SMART STREET LIGHTING AT SCALE

San Jose, CA
14 May, 2018
AGENDA

• Ameresco Overview
• LED Street Light Experience and Approach
• Case Studies
  • Tucson
  • Phoenix
  • Chicago
SAVING ENERGY, AND SUPPORTING SUSTAINABILITY GOALS

- Founded in 2000
- $2.5 Billion project financing sourced and raised
- More than 1,100 employees
- Structured to deliver customer value
- Over $6 Billion in energy solutions delivered since inception (including our predecessors)
- 267 MWe of energy and landfill gas generated by owned and operated energy plants
- $717.2 Million annual revenue in 2017
- $1 Billion bonding capacity with a per project maximum of $150 million
- Public 2010 NYSE: AMRC
- Over $6 Billion in energy solutions delivered since inception (including our predecessors)
THE AMERESCO ADVANTAGE

Ameresco delivers the best value to clients through:

<table>
<thead>
<tr>
<th>Independence, Flexibility and Objectivity</th>
<th>Proven Expertise</th>
<th>Financially Strong and Stable</th>
<th>Reputation for Excellence</th>
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</thead>
<tbody>
<tr>
<td>No parent company</td>
<td>Deep, diverse experience across industries and technologies</td>
<td>$717.2 million annual revenue in 2017</td>
<td>Acknowledged/Established/Well-known reputation for project performance and customer satisfaction</td>
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<tr>
<td>No manufacturer/contractor affiliations</td>
<td>In-house engineering and project management</td>
<td>$2.5 billion project financing sourced and raised</td>
<td>Deliver immediate and long-term results</td>
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<td>- Competitive procurement for products and installation labor</td>
<td>Fully integrated project development and implementation expertise</td>
<td>Over $5 Billion in energy solutions delivered since inception</td>
<td>- Energy savings</td>
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<td>Flexible financing approaches</td>
<td>Innovative solutions</td>
<td>Continued growth generated through both new business and recurring revenue streams</td>
<td>- Financial savings</td>
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<td>Single-source provider</td>
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<td>- Carbon reduction/Sustainability goals</td>
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Client-centric Solutions  

Peace of Mind  

Reliability  

Confidence  

- Resource conservation
LED STREETLIGHTING EXPERIENCE

• Leader in smart LED street lighting
  • 41 projects encompassing over 600,000 street lights completed, currently in construction or awarded (62% with smart controls) across the United States
  • Provide complete turn-key services, including GIS audits, condition assessments, street light acquisition assistance, tariff negotiation, LED conversion and smart network design, material procurement, installation, financing, and ongoing maintenance
  • Strong vendor relationships (while still maintaining vendor neutrality) provide value to customers through advance knowledge of pending product innovations and excellent pricing
LED STREET LIGHTING RETROFIT APPROACH

- Success starts with a plan
- Fixture and control selection process
- Cohesive project team
- Leverages economies of scale
- Safety
- Scalable process
- Masterful logistics plan and detailed schedule
- Close communication and customer collaboration
- Minimize community impact
- Negotiate favorable utility rates

- Top reasons for project failures:
  - Over-lighting
  - Use of unpopular color temperatures
• Contract Type: Energy Savings Performance Contract; Guaranteed Energy Savings
• Project Size: $15.8 million
• Energy Savings: $180,000 per month
• Project Summary:
  • Includes the retrofit or replacement of 20,281 roadway, underpass and decorative lighting fixtures with high efficiency LED fixtures, as well as upgrades to the lighting in six City of Tucson parking facilities to LED lighting with occupancy and light level (daylighting) controls. The project also includes the city-wide installation of the ROAM adaptive control system for all roadway fixtures.
TUCSON LUMINANCE SKY IMAGERY
• Contract Type: Design Build
• Project Size: $26.5 million
• Energy Savings: Estimated $22 Million through 2030
• Project Summary:

“The Council approved a $30 million plan to convert approximately 100,000 street lights to LED over the next two years – which will save the city a net total of approximately $22 million through 2030 in reduced energy and maintenance costs.” [https://www.phoenix.gov/news/mayor/1575](https://www.phoenix.gov/news/mayor/1575)
• GIS Audit & Condition Assessment
  • Over 330,000 street, alley, viaduct & tunnel lights

• LED Conversion Design & Luminaire Selection
  • Re-engineer City lighting specification, photometric & lifecycle cost analysis

• Convert over 270,000 Lights to LED

• Infrastructure Stabilization Repairs
  • $30 million budget, informed by condition assessment

• City-Wide IoT Network
  • Street light monitoring & control, integration with 311 and other City systems
CHICAGO
CITY-WIDE IOT NETWORK

- IPV6, 900 MHz mesh network
- Can support electric/gas/water meters, street lights & other connected devices
- Provides robust monitoring & control of street lights (City employing CLO strategy)
- APIs enable integration with City’s 311, legacy asset management, and ComEd billing systems (911 planned)

ESPCC ANNUAL ENERGY SAVINGS

$1,522,629
THANK YOU

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