Title:

Demonstration of Transactive Control for Energy Management in Microgrid Systems

Brief Description: Write 2-3 sentences/bullets to describe the project development area and the necessary partnerships

- Scalability – Account for devices inside of building to full external market
- Theoretical grounding – transactive
- Graceful degradation

Challenges: Identify the anticipated challenges for creating a workable demonstration or testbed for the concept

- Formal simulation experience
- Larger test bed – Alstom - Gridstar

PROJECT APPROACH

Major Tasks: Describe a possible approach to developing the project, including 3-5 major tasks

- Conduct requirements gathering scenarios
  - Performance targets
- Develop theory/design/simulate
- Develop software/test
- Refine above
- Conduct analysis of regulatory aspects

Major Milestones with dates: Define 3-5 milestones that can be used to measure progress (what markers can we use to measure and assess progress in development?)

1) Requirements
2) Design
3) Develop
4) Test
5) Analyze

Performance Targets: Identify 1-5 (quantitative) performance targets that define a successful outcome.

- Graceful degradation
- Microgrid as participant
- ADR
- Measure of load following signal
- Improve achieved value of microgrid

Limits: What parameters should be used to define the realistic limits to use of the system/platform

- Extent of automation needed
- Flexibility of system

PROJECT IMPACTS and DEMONSTRATION

Impacts: Describe the anticipated economic benefits (new products, jobs, economic growth, exports, tax base, etc.) as well as impacts on energy, health, safety, environment, and other quality of life aspects

- Overall reduce carbon footprint
- Lesser initial capital expenditure
- Changed perception of Transactive business model
  - Improvements to the regulatory process

Demonstration vehicle: Describe how you might demonstrate the project concept (physical or virtual)

- Simulation
- Physical Grid Demonstration

Status of Commitment: Please advise on the current status of the CPS idea detailed on this worksheet (underline/circle one):

LAUNCHED

Ready for Public Announcement

In Deliberations / Negotiations

Concept only Stage / No partners yet

Team Lead:

- Jennifer Worrall, Cleanspark – Project Management, Software Development

Participants and Roles:

- Allen Jones, Independent Consultant – Requirement development
- Jorge Camacho – Regulatory analysis
- Paul Heitmann, IEEE – Interconnection, testing development
- Li Song, Univ. of Oklahoma

Participants and Roles: (continued)

- William Cox, Energy Mashup Lab – Architecture key???/design
- Larisa Dobriansky , General Microgrids– Regulatory analysis
- Ranjeet Vaishnan, Tata Consultancy– Technical
- Thomas Nudell, MIT – Algorithm development and methodology

Additional Notes:

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