One-Cycle Control, Inc.

The Art of Power Processing

PIER-VC Forum

June 7, 2011

Gregory T. Smedley, Ph.D.

CEO/President

Outline

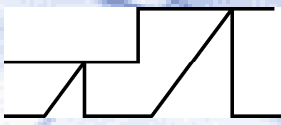
- What does OCC do?
- Products? Markets? OCC & Energy

- CEC Funding Impact:

  Case Studies: OCC-APF

  OCC-PLR

What does OCC do ?



One-Cycle Control, Inc.

The Art of Power Processing

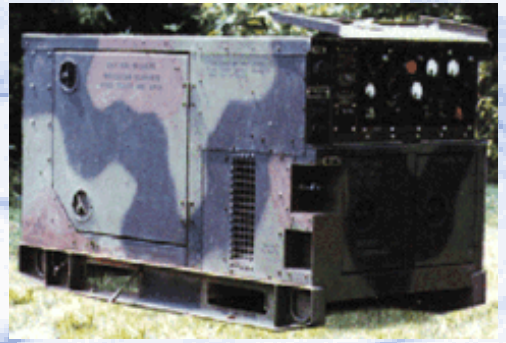
Power Conversion: kW to MW

OCC Government Contracts:

DOD

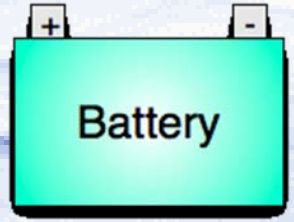
CEC

DOE



Mobile Electric Power

Power Quality



Peak Reduction

Grid Support

2010 Army Achievement Award

OCC enters Pentagon -- May 24, 2010

23 kg

Products & Markets:

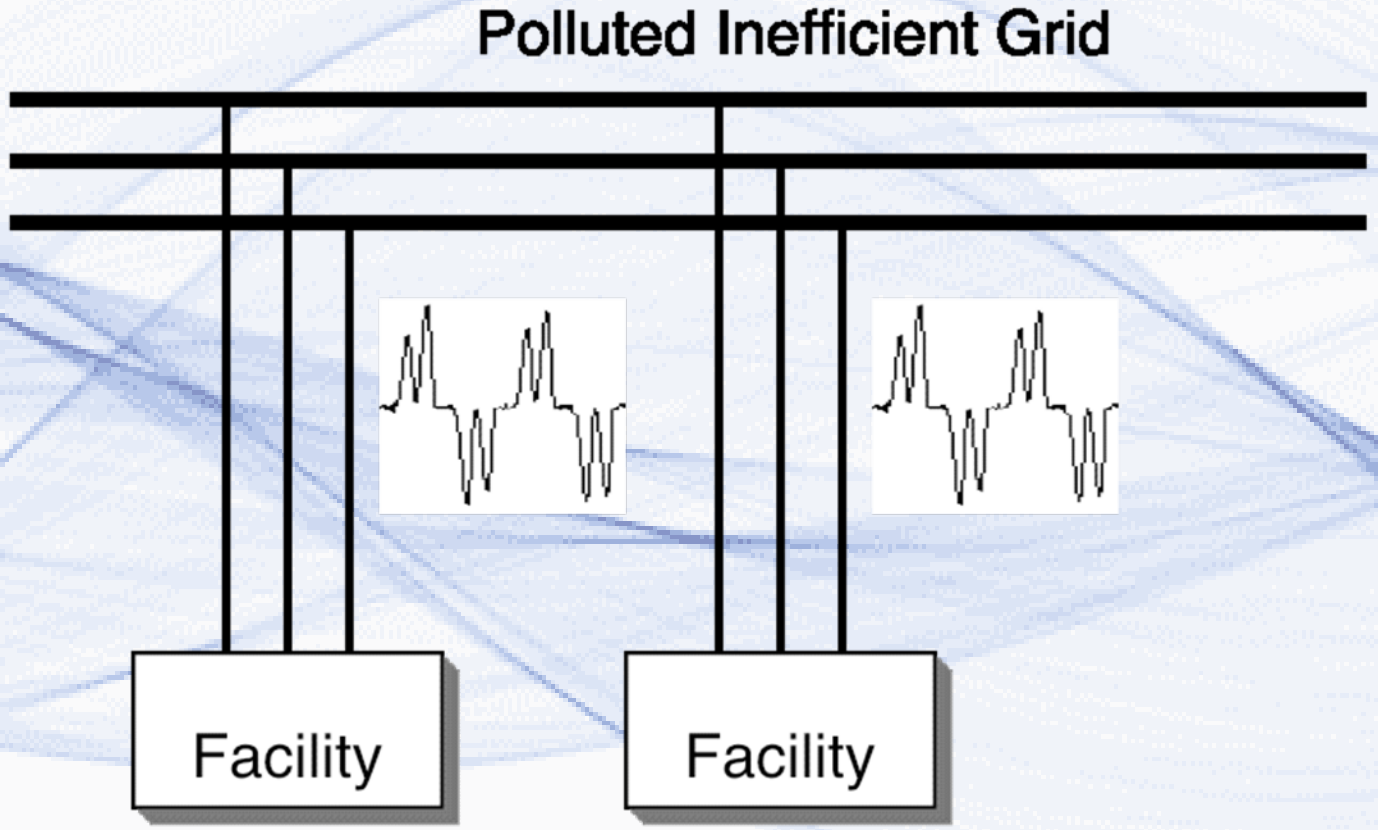
Generate	Deliver / Store	Use	Quality
Wind Solar μHydro Fusion Fuel Cell Off-Grid Mobile Power	Power Flow FACTS STATCOM V2G Storage	Data Center EV Charge UPS, Aircraft, Motor Drives, Elevators, Lighting, Indust. Equip. Transport	Harmonics THD Power Factor
PFC, GTI, 4L	**VAR, APF, GTI**	**PFC, BDC, MTR, 4L**	**APF, VAR**

Case Study: OCC-APF

What is an Active Power Filter? OCC-APF

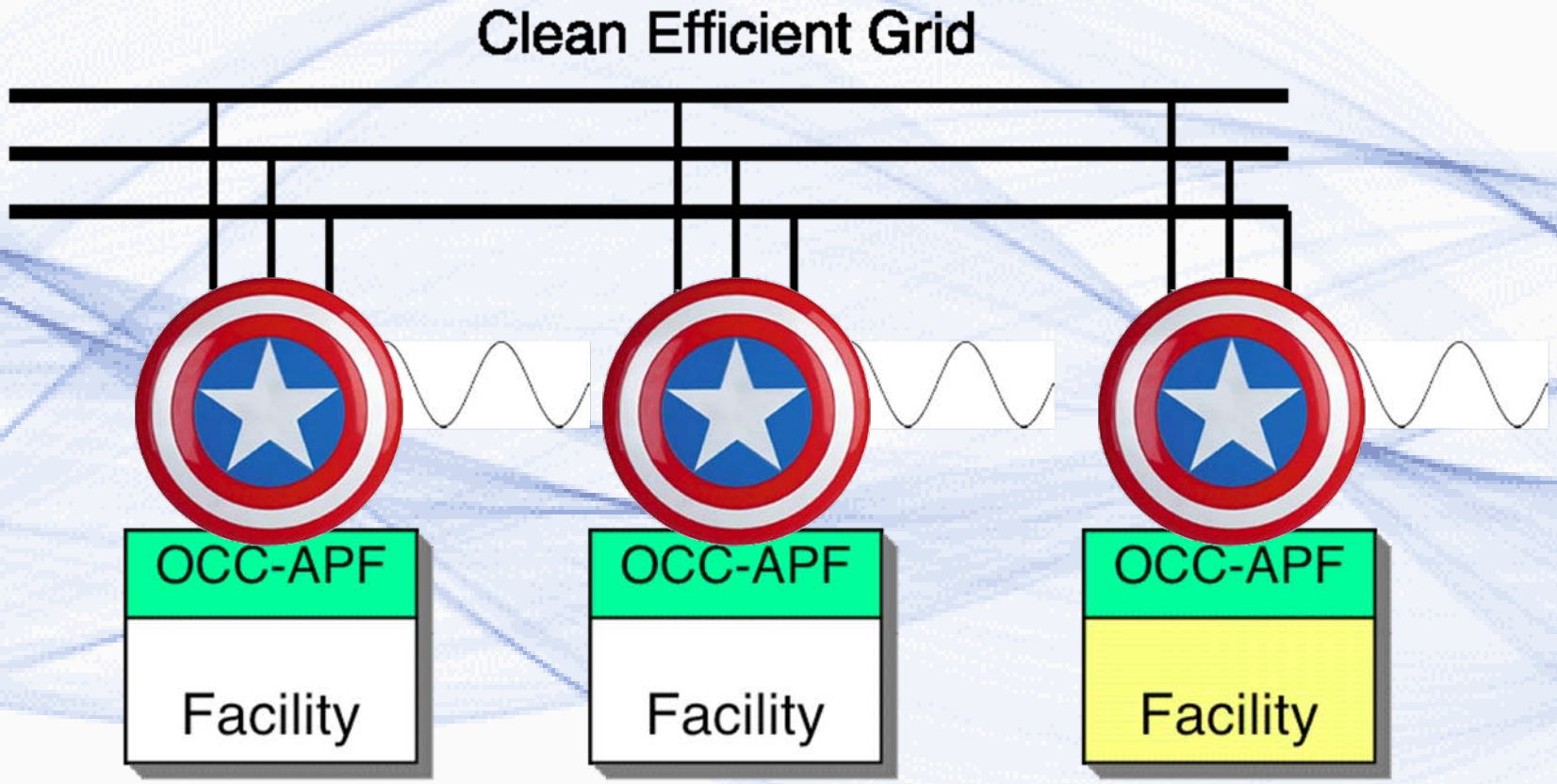
Bose QuietComfort® 15 Acoustic Noise Canceling® headphones

Active Power Filtering (OCC-APF)



- **Low efficiency power distribution**
- **Reduced capacity (Harmonic & Reactive Currents)**
- **Reduced reliability**

Active Power Filtering (OCC-APF)



- **Dynamic correction of power factor**
- **Real-time Cancellation of Harmonics**
- **Increased capacity, power quality, & reliability**

OCC-APF Prototype to Product

UCI
Early Proto
Circa 2000

SAN DIEGO STATE UNIVERSITY
Research Foundation

CEC: Market Study

CPR Demo

IP License

UL Test

2004

2006

2008

2010

EISG #1
(UCI)

EISG #2

PIER

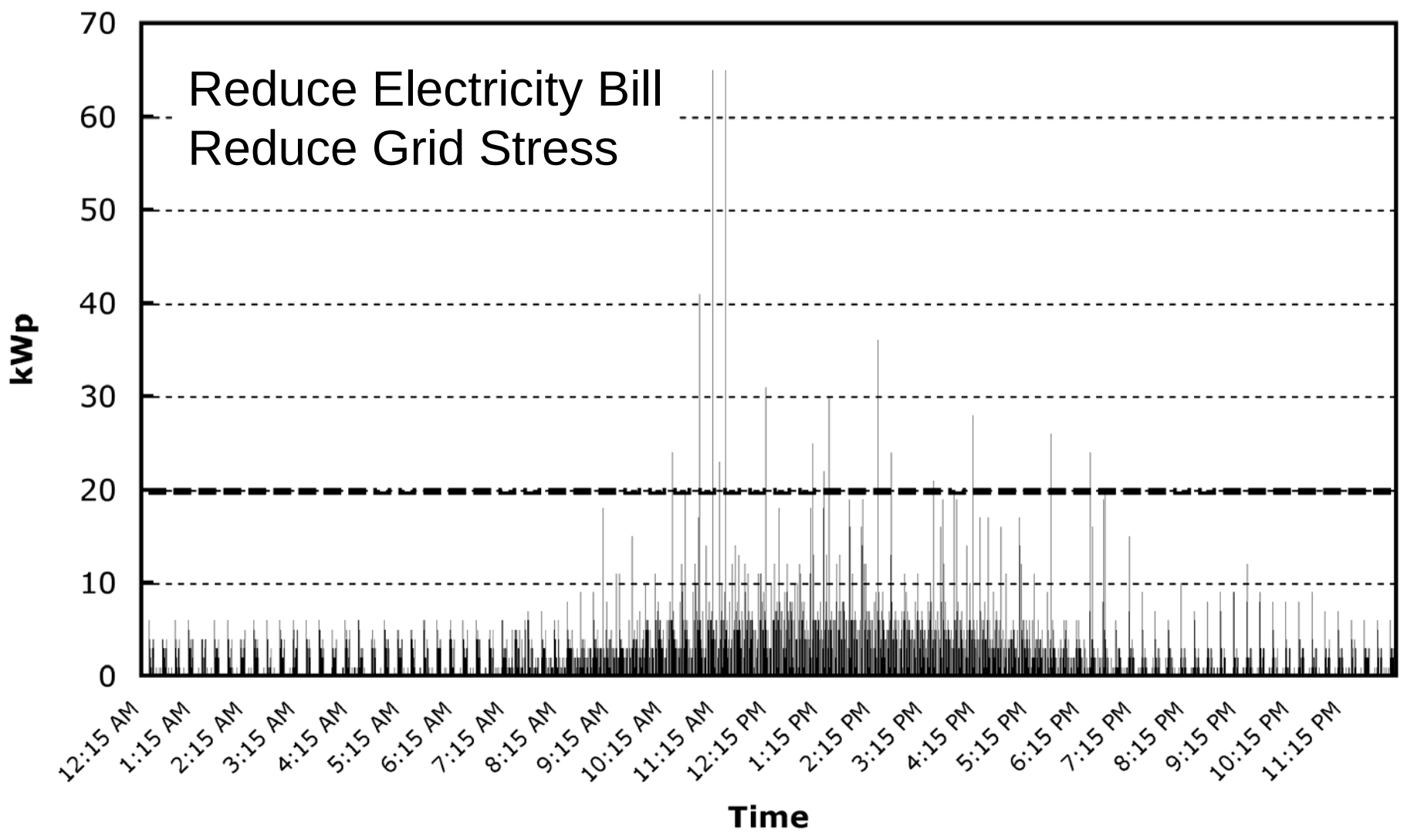
Field Demo

1st Sale

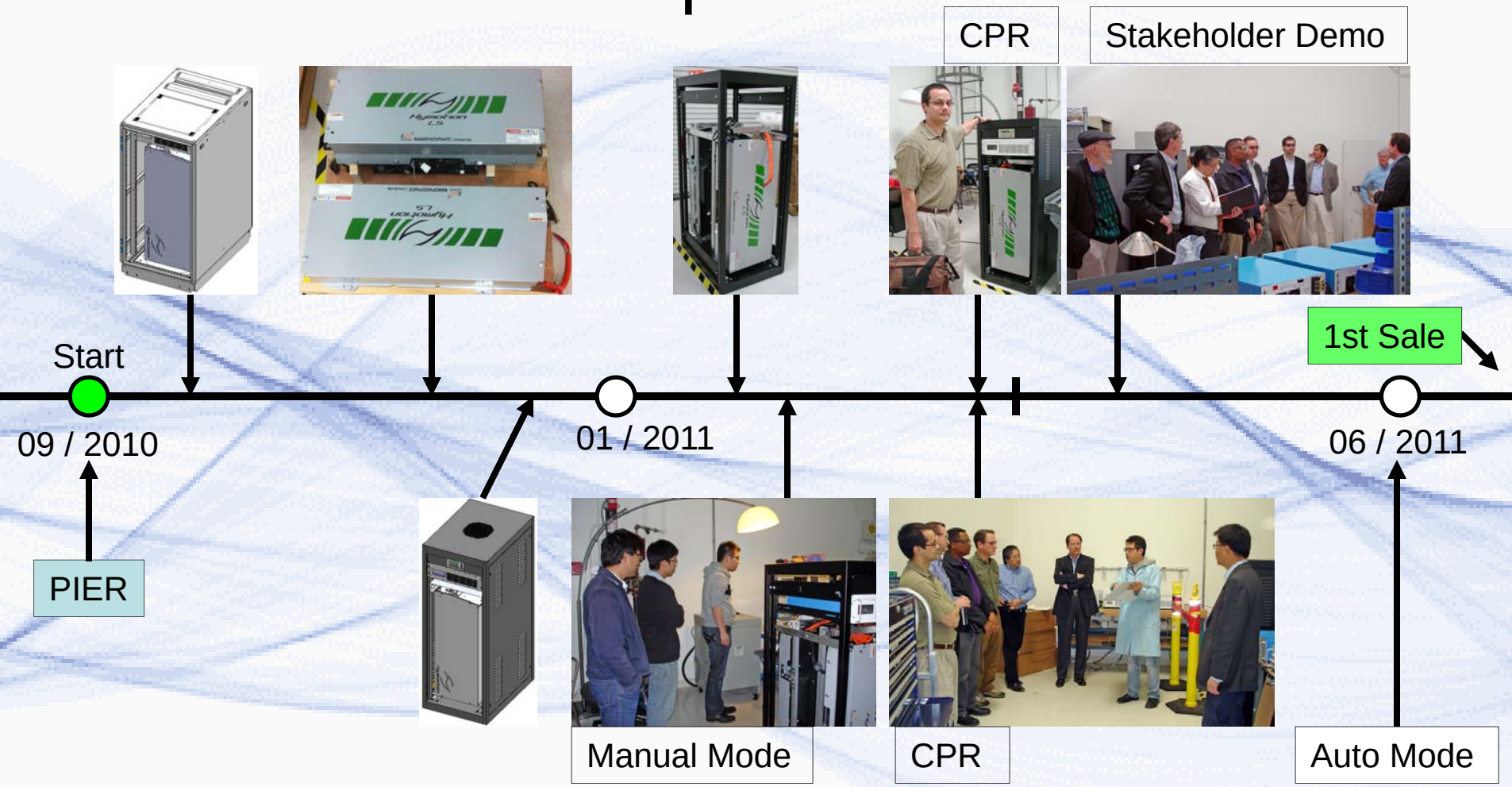
CEC Program Manager: Rajesh Kapoor

Case Study: OCC-PLR

What is Peak Load Reduction? OCC-PLR



OCC-PLR Development



CEC Program Manager: Michael Lozano

Greg Smedley

Thank you for your attention … Questions ??

address: 12 Mauchly, Building P, Irvine, CA, 92618

phone: (949) 727-0107 x01

email: gsmedley@onecyclecontrol.com