



## **Summary of Micro Grid Technologies Presentation/ The Current State and Future Prospects of DER Deployment**

At the CCRE's annual conference for energy leaders, a panel comprised of Paul Murphy, Dan McGillivray and Paul Sommerville considered the present state of the deployment of distributed energy resources ("DER"). The objective was to present a realistic assessment of the factors that will affect that deployment. The panel assessed the current state of technological development, and examined several examples of DER deployment in Ontario. It also examined the policy and regulatory implications of the development.

The perception is that a combination of rapid developments in DER technology and surging customer demand will, by itself, drive the deployment of DER. The panelists did agree that we are one major technological development away from what amounts to a dramatic change in the level of customer demand and the pace of deployment. However, what was apparent from the panel's presentation was that DER deployment is, at the moment, a function of more than just technological development and customer demand. It is influenced by the presence of subsidies and incentives, as well as by the willingness of LDCs to participate, and the treatment of DER by the regulators. It was also apparent that the deployment of DER raises a number of policy issues which need to be resolved by the regulators and the government, alone or in combination.

What follows is a list of the issues identified by the panel. The issues are listed separately, but are inter-related. None of the issues can be addressed and resolved without considering the impact on the other issues.

1. What is the role of technological development?
  - what are the costs of DER technology?
  - can these costs be considered separately from the values which people attach to DER?
  - what are those relevant values?
    - resiliency
    - reliability
    - bill reduction



- security
  - grid optimization
  - deferred capital investment
  - congestion relief
  - reduction in GHG
- some are values to the user (e.g. bill reduction) and some are values to the system (e.g. deferred capital investment) and some values to society (e.g. reduction in GHG)
  - how are the values monetized, and by whom?
  - are incentives/subsidies required to
    - a. alleviate the costs and
    - b. achieve the values?
2. What are the impacts of DER on the distribution system?
- integration issues
    - intermittent or variable production
    - visibility
    - standards
  - policy issues
    - stranded assets
    - unfair cost burdens
      - equity issues
3. What is the role of the regulator(s)?



- What role do regulator(s) play with respect to the following:
  - monetizing values
  - allocating costs through rates
  - system planning
    - setting and enforcing standards
    - determining optimum locations
    - regional planning
  - determining incentives
    - social or economic criteria
  - protecting the delivery system
  - ensuring social equity?
- who are the regulators and what are their respective roles?
  - IESO?
  - OEB?
- 4. What is the role of the LDC?
  - distribution system operator?
  - platform service provider?
  - owner of DER?
  - competition for DER services?
  - standards development?
- 5. What is the appropriate process for addressing and resolving these issues?



- should the regulators, LDCs and government respond to the combined effects of technological development and customer demand?
  - if so, should they respond separately or in combination?
- or should they set the rules for the deployment of DER in advance of, and in anticipation of, customer demand and technological change?
  - If so, what are the respective roles, alone or in combination, of:
    1. the government?
    2. the regulator(s)?
    3. the LDCs?