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GTAA Partners in Project Green

Webinar
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Presentation Overview

- **About REGEN Energy**
- **The EnviroGrid Controller System**
- **Case studies**
- **Questions**




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About REGEN Energy

- **Founded 2005 in Toronto**
- **Experienced Leadership Team**
- **Province of Ontario is an Investor**
- **2007: Initial Field Trials, OPA Research Funding**
- **2009: Initial Commercial Deployments**
- **2011: 57 installations across Canada, U.S.**
- **Approved for OPA Retrofit Incentives**












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About EnviroGrid™ Controllers

- **Wireless technology for electric demand control and load scheduling**
- **Most cost effective control solution for Roof Top A/C, Resistive Heating, and Heat Pumps**
- **Typical electrical demand savings of 20%-30%**
- **Actively managing loads with Target, HBC, Canadian Standards Association**



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EnviroGrid reduces energy usage and costs 4 ways:

Demand Management	<ul style="list-style-type: none"> • Reduces monthly peak demand charges by automatically balancing large electrical loads
Scheduling	<ul style="list-style-type: none"> • Ensures loads only operate as required and do not run off-hours
Demand Response	<ul style="list-style-type: none"> • Simplifies participation in utility Demand Response programs
Continuous Commissioning	<ul style="list-style-type: none"> • Identifies electrical loads running inefficiently, drawing either too much or too little power to function properly



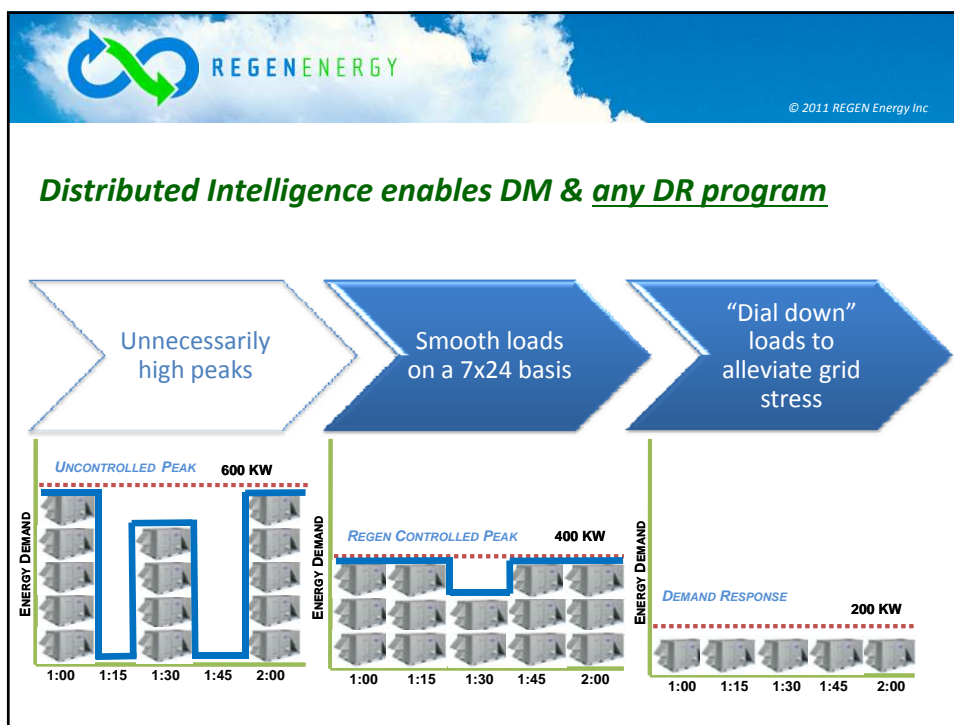
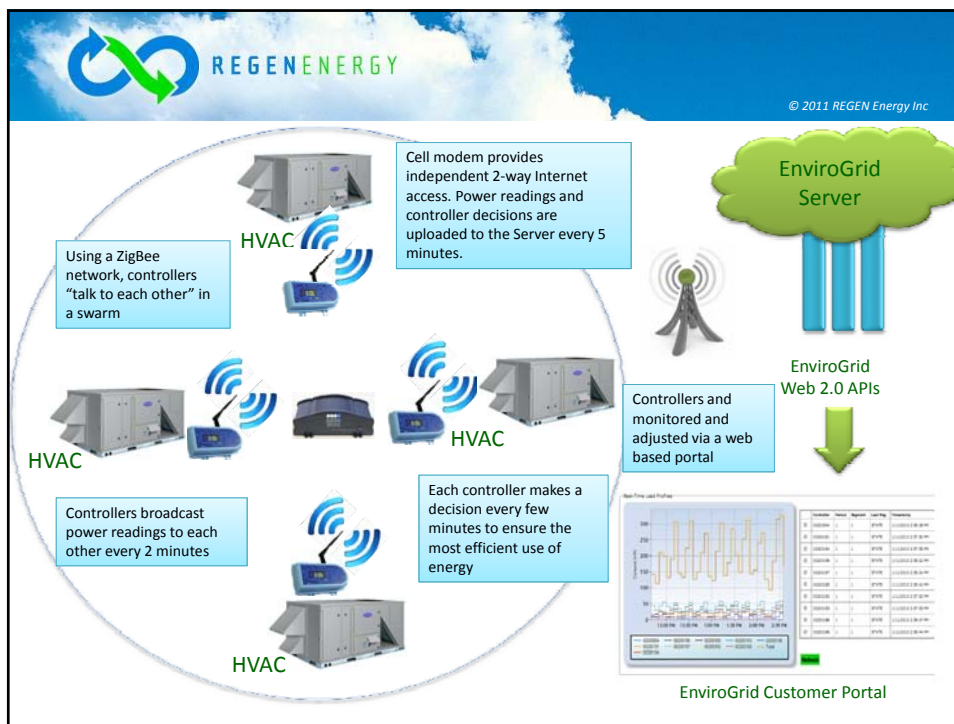
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Swarm Logic control systems




- Peers pass simple messages to each other
- Each peer makes frequent decisions using a simple instruction set
- Autonomous decision-making provides a flexible, resilient network

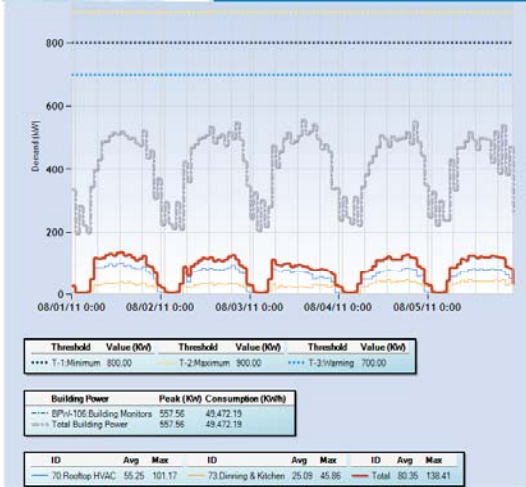






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The EnviroGrid Portal provides easy, simple access




Threshold	Value (kW)	Threshold	Value (kW)	Threshold	Value (kW)
**** T-1/Minimum	800.00	T-2/Maximum	800.00	**** T-3/Warning	700.00

Building Power	Peak (kW)	Consumption (kWh)
EPH-106 Building Monitors	557.56	49,472.19
Total Building Power	557.56	49,472.19

ID	Avg	Max	ID	Avg	Max	ID	Avg	Max
70 Rooftop HVAC	55.25	101.17	73 Dining & Kitchen	25.08	45.85	Total	80.35	138.41

- Web based portal – no software to install
- Site level permissions
- Scheduling
 - by zone
 - recurring or one time events
- Email alerts & analytics
- Real-time or historical load profiles, even across portfolios of sites
- Can export as spreadsheets



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EnviroGrid provides benefits for a wide span of facilities

Sample Types of Facility


- Big Box Stores
- Factories
- Office Buildings
- Call Centers
- Convention Centers
- Recreation Centers
- Libraries
- Schools, “Portable” Classrooms
- Distribution Centers
- Warehouses

Preferred Deployments

- Packaged HVAC units, esp. rooftop installations
- Ideally +10 tons of cooling each
- Resistive heating banks
- Works with or without a Building Automation System

Preferred Site Characteristics

- Low, wide buildings; open spaces are ideal
- Ideally 50,000 sq ft.+
- Managed as part of a portfolio of sites
- Unoccupied periods throughout the week




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EnviroGrid Pricing

- Initial costs:
 - \$1,200 per controller, \$1,200 for gateway cell modem
 - Installation about 1 hour per controller (paid by customer)
- Annual fees (2 years paid up front):
 - \$150 per controller / year
 - \$600 telecom fees / year

ROI


- Typically estimated at around 2 years
- Savings: 20% from peak reduction, 80% from scheduling (Ontario)
- OPA incentive: \$800/kW: typically use less than 1/2 available due to cap
 - Can fund additional projects to use up available incentive



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Case study #1 – Toronto Cricket Club

- 23 controllers, 2 zones
- BOMA incentive \$17k - \$23k
- Combined with savings, payback just over 1 year

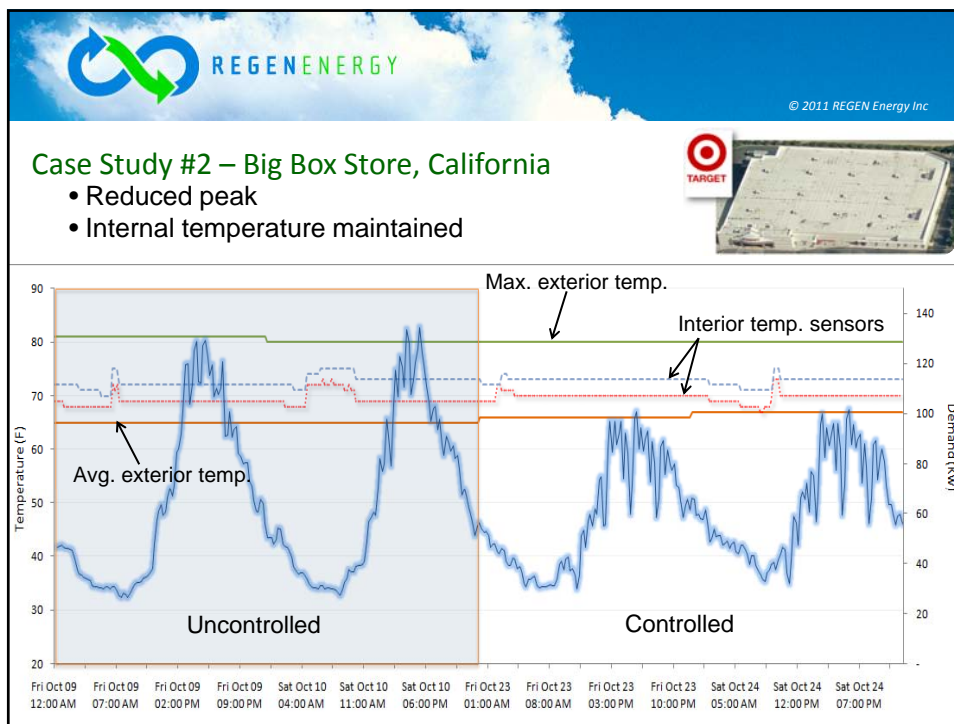


PEAK DEMAND (KW)	
Baseline	138
Controlled	114
Reduction	24
%	17%
Annual Savings	\$ 1,015

CONSUMPTION (KWH)	
Baseline (Daily)	2,051
Controlled (Daily)	891
Reduction	1,160
%	57%
Annual Savings	\$ 5,459

- Other work was combined with EnviroGrid installation, so Cricket Club was able to max out the available incentive, i.e. not limited by cap of 50% of cost
- Building monitor added in 2011

Total Annualized Savings	\$ 6,474
BOMA Incentive (minimum)	\$ 17,000
Purchase Price	\$ 26,400



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Questions

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