

Panel Session Notes

Session II: Energy

Moderator: Dr. Jennifer Curtis

Panelists: Dr. Gary Peter, Patrick Sheehan, And Dr. Samuel Baldwin

Notes: Roberto Ruiz and Emotion Silvestri

Dr. Curtis begins by opening the floor for questions

“How do you make money in a sustainable energy environment? Where are the opportunities for energy growth [by location]?”

(Dr. Sam Baldwin)

- Since natural gas (NG) prices are region dependent, NG prices are high in some locations, but overall NG prices are still low.
- Although natural gas prices are low now, the markets for renewable energy are growing rapidly in different sectors.
- As the PV price for operating cost and the cost of manufacturing go down, there are many more sectors in the US that are making it easier to promote more sustainable energy resources
- Global market energy growing, PV has a 50%-60% growth trajectory
- Power industry is not evenly distributed in the United States
- Florida has limited pipeline pathway, hurricanes can easily take them out
- Areas of high priced power can see more opportunity for growth
- We don't price coal correctly as there are medical costs involved. There are no cost projections due to climate change.

(Patrick Sheehan)

- You also have to find win/win situations for the state
- Florida is diminishing the amount of state foreign oil used and its dependence on other state's energy resources
- There are huge efforts made to try and make the state of Florida a “home-made” energy state with resources such as biofuels, wind and solar, however, there are problems on how to integrate these ideas due to the current regulatory system implemented by the State.
- So far, the state of Florida has been the only one to use \$30M out of the \$175M used for funding to attract businesses to the state and invest in more sustainable resources. So far, out of the businesses' investment, 8 different companies are producing revenue.

(Dr. Gary Peter)

- Maybe you should touch on the growth in energy storage and transmission. Like the smart grid.
- The biomass sector is even more competitive now because of how new it is compared to other renewable energy sources.
- The complications with the Biomass sector are also transportation, mass production but most importantly, how to implement any major changes into a plausible replacement with oil.

(Dr. Sam Baldwin)

- So there is a large amount of new technology in energy. We don't have a way to manage it all. The solution is the smart grid.

Social aspect of energy efficiencies - "Do you believe that we can get to 80% renewables before projected 2050 as mentioned earlier?" Directed at Sam Baldwin in reference to his talk before the panels

(Dr. Sam Baldwin)

- With 13 MW in wind annually, it can happen.
- Look at climate change. Will public opinion change? Lose assets?
- I see integration issues if public gets ahead of the game
- We can see issues as PV operators need to replace systems. Projected to be 100-120 years to replace most assets.
- Utility industry with slow/no growth. To invest on new generation of equipment is very constrained.
- So far there is not an effective solution to integrate all of these technologies
- Not a single massive feasible solution has been created; however, there are huge efforts from governors and from politicians to try and integrate solutions to deliver results to consumers.
- Big efforts also to make cars more efficient, to make solar panels store more energy to be dispersed throughout the night.

(Patrick Sheehan)

- Florida standpoint, under Putnam
 - His stance is to find win-wins for the nation. Look at economics for FL. \$68B on energy spending in the state. About \$1 for \$1 what we spend on state government. 2/3 of that is spent on oil/petrol. FL is diminishing to almost 0% petrol for electric generation, used to be highest in country. \$15B out of state. Economic statement: Want to see FL production grow to export clean energy. 1st energy bill renewed was the 5 year tax credit program for fuels. This will incentivize production for renewables.
 - Lots of challenges to get into due to current arrangements on regulatory system.
 - Out of \$175M from DOE, \$30M toward unique program as to how we attract businesses in the state. (References: Space FL, and Enterprise FL). All of these provided parts of \$30M. The Opportunity fund helps clean energy business and start-ups.

- Only state to commit that much. Marrying together venture capitalists and energy companies.
- Wall Street focus, how to revolve money back into market place. Energy can pay dividends over time.
- One major problem with a faster or nearer solution is the money constraint. To change an energy source is very expensive, as well as tedious because of the regulations that have to be created and implemented by the state to prevent any problems.

(Dr. Gary Peter)

- To the gentlemen who asked about where the opportunities are, it is a great time to be a tech developer. The biomass arena is seeing growth. Focus on the transportation market.

Same individual who asked the first question - ***“Looking at Colorado, I don’t have to go to 8 websites, to start a clean energy company. Florida isn’t doing it. It’s hard to get into business here. Have to cut through red tape and can’t get into market.”***

(Patrick Sheehan)

- Not first to express this frustration. Some consolidation of groups within FL, this can be fine-tuned. We are under department of agriculture now. We control some stimulus dollars, build on opportunity fund.
- We are in the process of starting matching funds program to help universities with their federal grants. For example, US DOE requires 20 % to 50% cost share for grant applications. Matching funds program may help universities in this area.
- The recent State Bio R&D program call will provide seed funding for university/industry research programs. Won’t have enough \$\$ to satisfy everyone though.
- FL is unique due to the regulations and the monopoly based utility system
- Efforts towards changing some of the regulations to encourage new businesses/investors to come to FL.
- The main efforts are to try and make Florida an attractable state for investors
- To promote universities with clean energy programs that can help promulgate these ideas to public and private entities
- The creation of a bioenergy program that can be used by both the private and public sector to help consumers

“Working with company that wants to start a power plant in south FL worth \$1.2B with as much as 3M acres of land. Hard to get financed but we want to help it. According to law, no new power source can start without being less than or equal to current price.”

(Patrick Sheehan)

- There are challenges. Challenges because of the regulatory system implemented by more than 100 years ago. Integration of new technology is monitored closely in the state, making it very hard for small companies to compete with current utility providers.
- FL benefits from a monopoly based system due to region, preserved through Supreme Court case.

- Redefine paradigm so as not to compete against Power Company. Can't do that if people do this in backyard.
- Utilities are committed to meet the daily expected peak electric load plus a "reserve margin" to maintain service in the event of a power plant failure. If a qualifying facility delivers energy to the utility, the utility will then reduce the amount of energy generated at their operating plant. The energy-related costs of that "avoided" plant (cost of fuel, operation expenses, and maintenance cost), comprise the energy component of avoided cost paid to qualifying facility.

Building construction - ***“New homes are 20 – 30% more efficient, but 90% of Florida homes are older, how can there be a change so that the older Florida homes can be more efficient “***

(Dr. Sam Baldwin)

- DOE does not have resource for large scale solutions
- They are working with big builders around country to make homes more efficient and easier to incorporate better and newer technologies
- It also depends on how the consumer would like his/hers home to be more efficient, an example is the use of newer electric equipment which can reduce the amount of energy used by four times of the that of the old equipment
- If we develop technologies to be cost neutral, it is easier to implement
- Need to convince the owners they want the change.
- Convince Joe the homeowner he wants insulation, not a Jacuzzi.
- Make more efficient equipment
- Also better marketing effort to make sure the consumer knows what he/she is getting whenever an investment in a sustainable energy source is used.
- How investors and consumers can get a better return on their investments

(Patrick Sheehan)

- Need to do a combination of marketing/explaining and doing it correctly.
- We capture energy efficiency information so homeowner can make smart decisions as to how to best make improvements
- Under FECA statute, must tell management programs to maintain so as to keep monopoly rights
- Working with PSC to offer more audits/rebates
- Want to target specific area, multifamily tenants
- Land Lords don't have incentives to make upgrades, trying a revolving-loan program so they can get land lords to address that.

Owner of Solar Impact in Gainesville – ***“Customers have property taxes. We win margin wise, but we are fighting an uphill battle.”***

(Patrick Sheehan)

- Introduce legislation, tax assessment issue. High property taxes create more challenges. Quickly to move through legislature.

- SEA (solar energy association) explains what can be done and gives ideas on moving forward.

(Dr. Sam Baldwin)

- Level playing field
- Renewables have benefits of driving penetration

Audience member

- Broward County is trying to make sure the costs are leveled
- Alachua county on board to get costs and fees leveled
- Should help with permitting

(Dr. Sam Baldwin)

- Utility wants to know how utility is distributed through system
- Plug and play system that works

“President Obama wants \$2B for Bio research for cars running on biofuels in 10 years. Comments?”

(Dr. Sam Baldwin)

- There has to be a tremendous change in the biomass/biofuels industry in order to replace oil with this new source. It has to meet a certain requirement to even be considered to replace petroleum based products with biomass/biofuels products
- In terms of biomass, we can't make enough oil to use for cars. Better use this resource for chemical products and aircraft fuel.
- Making vehicles more efficient will be helpful to reduce consumption
- Electric and hybrids cars will also reduce the consumption of oil.