

# Demand Back-casting Scope Discussion

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# Agenda

1. Purpose
2. Backcasting approaches
3. Industry feedback

# Purpose

The purpose of today's meeting:

- Discuss the scope of backcasting.
- Present two different backcasting methods.
- Discuss the value of backcasting to industry.

# Why backcast?

To compare current values with past values on a similar basis.

To assess forecast accuracy:

- Build trust in forecasts.
  1. Better allocation of resources in the market.
  2. Improved investment (and divestment) decisions.
- Highlight areas for improvement (continuous improvement process).
  1. Better models.
  2. Improved input data.
  3. Enhanced understanding of uncertainty.

# Forecast monitoring

# Simple approach

Backcast the previous year's demand

Use the current model to backcast up to 12 months back with known inputs.

Maximum demand:

- Provide the full distribution of demand for the last year, to assess where last year's actuals fall within that distribution.
- Assess weather demand model performance metrics (model selection) for the past year.
- Assess drivers (PV capacity, PV generation, Large Industrial Loads, Connections, etc.)

Annual consumption:

- Assess weather and consumption model performance metrics.
- Assess drivers (PV capacity, PV generation, Large Industrial Loads, Connections, etc.)

Pros:

- Quicker, Cheaper. Can be done with minor adjustments to current system.

Cons:

- Can't go back further than one year.

# Complex approach

Backcast the previous  $n$  years' demand with significant changes to current models

Backcast  $n$  years back in time. Symmetrically backcasting using the same method that we use to forecast. Requires significant changes to our forecast system to be able to point backwards.

Maximum demand:

- Provide the full distribution of demand for the previous  $n$  years, to assess where previous years' actuals falls within that distribution.
- Would need significant data cleaning for history to control for structural breaks, DSP and closures to produce meaningful results.
- Assess drivers (PV capacity, PV generation, Large Industrial Loads, Connections, etc.)
- Assess weather demand model performance metrics (model selection) for the past years with more data points.

Annual consumption:

- Assess weather and consumption model performance metrics.
- Assess drivers (PV capacity, PV generation, Large Industrial Loads, Connections, etc.) and provide insights for how the industry is changing.

Pros:

- More data points – is this of value to industry?

Cons:

- Costly, complex redesign of current forecasting system to grow drivers backwards in time.

What is the value to industry?



