Activity and Program Benchmarking in Other Jurisdictions

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Introduction

Statistical benchmarking is an important part of utility regulation in several jurisdictions around the world

Ontario Energy Board ("OEB") uses *total cost* benchmarking to set stretch factors of rate & revenue cap indexes

In other jurisdictions, benchmarking is undertaken at the more granular level of activities and/or programs

This presentation briefly reviews activity and program benchmarking ("APB") in Australia, Alberta, and Great Britain

Australia

Overview

Australian Energy Regulator ("AER") has jurisdiction over 14 power distributors

Its custom IR approach uses

- indexes to escalate operation, maintenance, and administrative ("OM&A") revenue
- capex "forecasts" (really proposals) to escalate capital revenue

AER has two benchmarking programs

- Economic Benchmarking
- Category Analysis

Australia (cont'd)

Economic Benchmarking

Primary focus is (total) distribution OM&A

Data do not yet support capital cost (e.g., depreciation and return on rate base) or total cost benchmarking

Econometric cost modelling is favored method

Models estimated using Australian, New Zealand, & Ontario data

OM&A and multifactor productivity ("MFP") indexes with elasticity-weighted output indexes also computed

Australia (cont'd)

Category Analysis

AER also benchmarks more granular costs

Opex and capital expenditures ("capex") both considered

Includes several programs (e.g., various vegetation management tasks)

Various benchmarking methods used

- Simple unit cost metrics
  e.g., cost/customer
- Cost/volume metrics

  cost = volume/(cost/volume)

  e.g., Pole replacement capex = # poles replaced x (capex/pole)
- Engineering models used to benchmark augmentation (growth related) and replacement capex

Australia (cont'd)

Of Interest

Itemization of data required for category analysis

Especially needed for capex/volume metrics (e.g. many kinds of poles)

AER asked for several years of historical data when program began

Capex decomposed into categories similar to OEB's

- augmentation
- replacement
- customer-initiated (e.g., services)
- non-network (e.g., vehicles and buildings)

Maintenance expenses divided into routine and non-routine

Australia (cont'd)

Business Condition Variables

Data gathered on many pertinent business conditions

- Route line length
- Distribution and zone substation transformer capacity (MVA)
- Number of vegetation management spans (urban, rural)
- Average number of trees per vegetation management span (urban, rural)
- Number of spans in tropical areas
- Length of line with standard vehicle access

Great Britain

Office of Gas and Electricity Markets ("Ofgem") regulates 14 power distributors using RIIO, a form of custom IR

Fixed share of *total* expenditures ("totex") is capitalized, not just capex

Totex is benchmarked using crude econometric models

Data do not permit capital cost or total cost benchmarking

Granular costs are benchmarked using various methods

- unit costs
- cost/volume metrics (e.g., for capex)
- econometric modelling

Summary benchmarking scores average totex and granular cost results

Cost Categories Addressed by Ofgem's Granular Benchmarking

Cost Areas	Cost Subcategories
Network Operating Costs	Responses to Outage Calls: [Resolution of faults which are interruptions and occurrences not incentivised ("ONIs"). Interruptions can cause customers to be without supply, whereas ONIs generally do not cause customers to be without supply.]
	Severe Weather (1 in 20) Events
	Inspections and Maintenance
	Tree Cutting (e.g., vegetation management and tree trimming)
	Other (includes substation consumed electricity, dismantlement and remote location generation)
Load-related capex	Reinforcements
	Transmission Connection Point Charges (Investment costs relating to points at which the DNO network connects to the transmission network)
	Connections: New or upgraded network exit point to a new or existing customer, includes DG
Asset replacement, refurbishment, and civil works capex	Asset replacement capex
	Asset refurbishment capex
	Civil works capex
	High Value Projects (Major projects where the related capex is forecast to exceed the high value project threshold as determined by Ofgem)

Cost Categories Addressed by Ofgem's Granular Benchmarking (*cont'd*)

Cost Areas	Cost Subcategories
Non-core non-load-related capex (Installation of new network assets and planned installation of replacement network assets for reasons other than load-related reasons)	Operational IT & Telecoms (Equipment which is used exclusively in the real time management of network assets, but which does not form part of those network assets)
	Diversions (Costs to secure easements, compensate owners of nearby land for loss of value due to asset installation, or divert assets to new areas once a right of way is lost)
	Electricity Safety, Quality and Continuity Regulations (broken further into 28 separate subcategories)
	Legal and Safety (Any investment or intervention where the prime driver is to meet safety requirements and to protect staff and the public. It does not include assets replaced because of condition assessment or to meet Electricity Safety Quality and Continuity of Supply Regulations)
	Substation Flood Resilience
	BT21C (BT's rollout of next generation communications network)
	Losses and Environment (Projects that improve visual amenity, mitigate oil, SF6, and noise pollution, and clean up contaminated land)
	Critical National Infrastructure
	Black Start
	Rising and Lateral Mains: any expenditure on individual distributor-owned three phase cable or busbar, not laid in the ground, which runs within or is attached to the outside of a multiple occupancy building.
	Improved Resilience for Worst Served Customers

Cost Categories Addressed by Ofgem's Granular Benchmarking (*cont'd*)

Cost Area	Cost Subcategories
Closely associated indirect expenses, business support expenses, and non-operational capex	CEO and Group Management
	Network Design and Engineering
	Project Management
	System Mapping
	Engineering Management and Clerical Support
	Stores
	Network Policy
	Control Center
	Call Center
	Vehicles and Transport
	Operational Training & Workforce Renewal
	Streetworks
	Finance and Regulation
	HR and non-operational training
	IT & Telecoms
	Property
	Small Tools, Equipment, Plant and Machinery
	Vehicles and Transport

Great Britain (*cont'd*)

Of Interest

Rate applications with good benchmarking scores are fast-tracked

Asset health index indicates need for replacement capex

Cost of severe weather events is itemized

Capex decomposed into categories similar to OEB's

- load related
- replacement
- refurbishment
- non-load related

British dataset is unusually small

Benchmarking uses cost *forecasts* as well as *historical* cost data

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- Leading PBR and benchmarking consultant since 1990s
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