

INTERSECT: Energy Policy and Innovation An Optimistic Outlook for Energy Innovation in the Southeast

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Recently, the Georgia Institute of Technology hosted over 160 energy executives to discuss the future of innovation in energy and to launch its Energy Policy and Innovation Center. The INTERSECT Conference was held to gain input from a broad spectrum of stakeholders exploring energy innovation as a dynamic system considering challenges through the lens of multiple perspectives. Led by Georgia Tech’s Strategic Energy Institute and sponsored by Southern Company, Siemens, and the American Energy Innovation



Participants in the “Perspectives on Innovation” panel respond to audience feedback and provide an analysis of southeast region.

Council, the day was highlighted by several panels including insights from CEOs Tom Fanning of Southern Company and Kevin Yates with Siemens Energy Management, a keynote by former secretary of energy Dr. Ernest Moniz, and a free-wheeling discussion moderated by pollster Frank Luntz.

A key observation emerged that the scale and pace of innovation over the last two decades has produced technological solutions more quickly than policy, regulation and markets have been able to adapt. Other emergent themes included:

The **future of energy innovation will be driven by two key interrelated themes: “Energy in the Information Age” and “Energy in a Carbon Constrained World”**. Information technology and digitization will be central to increasing system reliability and performance while enabling future operation

Summary of Key Findings:

- ◆ **The scale and pace of innovation over the last two decades has produced technological solutions more quickly than policy, regulation and markets have been able to adapt.**
- ◆ **Innovation, defined broadly, includes critical technological, business model and regulatory aspects which interact to determine the effectiveness of deployment.**
- ◆ **The future of energy innovation will be driven by two key interrelated themes: “Energy in the Information Age” and “Energy in a Carbon Constrained World”.**
- ◆ **The deployment of sustainable energy innovations has both near term and long term strategic implications, and different approaches and solutions are needed for each.**
- ◆ **The Southeast provides unique opportunities for leading innovation through its ability to take a long view in deploying bold, transformative solutions.**
- ◆ **Many corporate entities are self-regulating and aspiring to sustainable business practices because customers are increasingly demanding it.**
- ◆ **Attendees were challenged to consider appropriate horizons for implementation as well as the on-going need to improve the economic sustainability of new technologies.**
- ◆ **There are huge upsides to improved collaborations, especially in the Southeast, where key strengths can be leveraged.**

of a decentralized grid. Near-term carbon goals may be possible with current technology, but more significant changes will require innovation in technology, supportive policies, and alignment of the complex mix of public and private stakeholders. Sustainable energy technologies are available and being deployed cost-effectively in the region with some success, yet many stakeholders emphasized the greater challenge of maintaining this trend at scale far into the future. In addition, a regional approach to innovation is needed, with sufficient granularity to address the regional differentiators in resource mix, regulatory structure, industrial base, and demographics. These region-specific issues for the Southeast include new nuclear facilities, significant natural gas, and a much different mix of utility-scale solar.

In this regard, the **Southeast region provides a significant opportunity for leading innovation and solutions because its regulated structure enables bold, transformative solutions** that require taking the “long view” and investing in “long term solutions for long term issues”. For example, the Southeast is home to important demonstration facilities (such as carbon capture) and new nuclear builds that can be leveraged globally. However, it is not predetermined that these benefits will be realized, as the regulated structure could also promote a status-quo mentality; therefore the region must be diligent in aggressively “playing offense” and promoting “creative destruction”. In addition, close coordination between the innovation community and the regulatory communities is critical to realizing these advantages.

The status quo was certainly challenged, at times by unexpected stakeholders. As noted by Tom Fanning, “The greatest harbinger of future failure is past success”. In order to successfully make this transition, **integration of technology, policy, and business model innovation are needed**. There is a need to look beyond the meter as an artificial barrier with the customer. Taking a system level view opens the door to better serving the customer and integrating new technologies. In order to do this, the regulatory model, largely unchanged since the 1930’s, will need to evolve. Innovations should also be sought in regulation to promote opportunities to more quickly test new technologies with the understanding that some will fail.

Despite the uncertainty surrounding current federal policies, **there was optimism that leadership could emerge from other sectors and “self-create” standards**. Industries have shown the ability to create consensus, as the airlines did by creating their own standard for carbon credits in meeting their sustainability goals. One idea put forth is that there is “a new regulator in town,” - the customer. Pressure will continue to come from investors and customers for action regardless of the current political environment. As another participant noted: “Policy certainty is critical: if you can’t get it, make it.”

Despite the challenges, the **consensus of the group was that the changes in the energy industry are seen more as an opportunity than a threat** – particularly if we “play offense”. Despite flat load growth, there are great opportunities in distributed infrastructure, electrification of transportation, storage, and others. As Dr. Moniz pointed out “The transformation of the energy industry is attached to a multi-trillion dollar opportunity for those at the forefront.” A trillion here, a trillion there, pretty soon we are talking about real money. Opportunity indeed!