Electricity Market Simulation and Optimization Lab (EMSOL)
http://www.power.uwaterloo.ca/emsol.htm

Location
CPH 3681
EIT 4151/3127/3131

Management
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Users
- Researchers
- Graduate Students
- Visiting Scholars
- PDFs

Research
- Operation of Restructured Electricity Market
- Power System and Smart Grid Modeling, Simulation, Analysis & Optimization
- Stability and security analysis and improvements of power system in a deregulated environment
- Optimal power management and forecasting in competitive electricity markets
- Simulation and studies of energy systems with multiple energy carriers
- Simulation, modeling and analysis of FACTS controller in power systems
- Network/distributed and web-based programming applications in power systems

Selected Projects
- Industrial Voltage Optimization
- Operation, Communications & Information Management of Smart Electricity Grids
- Micro Grids
- Large-Scale Photovoltaic Solar Power Integration in Transmission and Distribution Networks
- The Energy Hub Management System
- Operation of Power Systems with High DG Penetration
- Plug-In Electric Vehicles (PEVs)
- Hydrogen Economy Research & Development
- Reactive Power Ancillary Service Markets & Dispatch
- Electricity Market Price Forecasting

Equipment
- 2 powerful multi-processor severs
  - IBM
- Dell
  - Laptops
  - Desktops

**Supporting Partners**
- CFI
- NSERC
- OCE
- IBM
- Hydro One

**Access Rights**
- Open to university faculty/student and public