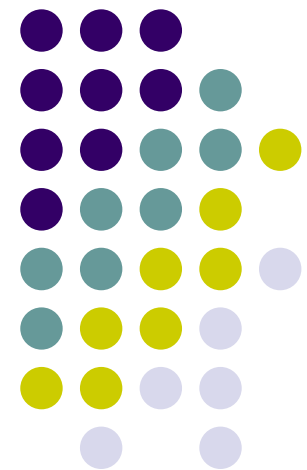
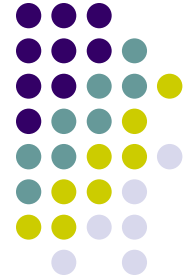


# Capital Investment Mechanisms: Some Options for IRM3

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# Introduction

Fundamental question for IRM3: is there a need for special treatment of capital spending?

A number of alternative capital investment mechanisms can be used within the context of incentive ratemaking

This presentation will summarize and briefly evaluate some of the main options

>>> Starting point for discussion only!





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# Criteria for Evaluating Options

Current principles for designing IRM3 framework

1. Protect customers in relation to prices
2. Better align the financial interests of distributors with consumer interests and government policy objectives
3. Provide a sustainable regulatory framework that is predictable and at the same time responsive to changing circumstances
4. Promote economic efficiency by providing the appropriate pricing signals and a system of incentives for distributors to maintain an appropriate level of reliability and quality of service





# Criteria for Evaluating Options (Con't)

Current principles for designing IRM3 framework (con't)

5. Provide for prudent investment necessary to maintain an appropriate level of reliability and quality of service
6. The rate-setting methodology should be predictable, understood by all participants, and capable of implementation through a regulatory process that is efficient while at the same time addresses the concerns of interested parties and ensures openness and transparency



# Other Issues Specific to Capital Investment



Capital investment policy is clearly related to

1. Service quality regulation  
*i.e.* more demanding service quality standards likely to increase investment, perhaps increase the need for new mechanisms  
>>>less true if the objective is to *maintain* standards
2. Rate rebasing  
investment costs can be recovered when rates are rebased  
>>> less need for new mechanisms as the term of PBR plan (*i.e.* period between rate rebasings) becomes shorter





# Index Based Price Adjustments

No explicit mechanism beyond basic “GDP-IPI –X” price indexing formula

- Comprehensive, applies to all costs

- >>> already allows for some implicit growth in capital investment

Classic North American approach, used most often in indexing plans

Multiple precedents

- San Diego Gas and Electric

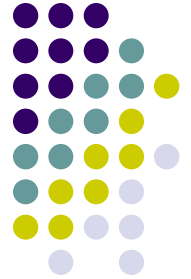
- Central Maine Power

- Boston Gas

- Ontario gas and electric PBR plans to date



# Index Based Price Adjustments (Con't)



## Pros

Relatively simple

No administrative burdens during PBR plan

Strong performance incentives

## Cons

If growth in investment costs exceeds what's allowed in indexing formula, Company must wait until rebasing to recover costs

>>> some risks to company







# Forward Looking Test Years

Company makes forward looking projection of capital investments and associated costs over term of PBR plan

Parameters of PBR formula set to recover those costs

>>> Classic UK approach

## Precedents

UK Electric distribution 1990-2005

Most UK gas network investments 1986 – 2006

Connecticut Light and Power

United Illuminating

Consolidated Edison





# Forward Looking Test Years

## Pros

Allows projected costs to be recovered via price trends

## Cons

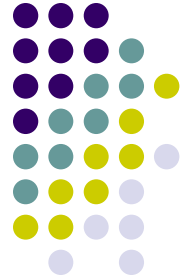
Complexity of reviewing capital investment plans

>> increases with number of companies

Incentives to “game” forecasts, inefficient capital costs built into rates



# Forward Looking Test Years with Information Quality Incentive



Most recent UK energy distribution plans have retained forward-looking test years but have added an information quality incentive (IQI) for determining allowed capital costs

IQI designed to eliminate forecast gaming

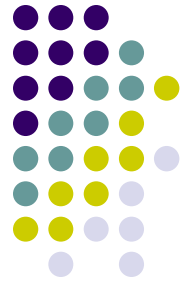
Precedents

Current power distribution controls (2005-2010)

Proposed gas distribution controls (2008-2013)



# Forward Looking Test Years with Information Quality Incentive (Con't)

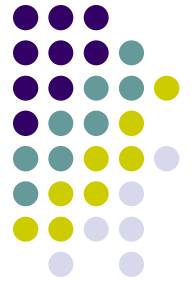


## Basics of IQI

1. For each company, Ofgem determines a benchmark level of projected capital expenditures (capex)
2. Each company then presents its actual capex projections
3. Ofgem then determines a:
  - a. Capex *allowance rate* = amount of capex allowed in prices (specified as a multiple of benchmark capex)
  - b. *Additional income* allowed in price controls
  - c. Capex *incentive rate* = portion of capital underspend/overspend the company is allowed to retain/collect



# Forward Looking Test Years with Information Quality Incentive (Con't)



The allowance rate, additional income, and incentive rate each depend on the relationship between the company's forecast and benchmark capex

- All rates increase as company's forecast gets closer to benchmark
- All rates decrease as company's forecast diverge from benchmark

>> rewards companies for keeping forecasts low, but allows adjustments for differences between actual and allowed capex



# Forward Looking Test Years with Information Quality Incentive (con't)



Forecast (F)/ Bench (B)	$\Delta$	Allowance Rate (AR)	$\Delta$	Incentive Rate (IR)	$\Delta$	Additional Income (AI)	$\Delta$
100		105.00		.40		2.5	
105	5	106.25	1.25	.38	-.02	2.1	-0.4
110	5	107.50	1.25	.35	-.03	1.6	-0.5
115	5	108.75	1.25	.33	-.02	1.1	-0.5
120	5	110.00	1.25	.30	-.03	.06	-0.5
125	5	111.25	1.25	.28	-.02	-0.1	-0.7
130	5	112.75	1.25	.25	-.03	-0.8	-0.7
135	5	113.75	1.25	.23	-.02	-1.6	-0.8
140	5	115.00	1.25	.20	-.03	-2.4	-0.8



# Forward Looking Test Years with Information Quality Incentive (con't)



## Pros

If IQI menu designed correctly, should encourage efficient behavior

If IQI menu designed correctly, should allow efficient costs to be recovered

## Cons

Complexity of designing IQI “correctly”

Additional administrative burdens during PBR plan





# Capital Cost Project Pre-approval

Process agreed in advance between company and stakeholders for approving allowed capital cost, provisions for cost recovery, cost over-runs and under-runs

>> like integrated resource planning

## Precedents

Three generation plants for Mid-American Energy

Two projects for Wisconsin Electric Power

CPCN process in BC, Minnesota, Louisiana





# Capital Cost Project Pre-approval (con't)



## Pros

Allows efficient costs to be recovered

Depending on rules, may create incentives to invest efficiently

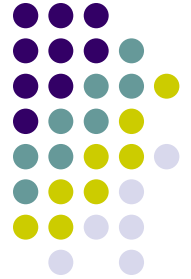
## Cons

Complexity and administrative costs increase with scope of pre-approvals

>>> generally applies to large projects, unwieldy for all investment costs



# Capital Cost Tracker with Prudence Reviews



Explicit mechanism outside of – or added to - indexing formula to track and recover capital costs

>>> after the fact, Z factor-type application and review  
>>> differs from UK approach which is based on projections at the outset of the PBR plan

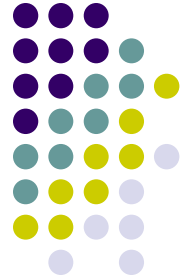
Precedents

NStar

Proposed CI factor



# Capital Cost Tracker with Prudence Reviews (con't)



## Pros

Allows costs to be recovered

Depending on prudence review, could lead to efficient capital investment

## Cons

Administrative burdens

Relies on Board oversight, rather than inherent IR incentives, to encourage efficiency



# Capital Cost Tracker without Prudence Reviews



Like capital cost tracker, except prudence reviews are less prominent or not used at all

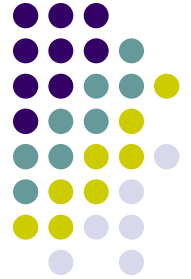
Other features of the plan designed to encourage efficiency, protect customers

## Precedent

AMRP for Cinergy in Ohio, long-term program with pre-established rate caps in rate rider to recover costs



# Capital Cost Tracker without Prudence Reviews (con't)



## Pros

Stronger incentives for efficient behavior

Relatively low administrative burdens

## Cons

Some risk of not recovering costs

Complexity in designing appropriate caps/cost controls for each distributor





# Unit Cost Incentives

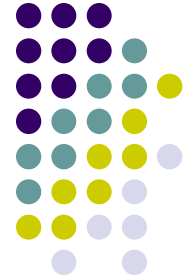
Unit cost benchmarks (e.g. \$/km for asset) are set for rolling allowed investment costs into either rate base or price formulas

## Precedents

Transco (UK) main replacement costs

Terasen (BC) small capital additions (?)





# Unit Cost Incentives (con't)

## Pros

Should encourage efficient behavior

Relatively low administrative costs (?)

## Cons

Risk of not recovering investment costs

Complexity of determining appropriate unit cost benchmarks





# Accelerated Cost Recovery

No explicit adjustments to indexing formulas, or new mechanisms, but regulatory framework and rules amended to accelerate the recovery of capital costs

- Include CWIP in rate base

- Adjust allowed depreciation

- “Formula rate plans”

## Precedents

- Several by FERC

- Formula rate plans for gas distributors in AL, MS, LA and OK







# Accelerated Cost Recovery (con't)

## Pros

Relatively simple adjustments

## Cons

No real incentives for efficiency

May not reduce risks of cost recovery

Adds some administrative burdens during PBR plan





# Next Steps

Stakeholder feedback

Expand/revise list of available options?

Further or more detailed analysis of options that are worth exploring?

More detail on precedents of interest?





## Next Steps (Con't)

Analyze relationship between capital investment options and rebasing policy and service quality policy as these are being finalized

How to “modularize” investment mechanisms given “plain vanilla” PBR framework

Menus >>> How to design?

Triggers >>> How to establish?

Other?

