

# [ The Business of Utilities ]

APPA Institute for Facilities Management  
February 2020

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Jeff Zumwalt



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# [ AIA Information ]

Credit(s) earned on completion of this course will be reported to American Institute of Architects (AIA) Continuing Education Session (CES) for AIA members.

Certificates of Completion for both AIA members and non-AIA members are available upon request.

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Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.



AIA  
Continuing  
Education  
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# [ Overview ]

- Example of how utility companies make money
- Review a sample utility bill and tariff
- Discuss strategies to reduce utility expenses



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## [ Revenue ]

- **Rate base** – amount invested in the “system” by utility company
- **Rate of return** – the percentage the utility company earns on the rate base



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## [ Expenses ]

- **Variable expenses** – fuel, maintenance, chemicals, etc.
- **Fixed expenses** – debt service, rent, insurance, dues, etc.



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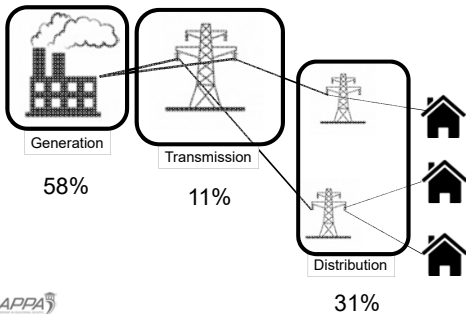
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## [ Cost Breakdown ]



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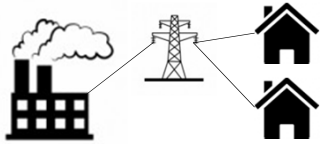
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# [ APPA Electric Co. ]



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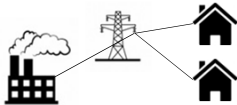
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# [ APPA Electric Co. ]

Rate base: \$100M

- 10% Rate of return: \$10M
- Variable expenses: \$7M
- Total Cost Recovery: \$17M



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# [ APPA Electric Bill ]



Facilities Management  
721 Main Street  
Orlando, FL

Rate	5A
Service Charge	\$4,000,000
Demand Charge @ \$10/kW	\$6,000,000

Energy Charge	
On-Peak Energy Charge @ \$0.09/kWh	\$4,000,000
Off-Peak Energy Charge @ \$0.06/kWh	\$2,500,000

Power Factor Charge	\$500,000
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Total	\$17,000,000
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# [ APPA Electric Bill ]



Facilities Management  
721 Main Street  
Orlando, FL

Rate	SA
Service Charge	\$4,000,000
Demand Charge @ \$10/kW	\$6,000,000
Energy Charge	
On-Peak Energy Charge	\$4,000,000
Off-Peak Energy Charge	\$2,500,000
Power Factor Charge	\$500,000
<b>Total</b>	<b>\$17,000,000</b>

The Service and Demand Charges recover the fixed costs of providing service to this customer class

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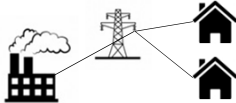
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# [ APPA Electric Co. ]

Rate base: \$100M



- 10% Rate of return: \$10M
- Variable expenses: \$7M
- Total Cost Recovery: \$17M

Customer Bills  
▪ Fixed revenue: \$10M



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# [ APPA Electric Bill ]



Facilities Management  
721 Main Street  
Orlando, FL

Rate	SA
Service Charge	\$4,000,000
Demand Charge	\$6,000,000
Energy Charge	
On-Peak Energy Charge @ \$0.09/kWh	\$4,000,000
Off-Peak Energy Charge @ \$0.06/kWh	\$2,500,000
Power Factor Charge	\$500,000
<b>Total</b>	<b>\$17,000,000</b>

Energy and Power Factor Charges recover the variable costs – the cost to make the power

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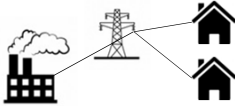
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# [ Ideal Rate Structure ]

Rate base: \$100M



- 10% Rate of return: \$10M
- Variable expenses: \$7M
- Total Cost Recovery: \$17M

### Customer Bills

- Fixed revenue: \$10M
- Variable revenue: \$7M
- Total Revenue: \$17M

- Revenue: \$17M
- Operating expenses: (\$7M)
- Interest expense: (\$4M)
- Company Profit: \$6M




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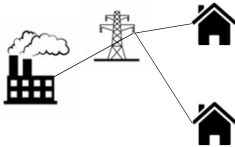
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# [ Typical Rate Structure ]

Rate base: \$100M



- 10% Rate of return: \$10M
- Variable expenses: \$7M
- Total Cost Recovery: \$17M

### Customers Bills

- Fixed revenue: \$7M
- Variable revenue: \$10M
- Total Revenue: \$17M

- Revenue: \$17M
- Operating expenses: (\$7M)
- Interest expense: (\$4M)
- Company Profit: \$6M



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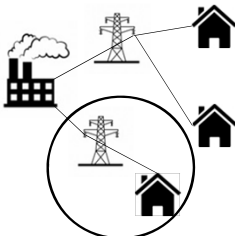
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# [ New Customer ]

Rate base: \$120M



- 10% Rate of return: \$12M
- Variable expenses: \$10M
- Total Cost Recovery: \$22M

### Customers Bills

- Fixed revenue: \$10M
- Variable revenue: \$12M
- Total Revenue: \$22M

- Revenue: \$22M
- Operating expenses: (\$10M)
- Interest expense: (\$5M)
- Company Profit: \$7M



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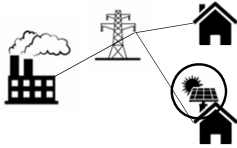
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# [ Customer Adds Renewables ]

Rate base: \$100M →

- 10% Rate of return: \$10M
- Variable expenses: \$5M
- Total Cost Recovery: \$15M



Customers Bills

- Fixed revenue: \$7M
- Variable revenue: \$6M
- Total Revenue: \$13M

- Revenue: \$13M
- Operating expenses: (\$5M)
- Interest expense: (\$4M)
- Company Profit: \$4M



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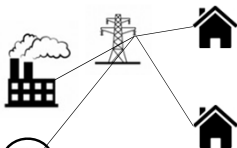
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# [ Company Adds Renewables ]

Rate base: \$120M →

- 10% Rate of return: \$12M
- Variable expenses: \$6M
- Total Cost Recovery: \$18M



Customers Bills

- Fixed revenue: \$7M
- Variable revenue: \$11M
- Total Revenue: \$19M

- Revenue: \$19M
- Operating expenses: (\$6M)
- Interest expense: (\$5M)
- Company Profit: \$8M



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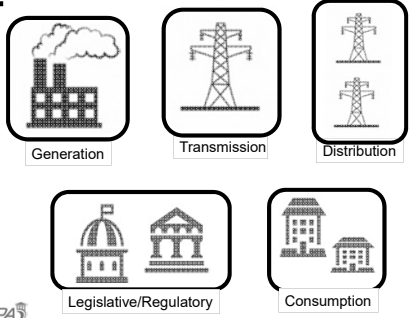
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# [ Opportunities ]



Generation      Transmission      Distribution

Legislative/Regulatory      Consumption



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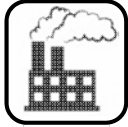
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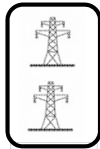
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# [ Opportunities - DIY ]



Generation

- Electricity - Cogeneration
- Electricity - Solar
- Water - University owned well



Distribution

- Electricity
- Water

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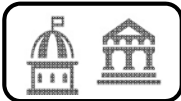
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# [ Opportunities ]



Legislative/Regulatory

- Monitor and shape new laws
- Participate in the regulatory arena
- Join a "large-user" group to share these costs



Consumption

### Demonstrate Savings

- Maintenance and operations?
- Design and Construction?
- Administration and Management?
- UEM?

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# [ The Business of Utilities ]

Questions, Comments, Observations  
Sign-in Sheet & Evaluations

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This concludes  
The American Institute of  
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 APPA

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