IESI International Institute for Energy Systems Integration

Vision:

A global community of scholars and practitioners from leading institutions engaged in efforts to enable highly integrated, flexible, clean and efficient energy systems.

Mission:

Through knowledge capture, management and transfer, ensure that investments in energy systems integration (ESI) are coordinated and optimized to yield the greatest value possible to the global community.

Near-Term Objectives:

1. Hold regular meetings (2-3 per year; rotating) to foster exchange of ideas, results, lessons learned and best practices from ESI-related activities throughout the world.

2. Create and execute on a framework for knowledge capture, management and transfer from energy systems experiments conducted to date and in future.
   a. Internet portals and bookmarks
   b. Blogs, wikis and other collaborative tools
   c. Repository for institutional capabilities, contacts, publications, data, and current research

Near-Term Objectives:

3. Coordinate, where feasible, institutional investments in future ESI R&D to enable efficient and leveraged use of resources

4. Develop shared resources for ESI workforce development and training
   a. Hands-on research experiences for students
   b. Student support for ESI projects/thesis topics
   c. ESI curricula and summer schools
   d. Online resources to aid continuing education in energy systems

Participation:

- Open to any institution or entity actively involved in ESI-related R&D
  - Research universities
  - National laboratories
  - Non-profit research organizations
  - Energy companies, suppliers, vendors, etc.
- Core contribution of $50-100K/yr for iiESI administration and activities
- Participants cover own travel costs and in-kind contributions (staff time)
- Additional projects subject to agreement by participants (or subset)

Group Discussion

- Useful discussion at meetings – Can this group provide some recommendation to industry and regulators (smart inverter grid code recommendations) – position papers on relevant topics? – Document relevant work that has been done around the world – need quality of people/work
- Energy space is very complex and it would be useful to get a variety of player to participate in the meeting. Especially between regulators and technical people. Education can be the path to create this interaction between groups. Need communications to wider audience. (existing and new groups)
- Unclear how to take information and make impact – need to define
- What is integration? – (gas/grid, energy/water, grid/transportation) need to define. Need to make sure it is not duplicative. Need to identify gaps that are not being addressed.
- Need quality people involved. Need to involve people outside engineering (e.g. economics, regulatory) – need to be selective, but inclusive of broader stakeholders

Group Discussion

- Need to get common approach and language around energy system – this group could bring those together a wide range of stakeholders (diverse views) and develop common frameworks. Help world understand big picture. Filter for evaluating R&D projects around the world.
- See a commitment for people to follow up for larger group to move forward – need to mature -
- Some endorsement of backing for specific technical requirements. As a way to provide information to regulators. Expertise on how to properly operate system.
- It would be good to expand globally – this group could help rationalize requirements across geographies
- Systems Integration – Interoperability needs to look at larger system integration implications
- Need benchmarks and exchange of information. Need to include all stakeholders. Need to highlight relatively few focus topics/year. – develop culture that alows sharing of information between reserachers and others.

Group Discussion

- How to evaluate a large variety solutions available? Economic studies are needed to identify the values and benefits of these solutions. This group could provide a framework for the economics of future energy scenarios that encompass a systems approach.
- The institute could create framework that incudes a systems approach but not pick winners.
- Highlight new technology advances for integration
- Need differentiators for industry to participates. Provide a forum where industry identifies issues to work on together. Governance of organization critical. Need to identify timeframe (not immediate need would be more valuable – future looking/longer-term view)
- What are Key Attributes of an Institute?