INTRODUCTION

David Casentini, Resource Solutions Group - VP of California Programs
Who we are

CLEAResult is an energy optimization company
California RSG overview

Facility/Project Evaluation and Surveys
- From project opportunity screening to comprehensive energy efficiency surveys

Custom Energy Management Reports
- Tailored for each customer, from short executive summary format to comprehensive reports

Program Incentives and Support
- Project savings calculations
- Rebate qualification and processing, project verification and evaluation

Project Financing Support
- On Bill Financing, low interest loans

New Program Opportunities
- Analytics-Enabled data collection and evaluation
- Direct installation of low cost measures
California RSG overview cont.

Installation Support Services (IS Services)
- Bid Package Development, Bid Support & Evaluation, Contractor Evaluation and Support

Benchmarking & Strategic Master Planning Services
- Project Opportunity Identification and Evaluation
- Project Planning and Implementation

Additional Support & Services
- EE curriculum meeting CA accreditation standards
- School site energy demonstration projects
- Workshops for teachers, facilities managers
Working with Schools

- Energy Efficiency is complex and challenging
  - Limited funding
  - Risk averse
  - Doing the “usual”
  - Limited staff
  - Multiple priorities
  - Limited technical knowledge
  - Multiple sales pitches
  - Bureaucratic in decision-making and procedurally
  - Lengthy timelines
  - Need to move from “widgets” to “systems”
What will it take?

**Awareness**
- Getting qualified data quickly
- Presenting unbiased information and recommendations
- Presenting phased approach to meet district needs

**Action**
- Growing trade ally relationships/partnerships
- Support services post-recommendation phase
  - Administrative
  - Technical
- Project qualification, analysis and implementation
- Project verification
Prop 39: A New Paradigm for Schools

New Opportunity for Schools to work with Energy Efficiency Service Providers

- Time to move beyond widgets & rebates
- Plan now to focus on next level of savings opportunities
  - New technologies
  - Operational best practices (HVAC)
  - Cost effective ways for data collection and evaluation
  - More integrated operations solutions
Case Study: Inventory

Bakersfield City School District

- Understanding age and operation
- Creating HVAC inventory
- Identifying replacement opportunities

Web Tool / Integrated to Database

Report
## Retrofit

### Replacement Strategy

#### Cost Savings Summary*

<table>
<thead>
<tr>
<th>New Minimum Efficiency (ASHRAE 90.12001)</th>
<th>New Good Efficiency (CEE Tier 1)</th>
<th>New Better Efficiency (CEE Tier 2)</th>
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<tbody>
<tr>
<td><strong>Efficiency Rating</strong></td>
<td><strong>Annual Cost Savings</strong></td>
<td><strong>&quot;Ballpark&quot; Incentive</strong></td>
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<td>SEER 13.000</td>
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<td><strong>TOTALS:</strong></td>
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#### Energy Savings Summary

<table>
<thead>
<tr>
<th>New Minimum</th>
<th>New Good</th>
<th>New Better</th>
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<tbody>
<tr>
<td><strong>Efficiency Rating</strong></td>
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*Actual savings and incentives may be different and should be calculated later based on exact equipment specifications and operations.

**Baseline cost estimates are from RSMeans. Incremental cost estimates for more efficient units are based on percentages provided by a mechanical contractor (BS).

***Incremental Payback equals Net Incremental Cost divided by Incremental Savings. The Good and Better options are both being compared to the Minimum option.
Retro-Commissioning

Analytics-Enabled Retrocommissioning

- RSG has 2,000 sites with 15-minute electric data and daily gas data

Benefits

- Safe/healthy facility
- Staff orientation & training
- Improve installed building systems documentation
- Reduce operating costs
- Optimize energy use

Staff orientation & training

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Benchmarking results are presented for Master Energy Planning...

Data is collected- “can only manage what you can measure”
The benchmarking report provides an easy way to review the results of the comprehensive analysis:

- Key Performance Indicators (KPIs)
- Graphical representations of greenhouse gas emissions
- Identifies lease efficient buildings along with the best performers
- Provides both organization wide summaries and individual building analysis
- Review both usage and cost analysis
Pacific Gas & Electric Company: ARCx Program

- Applies advanced analysis of energy consumption to quickly hone in on low and no-cost operational improvements to help public schools and municipal customers achieve their energy conservation while reducing building operational costs.

- Recommendations focus on low-cost operational measures that typically pay for themselves within 1-2 years, and with typical costs under $20,000. Incentives are offered at $0.09/kWh, up to half the cost of the project.
Pacific Gas & Electric Company: SEE Program

- School Energy Efficiency (SEE) Program
- Program funded by PG&E and implemented by RSG
- Since 2006, SEE has...
  - Worked with over 200 School Districts and COEs to identify and/or implement energy efficiency projects
  - Saved customers 20M kWh, 3,000 kW, and 2M Therms of energy
  - Issued over $3.5M in rebates and bonuses
Southern California Gas: PREPPS Program

- Program for Resource Efficiency in Public and Private Schools (PREPPPS)
  - Comprehensive gas efficiency third party program
  - Extensive trade ally relationships
  - Engineering and analytical work
A Step Further: Behavior Counts

Behavior-based savings from Resource Conservation Management

- Promotes conservation of utility resources through organizational guidelines, tracking, & maintenance
- Aligns efficient operations and quality maintenance with low-cost actions to instill behavioral changes
- Realistic reductions of 10%-15% energy usage in 1-3 years
EXPERIENCE IN SCHOOLS
CASE STUDIES
Case Study: Fresno USD

- **District**
  - Fourth-largest district in California
  - 73,000 students
  - 8 high schools, 17 middle schools, 65 elementary schools, 9 alternative/special ed schools

- **Results:** large, district-wide lighting retrofits, tankless water heaters, and pool covers upgrades
  - 590 efficiency projects
  - Program incentives: $651,303
  - Energy Savings: 4.6M kWh, 820 kW, and 37,684 therm savings

- **Funding:** Measure Q (bonds), OBF and incentives
  - Rebates are reinvested in future EE projects; serve as a revolving pool of funds. District is extremely committed to pursuing all cost effective options

“[Fresno USD] is committed to being good stewards of the public’s money by saving money on energy costs. Energy efficiency is good for the students, good for the environment and good for the district budget.”

– Frank Diliddo, Energy Manager
Case Study: Rosedale Union

- **District**
  - K-12 district
  - 5,300 students
  - 2 middle schools and 7 elementary schools in Bakersfield and Kern County

- **Results**: Installed by local contractor, lighting in multiple schools, HVAC tune-up, duct cleaning programs upgrades
  - Program incentives: $11,596
  - Energy savings: 34,794 kWh

- **Funding**: Program incentive and deferred maintenance budget
  - Priority order of funding: deferred maintenance → Mello-Roos funds → operations budget → general fund

“Our first priority [at Rosedale Union] is the students— and energy efficiency improves the classroom, improves air quality and enhances learning. In this day and age, saving money is also a priority. Energy efficiency upgrades benefit the school in both learning and cost saving.” —Peter Bayley, MOT Director
Case Study: Cabrillo USD

- **District**
  - 3,400 students
  - 1 high school, 1 intermediate school, 1 alternative continuation school and 4 elementary schools

- **Comprehensive Master Energy Management Plan**
  - Assessment of past, present, and future energy usage
  - Evaluation of all district facilities for potential energy, water, fleet and generation savings and strategies
  - Analysis of the cost and benefits, including life-cycle costs, likely energy cost savings, and potential for fee generation

- **Results**
  - Annual cost savings of $181,000
  - Total rebate potential of $250,000
  - Savings-to-debt ratio of 1.65
What’s Needed in the New World

- Industry history, understanding and experience
- Strategic program design and planning
- New technical and operational improvement considerations
- Industry and trade ally relationships
- Understanding of regulatory and policy issues
- Multi-faceted service offerings through phased approach
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