



# **Presentation to Representatives of the Electricity Regulatory Authority of Albania**

## **Ratemaking Topics**

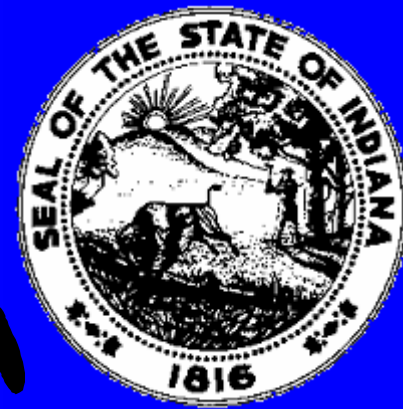
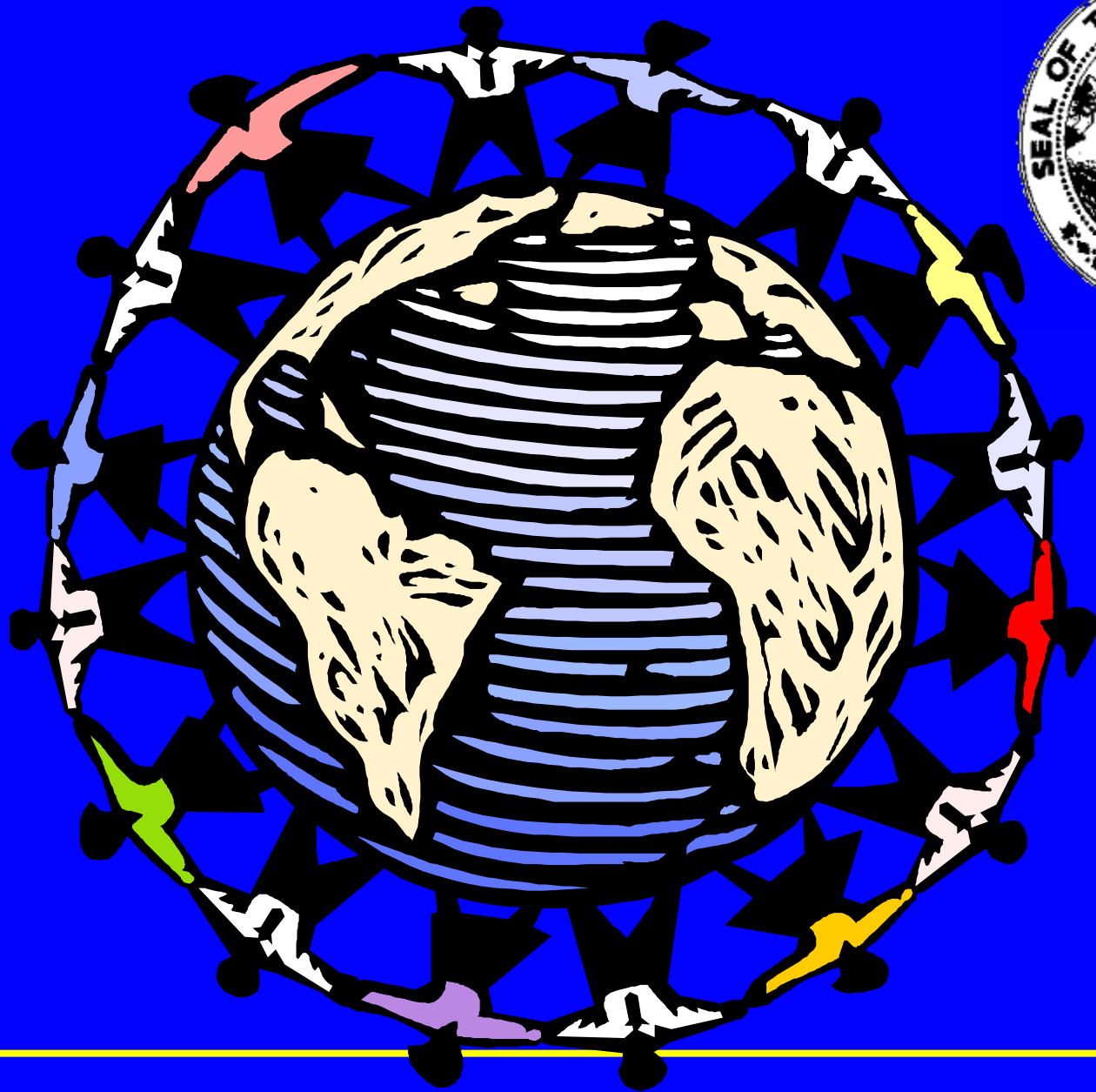
**Subsidies, Return, Technical Losses and Recovery of Special  
Costs Outside of a Rate Case**

**Jerry Webb**

**Director Gas, Water and Sewer Division  
Indiana Utility Regulatory Commission**

**October, 2005**

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# Cost of service/rate design

- Inter class subsidies
- How the issue is addressed:
- Each class allocated costs and plant as if it were a company
- An income statement is prepared for each class
- A rate of return and dollar return is derived for each class



# Cost of Service/rate design

- The general concept is that if each class is earning the same return, that is the overall return for the company, no subsidies exist.
- What to do if the returns are unequal
- The concept of gradualism.

# PETITIONER'S EXHIBIT Z-13 (KKF-13)

## PSI ENERGY, INC.

IURC CAUSE NO. 42350

PETITIONER'S EXHIBIT NO. Z13 (KKF-13)

PAGE 1 OF 2

COMPANY'S PROPOSED ASSIGNMENT OF REVENUE INCREASE TO THE COMPANY'S  
RETAIL CUSTOMERS BY RATE GROUPS FOR THE TWELVE MONTHS ENDED  
SEPTEMBER 30, 2002 BASED ON A 33% REDUCTION IN CURRENT  
LEVELS OF SUBSIDY / EXCESS REVENUES BETWEEN THE RATE GROUPS  
(DOLLARS IN THOUSANDS)

UNDER PRESENT RATES												PROPOSED BASE RATES			
APPLICABLE TO RATE GROUPS PRIOR TO SUBSIDY / EXCESS							APPLICABLE TO RATE GROUPS AFTER SUBSIDY / EXCESS								
RETAIL RATE GROUPS	ORIGINAL COST DEPRECIATED PLANT	PRO FORMA GROSS REVENUES (SEE NOTE 1)	ADJUSTED CWP REVENUES	ADJUSTED PRO FORMA GROSS REVENUES (SEE NOTES 1 & 2)	NET OPERATING INCOME	RATE OF RETURN	GROSS REVENUES AT AVERAGE RATE OF RETURN	SUBSIDY (I) EXCESS	33.00% REDUCTION IN SUBSIDY EXCESS	PERCENT INCREASE / (DECREASE)	RATE INCREASE	ADJUSTED PRO FORMA GROSS REVENUES (SEE NOTES 1 & 2)	PROPOSED GROSS REVENUES PERCENT INCREASE / (DECREASE) (SEE NOTE 3)	ADJUSTED NET OPERATING INCOME	ADJUSTED RATE OF RETURN
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)
RATE RS	\$1,594,589	508,940	\$10,609	\$519,549	\$72,321	4.54%	\$508,126	\$814	(\$266)	-0.05%	\$87,512	\$596,186	14.75%	\$123,114	7.72%
RATES CS AND FOC	200,686	71,875	1,590	73,465	12,162	6.06%	66,546	5,329	(1,759)	-2.45%	11,015	81,131	10.43%	17,546	8.74%
RATE LLF	514,921	161,232	5,051	166,283	22,604	4.39%	162,250	(1,018)	338	0.21%	28,260	189,830	14.16%	39,260	7.62%
RATE HLF	1,249,736	455,941	10,006	465,947	49,465	3.96%	467,619	(11,678)	3,852	0.84%	68,592	528,385	13.40%	91,668	7.33%
SPECIAL CONTRACTS	33,441	27,538	268	27,806	1,834	5.48%	26,979	559	(185)	-0.67%	1,837	29,190	4.98%	2,797	8.36%
RATE OL	20,135	9,768	52	9,820	2,492	12.38%	7,062	2,706	(893)	-9.14%	1,105	9,980	1.63%	2,614	12.98%
RATE WP	13,780	5,505	152	5,657	920	6.68%	4,995	510	(168)	-3.05%	756	6,093	7.71%	1,262	9.16%
RATE FC	192	29	0	29	0	0.00%	44	(15)	5	17.24%	11	45	55.17%	10	5.21%
RATE SL	18,318	7,752	24	7,776	2,087	11.39%	5,598	2,154	(711)	-9.17%	1,005	8,046	3.47%	2,255	12.31%
RATE AL	3,706	1,324	1	1,325	307	8.28%	1,085	239	(79)	-5.97%	203	1,448	9.28%	379	10.23%
RATE MHLS	524	364	2	366	89	16.98%	253	111	(37)	-10.16%	29	356	-2.73%	85	16.22%
RATES MOLS AND UOLS	164	69	0	69	13	7.93%	59	10	(4)	-5.80%	9	74	7.25%	15	9.15%
RATES FS, TS AND MS	1,565	862	14	876	234	14.95%	583	279	(93)	-10.79%	86	855	-2.40%	230	14.70%
TOTAL RETAIL	3,651,757	\$1,251,199	\$27,769	\$1,278,968	\$164,528	4.51%	\$1,251,199	\$0	\$0	0.00%	\$200,420	1,451,619	13.50%	281,235	7.70%
PROFORMA UNBILLED REVENUE AND ADDITIONAL CUSTOMERS	0											13,708		7,984	
TOTAL RETAIL INCLUDING UNBILLED AND ADDITIONAL CUSTOMERS	\$3,651,757											\$1,465,327		\$289,219	7.92%



# Technical Losses

- In US, generally goes by the term “line loss” or “unaccounted for”
- Both terms are misleading as the losses come from more than the lines and if you know where it went, it is not unaccounted for



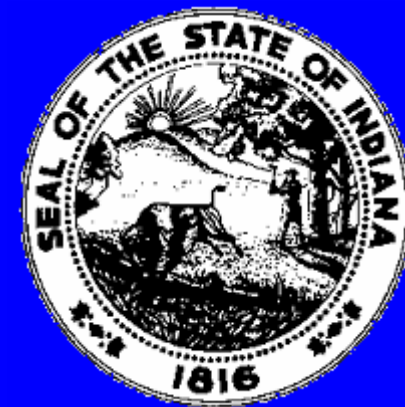
# Technical losses

- For water industry, losses of 15 % not unusual
- For gas industry, losses are usually less than 1 %
- For electric industry, losses around 5% or less are typical



# Technical losses

- Transformation losses
- Real line losses
- Reductions of losses below 2% are generally not possible given current state of the equipment
- If the current electric system is a given, most significant issue is tree trimming



# Technical losses

- Accounting for the “losses” is a key point
- Where did the kWh go?
  - ✓ Generation Station use should be net of power used to produce the electricity
  - ✓ Electricity used in the utility’s own office buildings should be accounted for
  - ✓ Lighting sales should be accounted for by using statistical representation or calculations
  - ✓ Flat rates for residential customers should be done as lighting above but eventually and gradually eliminated
  - ✓ Billing cycles

**SOUTHERN INDIANA GAS AND ELECTRIC COMPANY**  
**Determination of Average System Losses based on**  
**Twelve Months Ended December 31, 2004**

Line No.	Description	kWh
	<u>Sources of Energy</u>	
	Generation (Excludes station use)	
1.	Steam	6,461,933,400
2.	Nuclear	-
3.	Hydro	-
4.	Other	47,738,800
5.	Total Net Generation	6,509,672,200
6.	Purchases (Net)	3,469,610,190
7.	Interchanges (Net)	39,274,000
8.	Transmission for/by others-Wheeling (Net)	
9.	Total kWh available	10,018,556,390
	<u>Disposition of Energy</u>	
10.	Sales to retail customers	5,560,235,576
11.	Sales for resale (Wholesale)	4,151,929,777
12.	Company use (Office, Maintenance bldgs, etc.)	8,664,009
13.	Total kWh accounted for	9,720,829,362
14.	Total energy losses (9 less 13)	297,727,028
15.	Average system losses (14 divided by 9)	2.97%

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JAN 28 2005


INDIANA UTILITY REGULATORY COMMISSION  
ELECTRICITY DIVISION

# INDIANAPOLIS POWER & LIGHT COMPANY

## Determination of Average System Losses Based on Twelve Months Ended December 31, 2004

Line No.	Description	KWH	Line No.
<b><u>Sources of Energy</u></b>			
<b>Generation (Excludes Station Use)</b>			
1	Steam	16,697,861,000	1
2	Nuclear	-	2
3	Hydro	-	3
4	Other	0	4
5	<b>Total Net Generation</b>	16,697,861,000	5
6	Purchases (Net)	(1,262,549,000)	6
7	Interchanges (Net)	-	7
8	Transmission for/by Others - Wheeling (Net)	0	8
9	<b>Total KWH Available</b>	15,435,312,000	9
<b><u>Disposition of Energy</u></b>			
10	Billed & Unbilled Sales to Retail Customer	14,590,398,266	10
11	Sales for Resale (Wholesale)	47,280,000	11
12	Company Use (Office, Maintenance Bldgs., etc.)	25,150,161	12
13	<b>Total KWH Accounted for</b>	14,662,828,427	13
14	Total Energy Losses (9 less 13)	772,483,573	14
15	<b>Average System Losses (14 Divided by 9 in %)</b>	5.005%	15

I, Barry J. Bentley, Director, for and on behalf of Indianapolis Power & Light Company, certify that the foregoing Determination of Average System Losses is true and correct to the best of my knowledge and belief.

  
 Barry J. Bentley  
 Director, Indianapolis Power & Light Company





# Rate of Return

- Hope and Bluefield US Supreme Court Decisions

THE RATE OF RETURN FORMULA  
AND ITS SOURCES

INCOME STATEMENT	
REVENUES	
- OPERATING EXPENSES	
OPERATING INCOME	
INTEREST (AND PREFERRED DIVIDENDS)	
NET INCOME	

COST OF MONEY
COST OF DEBT
+ COST OF PREFERRED
+ COST OF COMMON EQUITY
COST OF CAPITAL



$$\text{RATE OF RETURN \%} = \frac{\text{RETURN}}{\text{RATE BASE}}$$



BALANCE SHEET	
ASSETS	LIABILITIES
PLANT IN SERVICE	COMMON EQUITY
- DEPRECIATION	+ PREFERRED STOCK
NET PLANT IN SERVICE	+ LONG TERM DEBT
+ OTHER ASSETS	CAPITALIZATION
TOTAL ASSETS (NET)	+ SHORT TERM DEBT
	TOTAL CAPITAL
	+ OTHER LIABILITIES
	TOTAL LIABILITIES





# Rate of Return

- DCF –Discounted Cash Flow
- CAPM-Capital Asset Pricing Model
- RP-Risk Premium

## 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%
	<b>Recommendation</b>	<b>11.50%</b>	<b>10.25 - 10.50%</b>	<b>9.15%</b>	<b>10.00%</b>
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
	<b>Recommendation</b>	<b>11.20%</b>	<b>10.35 - 10.55%</b>	<b>9.25%</b>	<b>NA</b>
<b>Major Areas of Disagreement - All Models</b>					
All	Floatation costs 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



# **Overview of Statutory Cost Recovery Proceedings in Indiana**

**Prepared By Scott R. Storms  
Chief Administrative Law Judge  
Indiana Utility Regulatory Commission  
October, 2005  
Tirana, Albania**

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# *Mechanisms to Recover Costs Outside of a Rate Case*

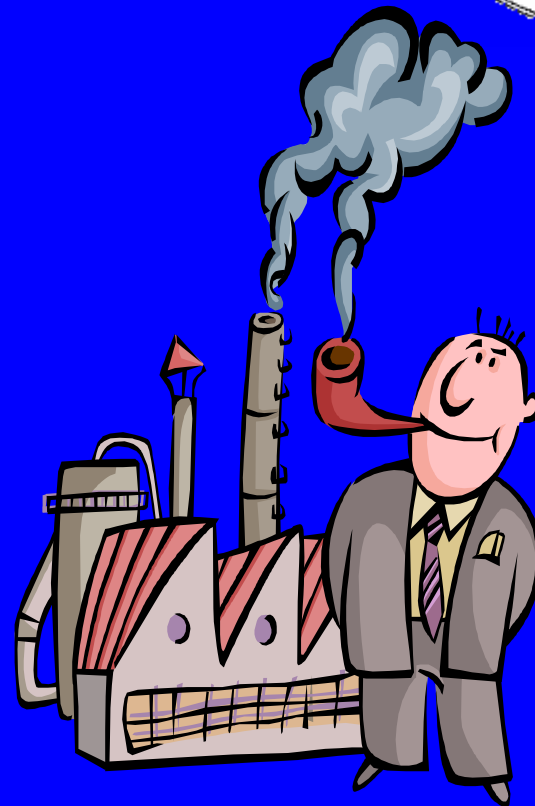
- Fuel Adjustment Clause (“FAC”) proceedings, IC 8-1-2-42(a).
  - Allows for the recovery of fuel costs used to generate electricity.
  - Typically done in quarterly “summary” proceedings limited to this single issue.





# *Mechanisms to Recover Costs Outside of a Rate Case*

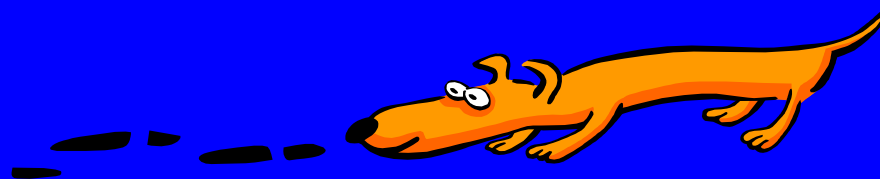
- Environmental Cost Proceedings.
  - Allows for review and approval of costs associated with new and innovative pollution control equipment outside of a rate proceeding.
  - Commission reviews and approves initial cost estimate and reviews expenditures quarterly. Rates are then adjusted as necessary.





# *Mechanisms to Recover Costs Outside of a Rate Case*

- Various additional mechanisms designed to “track costs” that are outside a utility’s control.
  - Purchased Power Costs
  - Costs associated with Regional Transmission Organizations (“RTO”) may, in some instances, be recovered through a tracking mechanism.





# Impact of Non-Rate Case Proceedings

- **Benefits**
  - Allows for assured financing of very expensive projects due to the prompt assured recovery of expenditures from ratepayers following ongoing review and approval by the Commission.
  - Limited review does not require evaluation of all issues that would be presented in a rate case.
  - Gradual upward adjustment in rates limits shock to ratepayers.



# Impact of Non-Rate Case Proceedings

- Drawbacks
  - Increases rates without a full evaluation of potential cost savings.
  - Limited scope of proceeding may not encourage the careful and full examination of all possible environmental compliance options.
  - Recovery of costs in this manner may provide an incentive for a utility not to present a rate case to the Commission.
  - Gradual upward adjustment in rates.