,000 - $3,000,000
Technology Development Research Support
• Perform high quality applied research driven by real-world problems
• Partnership with industry and must include a minimum of 10% industrial cost sharing
Energy Research Funds Requested

$1,200,000 - $2,400,000
**Exploratory/Fundamental Energy Research Support**
- Produces a steady stream of innovation which is key to Florida’s sustained economic development
- Provides a major role in developing Florida’s research leadership in the energy sector

$800,000 - $1,600,000
**Facilities Support**
- State-of-the-art energy research infrastructure – equipment and facilities – required to conduct cutting edge, high quality energy research
How You and Your University Can Support

- Already met with FESC Advisory Board at Florida Energy Summit and they are unanimously supporting this request
- Had several meetings with Office of Energy to modify/tweak request

Need lobby support from each university