Principal Uncertainties
Their Representation in the Regional Portfolio Model

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Overview

- Electricity requirements
- Natural gas prices
- Wholesale electricity prices
- Regional Portfolio Model
Electricity Requirements

5th Plan Non-DSI Price Effects Sales Forecasts

Average Megawatts

Year


Electricity Requirements

Council Load Forecast and Portfolio Model Range

Average Megawatts

Hydro Operating Year


5th Plan Adjusted Non-DSI Load Range
Wholesale Electricity Prices

Comparison of Flat (Average) Price with Council’s Electricity Price Forecast

2004 $/MWh

Wholesale Electricity Prices

Comparison with Council's Electricity Price Forecast

2004 $/MWh
Wholesale Electricity Prices

Comparison with Council’s On-Peak Electricity Price Forecast

Wholesale Electricity Prices

Comparison with Council's Electricity Price Forecast
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Different Kind of Risk Modeling

- Imperfect foresight and use of decision criteria for capacity additions
- Adaptive plans that respond to futures
  - Primarily options to construction power plants or to take other action
  - May include policies for particular resources
- “Scenario analysis on steroids”
  - 750 futures, strategic uncertainty
  - Frequency that corresponds to likelihood
Sources of Uncertainty

- Load requirements
- Gas price
- Hydrogeneration
- Electricity price
- Forced outage rates
- Aluminum price
- CO2 tax
- Production tax credits
- Green tag value (Renewable Energy Credit)

Spinner Graphs

- A given plan, across all futures
- Illustrates “scenario analysis on steroids”
- Link to Excel Spinner Graph Model
Feasibility Space

Increasing Risk
Increasing Cost

Selection of Resource Plans

Space of feasible solutions

Efficient Frontier

Selection of Resource Plans