Presentation to Representatives of the Public Utilities Regulatory Commission of Ghana

Conducting a Price/Rate Review

April 14, 2005

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Topics

- Regulatory Instruments and Tools
  - Cost of capital
  - Depreciation
  - Taxes
- Using a Standard Regulatory Approach
- Addressing Subsidy Issues
- Regulatory Proceedings

How Utility Rates Set

- How are rate of return and rate base used in a general rate case?
  - Revenue Requirement=

    (Rate Base X Rate of Return) + Taxes + Operating Expenses + Depreciation
- 12-month test period

Rate Base

- Rate base is the historic cost of physical, tangible and intangible assets, used to provide utility service.

- Typically included in rate base:
  - Utility Plant in Service
  - Materials & Supplies
  - Accum. Depreciation and Amortization
  - Accum. Deferred income Taxes
  - Working Capital

Rate Base

- Excluded from Rate Base:
  - Construction work in progress
  - Property held for future use
- Adjustments to Rate Base
  - Used and useful
  - Prudence

Rate of Return Highlights

- The cost of capital is a weighted average costs of financing sources, i.e., debt and equity.

- Typically the largest $ single issue in Rate Case

- An example: A company is financed by 50% debt and 50% equity. Debt interest is 7.0% and the cost of equity is 10.0%. The overall cost of capital is:

Debt:	7.0%	x	50%	=	3.5%
Equity:	10.0%	x	50%	=	5.0%

Overall Cost of Capital = 8.5%

Oregon Laws Reflect the “Hope” Standard

The commission shall balance the interests of the utility investor and the consumer in establishing fair and reasonable rates. Rates are fair and reasonable for the purposes of this subsection if the rates provide adequate revenue both for operating expenses of the public utility or telecommunications utility and for capital costs of the utility, with a return to the equity holder that is:

(a) Commensurate with the return on investments in other enterprises having corresponding risks; and

(b) Sufficient to ensure confidence in the financial integrity of the utility, allowing the utility to maintain its credit and attract capital.

Cost of Debt

- Relatively easy to determine
- Rate Case uses embedded cost of debt
  - Exclude Short term debt
  - Assume refinances
  - Issuance costs included and recovered through cost of debt rate

What Is Equity?

Equity is issued, sold and traded in the form of shares through a stock exchange.

The Cost of Equity compensates investors for placing their money in the utility.

- Constitutionally, the Cost of Equity is set at a level that is fair, reasonable and not so low as to be confiscatory.

Cost of Equity

- It is similar to the interest rate paid to bondholders
- Why is the Cost of Equity greater than the Interest Rate on Debt?
  - Equity costs more than debt because it is paid out as a residual claim on earnings and is therefore more risky.
  - It is not a guaranteed return – return is market and issuance costs are already considered in this cash flow
  - It is designed to fairly compensate investors

Risk Versus Return

An appropriate financial return is predicated on the risk of an investment.

Regulated public utilities are among the least risky of all potential investments. They require returns less than “average” for the market.

- Their revenue and earnings streams are more assured
- Their dividends are more secure

Risk and Return, Cont.

Equity shares similar risks as debt, e.g.

- As leverage increases, risk increases
- As macroeconomic factors (e.g., regional or state recession) increase earnings volatility, risk increases
- As interest rate increases, risk increases
  - Inflation impacts interest rates and affects the comparable returns offered on alternative investments

Estimating Cost of Equity

- Relatively difficult to determine
- Primary Techniques Employed:
  - Discounted Cash Flow Method (DCF)
  - Capital Asset Pricing Model (CAPM)
- Issuance (Flotation) costs typically amortized over 3 to 5 years.

Regulatory Instruments and Tools Depreciation and Amortization

- Depreciation and amortization: A non-cash charges that reduce the value of fixed assets due to wear, age or obsolescence. This figure also includes amortization of leased property, intangibles, goodwill, and depletion.
- Simplified Depreciation Example:

Utility Plant Schedule

Item	Purchase Date	Date In Service	Orig Cost
Land	1995	2000	15,000
Distribution	1999	2000	32,000
Generation	2000	2001	87,000
Transmission	2001	2002	18,000
Building	2001	2003	5,000
Building Improv.	2004	2004	1,500
Meters	2004	2004	600

Service Life

Item	Purch Date	Date In Service	Orig Cost	Service Life
Land	1995	2000	15,000	None
Distribution	1999	2000	32,000	25
Generation	2000	2001	87,000	50
Transmission	2001	2002	18,000	30
Building	2001	2003	5,000	35
Building Improv.	2004	2004	1,500	35
Meters	2004	2004	600	20

Annual Depreciation Expense
(Original Cost Divided by Service Life)

Item	Purch Date	Date In Service	Orig Cost		Serv Life		Annual Depre Exp
Land	1995	2000	15,000	/	None	=	None
Distribution	1999	2000	32,000	/	25	=	1280
Generation	2000	2001	87,000	/	50	=	1740
Trans.	2001	2002	18,000	/	30	=	600
Building	2001	2003	5,000	/	35	=	143
Building Improv.	2004	2004	1,500	/	35	=	43
Meters	2004	2004	600	/	20	=	30

Calculating Annual Depreciation

Date In Serv	Depre Exp	2000	2001	2002	2003	2004
2000	None	0	0	0	0	0
2000	1,280	1,280	1,280	1,280	1,280	1,280
2001	1,740		1,740	1,740	1,740	1,740
2002	600			600	600	600
2003	143				143	143
2004	43					43
2004	30					30
Total		1,280	3,020	3,620	3,763	3,836

Accumulated Depreciation

Accum Deprec	Remain Plant	2005 Dep Exp
0	15,000	0
6,400	25,600	1,280
6,960	80,040	1,740
1,800	16,200	600
286	4,714	143
43	1,457	43
30	570	30
15,519	143,581	3,836

Regulatory Instruments and Tools
Taxes

- Income taxes – stand alone or consolidated basis?
- Other taxes – treated like other expenses

Using a Standard Regulatory Approach

- Standard Reporting
- Standard Ratecase Procedures
- Detailed Tariffs
- Planning and monitoring – ensuring that utility operations change as a result of PURC decisions.

Addressing Subsidy Issues

- Definition of a class
- Preventing discrimination
- Removing class subsidies
  - Quantify the subsidy and remove it over time
  - Establish principles for rate changes
    - Rate increase – subsidized customers receive 1.5 times the overall rate change
    - Rate decrease – subsidized customers do not receive rate decreases
- Use of targeted assistance programs

Rate Case Proceeding

- Formal Procedures
- Many Parties
  - Staff
  - Customer group representatives
  - Environmental advocates
- Specific Events

Rate Case Proceedings Schedule

Company Filing	Nov. 12, 2004
Prehearing Conference	Dec. 7, 2004
Public Comment Hearings	Multiple Dates
Staff and Intervenors publish	
Settlement Proposals	Mar. 29, 2005
Settlement Conferences	Apr. 5-11 2005
Staff and Intervenors Testimony	May 5, 2005
Company Rebuttal Testimony	May 31, 2005
Staff and Intervenor Surrebuttal Test.	June 21, 2005
Company Sursurrebuttal Test.	July 8, 2005
Hearings	July 18-22, 2005
Opening Briefs	August 8, 2005
Reply Briefs	August 22, 2005
Commission Decision	Sept. 12, 2005

Tariff Filing
Typical Schedule

Company Filing	March 18, 2005
Public Meeting Memo Published	April 14, 2005
Public Meeting	April 19, 2005
Tariff Effective Date	April 20, 2005
Or Suspension	Full Schedule

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