Breakout Session Discussion

Breakout #2: So You Want to Run a Competition?

Objective: Identify methods of running a competition that encourage widespread participation, yet produce results that industry might buy into.

November 18, 2014
Breakout #2: So You Want to Run a Competition?

- What grid optimization competition structure would likely have the greatest impact?
  - What competition design alternatives should be considered?
  - Are there alternative (non-competition) program structures that should also be considered?
Breakout #2: So You Want to Run a Competition?

- How do we ensure participation that leads to maximum impact?
  - Whom should we target in the design of the competition?
  - How do we adequately incentivize both academic and industry participation?
  - How do we make this appealing to both power systems veterans and new entrants?
  - How do we limit the barriers to entry (i.e. high performance computing resources, expensive software, power system technical understanding, etc.)?
  - Where and how should we market the competition?
What are the strengths/weaknesses of the following testing procedure alternatives:

1) Participants submit solutions to ARPA-E
2) Participants run their code on ARPA-E defined/hosted virtual machine
3) Participants submit executable objects to be run by ARPA-E to generate results
4) Other (or a hybrid approach)

Which of these testing procedures might allow the most fair evaluation of solution time, convergence robustness, and other important solution method attributes?
Breakout #2: So You Want to Run a Competition?

- What should the testing platform (service and interface) look like?
  - How do we ensure the benchmarking platform employed by ARPA-E is compatible with the development platforms that participants may be using?
  - Pros/Cons of web-based vs. local platforms for testing?
  - How do we handle approaches that leverage parallel computing?
  - What type(s) of organizations could host the testing platform?
Breakout #2: So You Want to Run a Competition?

- When/how should the test scenarios be made available to teams?
  - Are different scenarios for the final scoring/evaluation required? Why/why not?
  - Should we impose limits on the number of times a team can have their solutions scored?
Breakout #2: So You Want to Run a Competition?

- How should new optimization methods and/or solutions be evaluated?
  - Does ARPA-E need to know the details of the methodology or only the solutions?
  - Should we require the solutions and/or methods be made public and/or open source?
  - What form of independent verification is required?
  - How should solutions be scored?
  - To what extent can the scoring method be used reveal the strengths and weaknesses of different solutions for different types of cases?
Breakout #2: So You Want to Run a Competition?

- When is a victor declared? X months vs X% improvement vs. X performance target
  - How do we define “X?” What improvement should be targeted, for example?
Breakout #2 Readout Summary