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Global Energy Partners, LLC

An Employee-Owned Company

Integrated Energy Efficiency and Automated Demand Response Pilot Effort-Food Processing Industry

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Programs 2010-2012



- EE Oil and Gas Production
- EE Comprehensive Food Processing
- DR Automated Demand Response



- EE Oil & Gas Production
- EE Comprehensive Petroleum Production
- EE Comprehensive Chemical Products
- EE Comprehensive Beverage Manufacturing

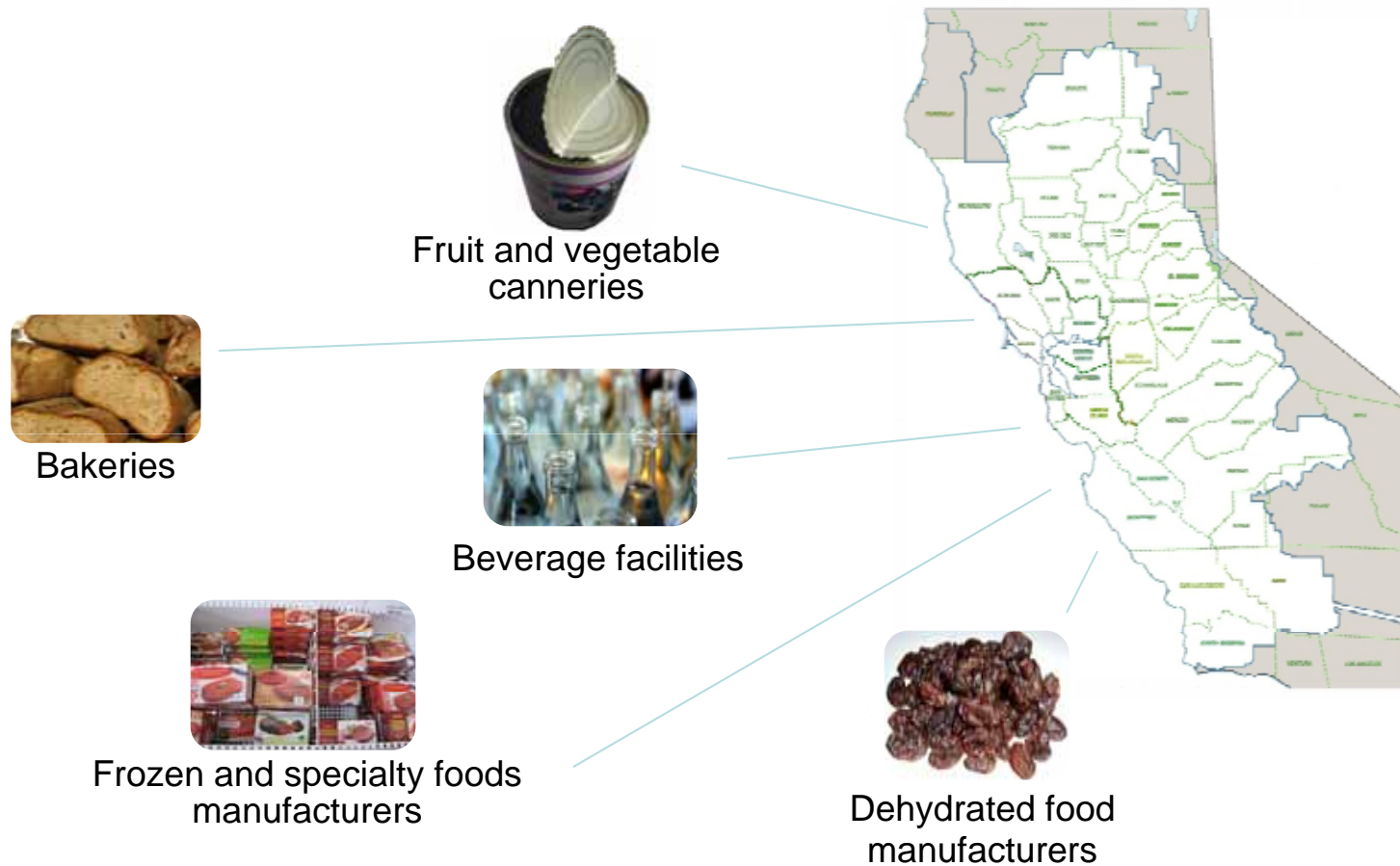


- EE Chemical Products
- EE Comprehensive Mixed Industrials



- DR Pilot Programs

Integrated Energy Efficiency and Automated Demand Response Pilot Effort



Why Integrate?



Source: Network Merchants Inc

Potential Barriers to Integrating EE & DR

- Separate funding sources
- Lack of integrated experience within the utilities, and EE & DR program implementers
- Lack of trained professionals providing EE & DR technologies and services
- Customers limited budget



Source: Trapac

Value of Integrating EE & DR

For Utility:

- Developing internal expertise
- Avoiding duplication of efforts
- Providing better customer service
- Achieving maximum EE and DR savings

For Customer:

- Reducing confusion
- Maximizing return on investment
- Avoiding missed opportunities



Source: Learn to Invest by Greekshares.com

Pilot Goals

- Developing integrated sales approaches
- Conducting integrated technical site assessments
- Defining funding allocations
- Assisting customers in prioritizing recommended measures
- Implementing projects



Source: The Lassnau Lounge

Case Study: Strawberry Grower

- EE Savings: 270,000 kWh
- Demand Response: 1.0 MW
- Technologies:
 - Wireless network
 - Power meters
 - Real-time energy monitoring
- Measures: Phase I
 - Partial shut-down compressors for the refrigeration systems
 - Lock-out of fork lift charging
- Measures: Phase II
 - Temperature monitoring and control of 18 blast cells



Source: Pro Gardening Systems

Case Study: Flour & Grain Mill

- EE Savings: 330,000 kWh
- Demand Response: 1.8 MW
- Technologies:
 - Advanced automated control and monitoring platform
 - Controls network
 - Power-metering
 - Real-time energy monitoring
- Measures Phase I:
 - Shut-down of Mills A & B
 - Lighting upgrade
- Measures Phase II:
 - Mill A expansion with upgrade of all motors to premium efficiency (Ph II)



Source: ConAgra Foods

Case Study: Peach Processor

- EE Savings: 994,000 kWh
- Demand Response: 2.3 MW
- Technologies:
 - Centralized control platform
 - Ethernet Network (3 locations)
- Measures:
 - Fork lift charging will be automatically shut down
 - Shutting down engine rooms for refrigeration systems
 - Floating head pressure
 - Lighting upgrade



Source: Hitchhiking to Heaven

Case Study: Spice Mill

- EE Savings: 1,591,000 kWh
- Demand Response: 6.8 MW
- Technologies:
 - Supervisory plant-wide controller
 - Advanced automation
 - Plant-wide network
 - Real-time energy monitoring
 - Power metering
- Measures Ph I:
 - Curing Bays (4) - Full shutdown
 - Dryers (12) – Full shutdown
 - Garlic Dry Prep - Full shutdown
 - Onion Wet Prep - Full shutdown
 - Garlic Mill - Full Shutdown
 - Onion Mill - Full Shutdown
 - Well Pumps - Full Shutdown
 - VSD's added to curing bay fans
 - VSD's added to all pumps



Source: Just Food Now

Case Study: Spice Mill (2)

- Phase II Measures:

- Reduce compressed air set-points
- Repair compressed air leaks
- EE Savings: 269,000 kWh

- Phase III Measures:

- Lighting retrofit
- EE Savings: 2,100,000 kWh

- Phase IV:

- Advanced process control - dryers
- EE Savings: 500,000 kWh



Source: Just Food Now

Building Success

- Program champion at utility familiar with both EE & DR
- Program implementer experienced with EE & DR offerings
- Program implementer that takes a “deep-dive” into customer’s processes
- Technology partners that understand energy consumption



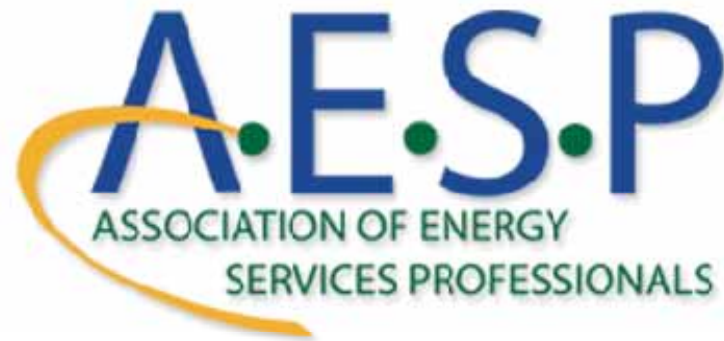
Source: Yu & Associates

Lessons

- Customers respond to integrated approach
- Advanced technologies & incentives help bridge the gap
- Industry specific expertise is required
- New approach-”Energy Performance”
- Opportunity to lead organizational change



Source: University of Notre Dame



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