Schneider Electric: The global specialist in energy management

Helping customers make the most of their energy, from plant to plug

Bruce Ford
Green Building Engineer
Certified Energy Manager
Professional Electrical Engineer
Our Vision

A world where we all can achieve more while using less of our common planet.

Our Mission

Help people make the most of their energy, while providing added value through building services for energy and security.
The energy dilemma is here to stay

The facts

× 2
Energy demand
By 2050

Source: IEA 2007

The need

÷ 2
CO₂ emissions
to avoid dramatic climate changes

Source: IPCC 2007, figure (vs. 1990 level)

Energy management is the key to address the dilemma
A unique positioning

Making energy:
- Safe
- Reliable
- Efficient
- Productive
- Green
Knowledge is **Power**

- You can’t **manage** what you can’t **measure**.
- Rising energy costs and environmental awareness have spurred investors, developers, builders, operators and occupants to make their **buildings and factories more energy efficient**.
- But to **truly optimize energy consumption**, you need detailed, accurate data about how that energy is being used.
Smart Energy Solution Fundamentals

- Consume **smarter** and consume **less** by deploying a comprehensive energy strategy that includes:
  - Understanding how energy is consumed through measurement and verification, and energy efficiency audits
  - Establishing **goals and benchmarks**
  - Delivering actionable information to key stakeholders with reports and dashboards at their fingertips
  - Sustaining maximum performance levels with responsive controls

![Energy Saving Graphic](image-url)
Measurement and Verification

- Audits, assessments and energy action plans
- System analysis and recommendation
- Engineering and design
- Installation and commissioning
- Performance contracting
- Enterprise energy management, greenhouse gas emission reporting
- Complete after-sale service for maintenance, training, and upgrades

Schneider Electric has a wide array of energy services
Responsive Control

- **Real Time Power System Dashboard**
  - Synchronized sequence of events recording
  - Supervisory control and data acquisition
  - Automatic transfer schemes
  - Load preservation and power system control
  - Generator paralleling controls
  - Comprehensive power quality monitoring and event recording

- **Integrated Building Automation**
  - Regulating indoor environment
  - Thermal energy control of chillers, air handlers and mechanical systems
  - Security
  - Lighting control
  - Fuel tank monitoring
  - CO2 sensors

- **Compliance Reporting**
  - Greenhouse gas emissions
  - Emergency power supply system exercising
  - LEED
Smart Grid Green Generator

Building Owners and Management Association (BOMA) of Chicago
The “green generator” is started by sending a signal from PJM or ComEd to controls in BOMA buildings.

Building automation systems and electrical distribution systems in each building respond by executing pre-defined routines that have been designed by Schneider Energy Engineers to reduce electrical demand.

PJM or ComEd compensate Metropolitan Energy for providing load reduction. Payments are shared with buildings after any capital project loans are paid off.
BOMA Chicago Project

- Create a utility-scale, “green generator” through implementation of smart grid technology
- Upgrade buildings with real time smart meters
- Build Network Operating Center to communicate with buildings and grid markets
- Subsidize and finance over $150 million in building-level upgrades of equipment and building automation systems
- Enable buildings to participate in demand response programs
- Create new income streams and cut operating expenses

Total program cost of $184.4 million
Benefits to BOMA Participants

- Creation of new building revenue streams from demand response program participation that could exceed $90,000 annually
- Optional financing with no additional out-of-pocket expense
- Reduced operating expense for electricity
- Upgraded building systems
- Enhanced asset value
Benefits to Society at BOMA

- Annual energy cost reductions of $82 million
- Reduced carbon emissions of 300 million pounds annually
- Ability to measure and verify regional economic and environmental benefits in unprecedented scope, scale, and granularity
- Creation or retention of over 2,000 jobs
- Opportunity for replication in other markets
Schneider Electric Financing at BOMA

- Schneider Electric will offer up to $100 million of innovative performance-based contract financing to qualified participants
- Relying on new revenue generated by participation in demand response programs, which is assigned to cover debt service
- Once paid, participant retains future revenue
- Building participant retains benefit of energy cost savings
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5 end markets
- Energy and infrastructure
- Industry
- Data centres & networks
- Buildings
- Residential

72% of the worldwide energy consumption of these five markets

Offering integrated solutions for segments
- Electric utilities
- Water & waste water
- Oil & Gas
- Marine
- Mining, Mineral, Metals
- Machine builders
- Data centres/Bank, insurance
- Hospitals
- Hotels
- Office buildings
- Retail
- Residential

up to 30% energy saving
Trusted by customers worldwide

Americas

Yale University

Golden Gate Bridge

Rockefeller Center

Shedd Aquarium

Héma-Québec
Trusted by customers worldwide

Europe

The Kremlin

Harrods

Eiffel Tower

Byblos Bank

Sanoma House
Trusted by customers worldwide
Asia Pacific

Sydney Opera House

Two International Finance Centre

Westin Resort

Kuala Lumpur Airport

Petronas Towers
Make the most of your energy