

# Strategic Options for Sustainable Power Generation Interest Group

Increasing energy demand combined with environmental and regulatory issues provide the power industry with new challenges. Utilities must increase power generation and reduce operational costs while maintaining sustainable practices.

The scope of the Strategic Options for Sustainable Power Generation Interest Group (SOIG) is to develop, evaluate and demonstrate sustainable power generation technologies that will result in an increase in power supply capacity and a reduction in greenhouse gas emissions.

By conveying various features of fuel cleaning and distributed generation technologies to participating organizations, vital factors influencing present and upcoming applications are appropriately addressed. The Interest Group enables its participants to enhance their knowledge via information exchange as well as through co-funding opportunities that will lead to the development of practical innovations that can be readily applied to today's problems.

## Topics & Issues

Renewable Energy

Distributed Generation

Distributed Resources

Fuel Advancements

Advanced Generation Cycles



### Technology Coordinator

Mark Tinkler leads the Strategic Options for Sustainable Power Generation Interest Group (SOIG). Mr. Tinkler holds an engineering degree from McGill University and a Master's Degree in Materials Science from the University of Toronto. He joined the Research Division of Ontario Hydro in 1977, and over a period of 24 years, held a number of R&D positions of increasingly responsibility addressing a range of technology areas, from robotics to alternative energy studies. As Manager of Distributed Generation Technologies, he oversaw the evaluation, development and demonstration of a full range of alternative energy and small-scale generation options, including solar, wind power, run-of-river small hydro, micro-turbines, waste-to-energy projects, energy storage and fuel cells. In 2001 he joined the Corporate Strategic Planning group of Ontario Power Generation providing technology advice to senior management and managing the planning and direction of OPG's strategic technology R&D activities, including a continuing look at alternative energy and Distributed Generation options and opportunities.



## Projects

for a complete project listing, please visit: [www.ceatech.ca/soig](http://www.ceatech.ca/soig)

- Demonstration and Evaluation of a 1MW/7.2 MW-hr NaS Battery Energy Storage System Project at MTA Long Island Bus Depot
- Impact, Reliability and Operation of a Plug-in-Hybrid Vehicle (PHEV)
- Development and Monitoring of a 60kW Kinetic Underwater Flow Turbine
- Demonstration and Evaluation of a 300kW/900kW-hr Battery Energy Storage System (BESS) at the Delaware County Electric Cooperative, Inc. (DCEC)
- Strategies for Energy Utilities to Address Emerging Sustainable Neighbourhood Developments
- Waste Heat Recovery Technologies in Industry
- PHEVs – Impacts on the Grid
- Renewable Energy: Costs, Performance and Markets – An Outlook to 2015
- Plasma Multi-Pollutant Control Technology Development
- Biomass Gasification Feasibility Study
- Short-Term Wind Energy Forecasting Study
- IEA Greenhouse Gas R&D Program
- IEA Coal R&D Program
- SFA Pacific Program
- State-of-Technology of Electrical Power Generation from Biomass
- CO<sub>2</sub> Emission Control and Mitigation
- Distributed Generation Competition for Fuel Cell Power Plants
- Study of Wind Turbine Generation Power Train Optimization
- Solar Energy for Generation
- Fuel Cells in Electric Utilities
- Fuel Reforming for Fuel Cells in Remote Areas
- Utilization of Wood & Other Biomass for Small Scale Electric Power Generation
- Interconnection Requirements for a Renewable Energy Interface with the Electric Grid
- Workshop: Biomass - An Overview of Agricultural Energy
- Workshop: Wind Energy Integration Workshop

## Topics & Issues

### Fuel Advancements

- Coal Cleaning
- Greenhouse Gas Mitigation
- Particle and Heavy Metal Emission Abatement
- Mercury/SO<sub>x</sub>/ NO<sub>x</sub> Removal

### Advanced Generation Cycles

- Supercritical Steam Plants
- Advanced Pulverized Coal
- Advanced Combustion Turbines
- Biomass Co-Firing in Coal Plants
- Combined Cycle Gas Turbines
- Integrated Gasification Combined Cycle
- Partial Gasification
- Fluidized Bed Combustion
- Magneto Hydrodynamics
- Reciprocating Engines
- Repowering/Refueling
- Cogeneration
- Combined Heat and Power Energy Systems

### Distributed Generation

- Biomass/Biogas Technology
- Wind Turbines
- Solar Photovoltaics
- Hydrogen Production Technologies
- Fuel Cells
- Microturbines
- Small Advanced Gas Turbines
- Small Boilers/Steam Turbines
- Advanced Batteries
- Small Hydro
- Wave Power
- Tidal Power

### Distributed Resources

- Grid Interconnection Issues
- Grid Penetration
- Safe Work Practices
- Benefits of DG Technology
- Approval Process Testing for DG Technologies
- Battery Storage



## Annual Activities

2-3 Meetings

1-2 Workshops

5-7 Conference Calls

Weekly Information Exchange

## Participation is open to:

Utilities

Independent Power Producers

Laboratories

Government Agencies

Universities

## Project Reports

Over the years more than 1300 projects have been completed and published in the fields of:

### Generation; Transmission Distribution; Utilization

For a complete listing, please consult our website.

CEATI International Inc.  
1010 Sherbrooke St. West, Suite 2500  
Montreal, QC Canada H3A 2R7

Phone: (514) 866-5377  
Fax: (514) 904-5038

[www.ceati.com](http://www.ceati.com)