



Calculating the Revenue Requirement in Electricity

Presentation to

**Energy Regulatory Agency
of the Republic of Serbia**

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Revenue Requirements

- **The annual revenues required by the firm to cover both its expenses and have the opportunity to earn a fair rate of return.**
- **The annual costs to provide safe and reliable service to the company's customers that the company is allowed to recover through rates.**

Revenue Requirement Formula

- **Required Revenues = Expenses + (Rate Base x Rate of Return)**
- **Rate Base**
 - Investment in facilities, equipment and other equipment used to provide service
- **Rate of Return**
 - The return earned, or allowed to be earned, on the utilities rate base

Revenue Requirement Formula

- **Expenses**
 - **Operating Expenses**
 - **Operation and Maintenance**
 - **Administrative and General**
- **Must determine whether to allow or disallow expense for rate-making purposes**

Rate of Return

- **Compensation to investors for their investment**
 - A percentage applied rate base
 - To be recovered in rates
- **Generally two types of cost associated with ROR – Cost of Capital**
 - Debt Capital
 - Equity Capital
- **$\text{ROR} = \text{Weighted cost of capital}$**

Debt Capital

- Long term and short term debt

- Example

\$60 debt x 8% interest rate

(60 x 8% = \$4.80)

Cost of debt = \$4.80

Equity Capital

- **Common stock and retained earnings**

- **Example**

**\$40 equity x 10% interest rate
(40 x 10% = \$4.00)**

Cost of equity = \$4.00

Rate of Return

	Investment	Cost Rate	Cost
Debt	\$60	8%	\$4.80
Equity	<u>\$40</u>	10%	<u>\$4.00</u>
	\$100		\$8.80

Weighted Cost of Capital

$$\text{\$8.80} / \text{\$100} = 8.8\%$$

$$\text{Rate of Return} = 8.8\%$$

Discounted Cash Flows

- **An investors' expected return on an equity investment take two forms:**
 - **Dividends**
 - **Growth in stock prices**

Cost of Capital

- **Debt Capital**
 - **Contractual Return (Interest)**
- **Equity Capital**
 - **Noncontractual Return (Dividends & Growth)**
 - **Riskier than Debt, therefore, higher cost to induce investors**

Return on Equity

Dividend = \$4.00 per share of stock

Stock Price = \$100.00 per share of stock

Dividend Yield = $(\$4.00/\$100.00)$ 4%

+

Expected Growth in Investment = 6%

Total expected return = 10%

Assessing Value of Utility – Rate Base

- **Rate Base Determination**

Gross Plant in Service (original cost of physical asset)

Less : Accumulated Depreciation

Equals : Net Plant in Service

Plus : Working Capital

Plus : Materials and supplies

Plus : Customer deposits

Less : Cumulative reserve for deferred income taxes

Equals : Rate Base