



Emerging Technologies Team

(part of Alternative Technologies Workgroup, 21st Century Energy Plan)
May 16, 2006 Meeting Minutes
10:00 – noon @MPSC Offices

Roundtable introductions and handouts

Review of Sub-group Key Objectives and previous meeting notes

Suggestion to develop a “Position Statement” for the group –

Draft Position Statement

In as much as emerging technologies related to DG, Transmission and Distribution have not been fully explored in terms of reliability, safety, efficiency and compatibility with any given system, the Emerging Technologies sub-group will identify and characterize such emerging technologies to the extent practical and possible and report on our findings to the MPSC for inclusion into the energy planning process being undertaken as part of the 21st CEP.

Suggestion was made to utilize a standard format with respect to characterization of emerging technologies for DG and SmartGrid technologies (Transmission/Distribution), especially with respect to merging data with Renewable Energy workgroup.

Under Slide # 8 add to the Grid Utilization bullet the following: Grid Utilize. Issues (i.e.: Variable Renewable Energy Sources; DG impacts – Operational Overview and Operational Compatibility

Tom Stanton suggested two (2) sources for Smart Grid information – GridWise and IntelliGrid. Have a whiteboard for working on this as a subgroup?

Under Slide #9 move Low-flow turbines under “Micro-turbines” bullet; add a bullet on Microgrid Issues for DG Systems (i.e.: Islanding effect; operating systems in parallel; Regulatory policy options?) Also, add a Bullet on Advanced Storage for DG systems

George Hayden suggested utilizing SWOT Analysis method for characterization of technologies (Strengths, Weaknesses, Opportunities and Threats)

It seems apparent that Interconnection issues pertaining to DG warrant an in depth analysis which is overarching the work being done by this subgroup. Studies need to be performed by each and every DG system being connected to the distribution system in order to determine the technical feasibility to interconnect. IEEE standards and MPSC regulatory oversight ensures consistency. Are there additional regulatory issues which need to be

explored in terms of providing flexible and adaptive policies for future DG and other emerging technologies?

What are assumptions/premises/guiding principles for workgroups? For example; in the future, generation owned by a variety of parties: utilities, non-utilities, customers; zoning and siting; differentiates by customer type? (Stanton note on best policies being auto-adjusting)

Need to identify the technologies. Need to "characterize" the technologies consistently and adequately. "Automatic Distribution Control" technologies of the future. Finding the best pre-existing characterizations of technologies. Identify base characteristics: type of technology, inputs and outputs, fuel source, size of units, \$/kW, efficiency, maintenance cost, emissions. Integration and effects on grid. Name market players.

Paul Proudfoot brought up Flywheel Effects and Diversity Effects related to DG interconnection on transmission and distribution systems.

Sharing of data/documents pertaining to DG and SmartGrid, should be handled through Sub-group leader and/or Steve Kulesia to the sub-group members. Posting of pertinent information of this nature can be facilitated through Pat Poli, MPSC staff. Note: need to send out an invitation for people to share their references & resources via Website. General Rule of Thumb: share messages/attached files smaller than 500kb..

Good article "What's wrong with the grid"? Will be shared by subgroup member.

Action Items

Sub-group assignments for individual focus areas;

- 1) Fuel Cell Research – Joe Funiyak, Ryan Waddington and George Hayden
- 2) Interconnection Issues for DG (white paper) Tim Sparks and Gerald Wyse, Consumers Energy
- 3) SmartGrid Technologies – Tanya Paslawski, Steve Paytash, Jim Beaubien
- 4) Micro-turbines – Steve Kulesia and ?
- 5) Advanced Storage – Seek help from Gary Westerhelm, Cobasys? And United Solar Ovonic reps?

Next Sub-group meeting will be held on May 31, 2006 @ MPSC offices from 10 – noon.

Future meeting to be held on either June 14th @ NextEnergy Center (check with Ryan Waddington) or, as an alternate, at MAREC in Muskegon from 1 until 4 pm, per Tom Stanton's suggestion.