

Tariff Development I: Basic Ratemaking Process

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Indiana Utility Regulatory Commission

Municipal Utilities

- Any city or town that may own, operate, manage, or control any plant or equipment for providing utility service.
- Electric Utilities Regulated - Municipal
 - Municipal – 21 utilities

Municipal Utilities

- Pursuant to I.C. § 8-1.5-3-8
 - A municipal utility is required to furnish reasonably adequate services and facilities
 - The rates and charges for service rendered are to be non-discriminatory, reasonable, and just.
 - “Reasonable and just rates and charges for services” means that rates and charges produce sufficient revenue for the following:

Revenue Requirements

Municipal Utilities

- Expenses related to the operations of a municipal utility include:
 - Operation and Maintenance Expenses
 - Upkeep and Repair Costs
 - Depreciation
 - Interest Charges
 - Debt Service and Debt Service Reserve
 - Taxes
- Reasonable Return on Plant

Revenue Requirements Municipal Utilities

- Return on Plant
 - This return is in addition to the expenses related to the operation of the utility.
 - Municipal utility must request to earn a return on plant from the Commission.

Return on Plant

- Calculating a Return on Plant
 - Certain statutes limit municipal utilities to invest surplus monies into low risk or risk-free securities.
 - These securities are usually government securities such as t-bills, t-notes, and t-bonds.
 - The Commission establishes a range of return based on a moving average of such securities.
 - Currently, that range is between 4% and 6%.

Investor-Owned Utilities

- A private or publicly owned (stockholders) company providing utility services in a specific service area.
- Electric Utilities- IOUs
 - IOUs - 5

Investor-Owned Utilities

- Pursuant to I.C. § 8-1-2-4
 - Every public utility is required to furnish reasonably adequate services and facilities
 - The rates and charges for service rendered are to be non-discriminatory, reasonable, and just.
 - “Reasonable and just rates and charges for services” means that rates and charges produce sufficient revenue for the following:

Revenue Requirements

Investor-Owned Utilities (IOUs)

- Revenue Requirements
 - Operating Expenses
 - Rate Base
 - Cost of Capital or Rate of Return
- Basic Equation
 - Revenue Requirements = Operating Expenses + (Rate Base * Cost of Capital)

Operating Expenses

■ Operating Expenses

■ Preliminary Hearing & Order

■ Test Year Established

- The test year to be used should be the twelve (12) months ending September 30, 2002, adjusted for changes which are fixed, known, and measurable and which will occur within the twelve months following the end of the test year.

■ Test Year Adjustments

■ Cutoff Dates

- The general rate base cutoff should reflect used and useful property as of May 31, 2003.

Operating Expenses

- Expenses related to the operations of the utility include:
 - Operation and Maintenance Expenses
 - Upkeep and Repair Costs
 - Depreciation
 - Taxes

Operating Expenses

■ Adjustments:

<u>Description</u>	<u>Per Books</u>	<u>Pro Forma Adjustments</u>	<u>Pro Forma Total Electric Utility</u>	<u>Revenue Transfer</u>	<u>Adjusted Electric Utility</u>	<u>Retail at Current Rates</u>
<u>Operating Expenses</u>						
<i>Fuel</i>	455,357	(40,080)	415,277	-	415,277	378,286
<i>Purchased & Exchanged Power</i>	1,097,762	(1,080,298)	17,464	(7,091)	10,373	9,519
<i>Other Operation and Maintenance</i>	520,243	(105,342)	414,901	-	414,901	391,395
<i>Operating Revenue Adjustment</i>	(30,789)	(1,722)	(32,511)	2,547	(29,964)	(28,917)
<i>Depreciation and Amortization</i>	153,934	78,693	232,627	-	232,627	218,316
<i>Taxes Other Than Income Taxes</i>	59,412	438	59,850	-	59,850	57,953
<i>Federal and State Income Taxes</i>	72,992	(15,547)	57,445	-	57,445	56,090
Total Operating Expenses	\$ 2,328,911	\$ (1,163,858)	\$ 1,165,053	(4,544)	\$ 1,160,509	\$ 1,082,642

Rate Base

- Original Cost Rate Base
 - Plant in Service
 - Plant Held for Future Use
 - Construction Work In Progress
 - Accumulated Depreciation
 - Materials and Supplies

Rate Base - Example

Electric Utility Plant In Service	\$ 3,463,726,000
Less: Construction Work in Progress	-
Less: Property Held for Future Use	-
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<i>Net Utility Plant in Service</i>	\$ 3,463,726,000
Fuel Stock	67,925,000
Emission Allowances	14,651,000
AFUDC Continuation / Deferred Depreciation	75,202,000
Materials and Supplies	40,846,000
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<i>Total Net Electric Utility Rate Base</i>	<i>\$ 3,662,350,000</i>

Rate Of Return

- Capital Structure
 - Long-term Debt
 - Preferred Stock
 - Common Equity

Capital	Amount	Ratio	Cost	Weighted Cost
Common Equity	\$ 1,603,374	44.44%	10.500%	4.67%
Preferred Stock	\$ 42,333	1.17%	6.110%	0.07%
Long-term Debt	\$ 1,402,254	38.87%	6.370%	2.48%
Deferred Income Taxes	\$ 519,273	14.39%	0.000%	0.00%
Pre 1971 ITC	\$ 193	0.01%	0.000%	0.00%
Post 1971 ITC	\$ 30,571	0.85%	8.530%	0.07%
Customer Deposits	\$ 9,741	0.27%	6.000%	0.02%
TOTAL	\$3,607,739	100.00%		7.30%

Equity Component

- Methodologies – Return on Equity

- Discounted Cash Flow (DCF)

- $K_e = D_1/P_0 + g$

- K_e = investors' expected return on equity

- D_1 = expected dividend during the coming year

- P_0 = current stock price

- g = expected growth rate of future dividends, earnings, book value

Equity Component

- Methodologies – Return on Equity
 - Capital Asset Pricing Model (CAPM)
 - $K = R_f + \text{Beta}(R_m - R_f)$
 - K = investors' expected return on equity
 - R_f = risk-free component
 - R_m = market risk premium
 - The expected return on equity consists of a risk-free component plus a risk premium component.

Summary of Cost of Equity

Summary of ROE Estimates and Areas of Disagreement					
	<i>Witness / Party</i>	<i>Morin / PSI</i>	<i>Inman / IURC</i>	<i>Kaufman / OUCC</i>	<i>Gorman / PSI-IG</i>
Original	CAPM	10.20 – 10.70%	9.21%	7.98 - 8.59%	9.50 - 9.80%
	DCF	10.70 – 13.60%	10.42 - 13.52%	7.94 – 10.12%	10.10%
	RP	10.90 – 12.30%	9.69 - 11.02%	NA	NA
	ARP	11.30 – 11.40%	11.30 - 11.40%	NA	9.40 - 10.90%
	Recommendation	11.50%	10.25 - 10.50%	9.15%	10.00%
Updated	CAPM	10.90 – 11.40%	NA	8.48 - 9.09%	NA
	DCF	10.30 – 12.10%	NA	8.02 - 9.67%	NA
	RP	10.90 – 12.50%	NA	NA	NA
	ARP	11.30 – 11.40%	NA	NA	NA
	Recommendation	11.20%	10.35 - 10.55%	9.25%	NA
Major Areas of Disagreement - All Models					
All	Floatation Cost Adjustment	0.30%	0.15%	0.05 - 0.10%	0.00%
CAPM	Beta	0.72	0.72	0.65 – 0.70	0.64
	Market Risk Premium Mean "Arithmetic vs. Geometric"	Arithmetic	Both	Both	Arithmetic
	ECAPM	Accept	Reject	Reject	Reject
DCF	Half - vs. Full - Year Div. Growth	Full-Year	Half-Year	Half-Year	Full-Year
	Quarterly Compounding Adj.	0.20%	0.20%	0.00%	0.00%
RP	Risk Premium Mean "Arithmetic vs. Geometric"	Arithmetic	Both	NA	NA

Summary of Finding - IOU

- Rate Base (RB)
 - \$ 3,662,350,000
- Rate of Return (ROR)
 - 7.30%
- Net Operating Income (NOI) = (RB * ROR)
 - $3,662,350,000 * 7.30\% = \$267,351,550$
- Revenue Requirements = Operating Expenses + Net Operating Income