Achieving Energy Efficiency in Water Operations: A Model for Speed and Scale

Presented at the 2017 ACEEE National Conference on Energy Efficiency as a Resource

Nov 1, 2017

The Energy Coalition and Lincus, Inc.

Policy Leadership

Education &Engagement

Smart Energy Solutions

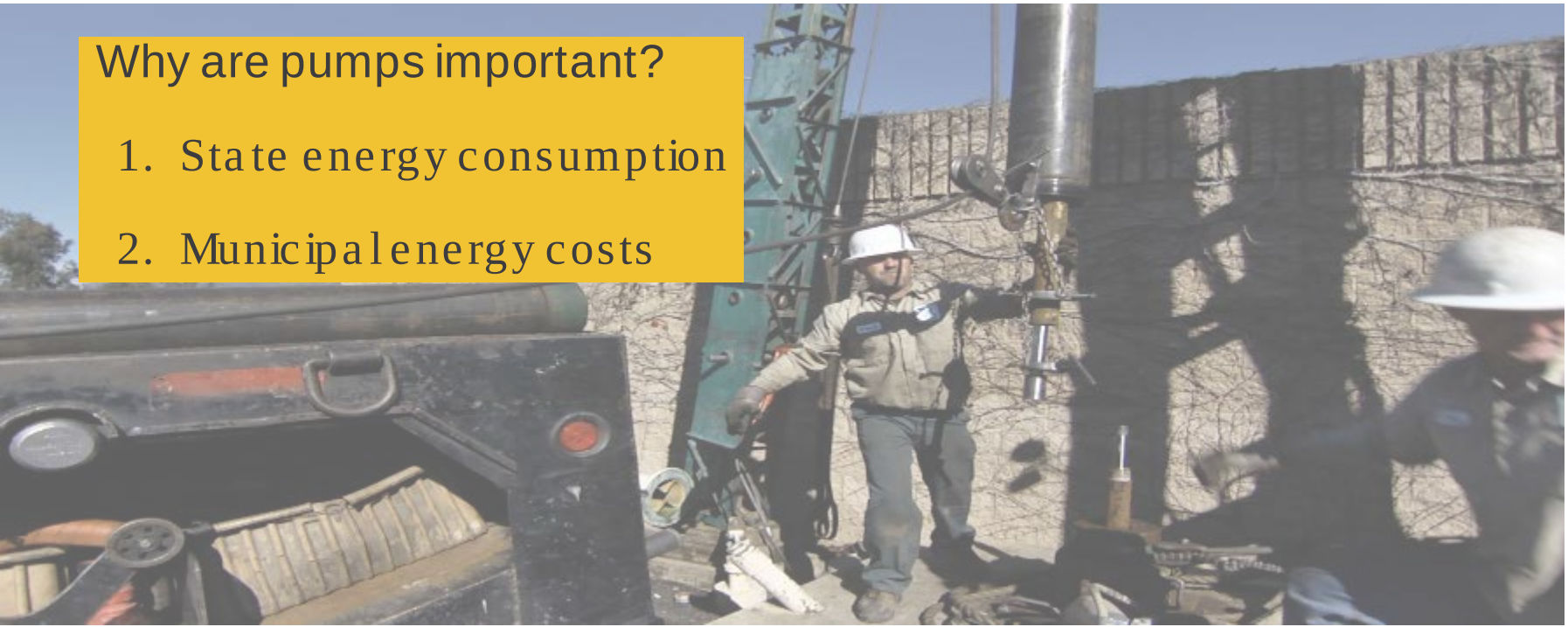
The Energy Coalition (TEC) is a non-profit 501(c)3 organization with over 40 years of experience. We design and implement strategies that transform energy use, generate capital and inspire people to take sustainable energy actions.

Cucamonga Valley Water District

Cucamonga Valley® Water District

Service Beyond Expectation

Holistic Approach for Water Utilities



Why are pumps important?

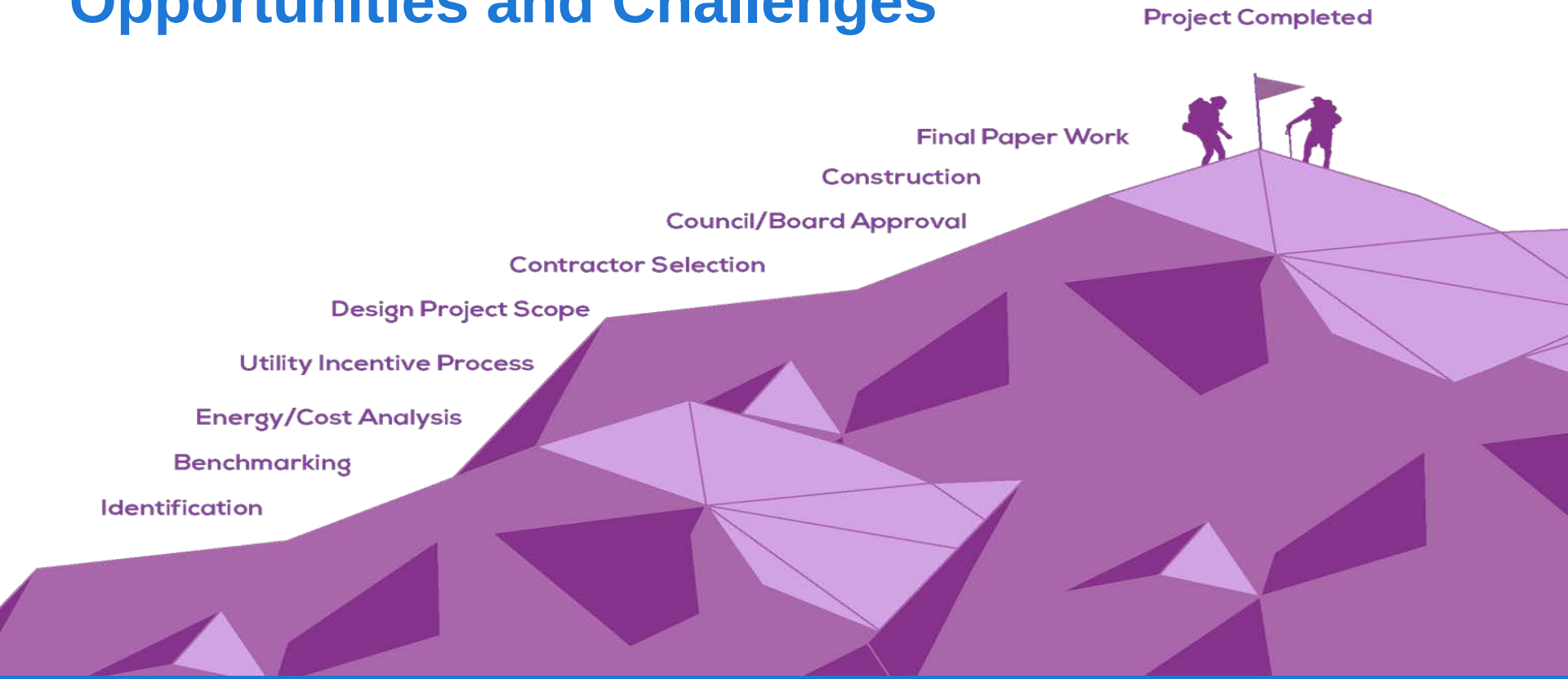
1. State energy consumption
2. Municipal energy costs

Holistic Approach for Water Utilities

Pump Upgrades Approach

1. Typical approach by water utilities
2. CVWD's approach

Opportunities and Challenges



WISE

Water Infrastructure and System Efficiency Program

Operate your water system at maximum efficiency.

LINCUS

The Solution: WISE™

SOURCE WATER PUMPING (WSO)

WATER TREATMENT (WTP)

WATER DISTRIBUTION (WSO)

WASTEWATER TREATMENT (WWTP)

The WISE™ Program
is designed to specifically assist
Water and Wastewater customers in identifying energy efficiency projects and securing incentives to offset installation costs and engineering services.

- Water System Optimization (WSO)
- Water & Wastewater Treatment Optimization (WTP & WWTP)

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The Program Approach

Preliminary Assessment

- Data Collection
- Preliminary Site Walk
- Preliminary List of ECMs

Detailed Assessment

- Detailed Site Visit (if required)
- Additional Data Collection
- Project Feasibility Study and Calculations
- Incentive Application

Implementation Support

- Solicitation and Contracting Support
- Project Management Support
- M&V of savings
- Final Documentation to Utility

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WSO Approach: Quick Wins

Motor HP	Low %	Fair %	Good %	Excellent		
				Well Pump	Booster	Submersible
3 - 5	≤ 41.9	42.0 - 49.9	50.0 - 54.9	≥ 55.0	≥ 55.0	≥ 52.0
7.5 - 10	≤ 44.9	45.0 - 52.9	53.0 - 57.9	≥ 58.0	≥ 60.0	≥ 55.0
15 - 30	≤ 47.9	48.0 - 55.9	56.0 - 60.9	≥ 61.0	≥ 65.0	≥ 58.0
40 - 60	≤ 52.9	53.0 - 59.9	60.0 - 64.9	≥ 65.0	≥ 70.0	≥ 62.0
75 - up	≤ 55.9	56.0 - 62.9	63.0 - 68.9	≥ 69.0	≥ 72.0	≥ 66.0

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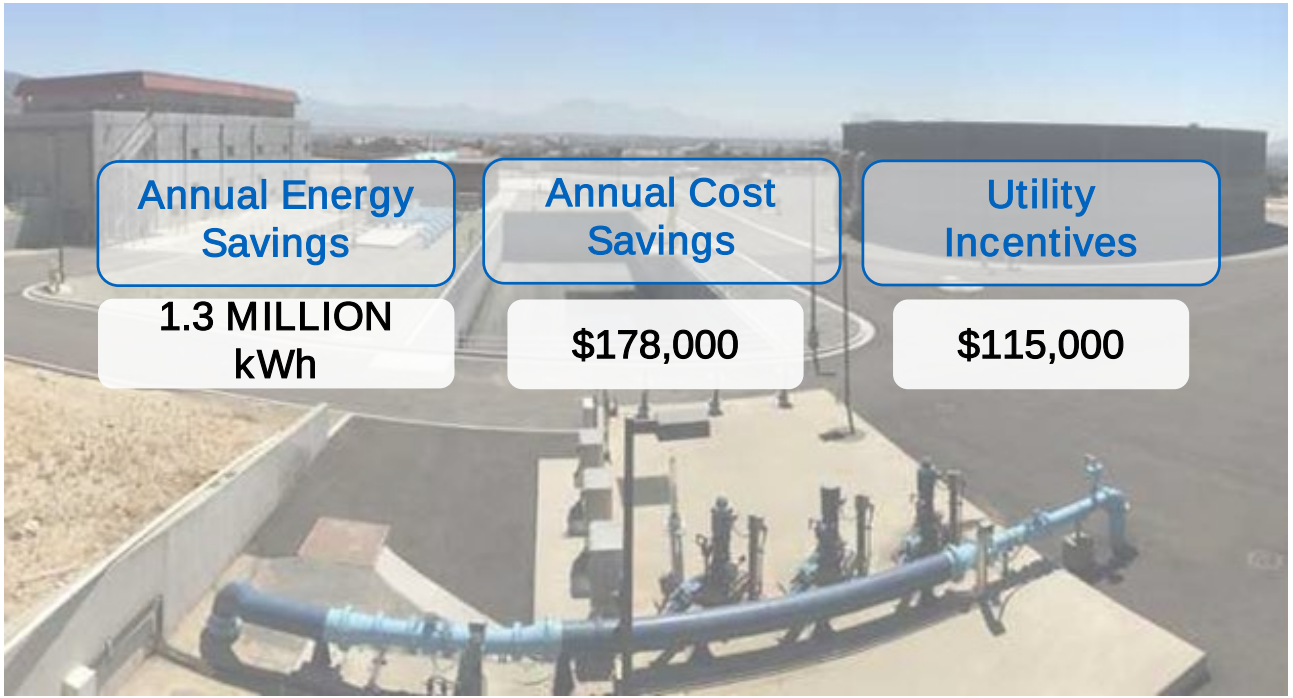
Case Study

Project Spotlight: Cucamonga VWD

Energy Efficiency solution

Measures pursued:

- Various pump overhauls and replacements



Southern California REGIONAL ENERGY NETWORK

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Overcoming Technical Challenges

Challenge	Solution
• Defining pump overhaul scope prior to inspection	• Include possible pump inefficiency causes in contractor's scope of work • Ensure pump contract includes optional pump replacement task

Contact Information + Questions

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