



Pasadena Water & Power

PWP 2015 Power IRP Attachment 2

Bill Impact Analysis



What Portion of PWP Costs Are We Addressing in the IRP?



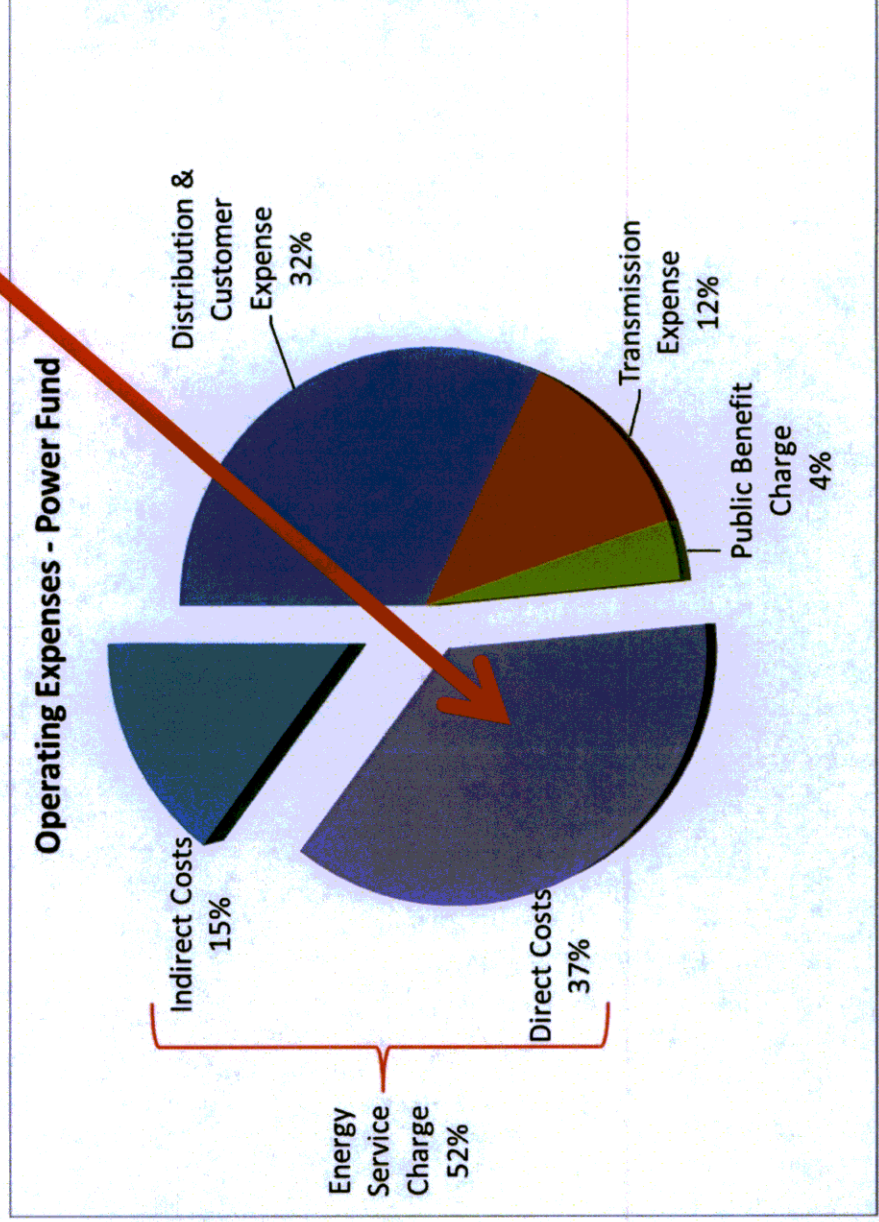
Pasadena Water & Power

The IRP Modeling addresses only the **Direct Cost** component of the **Energy Service Charge**.

Analyses of the economic impact of various alternatives under the IRP on customer rates/bills assume that **all other components of the power bill and rate structure remain unchanged from FY2017.**

It is reasonable to assume that there will be increases in these other components as well over the next 20 years.* It is very difficult to accurately predict all components of rates over a 20 year horizon.

* For example, the CAISO is forecasting significant increases in its transmission access charge.



PASADENA



Estimated Impact of Direct Electricity Cost Only – Monthly Residential Bill (by Usage)

Pasadena Water & Power

Assumes no changes to other cost components or rate structure from FY 2017 approved rates

Portfolio	Portfolio Name	500 kWh	1000 kWh
	Current Annual Average Monthly Bill – As of March 2015	\$84.95	\$189.78
	20-Year Levelized (2015\$)		
1	Stay the Course (Preferred Portfolio) Economic IPP Dispatch + carbon premium 40% RPS by 2020	\$96.31	\$216.03
2	Reduced IPP Output Reduce IPP to Min starting in 2015 40% RPS by 2020	\$100.77	\$224.93
3	Blended – 50% RPS Reduce IPP to Min starting in 2015 50% RPS by 2025 (Solar/Wind/Base Mix)	\$102.01	\$227.42
4	Blended – 70% RPS Reduce IPP to Min starting in 2015 50% RPS by 2025 & 70% by 2030 (Solar/Wind/Base Mix)	\$103.47	\$230.34
5	Carbon (GHG) Neutral Starting in 2015: Reduce IPP to Min, no power market purchases, natural gas plants burn 100% biomethane. 50% RPS by 2025 & 100% Carbon-Free by 2030 (e.g., 88% Renewable and 12% existing large hydro/nuclear)	\$110.24	\$243.88



Estimated Impact of Direct Electricity Cost Changes on Monthly General Service Bill (by Usage)

Pasadena Water & Power

Assumes no changes to other cost components or rate structure from FY 2017 approved rates

Portfolio	Portfolio Name	2,000 kWh	10,000 kWh	50,000 kWh	100,000 kWh
Current Annual Average Monthly Bill – As of March 2015					
		\$327	\$1,664	7,563	14,875
20-Year Levelized (2015\$)					
1	Stay the Course (Preferred Portfolio) Economic IPP Dispatch + carbon premium 40% RPS by 2020	\$372	\$1,898	\$8,630	\$16,965
2	Reduced IPP Output Reduce IPP to Min starting in 2015 40% RPS by 2020	\$390	\$1,988	\$9,081	\$17,847
3	Blended – 50% RPS Reduce IPP to Min starting in 2015 50% RPS by 2025 (Solar/Wind/Base Mix)	\$395	\$2,014	\$9,208	\$18,093
4	Blended – 70% RPS Reduce IPP to Min starting in 2015 50% RPS by 2025 & 70% by 2030 (Solar/Wind/Base Mix)	\$401	\$2,043	\$9,355	\$18,382
5	Carbon (GHG) Neutral Starting in 2015: Reduce IPP to Min, no power market purchases, natural gas plants burn 100% biomethane. 50% RPS by 2025 & 100% Carbon-Free by 2030 (e.g., 88% Renewable and 12% existing large hydro/nuclear)	\$427	\$2,181	\$10,042	\$19,722



How much does the 40% RPS portfolio (above and beyond the SBX1-2 33% mandate) cost rate payers?

Pasadena Water & Power

During the last rate case, PWP explored the potential impact on rates of reducing the local RPS from 40% to the state mandated 33%. As the table below shows, the savings would be very small.

Reduce Renewable Portfolio Standard from 40% to 33%	Fiscal Year 2015	Fiscal Year 2016	Fiscal Year 2017	Fiscal Year 2018
System Average Rate per kWh	16.150¢	17.120¢	18.030¢	18.030¢
Change in ¢ per kWh	n/a	(0.035¢)	(0.027¢)	(0.053¢)
New System Average Rate per kWh	16.150¢	17.085¢	18.003¢	17.977¢
<u>Annual Savings for 500 kWh per month Customer</u>	n/a	\$2.10	\$1.58	\$3.18
<u>Annual Savings for 1000 kWh per month Customer</u>	n/a	\$4.20	\$3.24	\$6.36
<u>Annual Savings for 10,000 kWh per month Customer</u>	n/a	\$42.00	\$32.40	\$63.60
<u>Annual Savings for 100,000 kWh per month Customer</u>	n/a	\$420.00	\$320.40	\$636.00



Pasadena Water & Power

FROM RATE PROCEEDING:

IMPACT OF OTHER COST COMPONENTS ON RATES

PASADENA



Current Rate Structure – FY2015

Pasadena Water & Power

FY 2015 PWP Rates

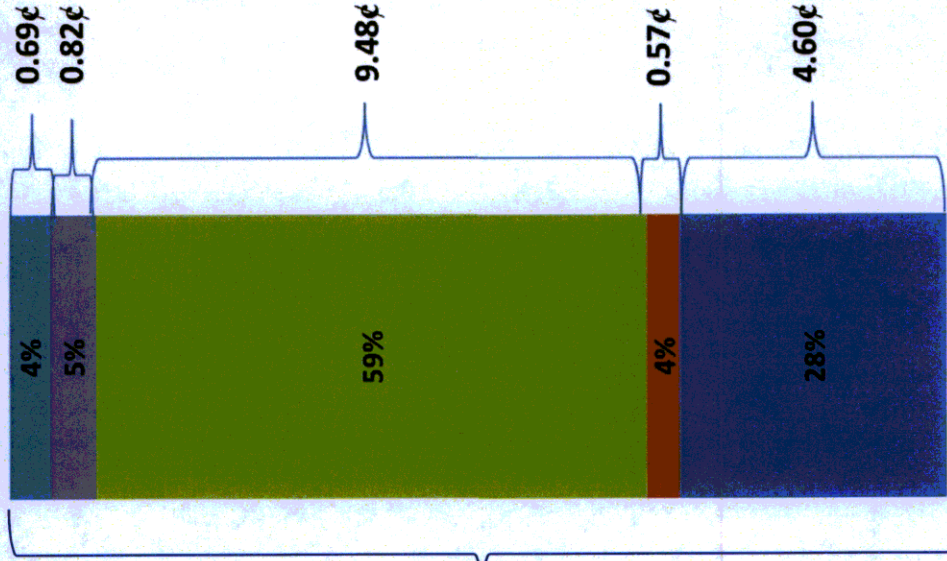
Public Benefits Charge (PBC)

Transmission (TSC)

Energy (ESC)

Customer

Distribution



Public Benefits Charge:

- Rebate programs
- Assistance programs

Transmission Services Charge:

- Operations, maintenance and portion of capital costs for transmission assets

Energy Services Charge:

- Debt Service for GT5 project
- Renewable energy premiums
- Cap and trade program
- Market gas and energy purchases

Distribution and Customer Charges:

- Call center, billing, customer service
- Distribution system operations and maintenance
- Debt service
- PAYGO for capital investment

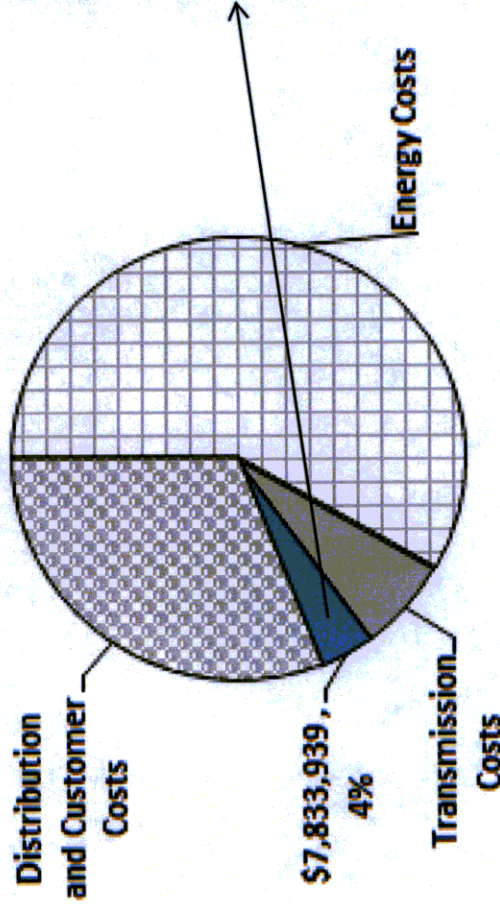
PASADENA



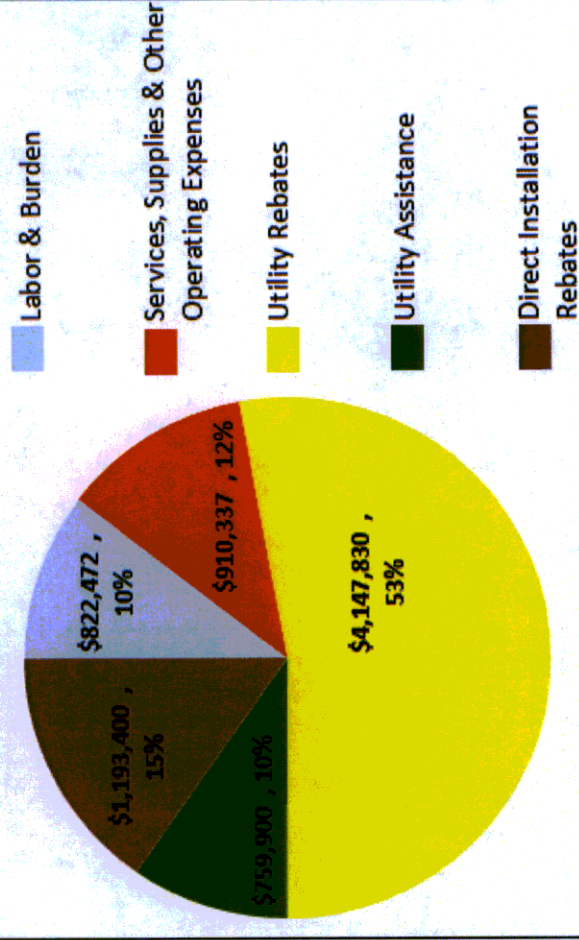
PBC Charge (Adjusted by formula)

Pasadena Water & Power

Electric System Revenue Requirement: Major Cost Type (2015)



Major Components of PBC Costs FY2015



PBC FTE: 7.25

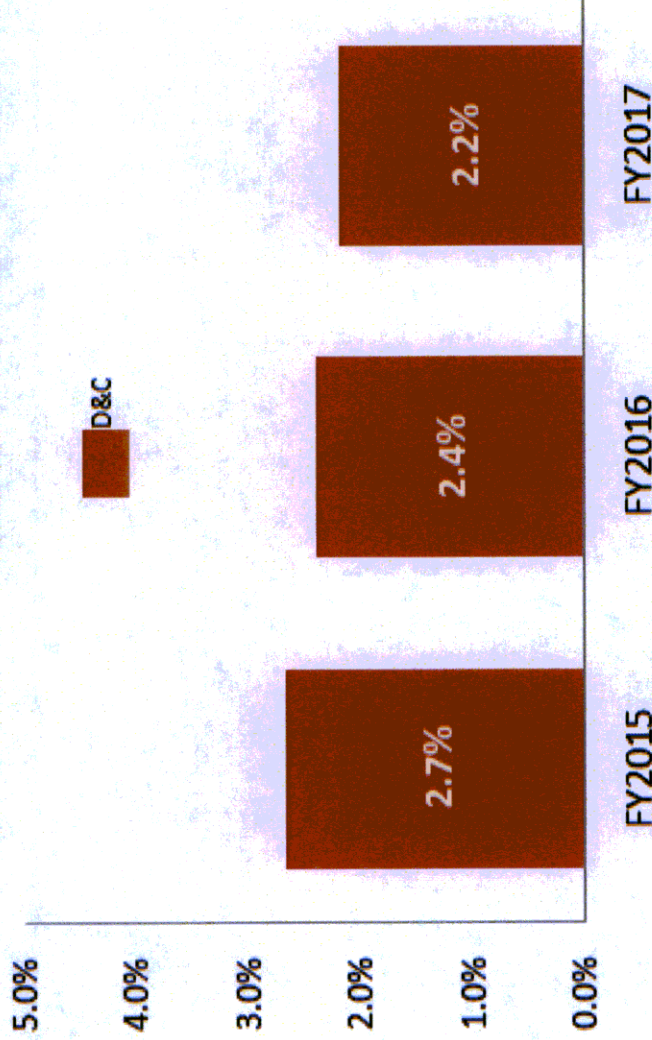
PASADENA



Most Recent Rate Adjustments: Distribution and Customer Charges

Pasadena Water & Power

System Average Increases



Net Revenue Increases from Rate Adjustments

	FY2015	FY2016	FY2017
Customer	\$510,517	\$481,425	\$461,345
Distribution	\$3,940,515	\$3,911,846	\$3,923,247
Total	\$4,451,032	\$4,393,271	\$4,384,593

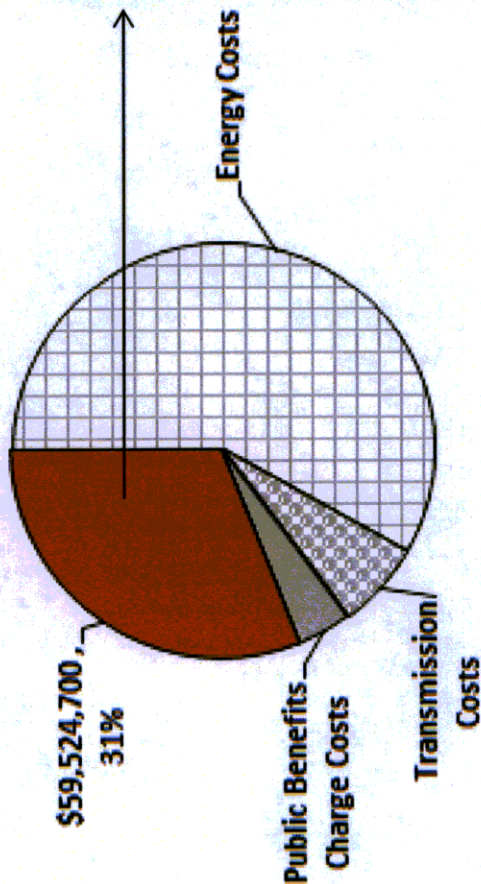
PASADENA



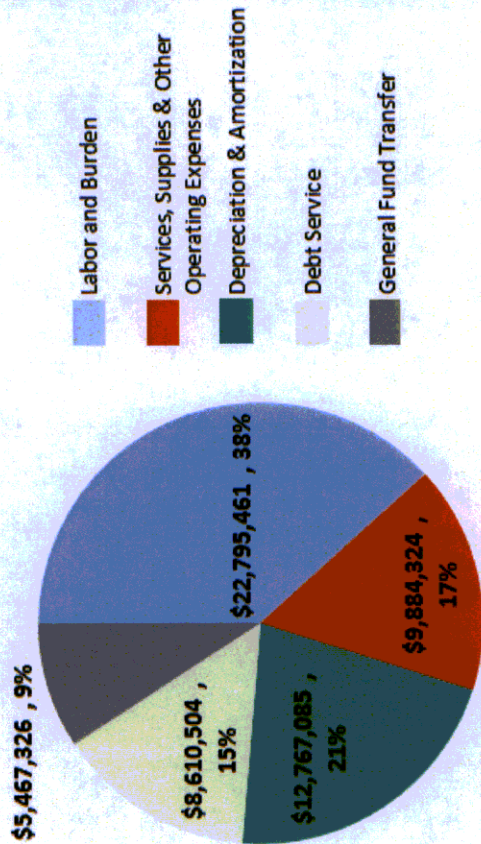
Distribution and Customer Charges

Pasadena Water & Power

Electric System Revenue Requirement: Major Cost Type (2015)



Major Components of Distribution & Customer Charges FY2015



Number of Full Time Equivalent employees:

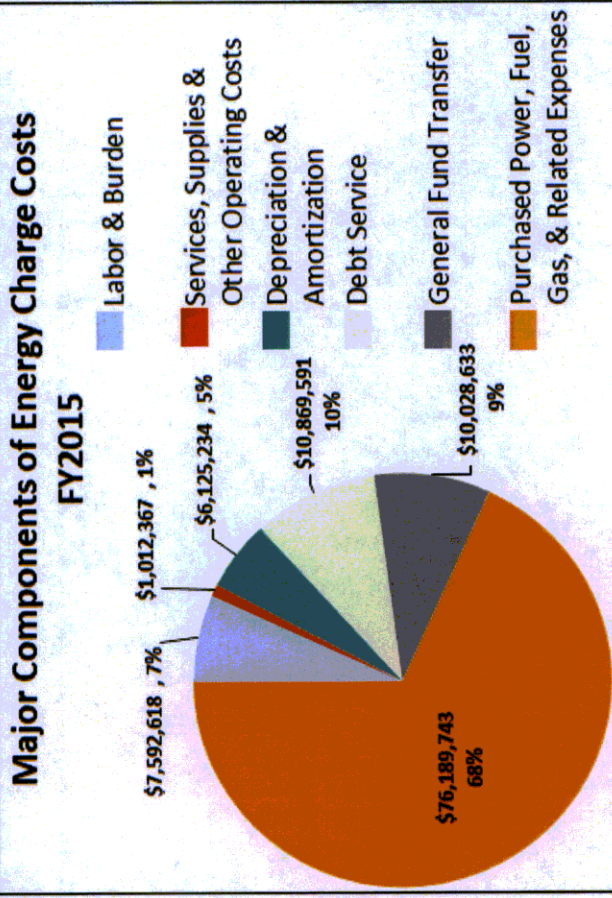
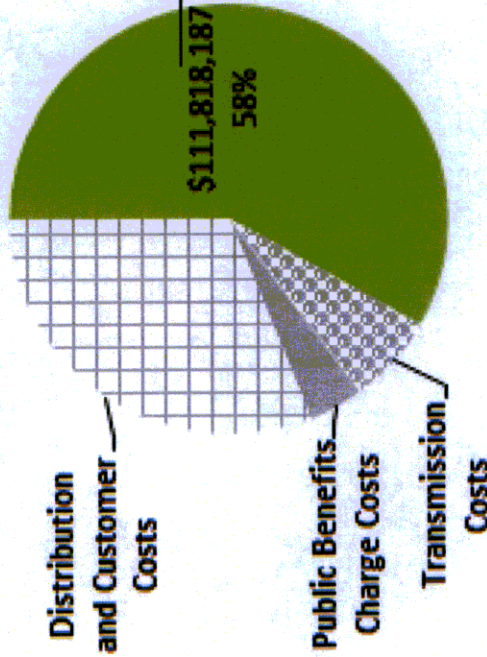
Distribution Operations & Maintenance FTE:	97.2
Distribution Capital FTE:	74.3
Customer FTE:	32.3
Administrative FTE:	<u>39.0</u>
Total FTE	242.8



Energy Charge (Adjusted by formula)

Pasadena Water & Power

Electric System Revenue Requirement: Major Cost Type (2015)



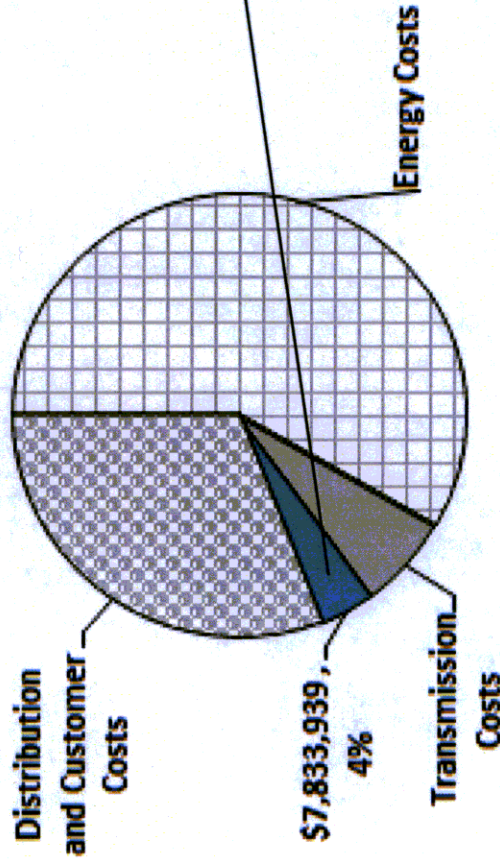
Power Supply FTE: 52



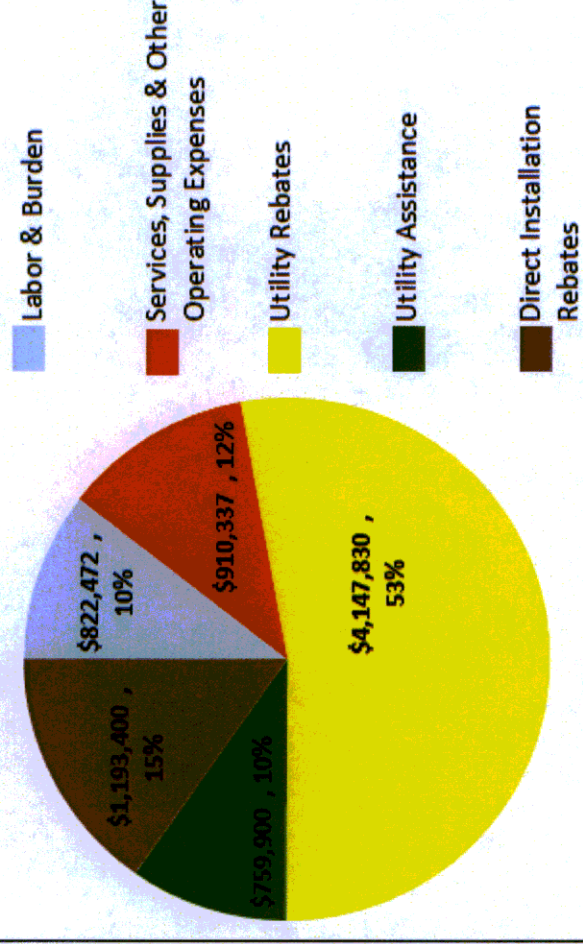
PBC Charge (Adjusted by formula)

Pasadena Water & Power

Electric System Revenue Requirement: Major Cost Type (2015)



Major Components of PBC Costs FY2015



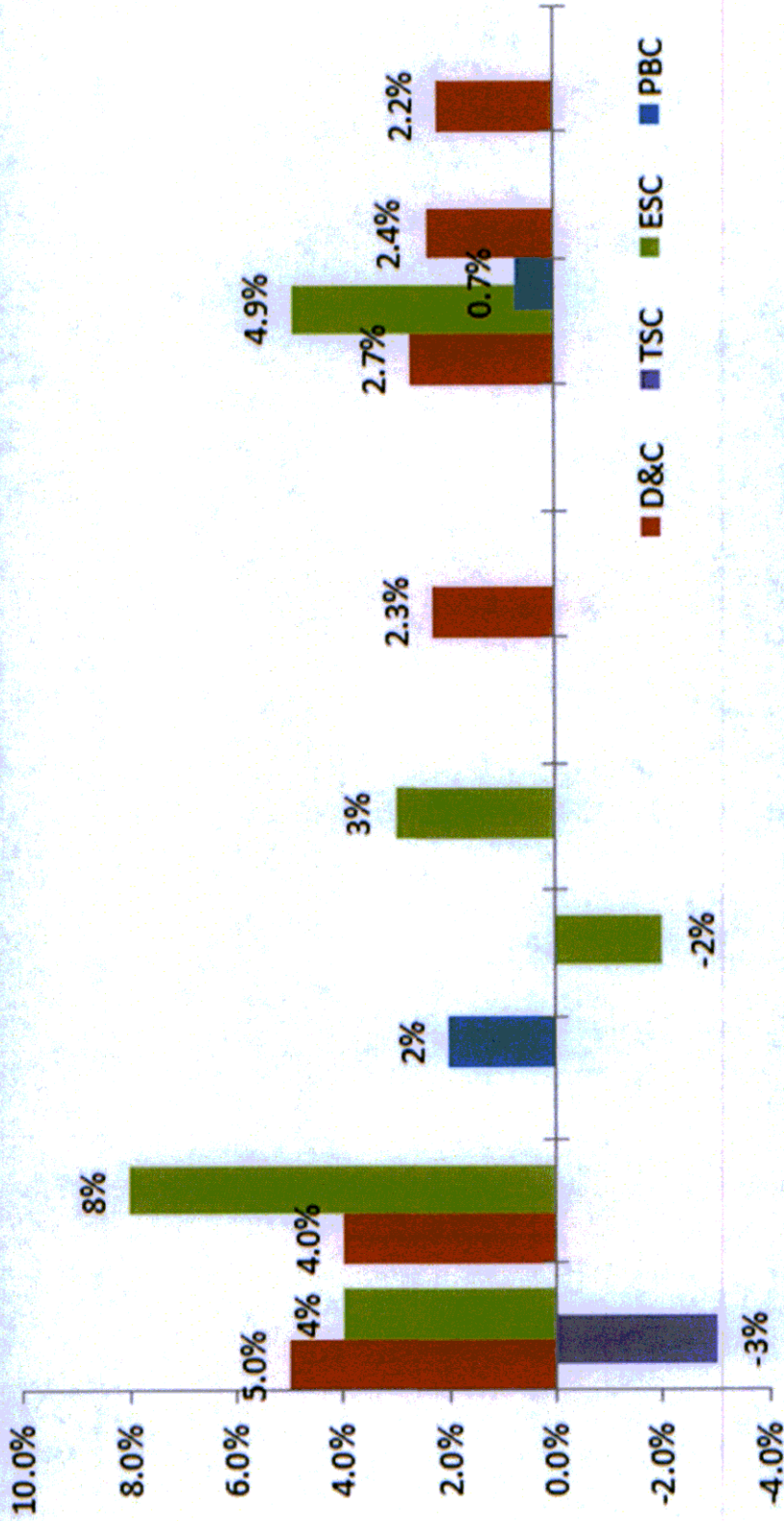
PBC FTE: 7.25

PASADENA



Recent Rate Actions

Pasadena Water & Power



FY2007 FY2008 FY2009 FY2010 FY2011 FY2012 FY2013 FY2014 FY2015 FY2016 FY2017

D&C = Distribution & Customer Charge
 TSC = Transmission Service Charge
 ESC = Energy Service Charge
 PBC = Public Benefits Charge

PASADENA