



Pasadena Water & Power

PWP 2015 Power IRP Exhibit 10

Bill Impact Analysis





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

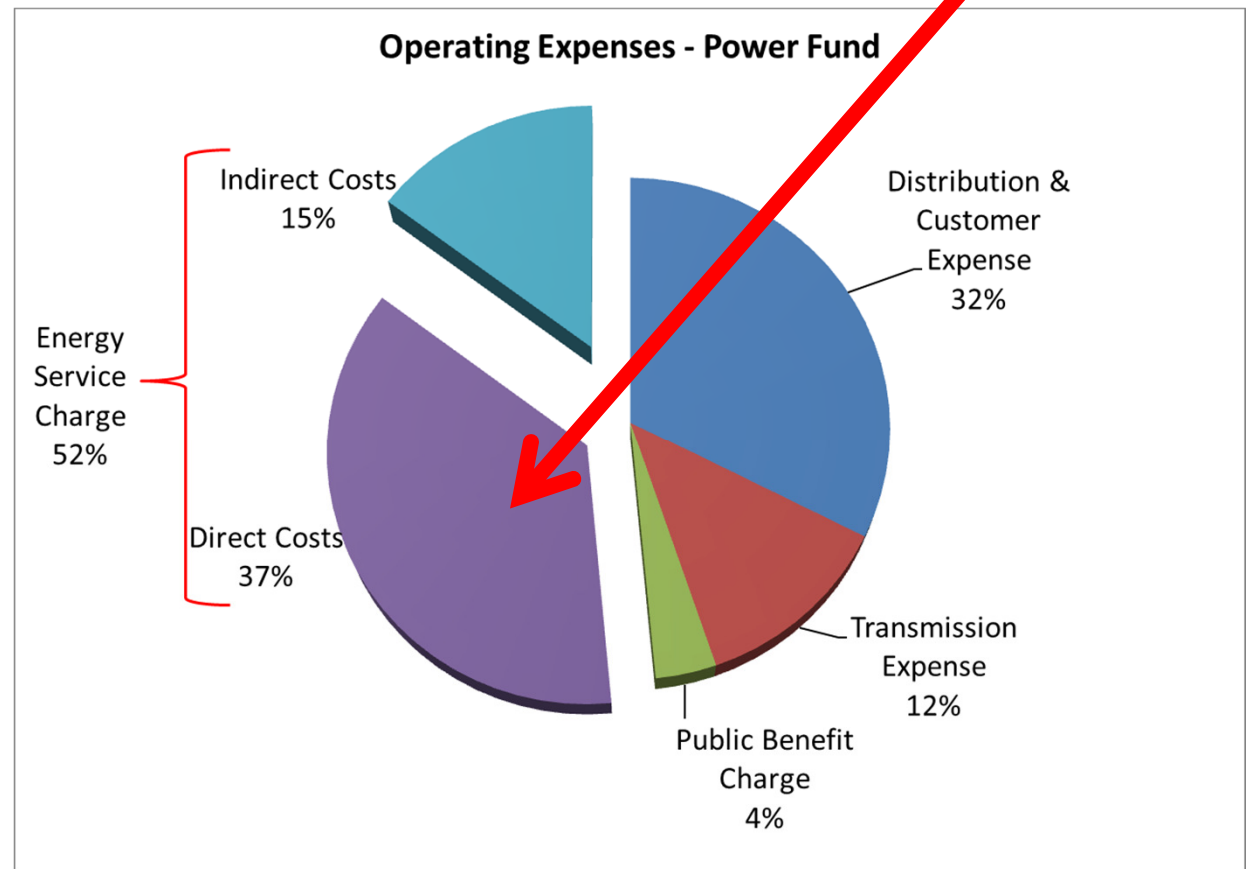
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The IRP Modeling addresses only the **Direct Cost** component of the **Energy Service Charge**.

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.





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

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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)

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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?

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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</u> Savings for 500 kWh per month Customer	n/a	\$2.10	\$1.58	\$3.18
<u>Annual</u> Savings for 1000 kWh per month Customer	n/a	\$4.20	\$3.24	\$6.36
<u>Annual</u> Savings for 10,000 kWh per month Customer	n/a	\$42.00	\$32.40	\$63.60
<u>Annual</u> Savings for 100,000 kWh per month Customer	n/a	\$420.00	\$320.40	\$636.00



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FROM RATE PROCEEDING:

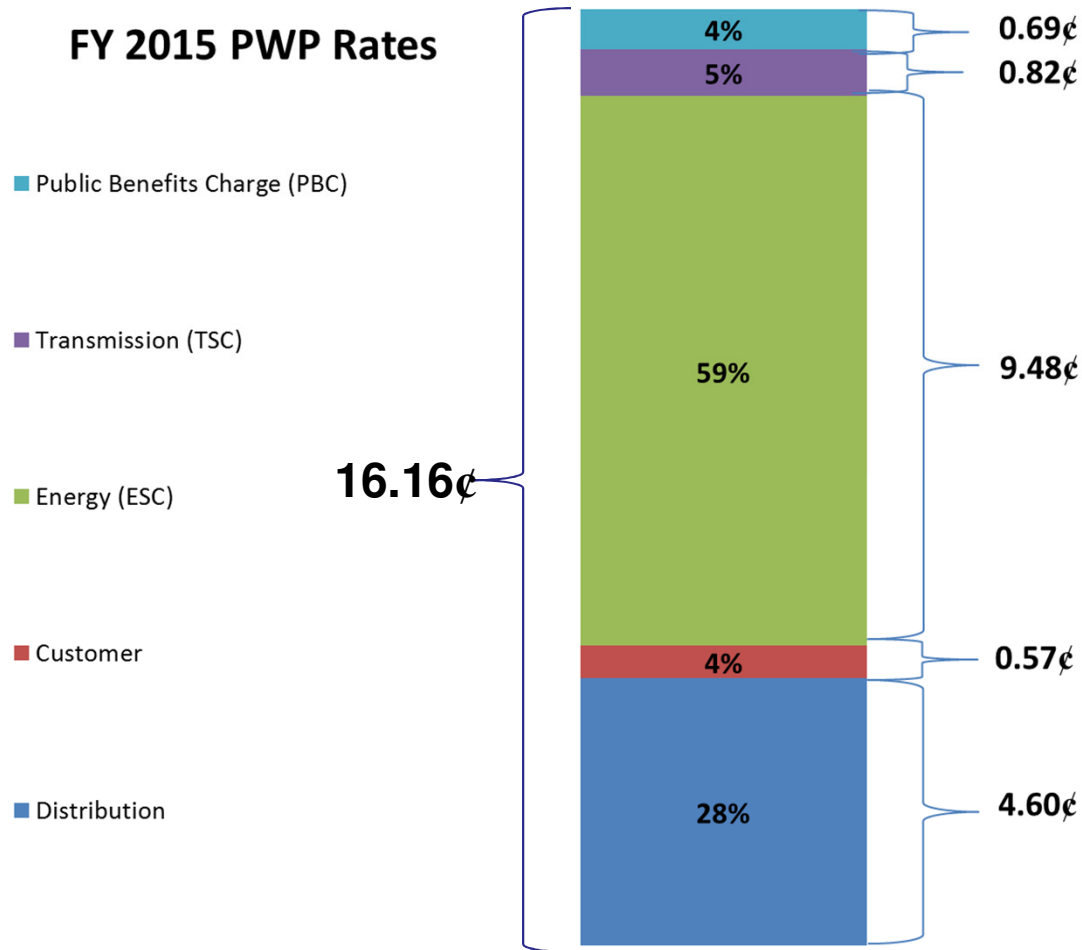
IMPACT OF OTHER COST COMPONENTS ON RATES



Current Rate Structure – FY2015

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FY 2015 PWP Rates



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:

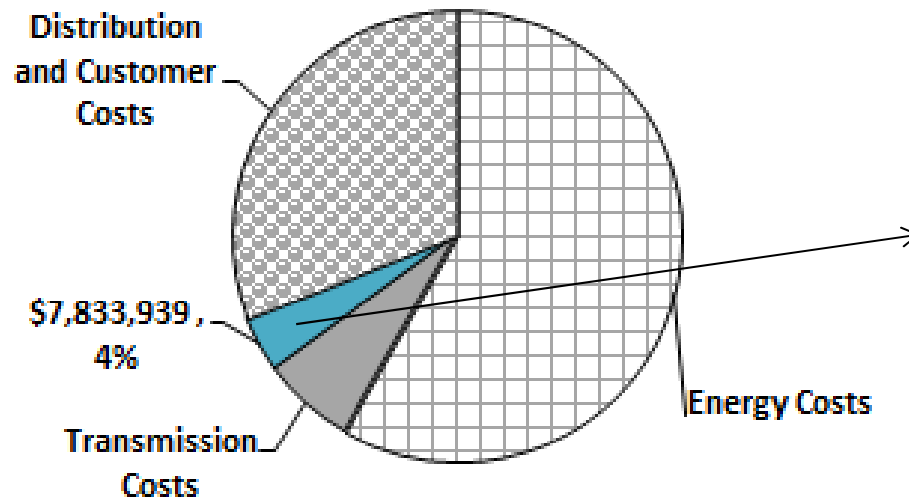
- Call center, billing, customer service
- Distribution system operations and maintenance
- Debt service
- PAYGO for capital investment



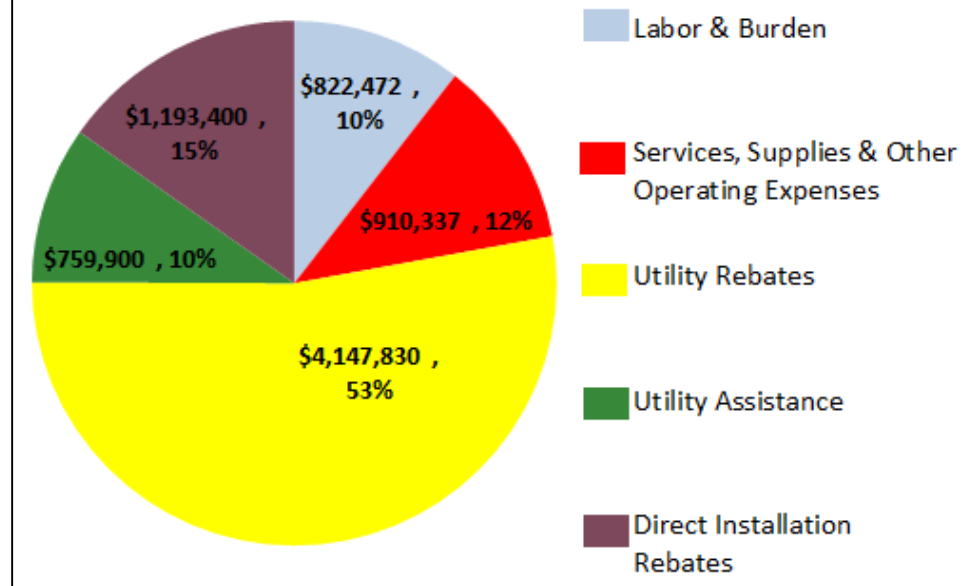
PBC Charge (Adjusted by formula)

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Electric System Revenue Requirement: Major Cost Type (2015)



Major Components of PBC Costs FY2015



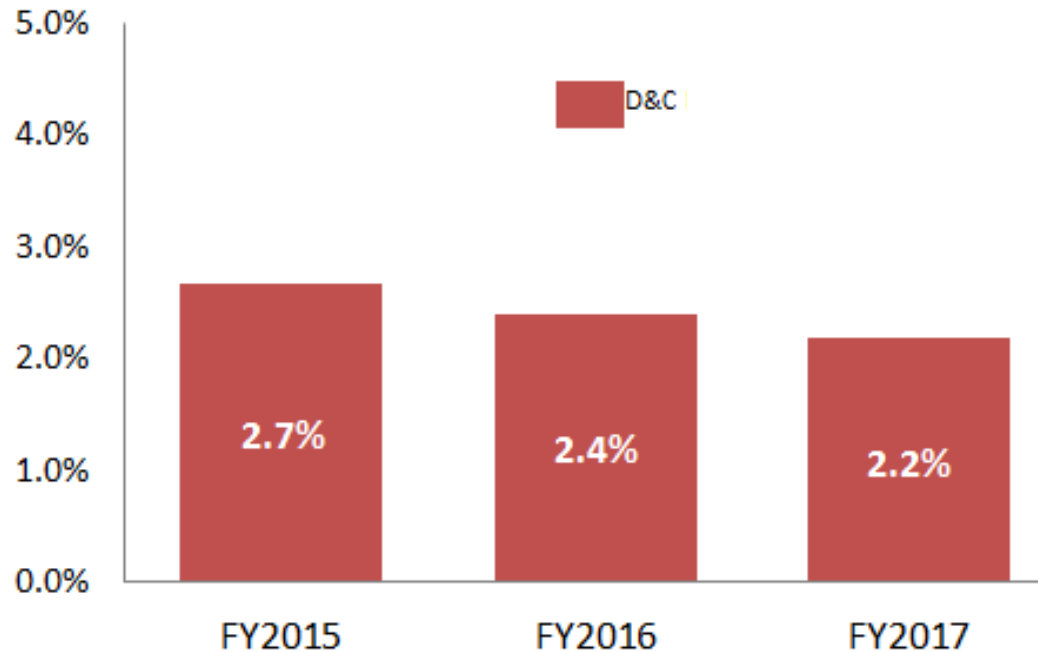
PBC FTE: 7.25



Most Recent Rate Adjustments: Distribution and Customer Charges

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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
	<u>\$4,451,032</u>	<u>\$4,393,271</u>	<u>\$4,384,593</u>

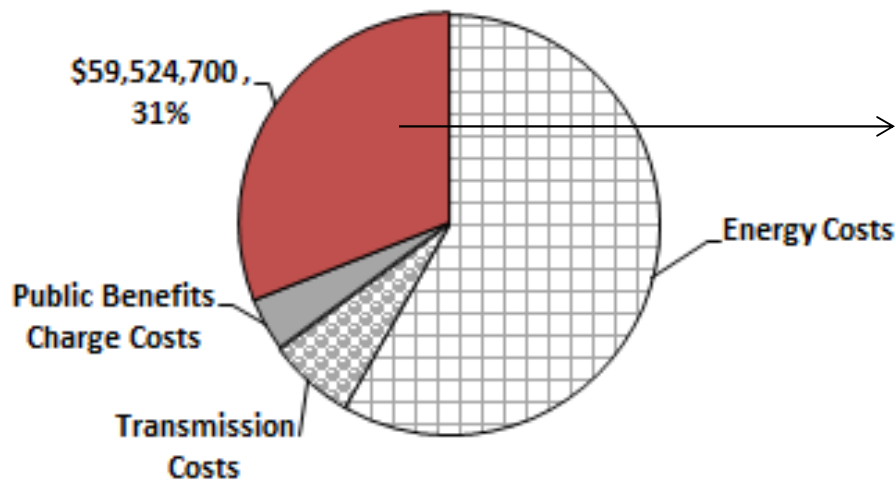
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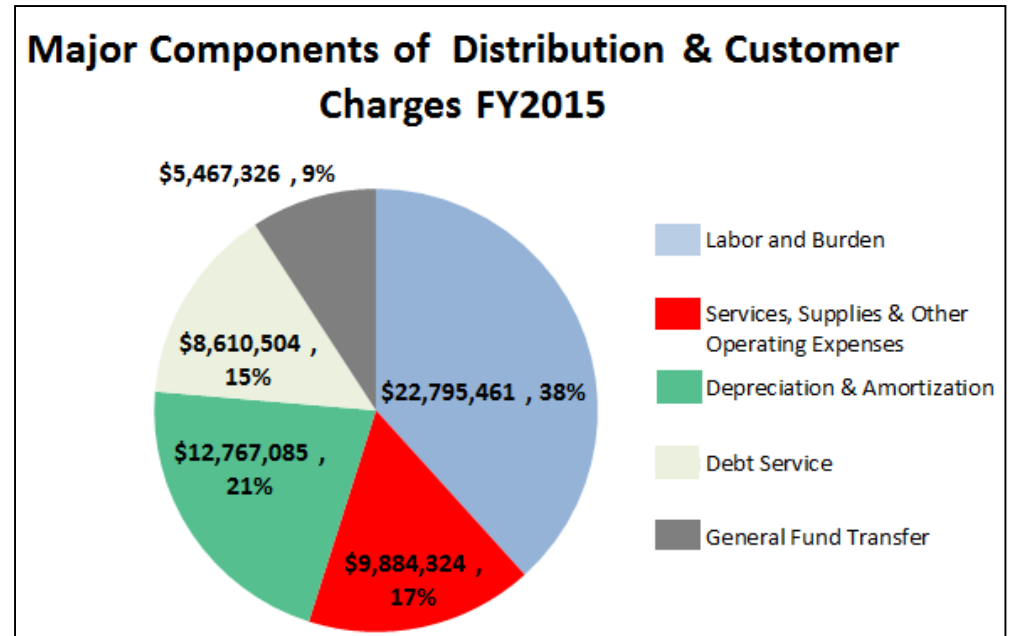
Distribution and Customer Charges

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**Electric System Revenue Requirement:
Major Cost Type (2015)**



Major Components of Distribution & Customer Charges FY2015



Number of Full Time Equivalent employees:

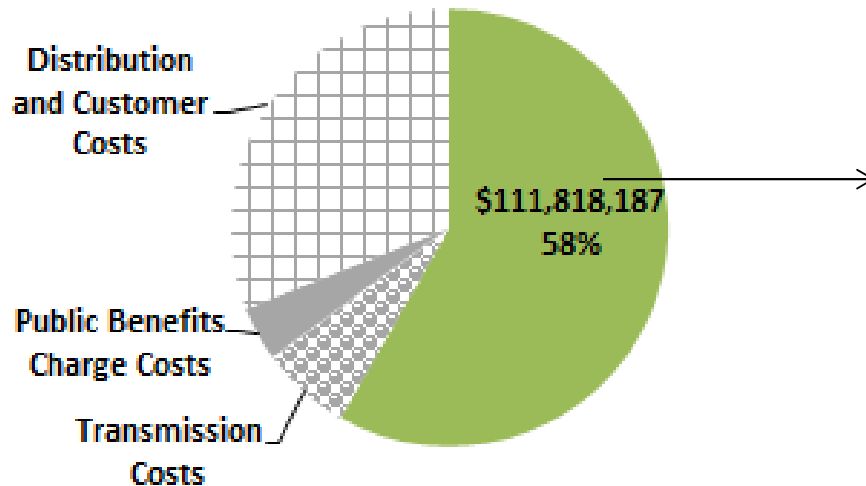
Distribution Operations & Maintenance FTE:	97.2
Distribution Capital FTE:	74.3
Customer FTE:	32.3
Administrative FTE:	<u>39.0</u>
Total FTE	242.8



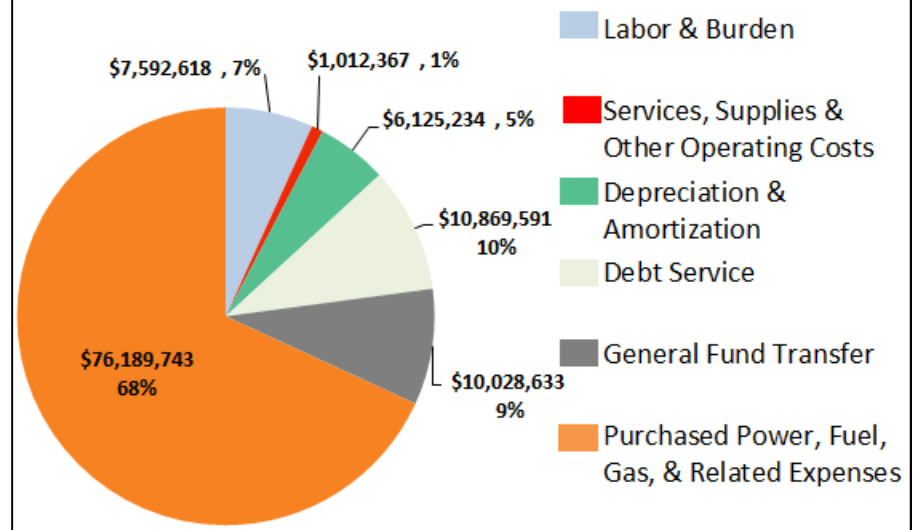
Energy Charge (Adjusted by formula)

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Electric System Revenue Requirement: Major Cost Type (2015)



Major Components of Energy Charge Costs FY2015



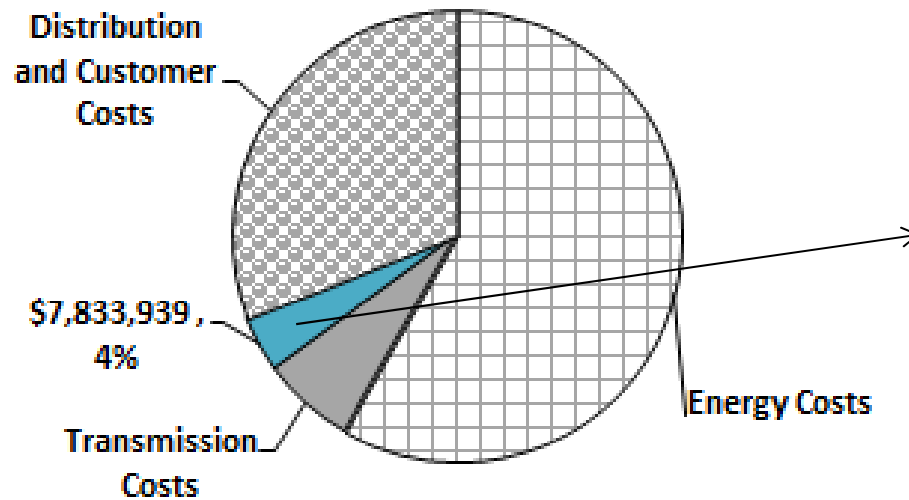
Power Supply FTE: 52



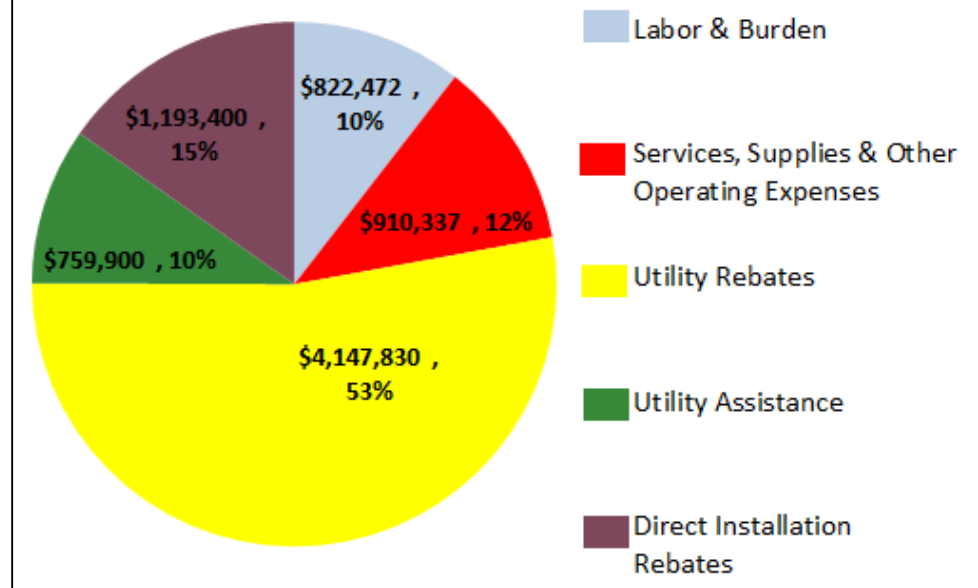
PBC Charge (Adjusted by formula)

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Electric System Revenue Requirement: Major Cost Type (2015)



Major Components of PBC Costs FY2015

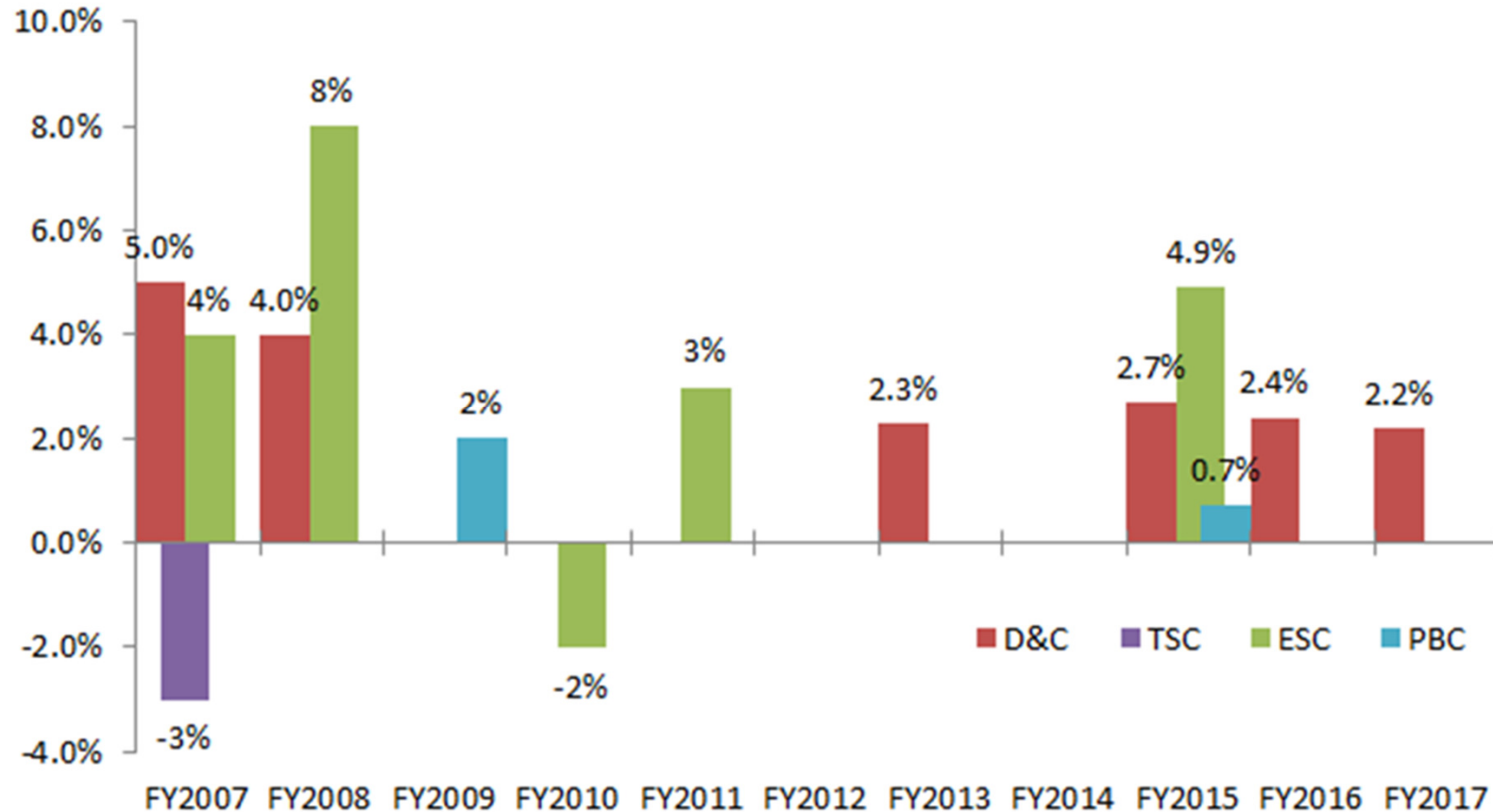


PBC FTE: 7.25



Recent Rate Actions

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