



Los Angeles Department of Water & Power

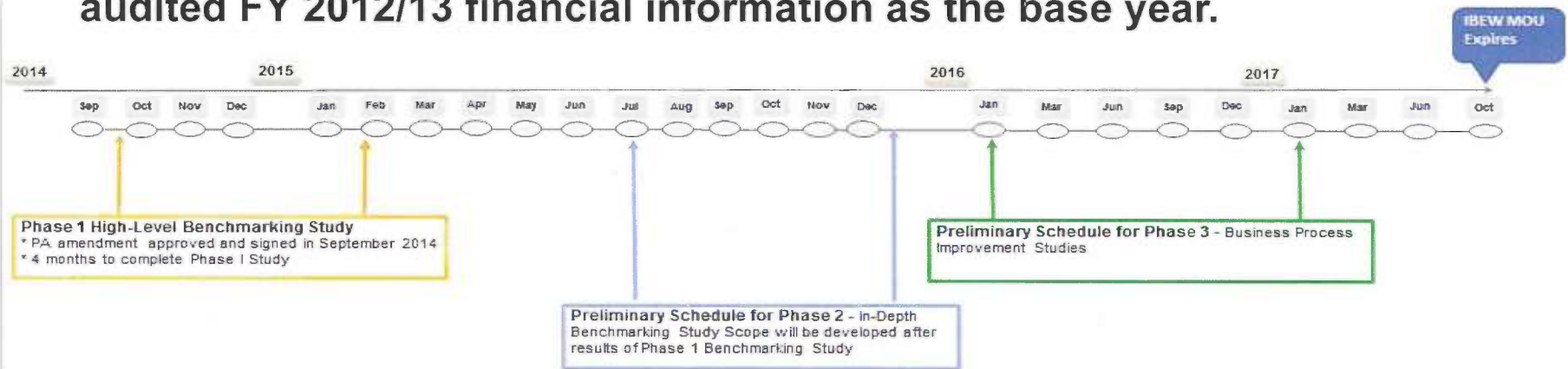


BENCHMARKING ANALYSIS

March 17, 2015

BACKGROUND

- Key City Stakeholders requested this benchmarking study including Mayor Garcetti, the Los Angeles City Council, and the City’s Rate Payer Advocate.
- This summary analysis was derived from a comprehensive benchmarking study performed by PA Consulting Group, Inc. in cooperation with PWC Strategy& (formerly Booz & Company) and was based upon data provided by LADWP staff.
- This “high-level” analysis is the first of a 3-Phase Benchmarking effort being led by LADWP’s Corporate Performance Division. The analysis is focused on operating and capital expenditures on a functional level using audited FY 2012/13 financial information as the base year.



- This analysis evaluated LADWP’s performance relative to peer water and power utilities ranking them from the 1st quartile being the “BEST” to the 4th quartile representing the “WORST” performer.

PEER GROUP #1 – SIZE: 36 ELECTRIC UTILITY COMPANIES WITH MORE THAN 1 MILLION ELECTRIC CUSTOMERS

This study benchmarked against large utilities that included both investor-owned and publicly-owned utilities from throughout the United States.

Peer Group #1 (Large Utility Companies > 1 million customers)

Operating Company	Customers
Pacific Gas and Electric Company	5,354,262
Southern California Edison Company	4,965,241
Florida Power & Light Company	4,626,927
Commonwealth Edison Company	3,842,198
Consolidated Edison Company of New York, Inc.	3,354,613
Oncor Electric Delivery Company LLC	3,266,126
Virginia Electric and Power Company	2,476,191
Duke Energy Carolinas, LLC	2,428,441
Georgia Power Company	2,387,727
CenterPoint Energy Houston Electric, LLC	2,243,818
Public Service Electric and Gas Company	2,194,066
DTE Electric Company	2,134,161
Consumers Energy Company	1,790,148
PacifiCorp	1,766,984
Duke Energy Florida, Inc.	1,682,182
PECO Energy Company	1,582,153
Los Angeles Department of Water and Power ¹	1,479,000
Duke Energy Progress, Inc.	1,470,039
Ohio Power Company	1,460,980

Operating Company	Customers
Alabama Power Company	1,444,803
Northern States Power Company - MN	1,417,543
PPL Electric Utilities Corporation	1,410,556
San Diego Gas & Electric Co.	1,399,745
Public Service Company of Colorado	1,392,244
Niagara Mohawk Power Corporation	1,260,076
Baltimore Gas and Electric Company	1,243,697
Ameren Illinois Company	1,222,570
Connecticut Light and Power Company	1,217,399
Union Electric Company	1,197,295
NSTAR Electric Company	1,172,940
Arizona Public Service Company	1,147,462
Wisconsin Electric Power Company	1,126,869
Massachusetts Electric Company	1,104,390
Long Island Power Authority **	1,100,000
Jersey Central Power & Light Company	1,096,950
Puget Sound Energy, Inc.	1,085,373
Ohio Edison Company	1,032,776

** Public Power Company

1)) LADWP is not included in the peer group of 36 companies

Source: Strategy& analysis; SNL

PEER GROUP #2 – WESTERN REGION: 26 ELECTRIC UTILITY COMPANIES WITH MORE THAN 100,000 CUSTOMERS IN THE WEST

This study also benchmarked against both investor-owned and publicly-owned utilities from the Western Region of the United States.

Peer Group #2 (Western Region > 100,000 customers)

Operating Company	Customers
Pacific Gas and Electric Company	5,354,262
Southern California Edison Company	4,965,241
PacifiCorp	1,766,984
Los Angeles Department of Water and Power ¹	1,479,000
San Diego Gas & Electric Co.	1,399,745
Public Service Company of Colorado	1,392,244
Arizona Public Service Company	1,147,462
Puget Sound Energy, Inc.	1,085,373
Salt River Project **	963,217
Nevada Power Company	859,012
Portland General Electric Company	833,129
Sacramento Municipal Utility District **	602,107
Public Service Company of New Mexico	508,248
Idaho Power Co.	504,653

Operating Company	Customers
Tucson Electric Power Company	409,529
Seattle City Light **	402,608
El Paso Electric Company	391,774
Avista Corporation	363,312
Sierra Pacific Power Company	327,320
Snohomish County Public Utility District No. 1 **	325,849
Colorado Springs Utilities **	204,156
Clark Public Utilities **	186,577
Tacoma Public Utilities **	169,018
Imperial Irrigation District **	148,610
City of Anaheim **	115,248
Modesto Irrigation District **	113,931
City of Riverside**	107,362

** Public Power Company

1) LADWP is not included in the peer group of 26 companies

Source: Strategy& analysis; SNL

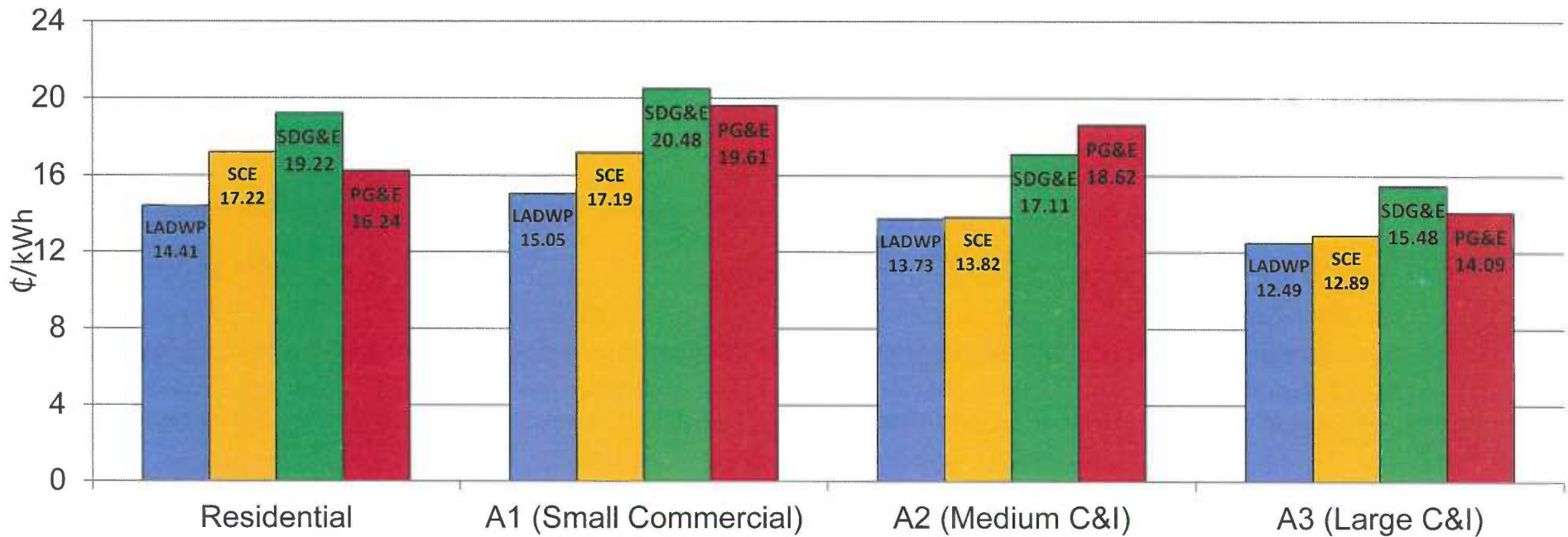
EXECUTIVE SUMMARY – POWER SYSTEM FINDINGS

- **Total O&M Costs:** Total O&M costs per Customer is one of the most significant metrics and benchmarked favorably in the 2nd quartile.
- **Reliability Metrics:** LADWP reliability metrics benchmarked favorably in the 1st and 2nd quartiles.
- **Financial Metrics:** Given the significant capital investments being made by LADWP, the key financial metrics are in-line with industry peer sets. LADWP's 4th quartile benchmarking for Net Income per Revenue Dollar metric demonstrates that given LADWP's costs, its rates are lower than the peer sets.
- **Customer Service O&M:** While overall Customer Service O&M costs are in the 1st quartile relative to Investor Owned Utilities which comprised the bulk of this peer set, there are some other key metrics to consider:
 - **Uncollectible Expenses:** LADWP's uncollectible expense of .72% or \$23 million for FY 12/13 is solidly in the 4th quartile. For FY 13/14 this rises to 1.74% or \$58 million. A review of collection policies is warranted.
 - **System Losses:** Total energy losses of 13.1% are in the 4th quartile and merit further analysis.
- **Distribution O&M:** While Distribution O&M costs are in the 4th quartile, additional capital spending in the Power System Reliability Program should drive these costs down as newer infrastructure is installed and system maintenance costs are decreased.
- **Administrative and General (A&G) O&M Costs:** This study includes all pension/benefit costs in the A&G area consistent with Investor-Owned Utility practice. While LADWP benchmarked in the 4th quartile for this metric, employee pension benefits under the recently approved MOU will reduce these costs in the future.
- **LA Metro Wage Rate:** Compared to other regions of the US, wage rates for the Los Angeles Metropolitan area can range from 13% to 33% higher than the national average. It should be noted that the recently approved MOU provides for no cost-of-living increases for 3 years. The labor component, including overtime and benefits, represents 72% the Power System's total O&M expense.

MAJOR CALIFORNIA UTILITIES ELECTRICITY RATES

This critical metric measures the electricity rates for residential, small commercial, medium and large commercial and industrial customers for major California utilities.

Electricity Rates for Other Major California Utilities - FY 12/13 (¢/kWh)

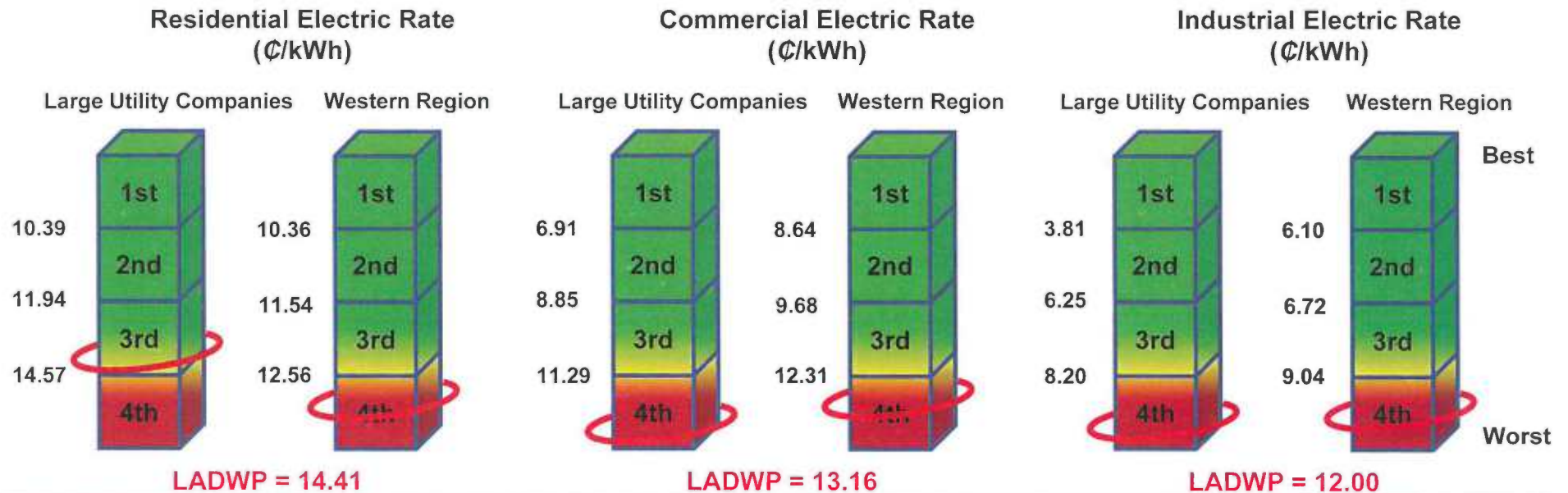


Metric Significance: HIGH

- As has been reported publicly many times, LADWP's rates are below those of other California Investor Owned Utilities in all classes for FY 12/13.
- These Investor Owned Utilities are also increasing rates to fund regulatory requirements and infrastructure reliability programs.

NATIONAL ELECTRICITY RATES

This metric is measuring LADWP's average electricity rates for residential, commercial and industrial customers among the utility peer sets.

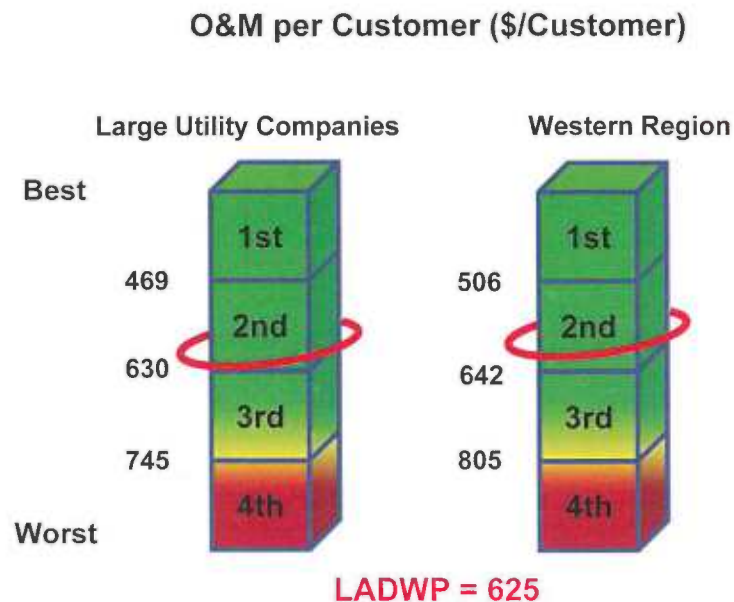


Metric Significance: HIGH

- This metric shows that while LADWP's rates are among the lowest compared to utilities in its region, California's regulatory and environmental requirements tend to increase rates above the two peer sets in this benchmarking study.
- These requirements include: Once-Through-Cooling, 33% Renewables, 10% Energy Efficiency, and other environmental regulations that drive rates up compared to non-California utilities.

TOTAL OPERATIONS AND MAINTENANCE EXPENSES

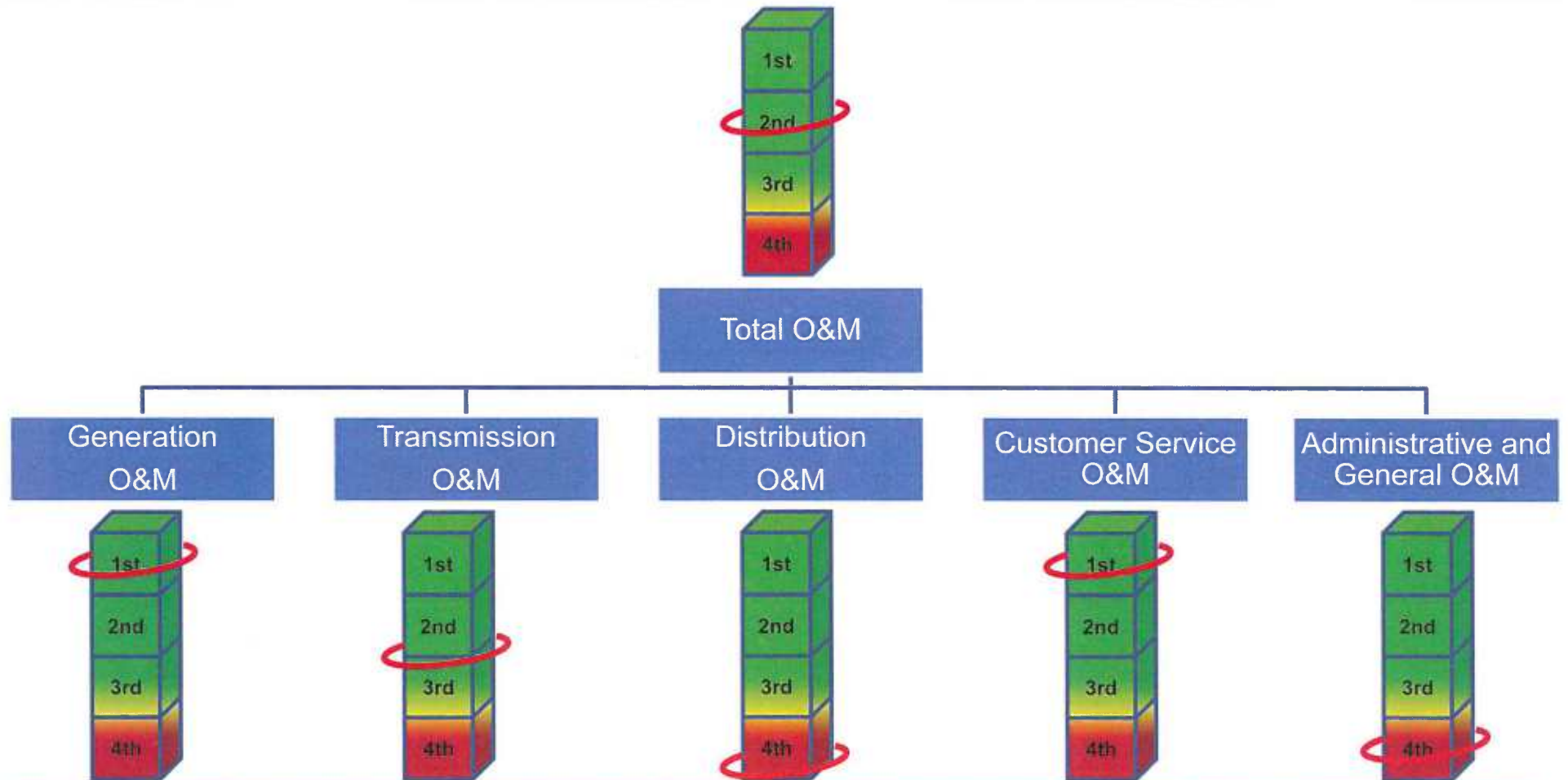
This critical metric measures the total electric utility operations and maintenance expenses (including labor, benefits and A&G) to the total number of ultimate customers.



Metric Significance: HIGH

- The O&M per Customer metric shows that O&M for the Power System is essentially in-line with the 2nd quartile for the 2 peer utility sets evaluated.
- This metric is one of the most critical benchmarks as it compiles all Generation, Transmission, Distribution, Customer Service, and Administrative & General O&M expenses.

TOTAL OPERATIONS AND MAINTENANCE EXPENSES



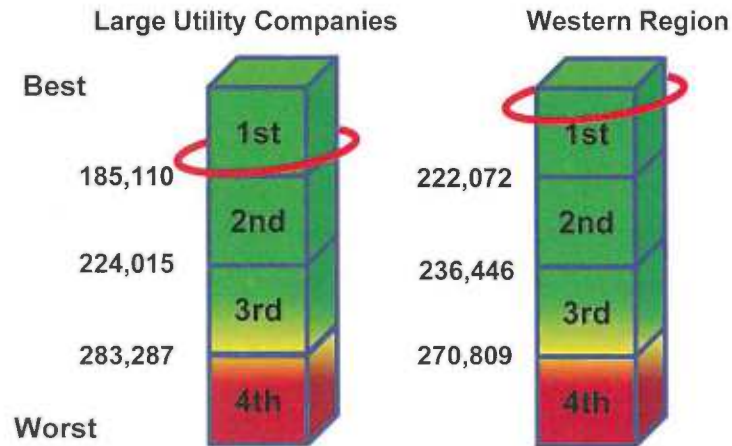
Metric Significance: HIGH

- Total O&M benchmarked favorably in the 2nd quartile and represents the aggregate of O&M costs for generation, transmission, distribution, customer service, and A&G. This includes all O&M labor and benefits.
- O&M costs allocated across these areas benchmarked between the 1st and 4th quartile.
- A&G's 4th quartile benchmarking should see improvements due to the new pension tier (from the recent MOU) and Distribution's 4th quartile benchmarking should also improve as future CapEx investments are expected to increase.

GENERATION O&M

This metric measures LADWP's total generation operations and maintenance expenses (including labor) on a installed generation capacity basis.

Generation O&M per Operating Capacity (\$/MW)



LADWP = 180,587

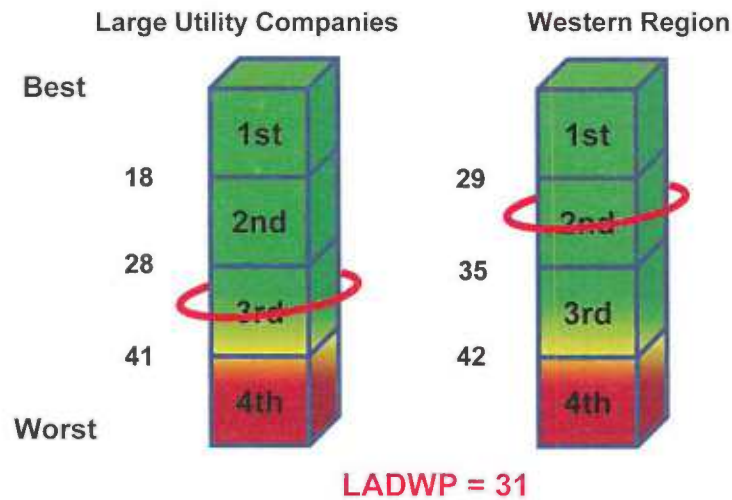
Metric Significance: MEDIUM

- This metric illustrates that power plant operations are in-line with the peer sets on an operating capacity basis.

TRANSMISSION O&M

This metric measures the Transmission operations and maintenance expenses (including labor) associated with delivering power to each retail customer.

Transmission O&M per Customer (\$/Customer)

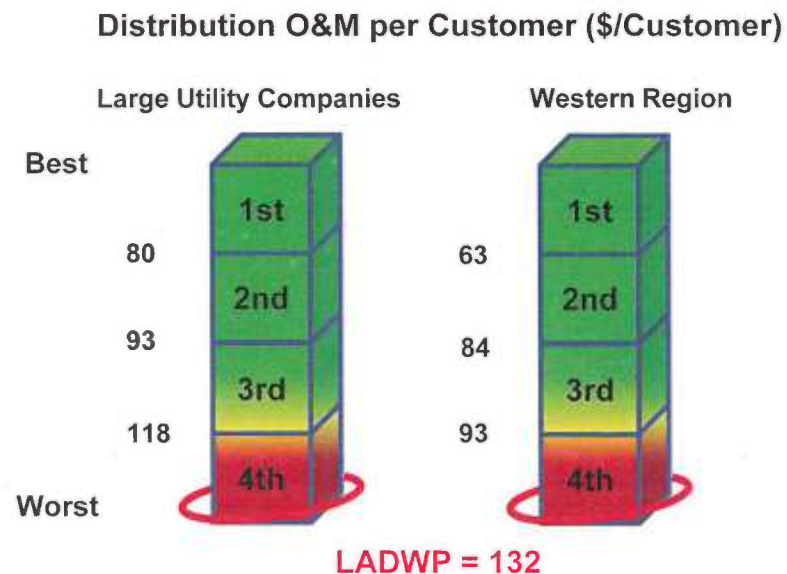


Metric Significance: MEDIUM

- Transmission O&M for LADWP benchmarked in the 2nd and 3rd quartiles relative to the peers on a per customer basis.

DISTRIBUTION O&M

This metric measures the Distribution operations and maintenance expenses (including labor) associated with delivering power to each retail customer.



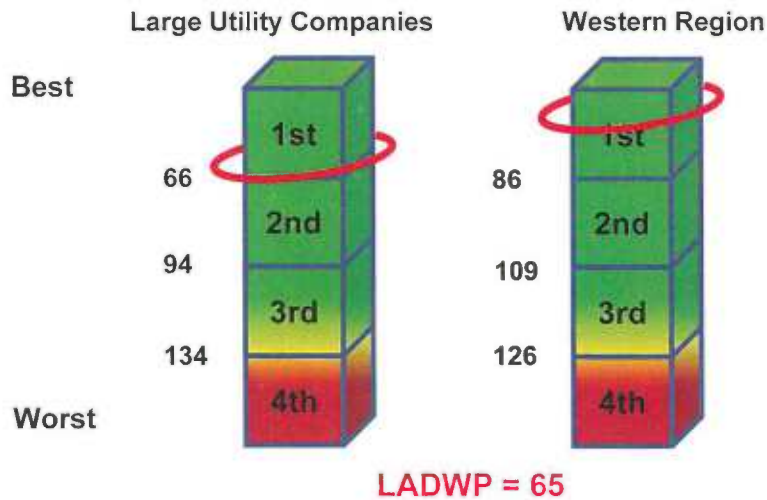
Metric Significance: MEDIUM

- LADWP's lower capital spending may be a contributory factor driving this metric into the 4th quartile. This metric is expected to benchmark better in the future with increases in Distribution capital investments (e.g. PSRP).
- These higher levels of Distribution O&M may have favorably impacted reliability as evidenced by 1st and 2nd quartile SAIFI and SAIDI benchmarks, respectively.
- Additional operational changes may need to be evaluated as part of Phases II and III of LADWP's planned benchmarking studies.

CUSTOMER SERVICE O&M

This metric measures the total Customer Service O&M (including labor) expenses per retail customer net of uncollectible accounts.

Customer Service O&M per Customer (\$/Customer)



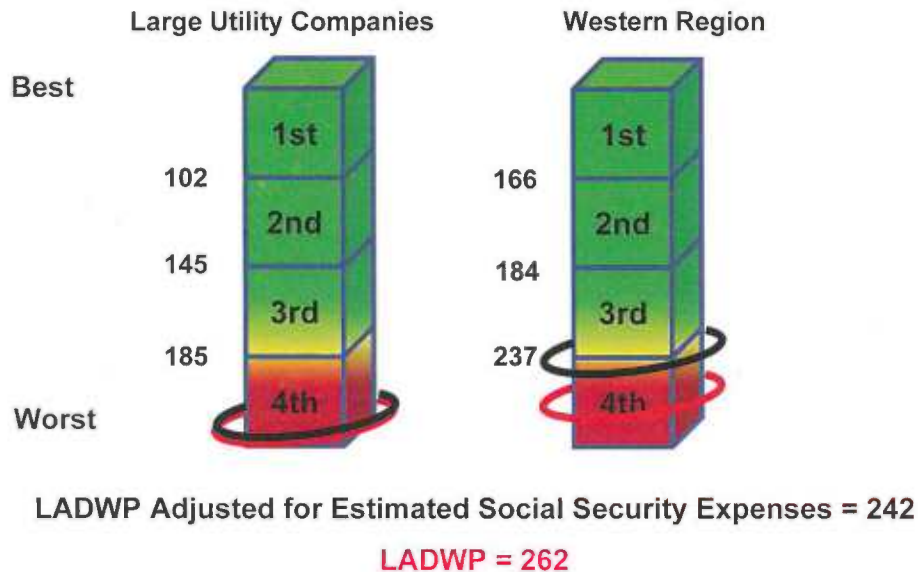
Metric Significance: MEDIUM

- LADWP benchmarks favorably in the 1st quartile when compared to peer sets comprised primarily of investor owned utilities.
- It is important to note that LADWP benchmarked in the 3rd quartile for the same metric when compared solely to publicly owned electric utilities.
- This may illustrate a difference in business philosophy between Investor Owned Utilities that seem to spend more on customer service O&M versus Publicly Owned Utilities which appear to place greater focus on Distribution O&M.

ADMINISTRATIVE AND GENERAL (A&G) O&M

This metric measures the average administrative and general expenses (including pension and benefits) incurred by the utility on behalf of each retail customer.

A&G O&M per Customer (\$/Customer)



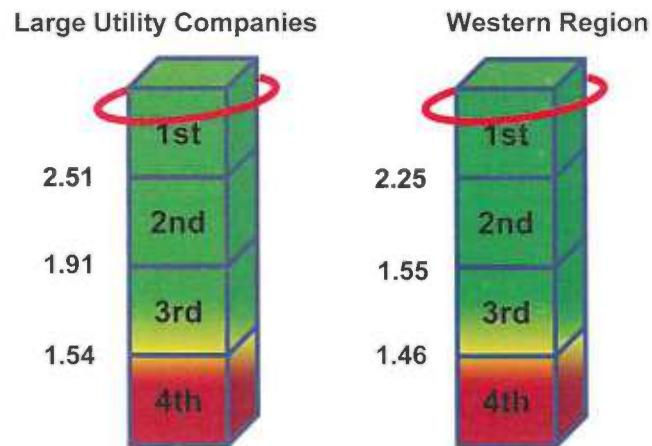
Metric Significance: MEDIUM

- This benchmarking study includes all pension and benefit costs in A&G.
- LADWP benchmarked in 4th quartile as a result of the pension/benefit costs in FY 12/13.
- This metric will improve as the impacts of the new pension benefits begin to take effect under the recently adopted MOU.
- Social Security expenses are not included in A&G for Investor Owned Utilities. If LADWP would remove an amount similar to the Social Security amount, this metric would be \$242/customer.

TOTAL CAPITAL EXPENDITURES (CapEx)

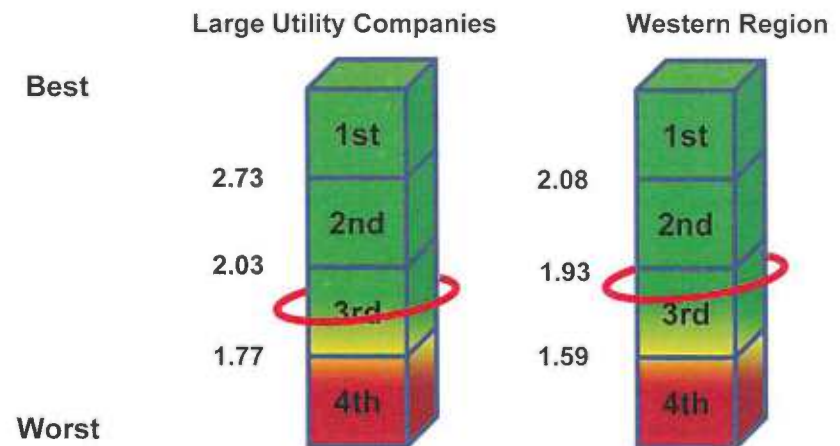
These metrics measure the amount of CapEx investments made for FY 12/13 as well as average CapEx spending from 2011~2013.

FY 12/13 CapEx per Depreciation Expense (\$/\$)



LADWP = 3.02

3-Year Average CapEx for FY 10/11 Thru FY 12/13 per Depreciation Expense (\$/\$)



LADWP = 1.92

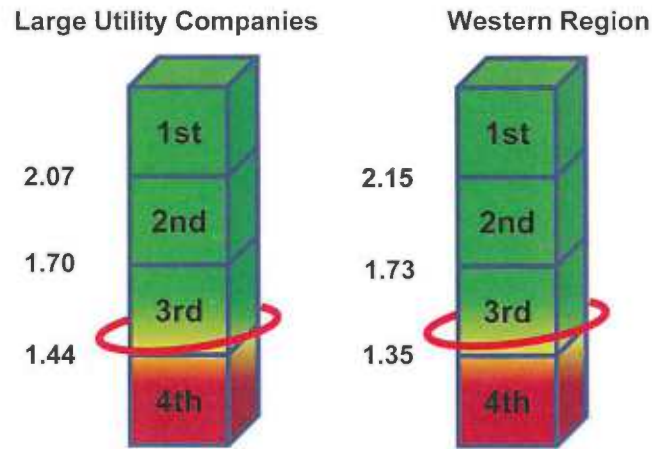
Metric Significance: MEDIUM

- The FY 12/13 Total CapEx benchmarks show higher investments (1st quartile) for both peer sets representing a reversal of historic under spending by LADWP.
- LADWP increased capital investments in FY 12/13 are largely a function of recent regulatory and environmentally mandated projects/programs. These expenditures are predominantly for construction of the six Haynes combustion turbines.

DISTRIBUTION CAPITAL EXPENDITURES (CapEx)

These metrics measure the amount of distribution CapEx made per distribution depreciation expense. This metric predominantly measures Power System Reliability Program investments.

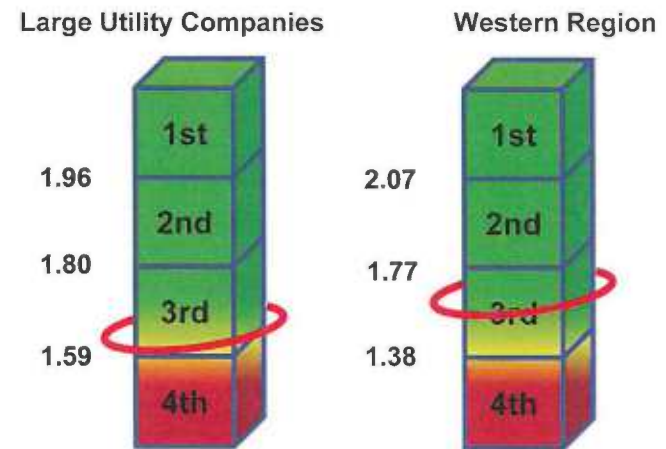
Distribution FY 12/13 CapEx per Depreciation Expense (\$/\$)



LADWP = 1.48

3-Year Average Distribution CapEx for FY 10/11 Thru FY 12/13 per Distribution Depreciation Expense (\$/\$)

Best



Worst

LADWP = 1.61

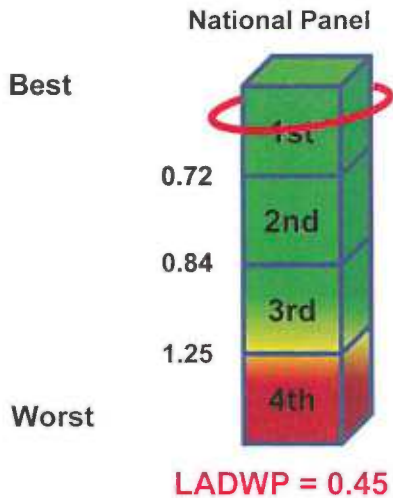
Metric Significance: MEDIUM

- While LADWP benchmarks in the 3rd quartile for both metrics, these results point to a historic trend of distribution related CapEx under spending.
- This historic CapEx under spending could also be contributing to LADWP's higher Distribution O&M costs when compared to peer utilities.

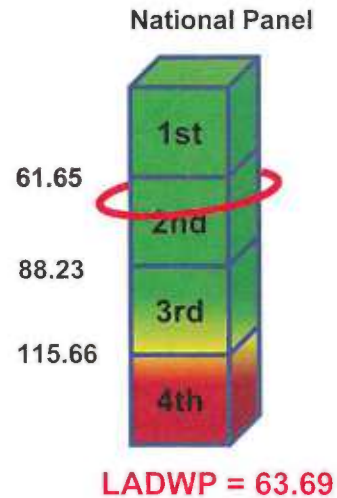
SAIFI and SAIDI

These metrics are designed to assess system reliability by measuring the Frequency (SAIFI) and Duration (SAIDI) of electricity outage incidents.

System Average Interruption Frequency Index (SAIFI)



System Average Interruption Duration Index (SAIDI)



Metric Significance: HIGH

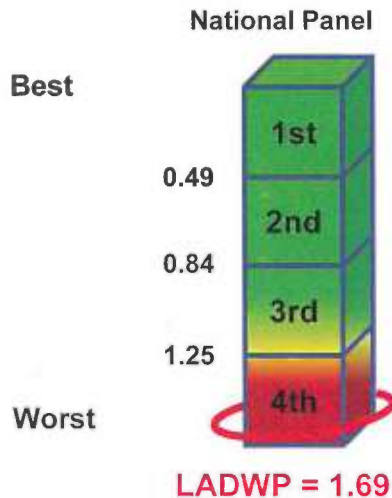
- LADWP ranks in the 1st and 2nd quartile for both metrics which demonstrates a high degree of system reliability relative to peers nationwide.
- These results are especially noteworthy given LADWP's historically low CapEx spending particularly in the Distribution area relative to peer utilities.

Lost Time Incident Rate

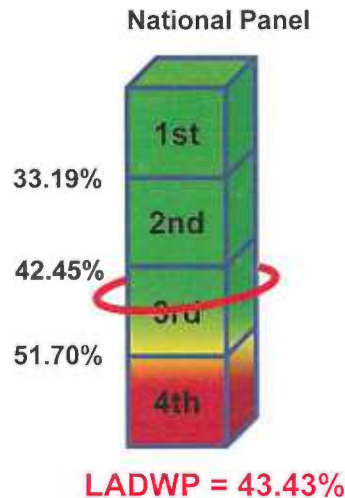
Recordable Incidents Resulting in Lost Time

This metric measures how many recordable incidents resulted in lost time due to on-the-job injuries and illnesses over the course of the year.

Lost Time Incident Rate



Recordable Incidents Resulting in Lost Time (%)

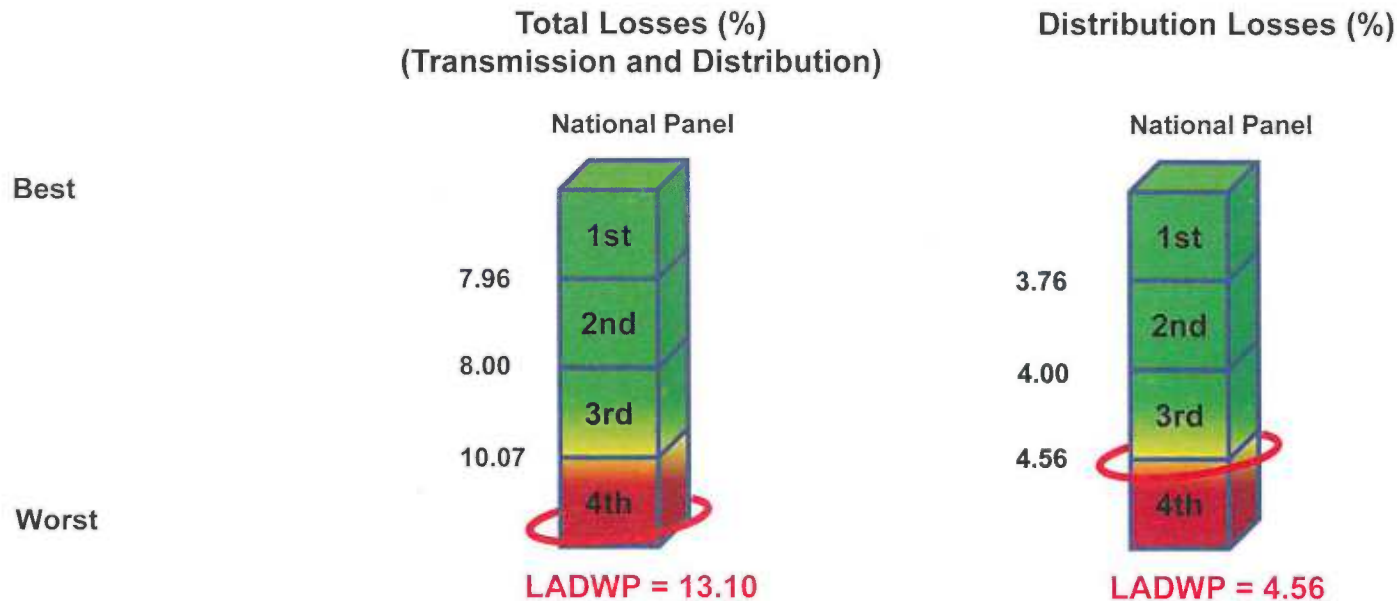


Metric Significance: HIGH

- Notably in a 2012 APPA benchmarking study of Publicly Owned Utilities, LADWP benchmarked in the 2nd quartile for the Lost Time Incident Rate metric.
- LADWP's more favorable benchmarking in the APPA study may be due to differing philosophies of the IOU versus POU workforce in reporting lost time incidents.

TRANSMISSION AND DISTRIBUTION LOSSES

This metric measures how much energy is lost in a utility's electrical transmission and distribution system and is an indication of overall electrical system efficiency.



Metric Significance: MEDIUM

- Energy losses of 13.1% are higher due to significant transmission line losses for generation plants located in remote areas from which ~60% of all LADWP's energy is generated.
- LADWP's lower distribution voltage relative to peers may also be driving this metric higher.
- Efforts are underway to mitigate any potential "non-technical" line losses such as non-billed customers, fraud and energy theft.

FINANCIAL STATEMENT RATIOS

The net income per revenue dollar metric measures the amount of income remaining after operation and maintenance expenses, depreciation, taxes and City transfer. Uncollectible Accounts measure the amount of revenue that is not received as a percentage of total operating revenue.

Net Income per Revenue Dollar (%)

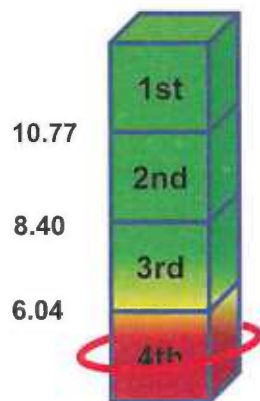
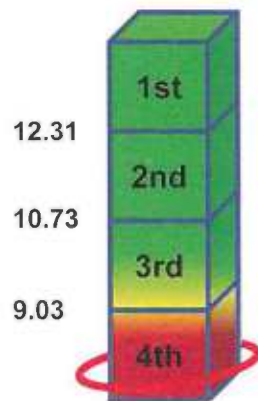
Uncollectible Accounts per Total Electric Revenue (%)

Large Utility Companies

Western Region

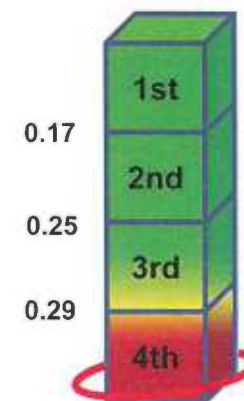
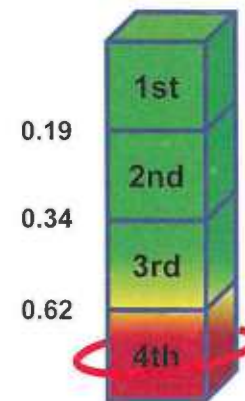
Large Utility Companies

Western Region



LADWP = 4.32

Best



LADWP = 0.72

Worst

Metric Significance: HIGH

- The Net Income per Revenue Dollar metric benchmarked in the 4th quartile and suggests that given LADWP's costs, its rates are low relative to the peer sets.
- LADWP's Uncollectible Accounts metric benchmarks solidly in the 4th quartile relative to its peers which is likely due to the more relaxed collection policies and billing practices.
- Uncollectible Accounts in FY 13/14 have now risen to 1.74% following CISCON's implementation, which will place LADWP even further into the 4th quartile for this metric.

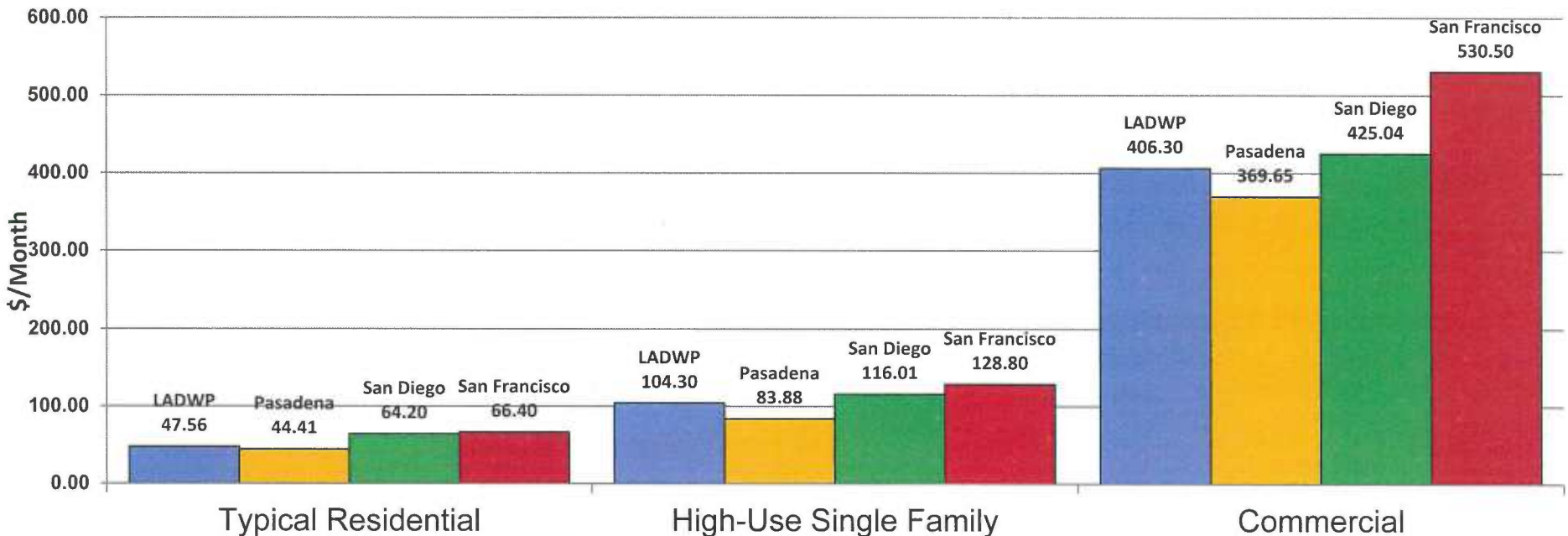
EXECUTIVE SUMMARY – WATER SYSTEM FINDINGS

- **Total O&M Costs:** The Water Total O&M costs on a per customer and per gallon metric are 2nd/3rd quartiles. This includes the \$56 million of O&M in support of the Los Angeles Aqueduct which is an asset that most water utilities do not have. If this cost was excluded, these metrics would improve by one full quartile.
- **Reliability Metrics:** LADWP is essentially 2nd quartile for both Planned and Unplanned Service Disruptions, as well as system losses.
- **Financial Metrics:** The Water System is making significant regulatory and reliability capital investments; however, the key financial metrics are in-line with the industry peer sets.
- **Customer Service O&M:** The Water System benchmark for Customer Service O&M per account fell into the 4th quartile. This result could be lower as a result of business strategies for mostly Publicly Owned Utilities within the AWWA peer set. LADWP bills roughly 71% of the customers on a bi-monthly basis.
- **LA Metro Wage Rates** - Compared to other regions of the US, wage rates for the Los Angeles Metropolitan area can range from 13% to 33% higher than peer utilities. The labor component, including overtime and benefits, represents 73% the Water System's total O&M expense.

REGIONAL WATER RATES

This critical metric measures the water rates for typical residential (12 HCF), high-use single family (24 HCF) and small commercial (100 HCF) for similarly situated regional utilities. A typical single family residential customer uses about 12 hundred cubic feet (HCF) of water per month or roughly 8,976 gallons.

Water Rates for FY 12/13 (\$/Month)



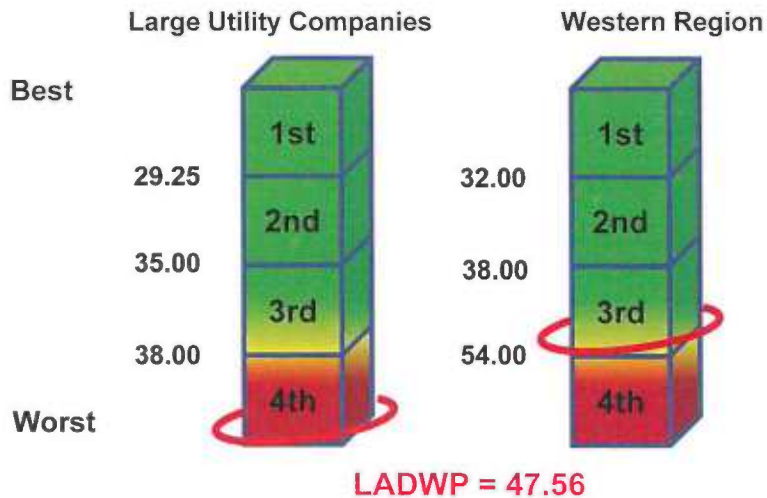
Metric Significance: HIGH

- As has previously been reported, LADWP's rates remain competitive with neighboring water utilities in all customer classes for FY 12/13.
- Water utilities in California are increasing rates in response to both state and federal regulatory requirements as well as much needed water storage and recycling infrastructure programs.

WATER SYSTEM RATES

This metric measures monthly average cost of water service for residential customers.

Monthly Average Residential Cost of Water Service (\$/Month)



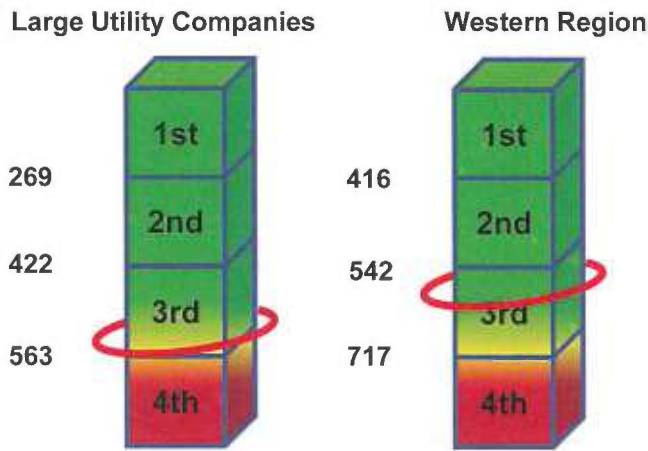
Metric Significance: HIGH

- Benchmark comparisons against Western Region utilities are more appropriate as the importing of water is more prevalent within this peer set.
- This comparison is also impacted by high purchased water costs.
- This result also reflects Los Angeles Aqueduct costs as well as costs associated with regulatory requirements pertaining to the Owens Valley Dust Mitigation program which are costs unique to LADWP.

WATER SYSTEM O&M

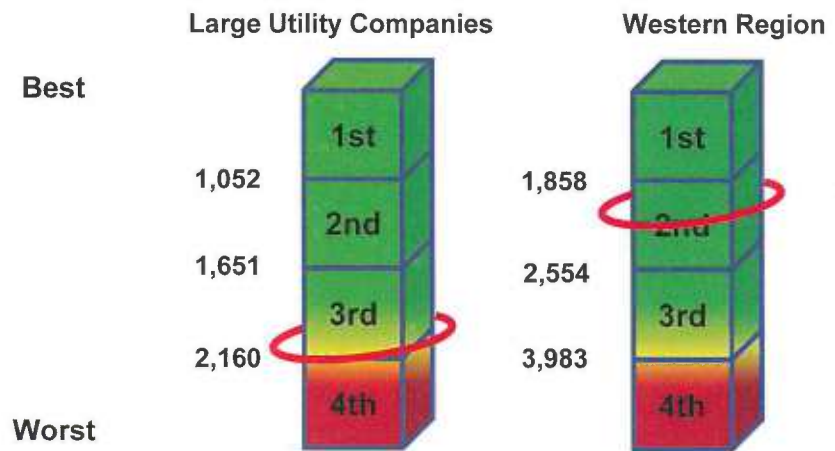
These metrics measure operations and maintenance costs per customer and per millions of gallons distributed to retail customers.

O&M Cost per Customer (\$/Customer)



LADWP = 558

O&M Cost per Million Gallons Distributed (\$/MG)



LADWP = 2,049

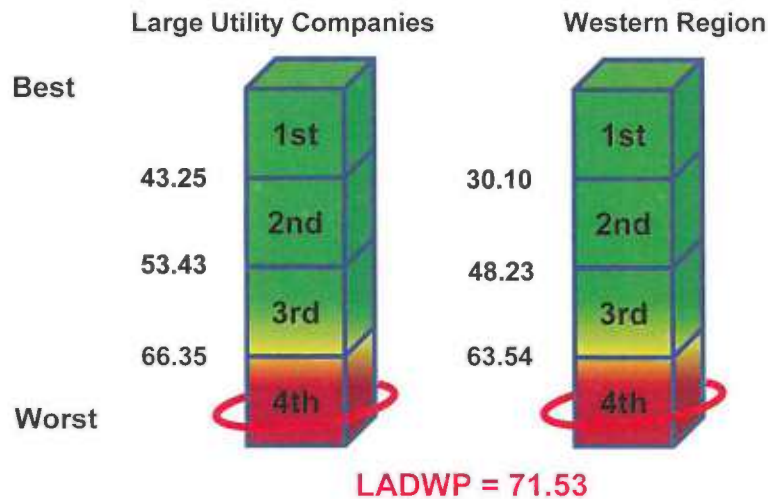
Metric Significance: HIGH

- LADWP is benchmarking in the 2nd and 3rd quartiles for these metrics, reflecting costs that are roughly in-line with the median of the peer set.
- LADWP's benchmark reflects the inclusion of LA Aqueduct O&M costs of \$56 million. If these costs were removed, LADWP would benchmark roughly one quartile better.

CUSTOMER SERVICE O&M COST PER CUSTOMER ACCOUNT

This metric measures the Customer Service cost including Uncollectible Accounts per total number of active accounts.

Customer Service Cost per Account (\$/Account)

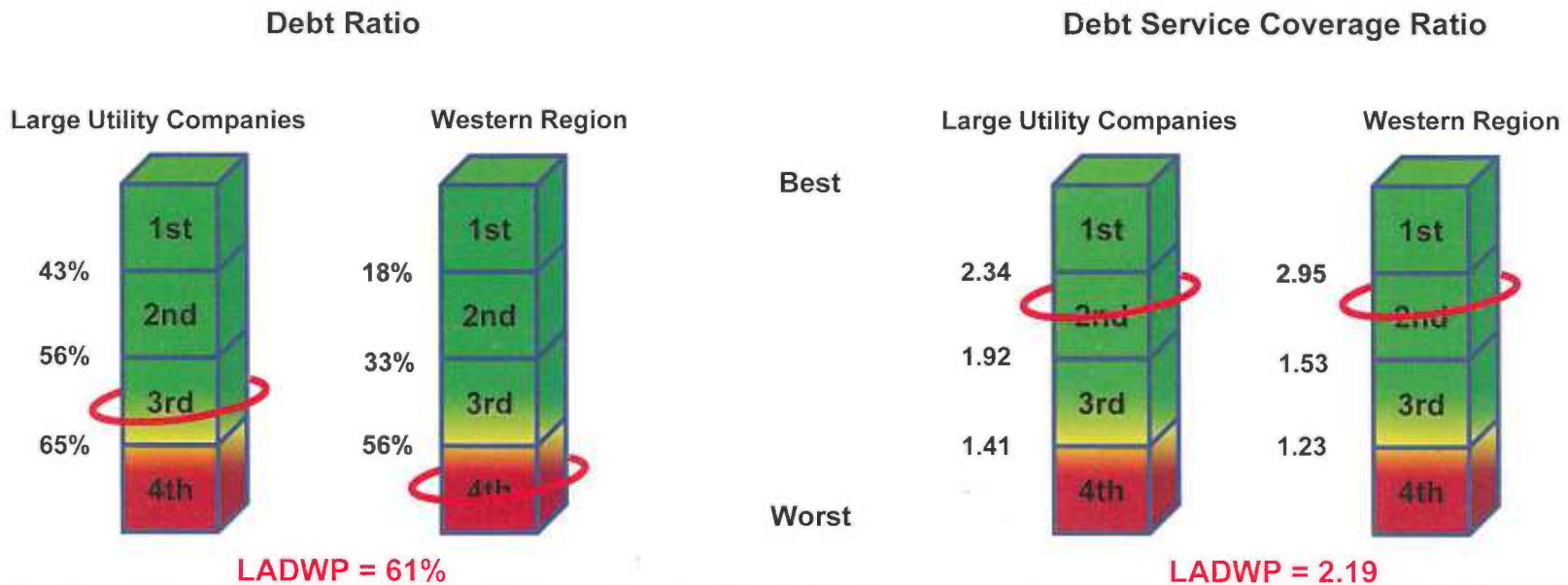


Metric Significance: MEDIUM

- These 4th quartile results are inconsistent with the Power System results which could be caused by differences in business strategy between publicly owned utilities and investor owned utilities.
- LADWP also has a substantial “brick and mortar” investment in 15 Payment Centers needed to collect customer cash payments.
- LADWP bills its residential customers (71% of all customers) on a bi-monthly basis. The Department will be switching customers to a monthly billing cycle which should drive this metric further into the 4th quartile.

WATER SYSTEM FINANCIAL METRICS

These metrics measure the amount of debt assumed by the utility as well as the utility's capacity to service its long-term debt obligations.



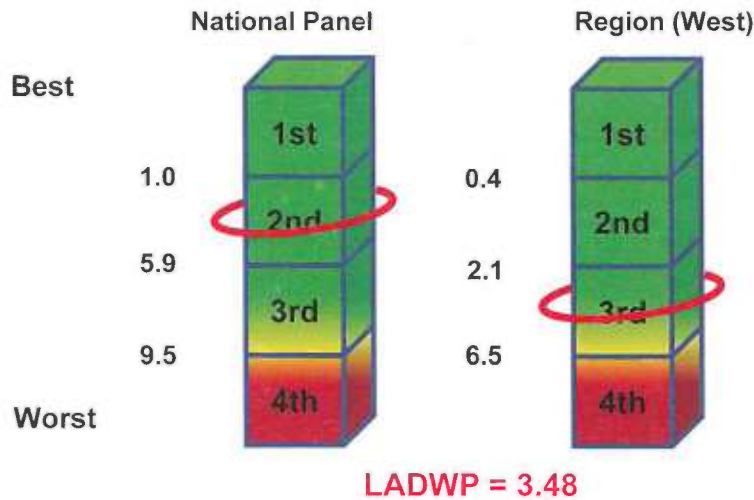
Metric Significance: HIGH

- As a result of significant capital programs, LADWP has comparatively more debt than its peers as evidenced by the 3rd and 4th quartile debt ratio benchmark for this metric.
- Nevertheless, the favorable 2nd quartile benchmark for debt service coverage ratio indicates that the Water System generates adequate revenue to appropriately service its long-term debt.

REAL LOSSES PER TOTAL WATER INTRODUCED TO THE SYSTEM

This metric measures the total amount of system wide water leakage and illustrates both system efficiency and reliability.

Real Losses per Total Water Introduced to System (%)



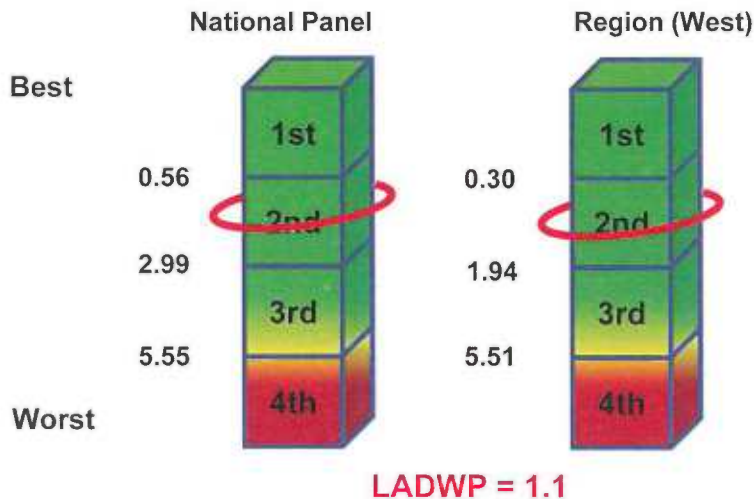
Metric Significance: MEDIUM

- This metric benchmarks in the 2nd and 3rd quartile and shows that the Water System losses are roughly in-line with the median of the peer set.

TOTAL UNPLANNED SERVICE DISRUPTIONS PER CUSTOMER

This metric measures the total number of Unplanned Service Disruptions or “incidents” per 1,000 customers. This metric is not a measure of the total number of customers impacted per service disruption.

Total Unplanned Service Disruptions per Customer
(Disruption/1,000 Customers)

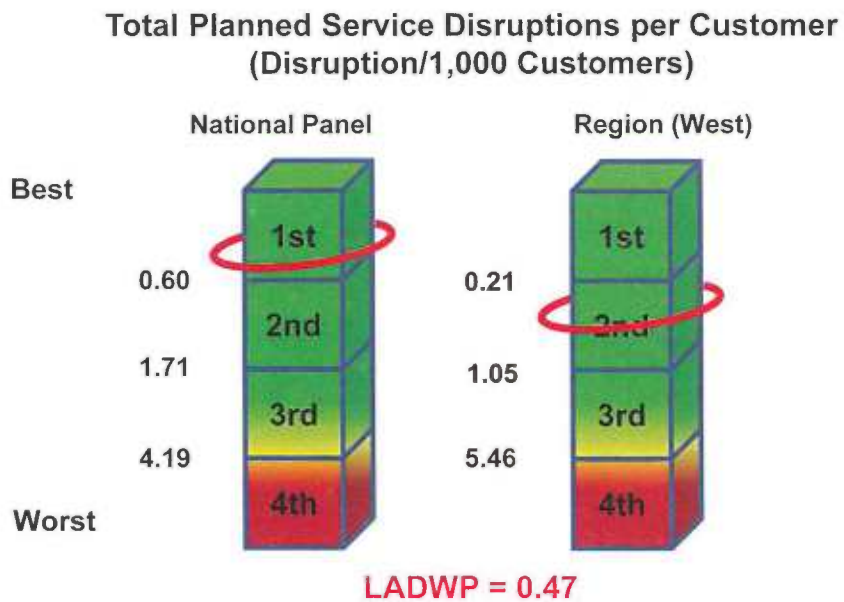


Metric Significance: HIGH

- LADWP 2nd quartile result is a favorable benchmark relative to both National and Western Regional peers.
- This metric is one of the most critical measures of reliability for the Water System as it measures unexpected service disruptions.

TOTAL PLANNED SERVICE DISRUPTIONS PER CUSTOMER

This metric measures the total number of Planned Service Disruptions or “incidents” per 1,000 customers. This metric is not a measure of the total number of customers impacted per service disruption.



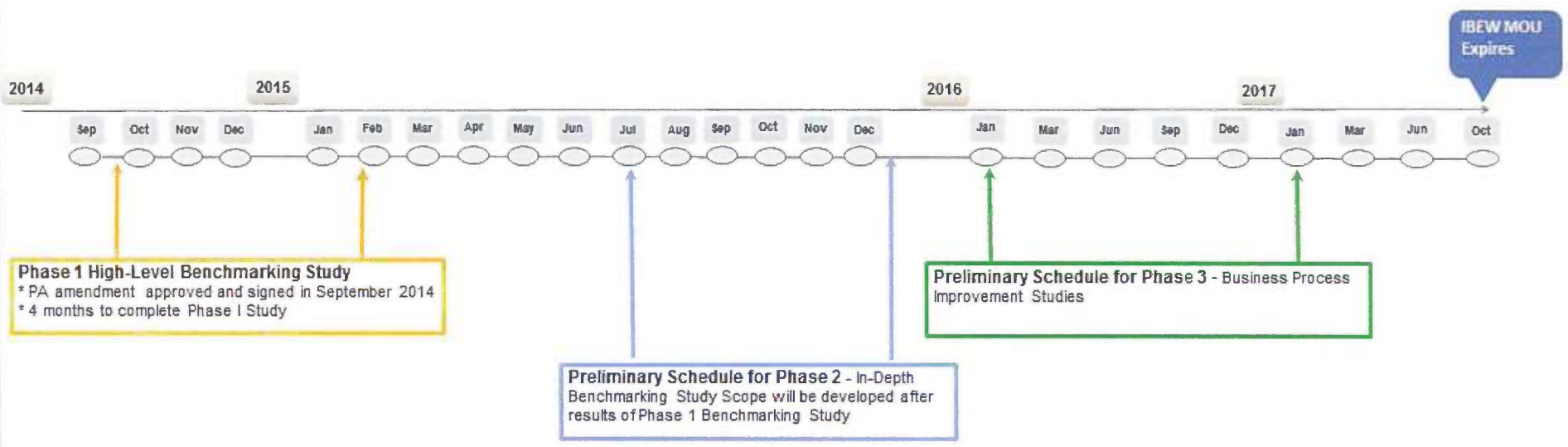
Metric Significance: MEDIUM

- LADWP's 1st and 2nd quartile results are favorable benchmarks relative to National and Western Regional peers, respectively.
- As water infrastructure programs ramp up, this metric could be impacted.

NEXT STEPS

- Following the Board presentation and under the direction of the GM, LADWP's Corporate Performance Division will conduct a City-wide stakeholder outreach campaign.
- The campaign will be designed to inform stakeholders and solicit feedback to identify areas for more in-depth analysis under Phase II of the Benchmarking Study.
- In parallel with the campaign, the following action items will be initiated based on Phase I findings with an emphasis on those metrics which fell into the 4th quartile and as part of the Phase II Study:
 - **Energy Losses**: Retain 3rd party consultant to assist LADWP staff in identifying and implementing measures to substantially reduce system-wide energy losses
 - **Uncollectible Accounts**: Retain 3rd party consultant to cost effectively assist LADWP staff in identifying and collecting outstanding funds owed in a timely manner.
 - **Distribution O&M**: Perform a more extensive analysis of Distribution O&M as part of the Phase II Benchmarking Study. This should include the impacts of proposed higher, Distribution System related capital investments.
 - **Customer Service Costs**: Evaluate resource levels, including differing strategies that are used by IOUs and POUs. Identify areas with the highest potential for cost effective changes that will improve Customer Service.
 - **Administrative and General**: As part of the Phase II study, conduct an enterprise-wide examination of labor and benefit costs including the Administrative and General function. The ultimate goal will be to identify specific areas/process with the highest potential for improvement and/or cost savings.

BENCHMARKING SCHEDULE

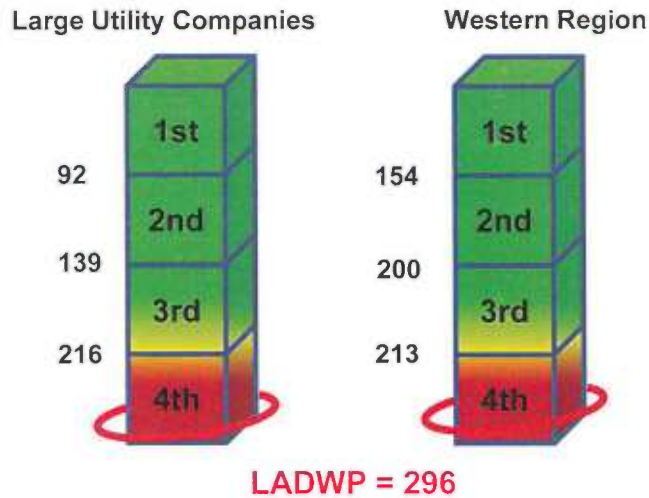


RPA REQUESTED BENCHMARKS

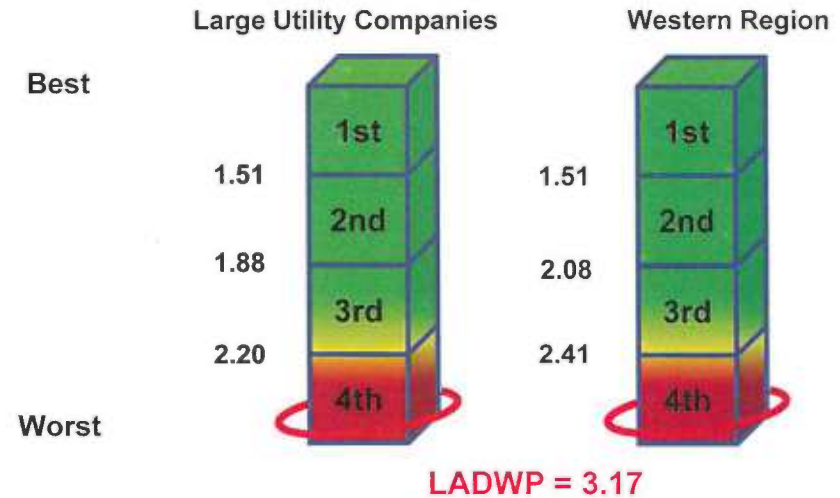
POWER O&M PAYROLL DOLLARS

These metrics are designed to measure the total amount of payroll spent per customer and per total assets.

Power O&M Payroll Dollars per Customer (\$/Customer)



Power O&M Payroll Dollars per Total Assets (%)

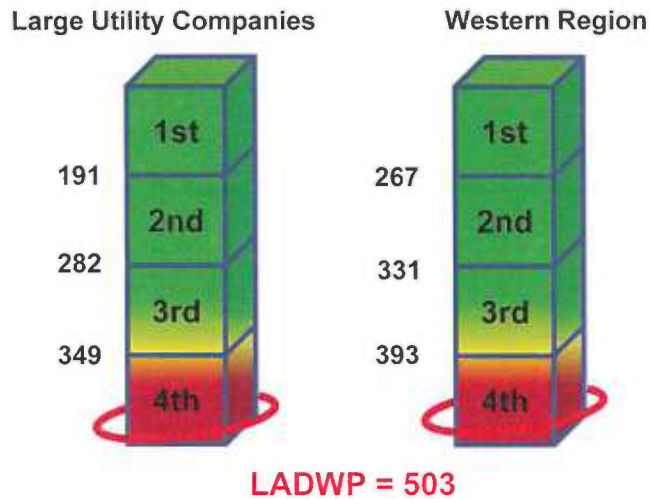


TOTAL POWER PAYROLL DOLLARS

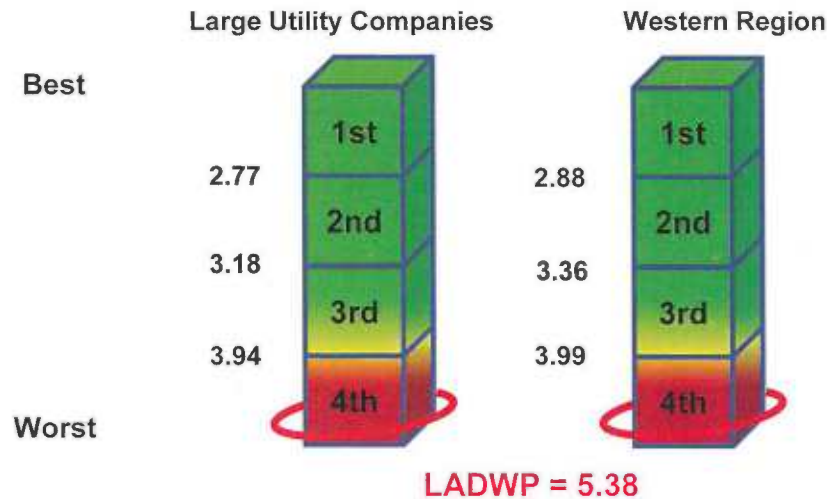
(LADWP BENCHMARK IS POWER CAPITAL AND O&M ONLY)

These metrics are designed to measure the total amount of Power payroll spent per customer and per total assets.

Total Power Payroll Dollars per Customer (\$/Customer)



Total Power Payroll Dollars per Total Assets (%)

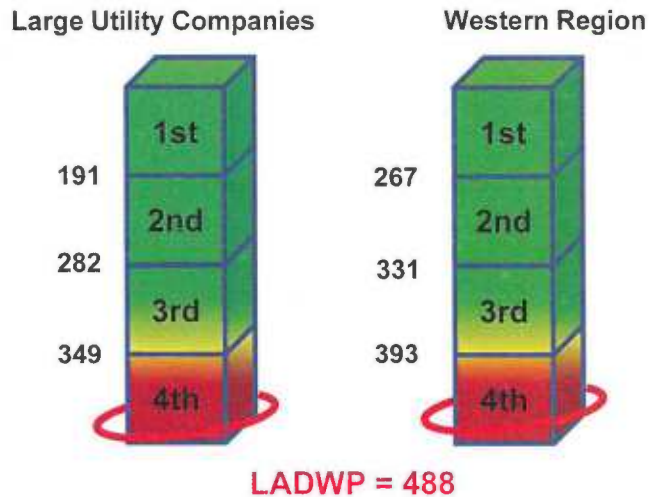


TOTAL PAYROLL DOLLARS

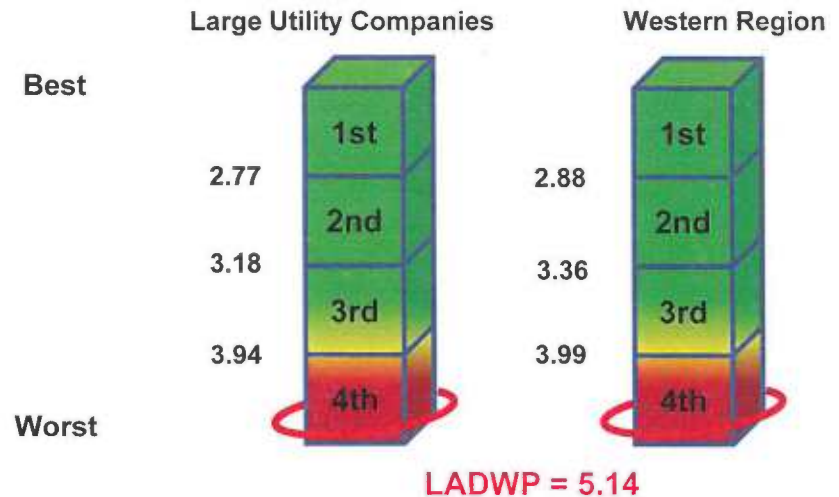
(LADWP BENCHMARK IS POWER AND WATER COMBINED)

These metrics are designed to measure the total amount of payroll spent per customer and per total assets.

Total Payroll Dollars per Customer (\$/Customer)



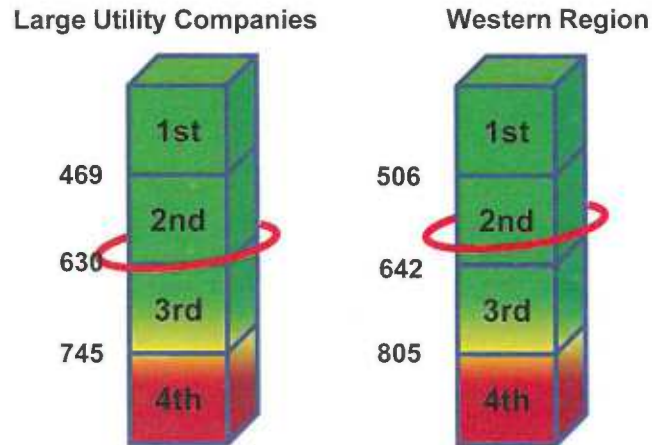
Total Payroll Dollars per Total Assets (%)



O&M

These metrics measure the total electric utility operation and maintenance costs (including labor, benefits and A&G) to the total number of ultimate customers and to the total number of megawatt hours sold.

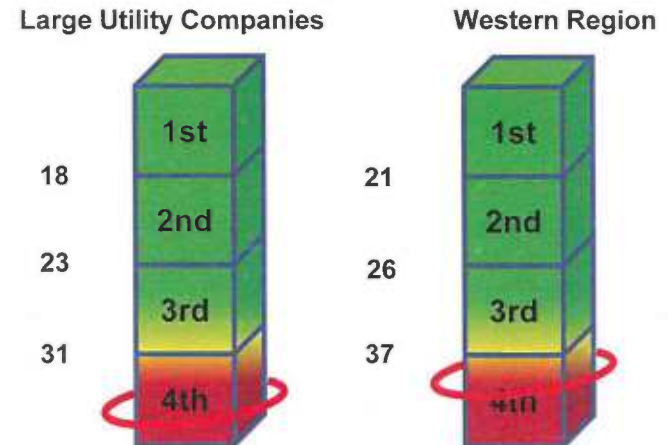
O&M per Customer (\$/Customer)



LADWP = 625

O&M per MWh Sold (\$/MWh)

Best

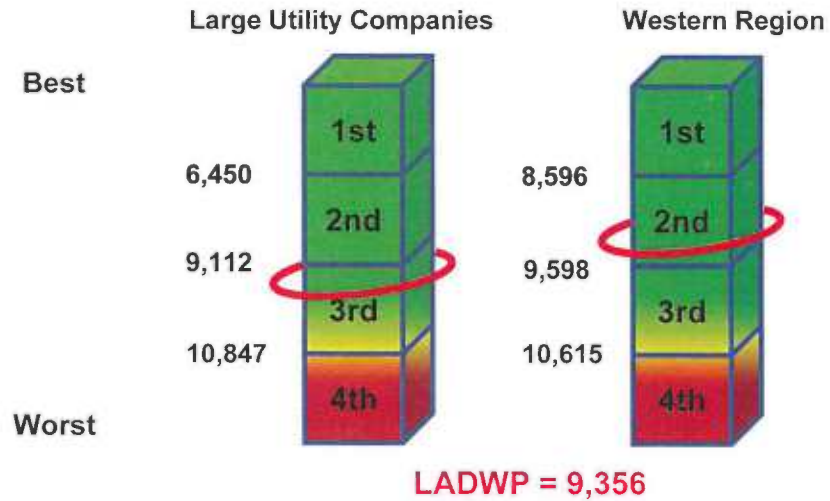


Worst

LADWP = 39

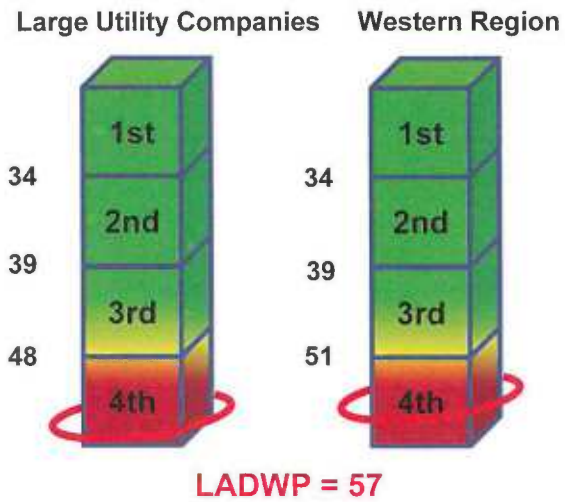
TOTAL ASSETS

Total Assets per Customer (\$/Customer)

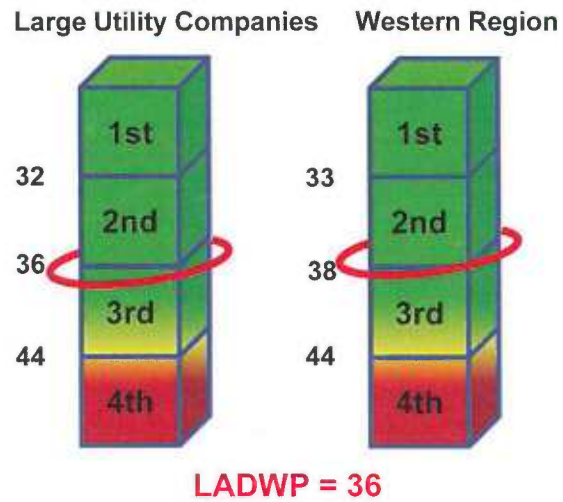


SALES

Production & Power Purchases Expense per Total Retail Sales (\$/MWh)



Residential Sales per Total Retail Sales (%)



MWh Sold per Customer (MWh/Customer)

