



# Seattle City Light Performance Improvement

UMS Benchmarking Study  
Results



Seattle City Light

# Performance Improvement

- ◆ **UMS Background**
- ◆ **Project Approach**
- ◆ **UMS Results and Recommendations**
  - ◆ **Transmission and Distribution**
  - ◆ **Generation**
- ◆ **Next Steps**

# UMS Background

- ◆ **UMS Group founded in 1989 specializing in advanced performance diagnostics of utility functions (over 200 utilities in database)**
- ◆ **UMS Group conducted a performance diagnostic of Seattle City Light's (SCL) Generation, T&D business**
- ◆ **Assessed the T&D business' standing relative to 33 other organizations**
- ◆ **Assessed Generation business' standing relative to 12-16 other organizations depending on plant size**
- ◆ **Developed insights and conclusions on which to build an actionable performance plan**

# Project Approach

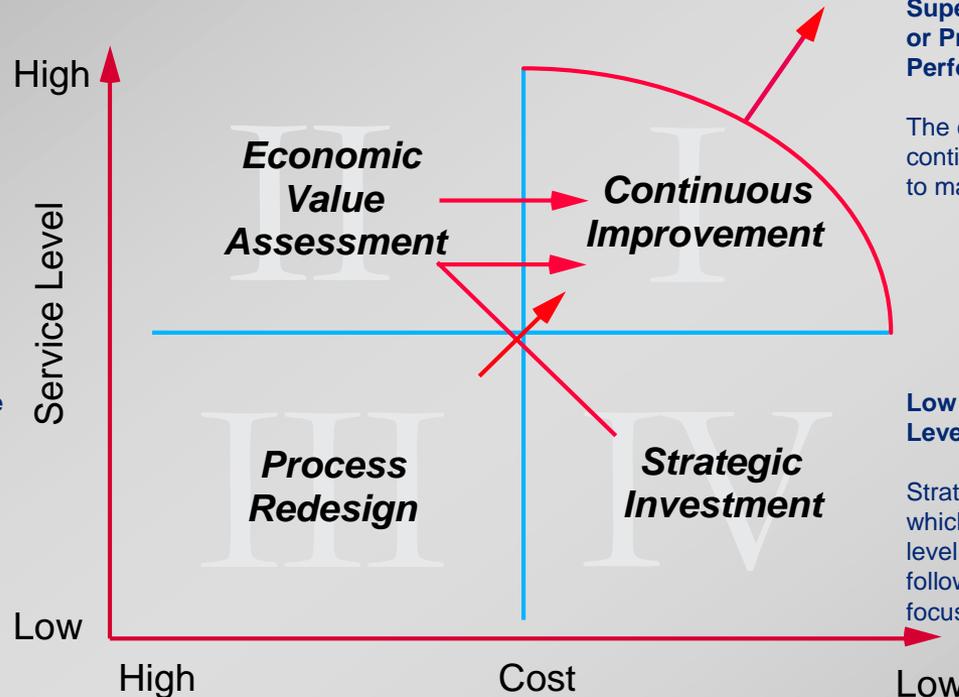
*Your relative position re: Cost and Service Level defines the optimum strategy for performance improvement*

## High Cost/High Service Level –

The key is identifying and eliminating costly, low value activities

## High Cost/Low Service Level –

Incremental improvement will not suffice. Time to start over (i.e. process reengineering)



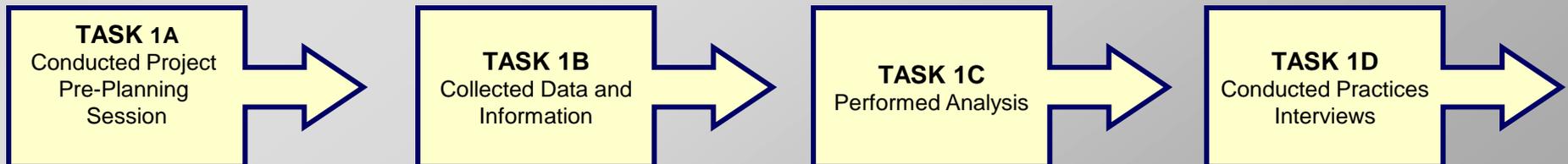
## Superior Functional or Process Performance –

The challenge is driving continuous innovation to maintain your lead

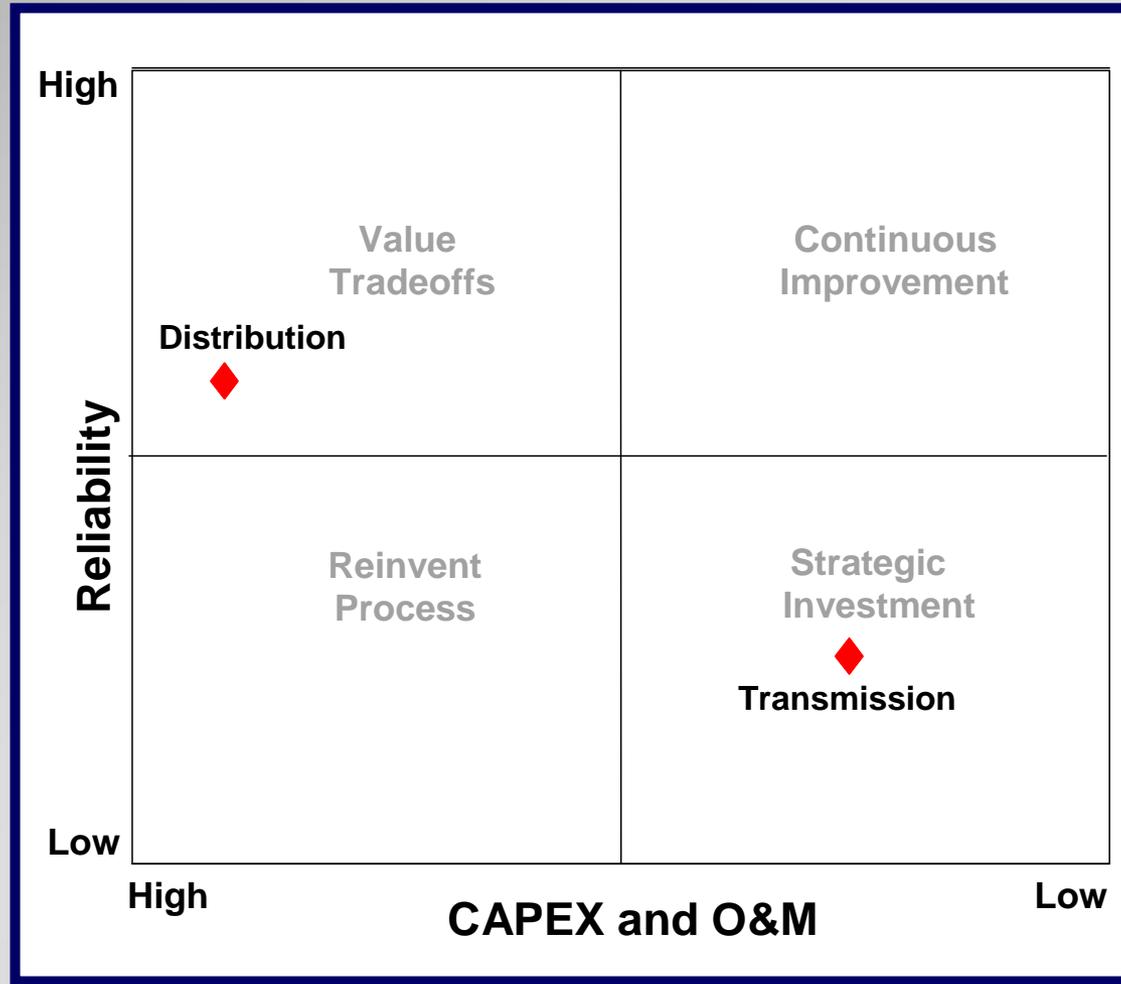
## Low Cost/Low Service Level –

Strategic investment in which cost and service level both rise initially, followed by longer-term focus on cost reduction

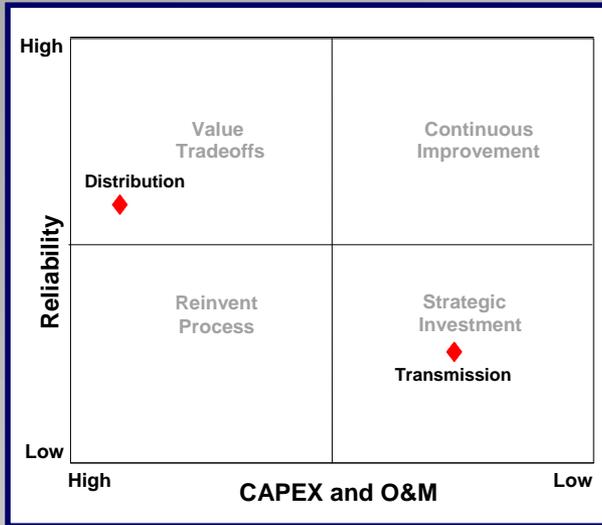
## STEP 1: Conducted Performance Diagnostic



# Transmission and Distribution Assessment



# Transmission and Distribution Assessment



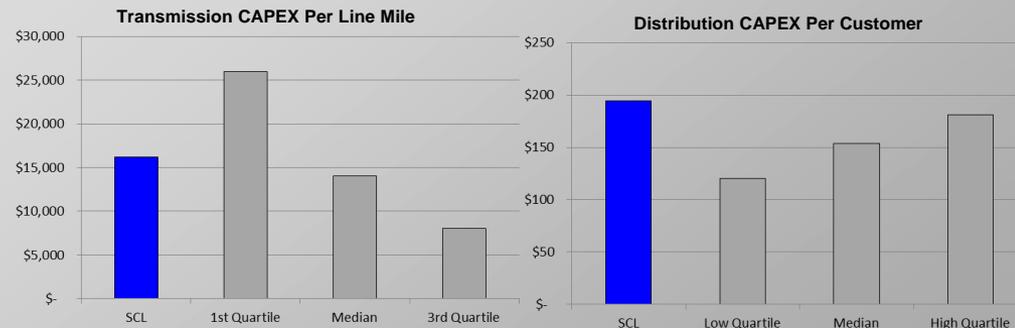
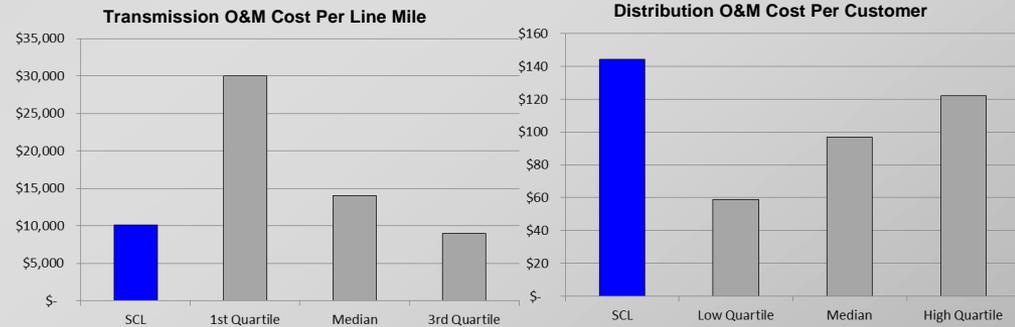
Distribution Reliability	SCL	1st Quartile	Median	4th Quartile
SAIFI (3-YR Average)	0.91	0.86	1.05	1.47
CAIDI (3 YR Average)	76	83	90	134
SAIDI (3 YR Average)	72	78	134	200

Transmission Reliability	SCL	Americas Average	Europe Average	Asia Pacific
Line Outages per 1,000 CKT Miles	28	9	7	8
Substation Outages per 100 CKT Ends	12	62	48	80

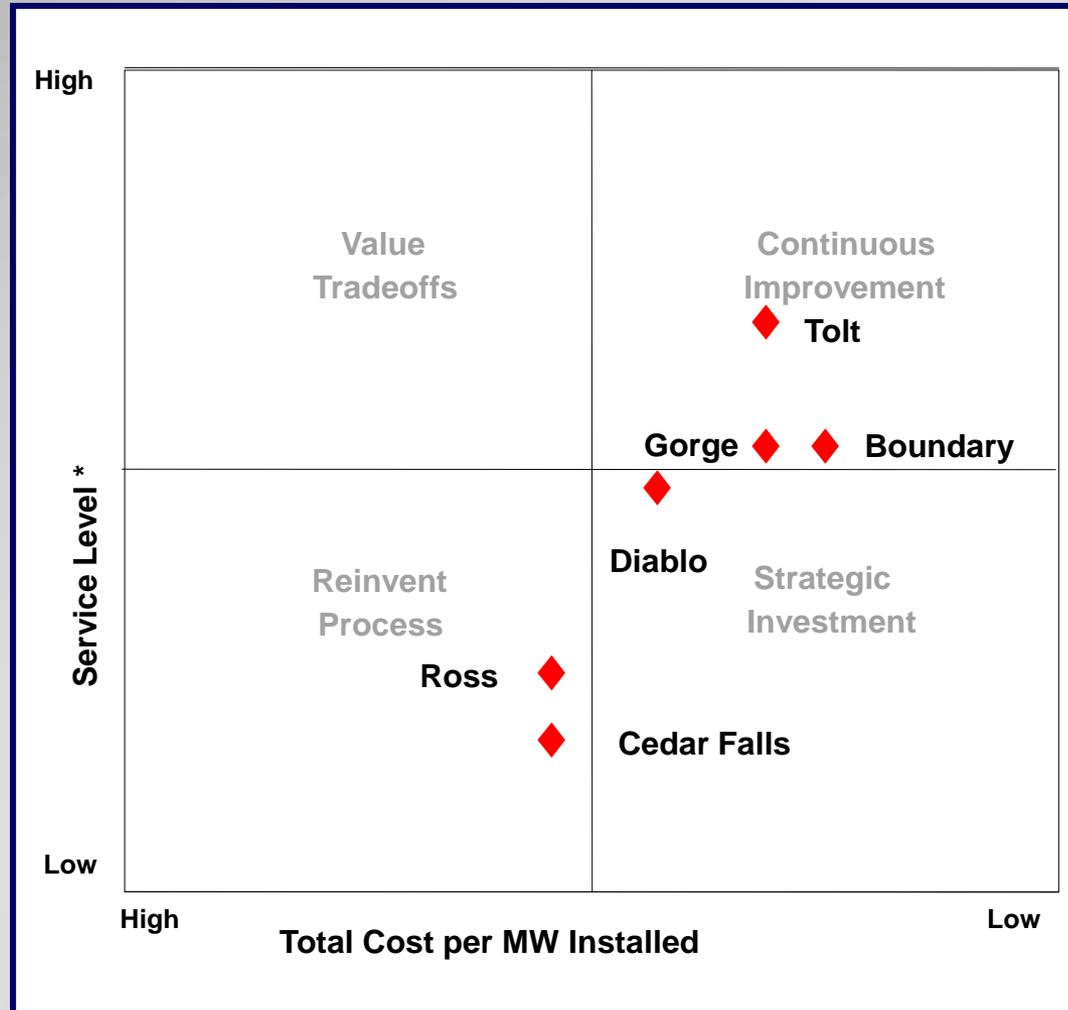
## Work rules and practices drive much of the added cost

- Limited, if any, “gloving” of live wire
- Larger than normal work crews (approximately twice that of industry norm) for routine tasks
- Wood pole replacement is a 3-step evolution using 3 separate crews
- For Emergency Response, industry norm of a single trouble shooter handling 30 to 50% of the customer interruptions (at least for partial restoration) augmented by an aggressive callout / first responder program is addressed by SCL with 2-persons crews and 24/7 coverage

Percent of overtime, despite noted recent improvement, is still higher than industry norms



# Generation Assessment



# Generation Assessment

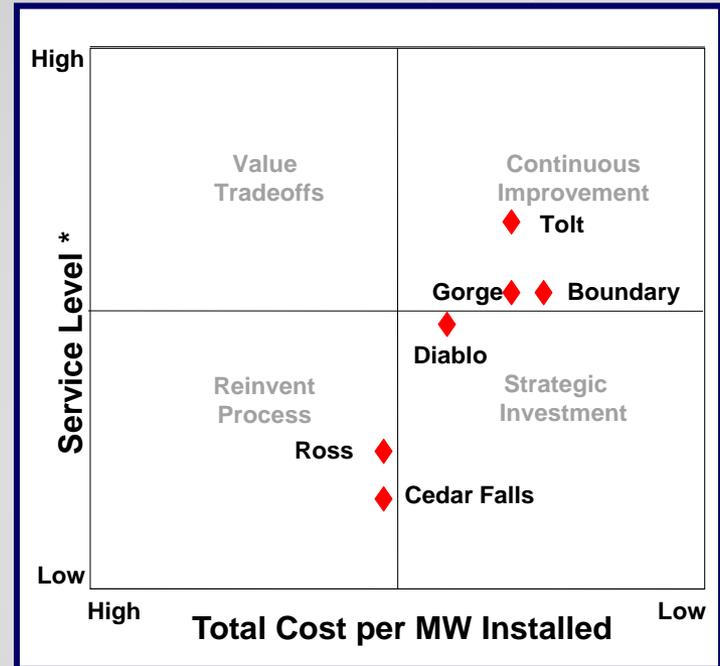
The 6 City Light plants are notably different in terms of their comparative positions as compared with their respective peers.

Reliability	EAF *	EFOR**
Boundary	85%	0.3%
Ross	77%	1.2%
Peer Group Average	90%	1.5%
Peer Group First Quartile		0.2%

Reliability	EAF	EFOR
Cedar Falls	69%	9.3%
Tolt	97%	1.3%
Peer Group Average	91%	3.8%
Peer Group First Quartile		0.1%

Reliability	EAF	EFOR
Diablo	89%	0.6%
Gorge	93%	1.3%
Peer Group Average	88%	1.5%
Peer Group First Quartile		0.1%

3 Year Average EFOR & EAF



- **Key Management Systems, Tools and Organization Steps – In Order of Recommended Priority**
- Cross Train and Reduce the Number of Job Classes to Provide Workforce Flexibility.
- Key performance metrics required with weekly reporting to all management and supervisory levels
- Capital improvement plan to support plant and unit operations automation over the next 5 years.
- Measure and monitor station performance – outages, outages/unit, time of day/year analysis, central ability to audit all runs, stops, forced and planned outages
- Develop and Deploy an Asset Condition Assessment / Auditing System
- Develop a Capital and Asset Plan tied to an Asset Management Strategy including strategic importance of each plant and unit, asset age, reliability, asset mechanical, structural and electrical condition
- Reduce Generation T&D Equipment Specialists and Integrate with Transmission

\*EAF = Equivalent Availability Factor ( a measure of the availability of the plant and unit to generate power should it be called upon to do so)

\*\*EFOR = Equivalent Forced Outage Rate (a measure of the rate at which forced outages are occurring)

# Goals

- ◆ **Annual Savings Goals = \$15M**
  - **T&D = \$12.0 Generation = \$ 3.0 M**
  - **Change work rules and practices**
  - **Improve management processes**

<b>Process Improvement Examples</b>	<b>Short Term (2013)</b>	<b>Mid Term (2014)</b>	<b>Long Term (2015)</b>
Line Crew Sizing	X		
Single Person Trouble Shooter		X	
Pole Replacement- Combine Set and Transfer Crews	X		
Workforce Flexibility (Power Production)		X	

# Next Steps

- ◆ **Complete analysis of opportunities prepared 1 Qtr 2012**
- ◆ **Develop Action Plan:**
  - **Management process improvement**
  - **Work rules and practices**
  - **Develop goals by function and specific work**
  - **Develop effective metrics and measurement process**
- ◆ **Savings achieved through attrition**
- ◆ **No plans for layoffs from efficiency improvements**