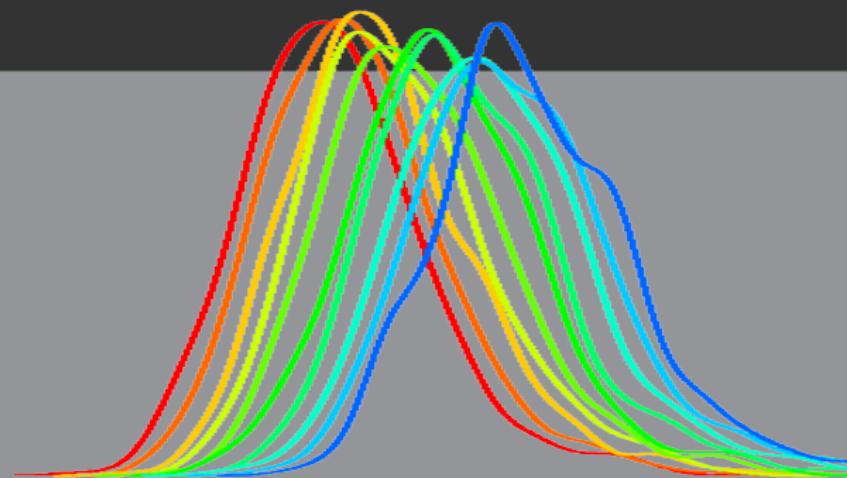




# Challenges in forecasting peak electricity demand

Part 2



Rob J Hyndman

# Challenges

- 1 How to evaluate forecast distributions**
- 2 How to select the best forecasting method**
- 3 How to account for off-grid generation**
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- 5 How to improve forecasts**

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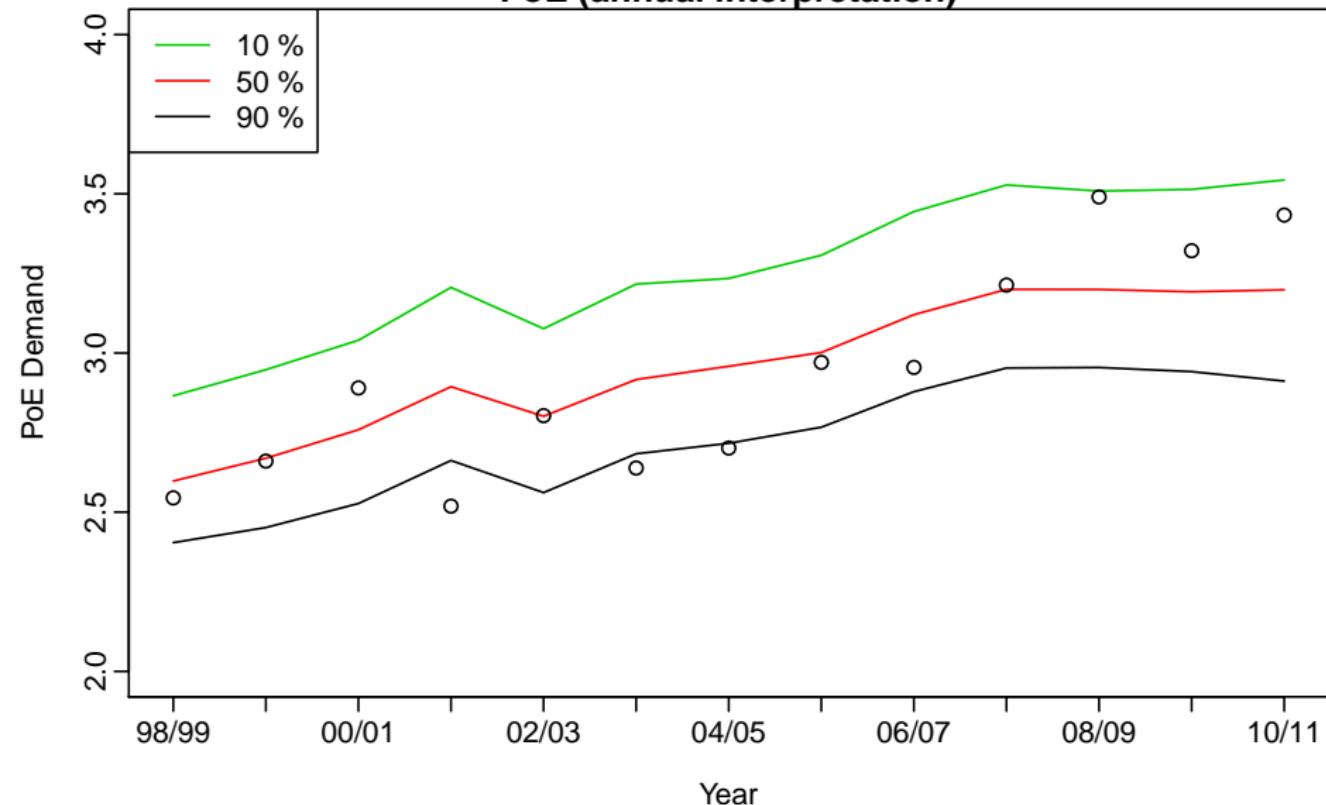
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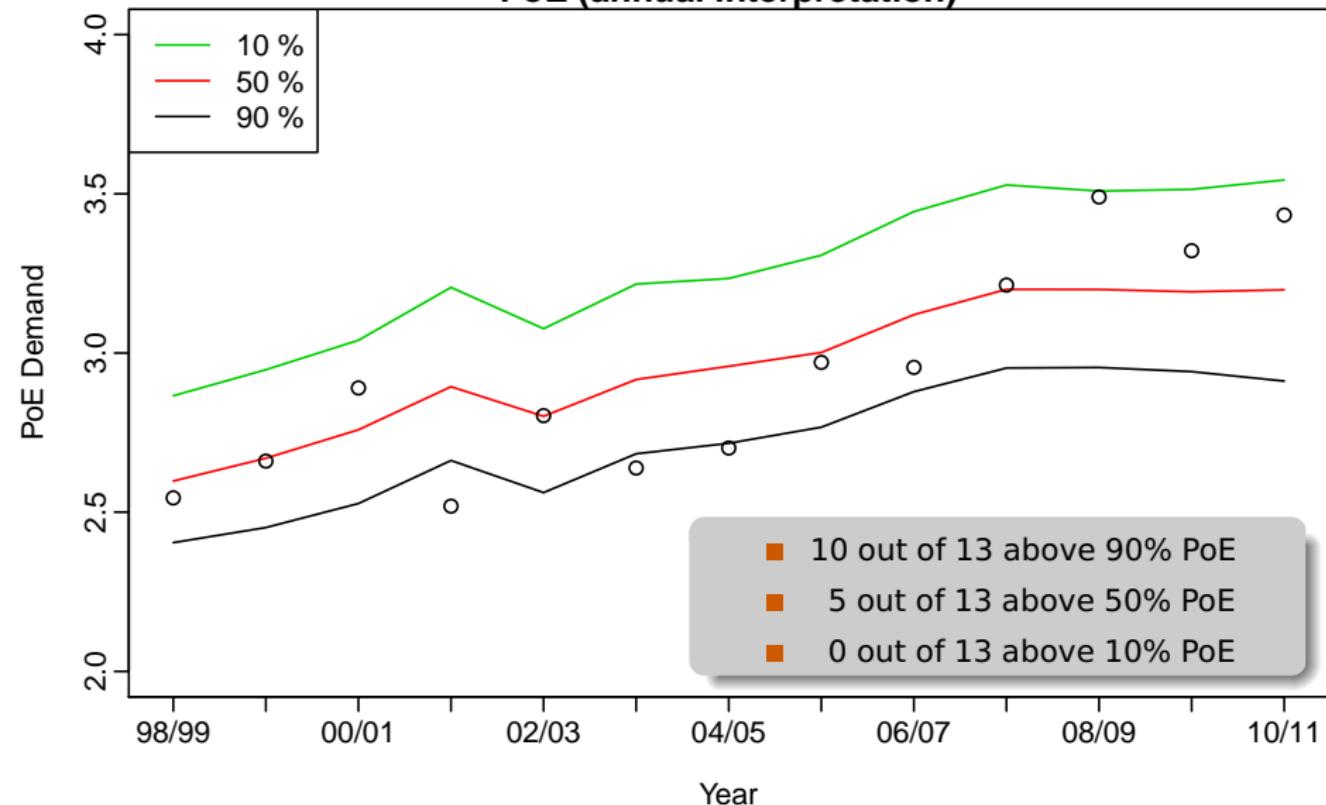
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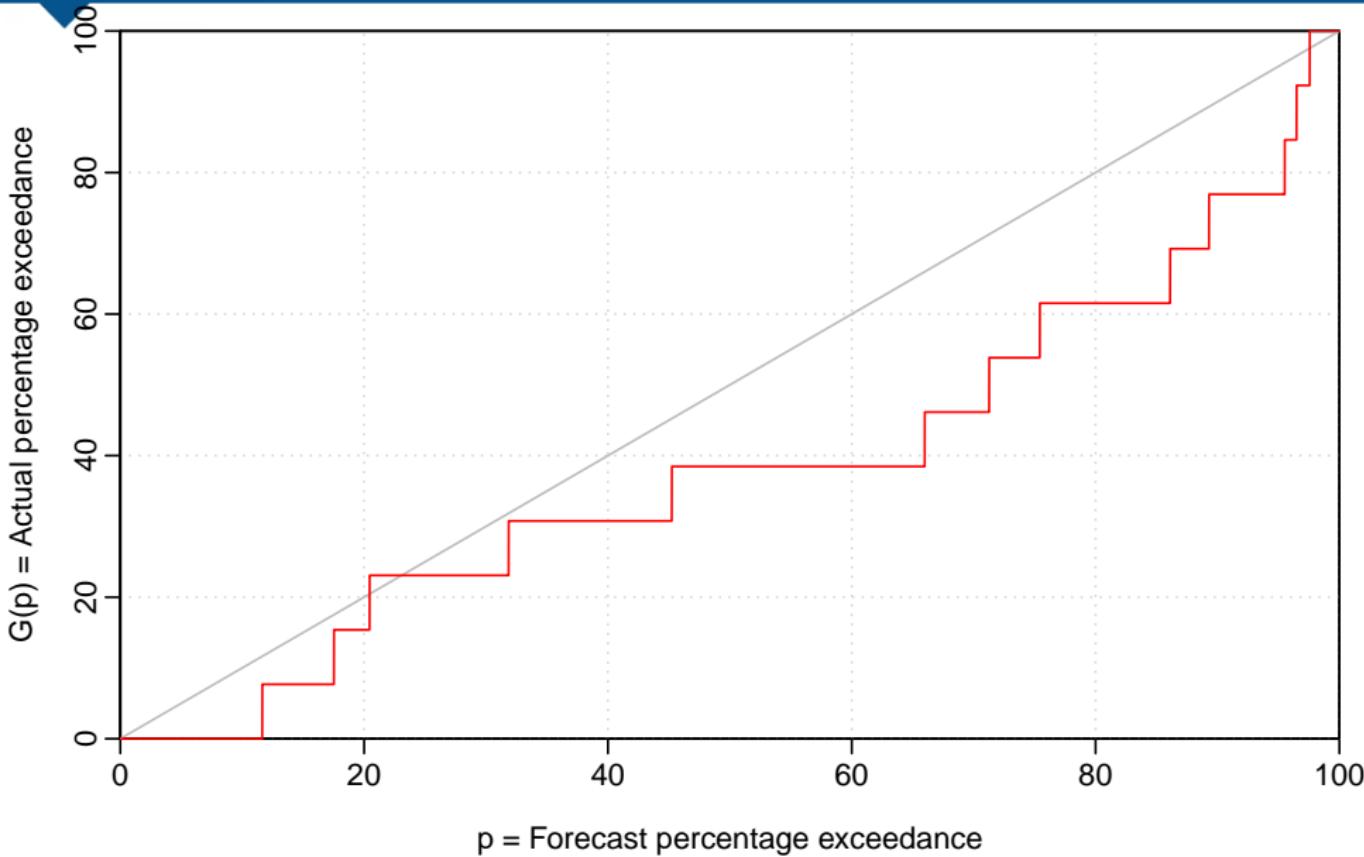
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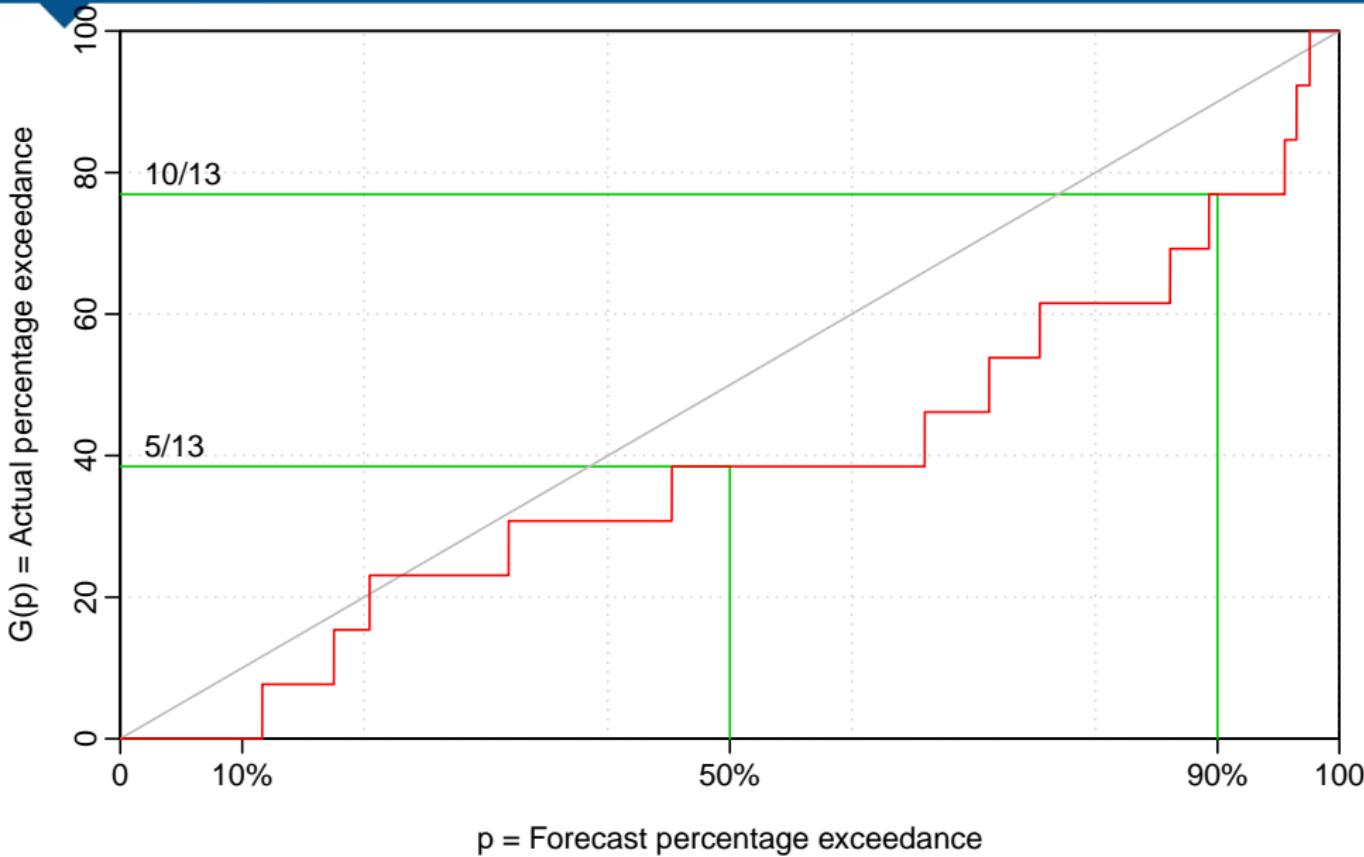
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If  $Q_t(p)$  is accurate, then  $G(p) \approx p$

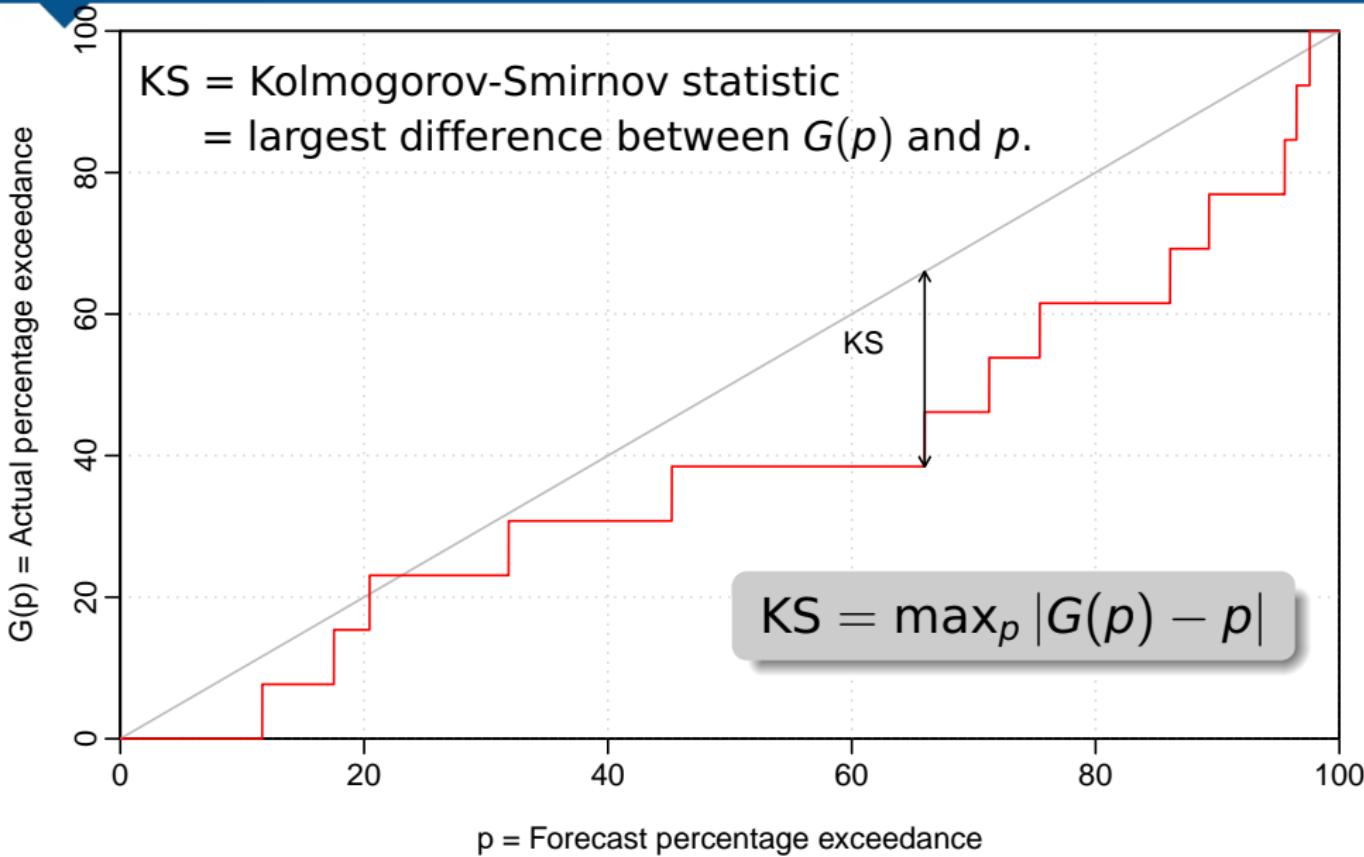
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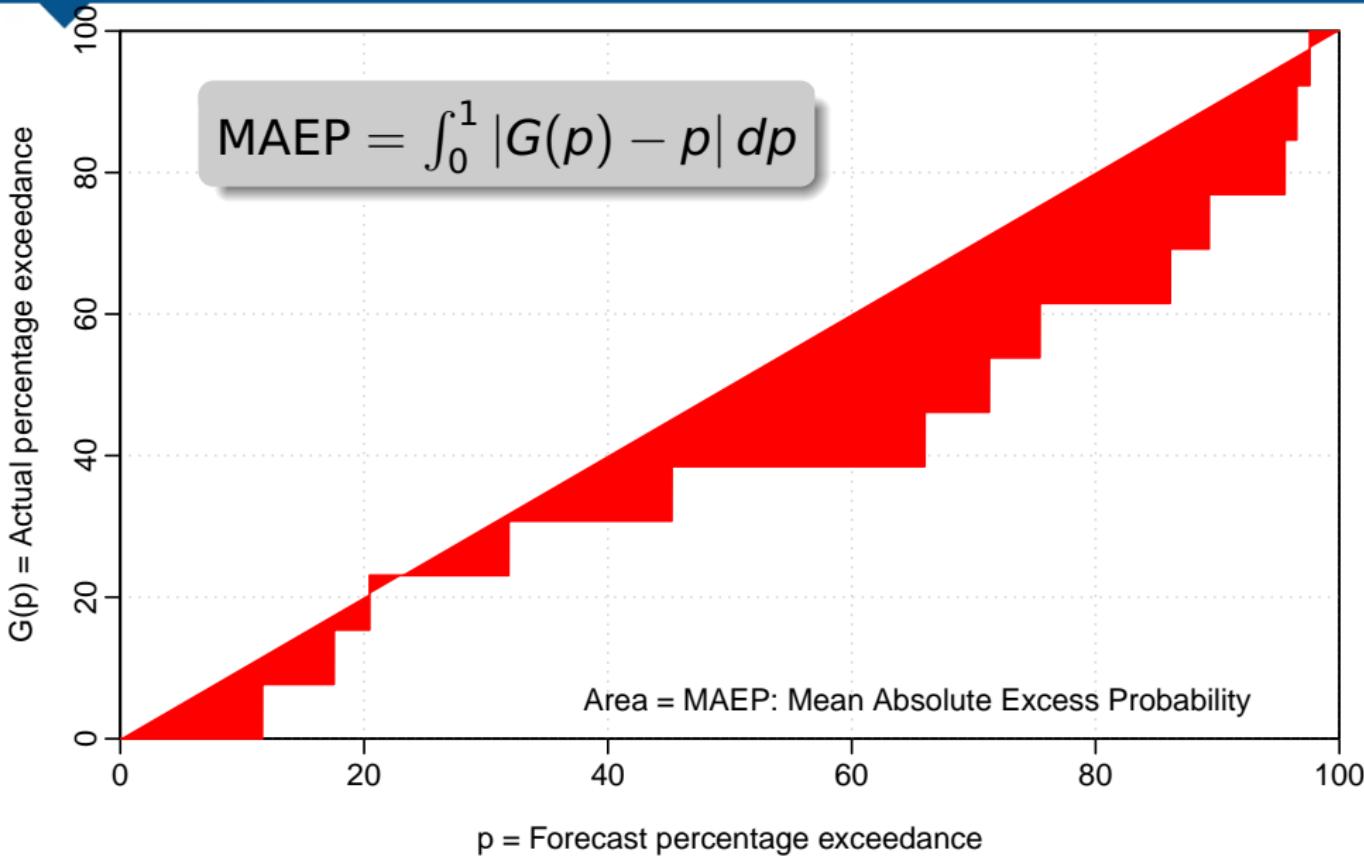
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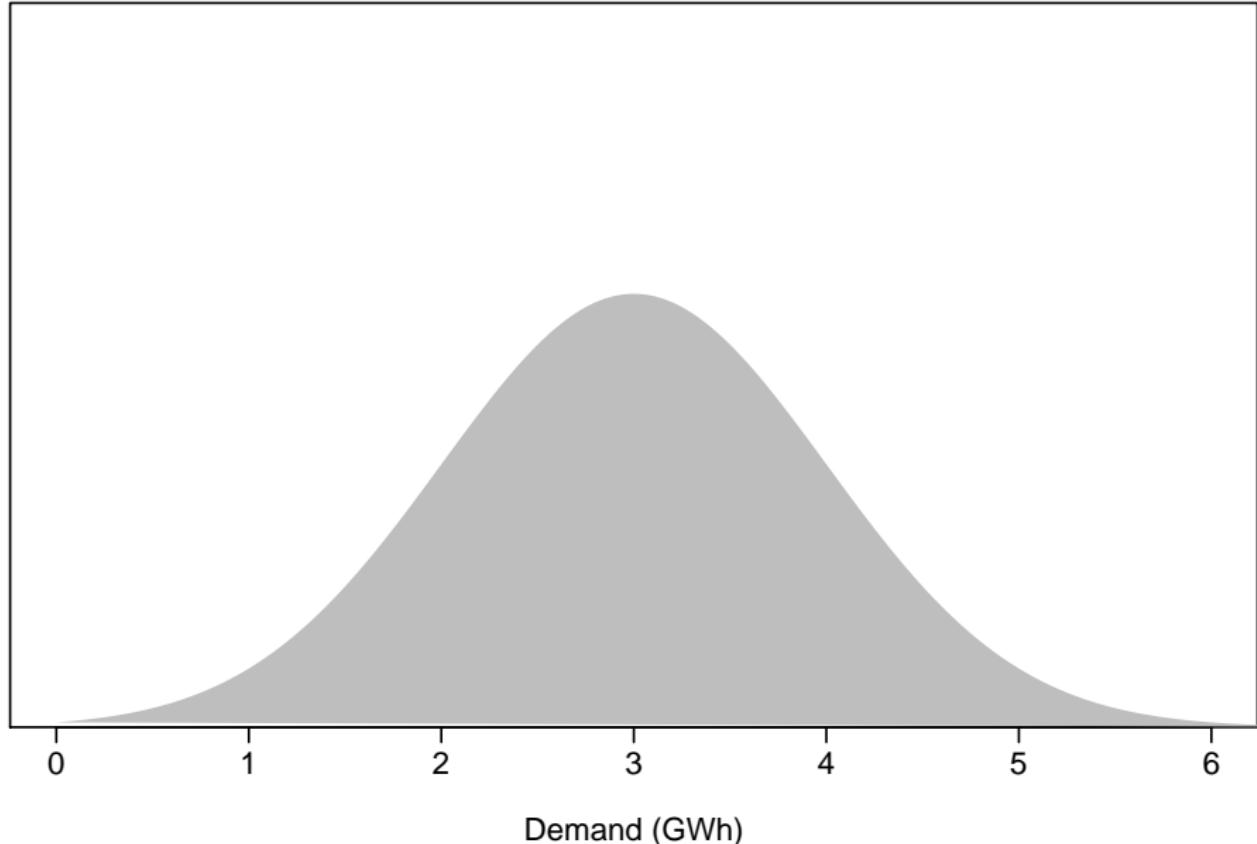
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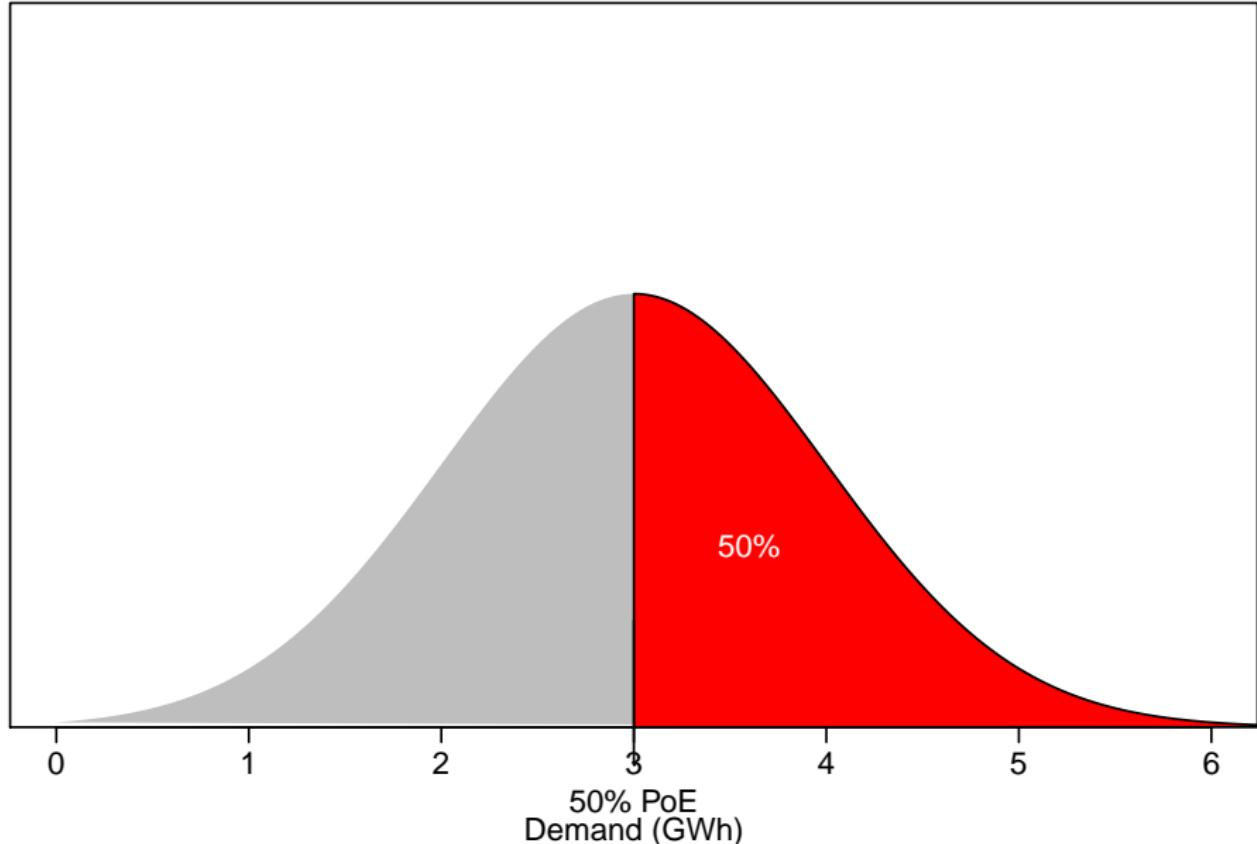
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## Demand distribution



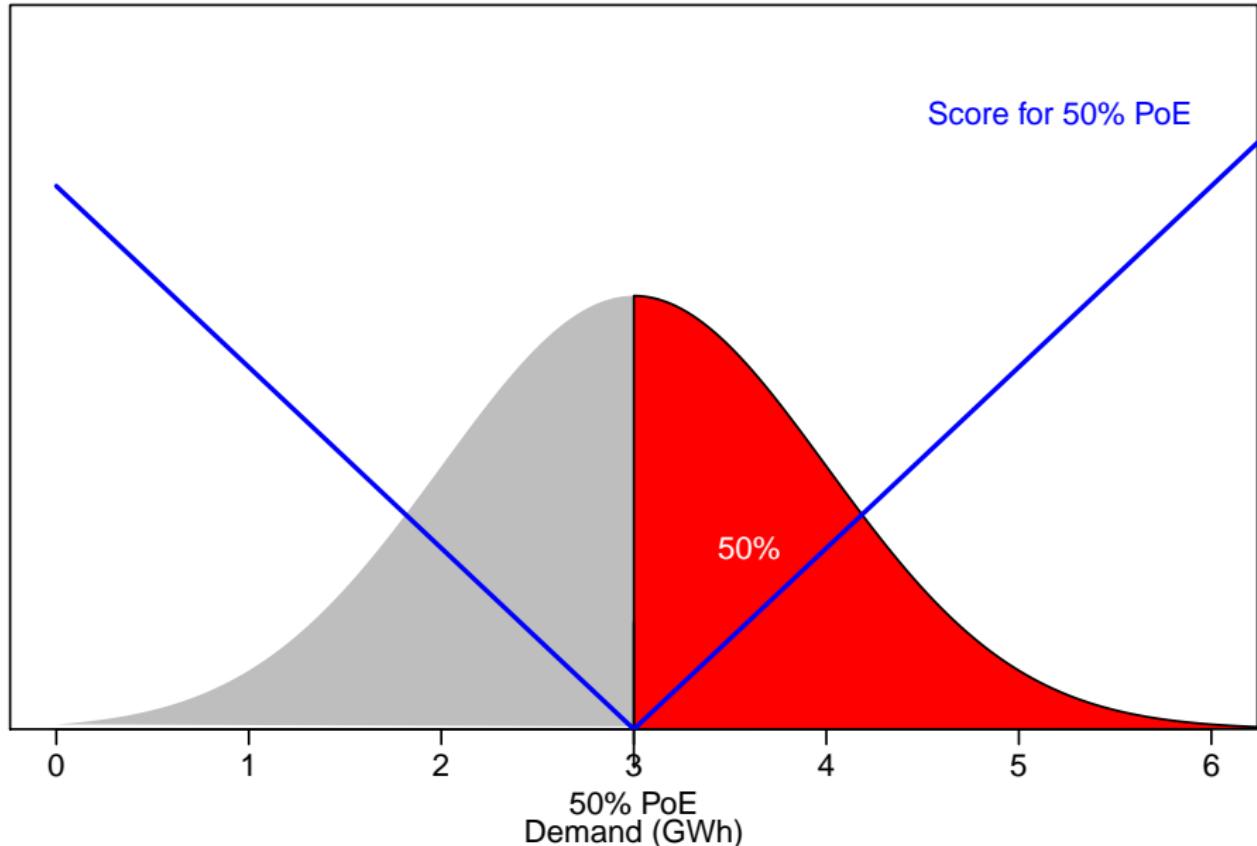
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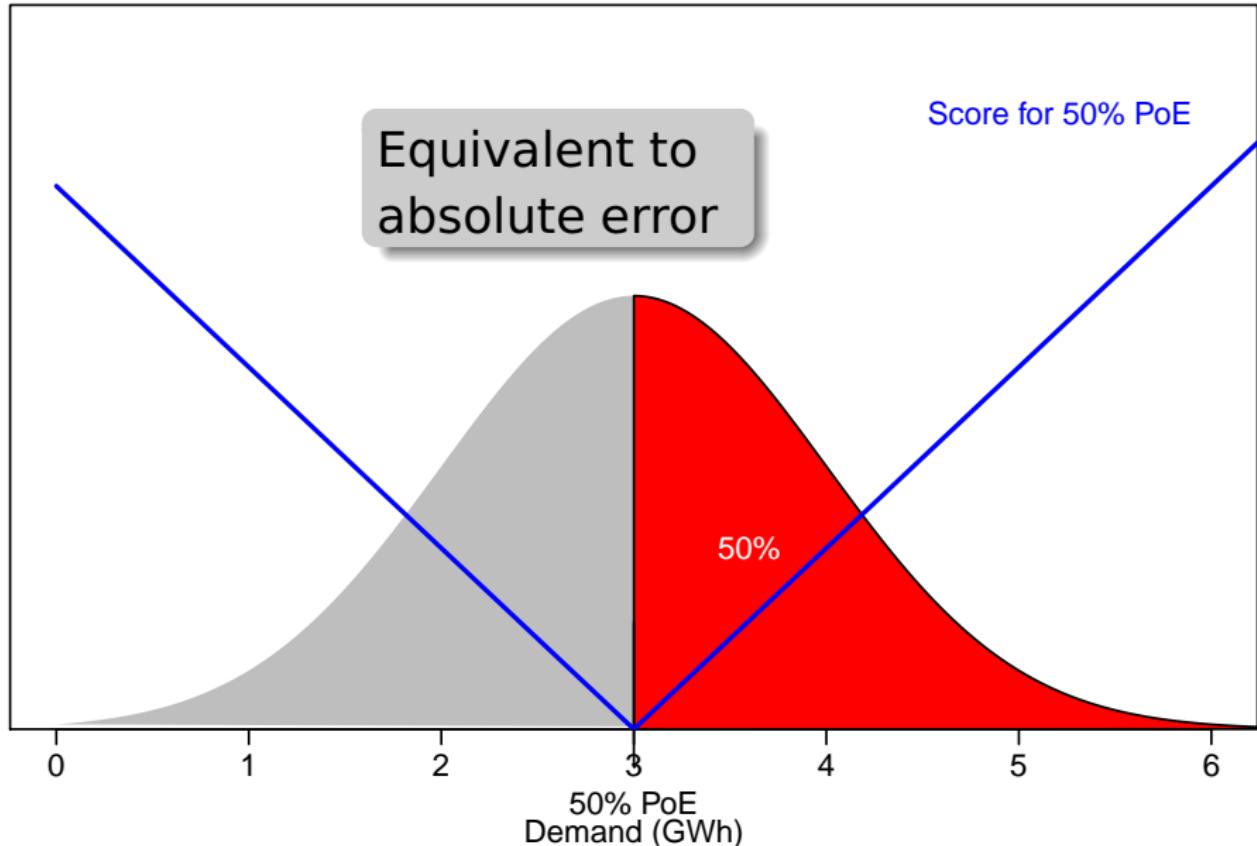
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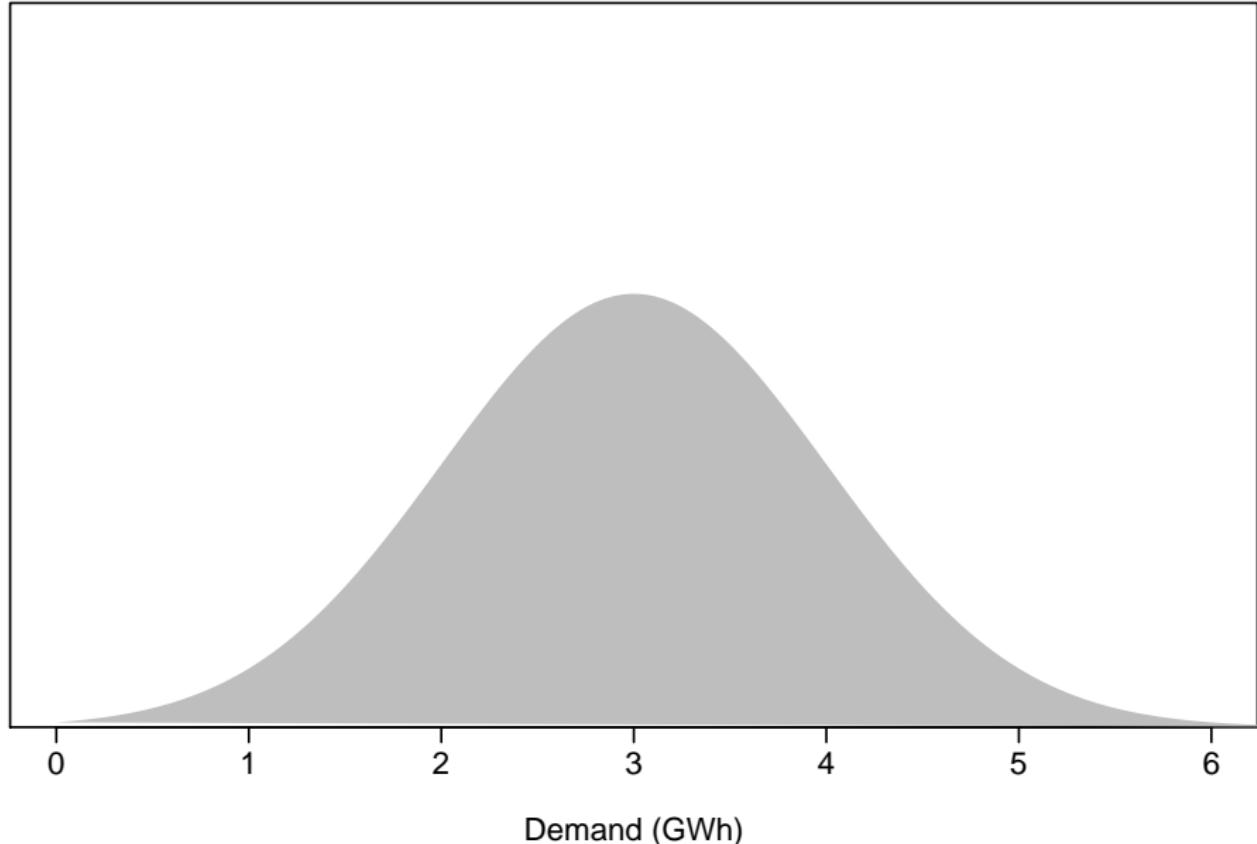
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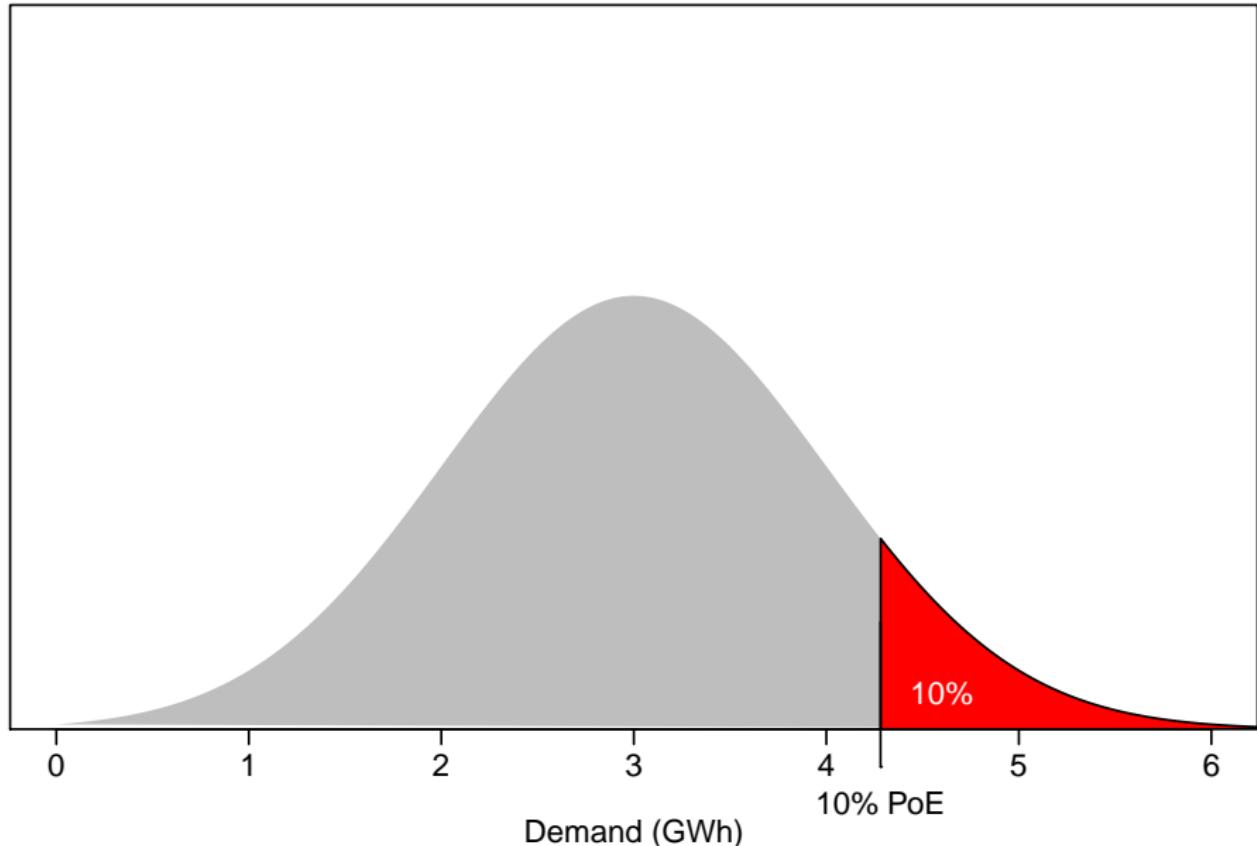
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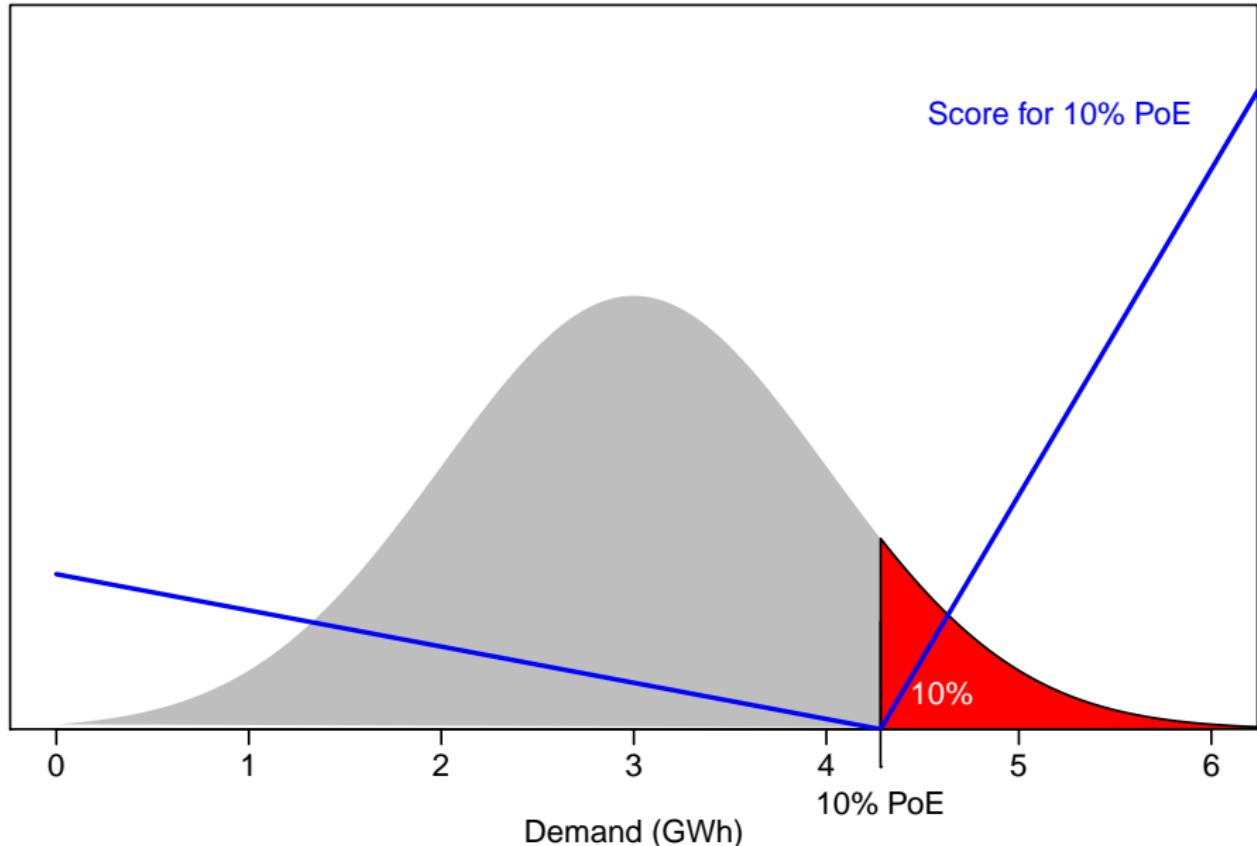
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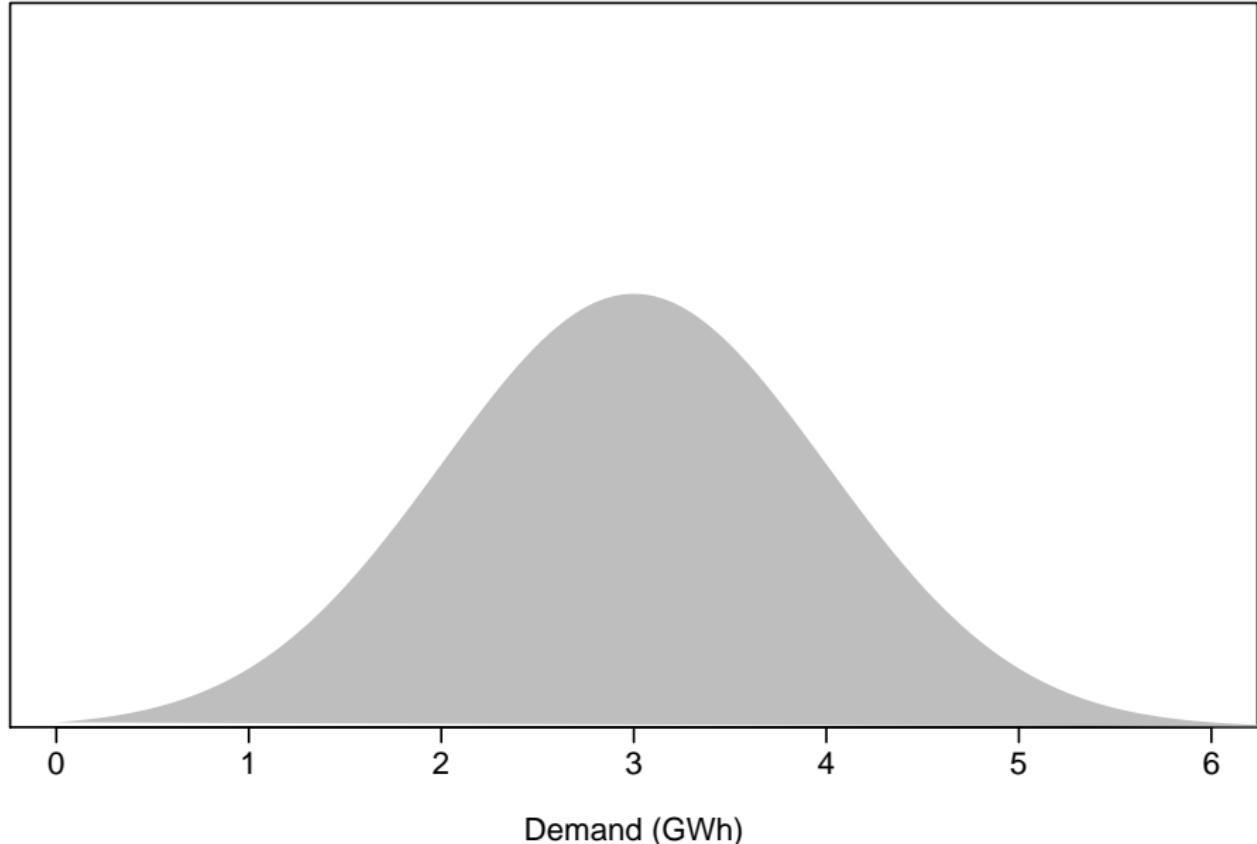
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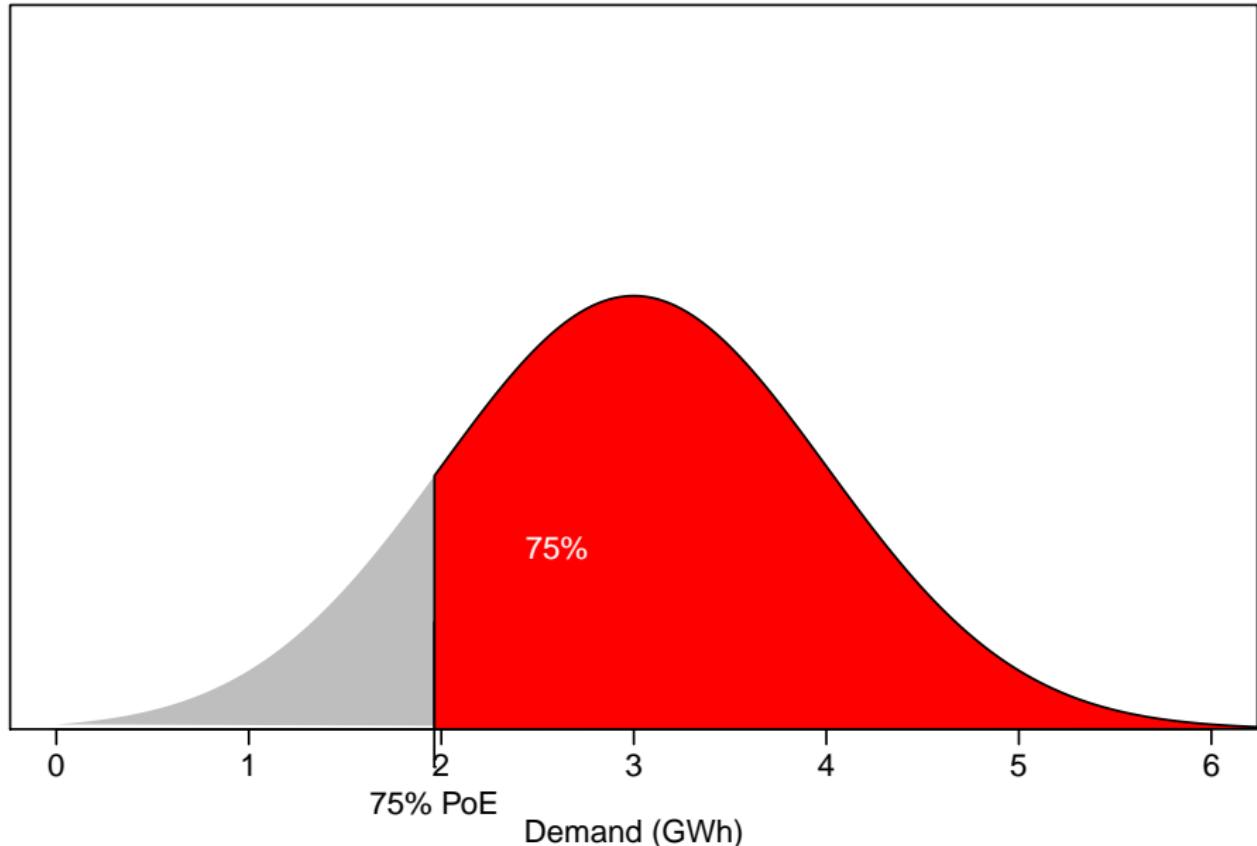
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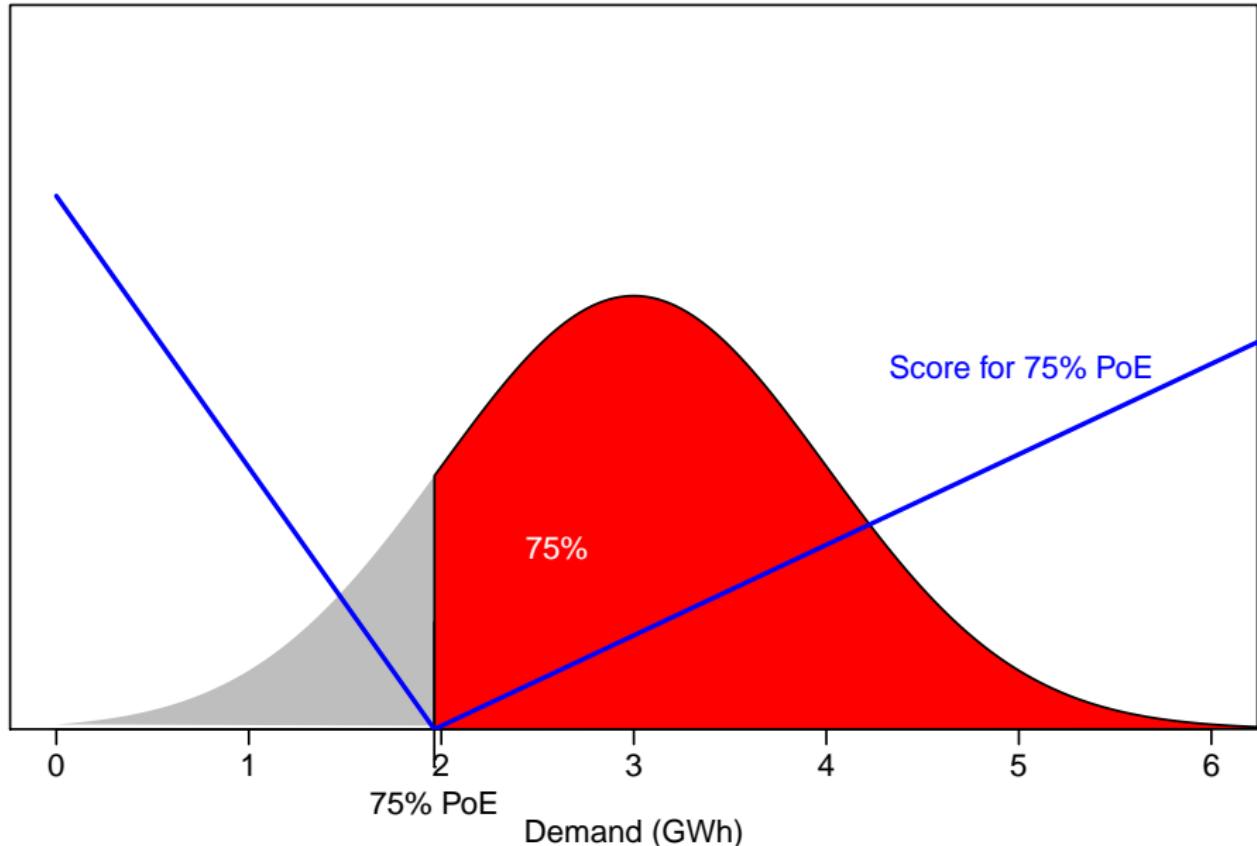
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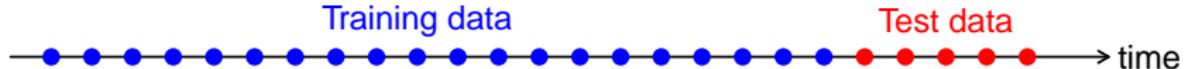
# Forecasting the past

## Traditional evaluation

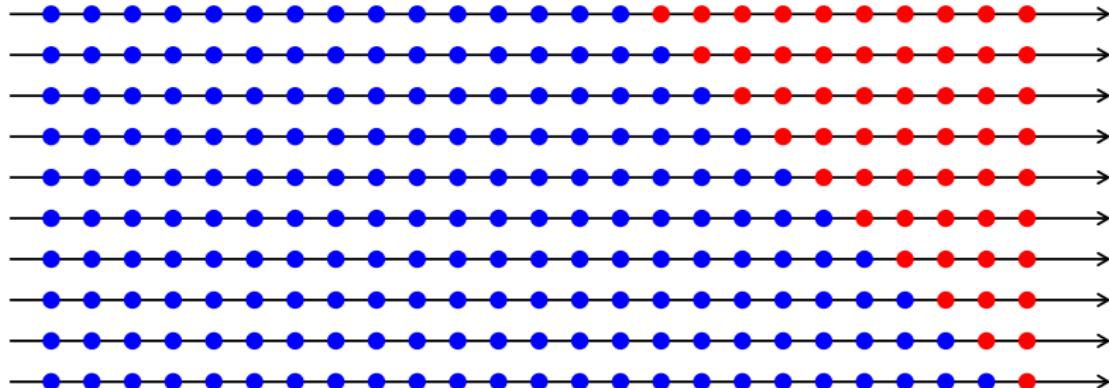


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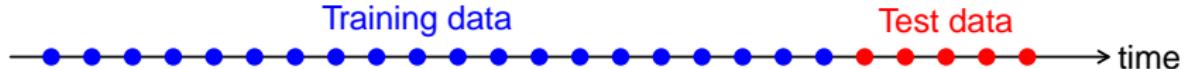


## Time series cross-validation

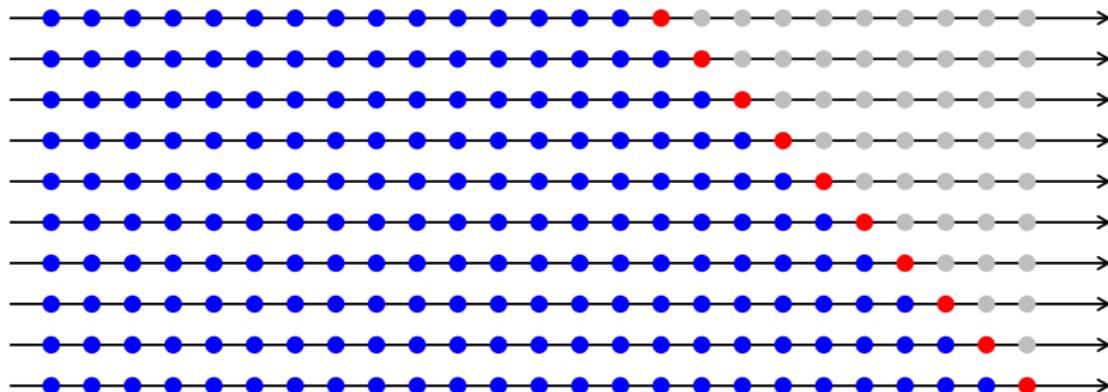


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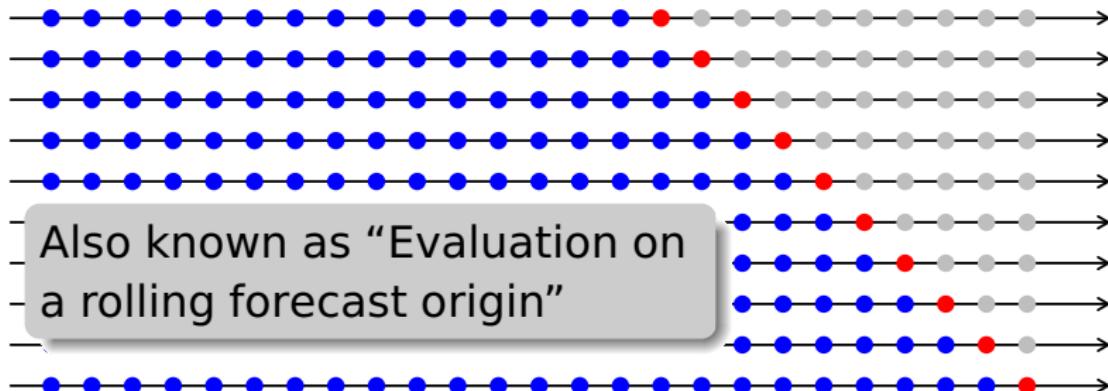


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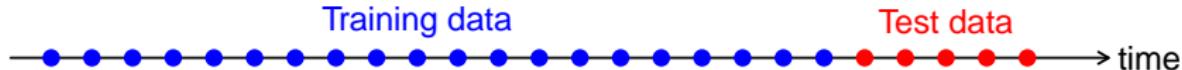


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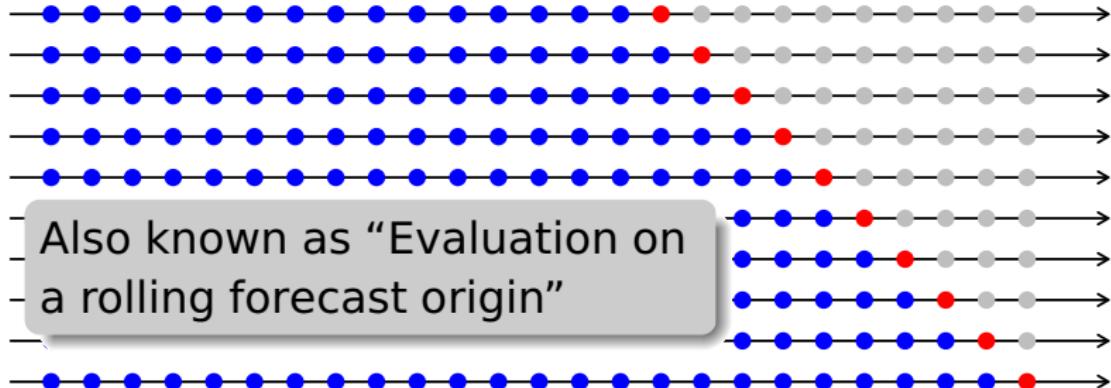


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## GEFCOM 2012 competition



## GEFCom2012 Load Forecasting

### Global Energy Forecasting Competition 2012 - Load Forecasting

Finished

Saturday, September 1, 2012

\$7,500 • 105 teams

Wednesday, October 31, 2012

Dashboard

Public Leaderboard • Private Leaderboard

This competition has completed. This leaderboard reflects the final standings.

See someone using multiple accounts?

[Let us know.](#)

#	Δ1w	Team Name * <small>in the money</small>	Score ⓘ	Entries	Last Submission UTC (Best – Last Submission)
1	-	Tiberius Data Mining *	<a href="#">60777.02849</a>	4	Sun, 23 Sep 2012 08:14:35
2	-	CountingLab ↴	<a href="#">67214.64846</a>	33	Tue, 30 Oct 2012 16:54:59 (-2.2d)
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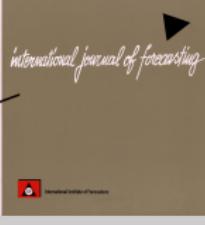
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Methods  
published  
in IJF,  
April 2014

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- Forecasts to be submitted in the form of percentiles of future distributions.
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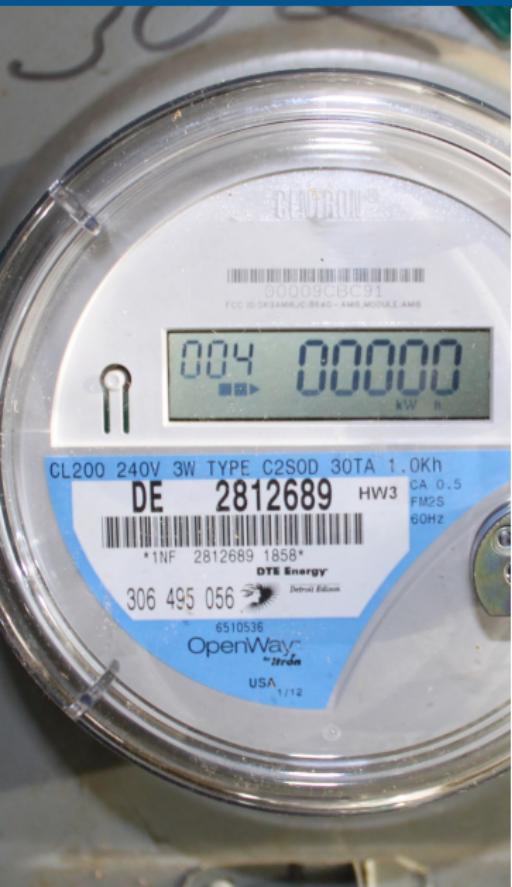
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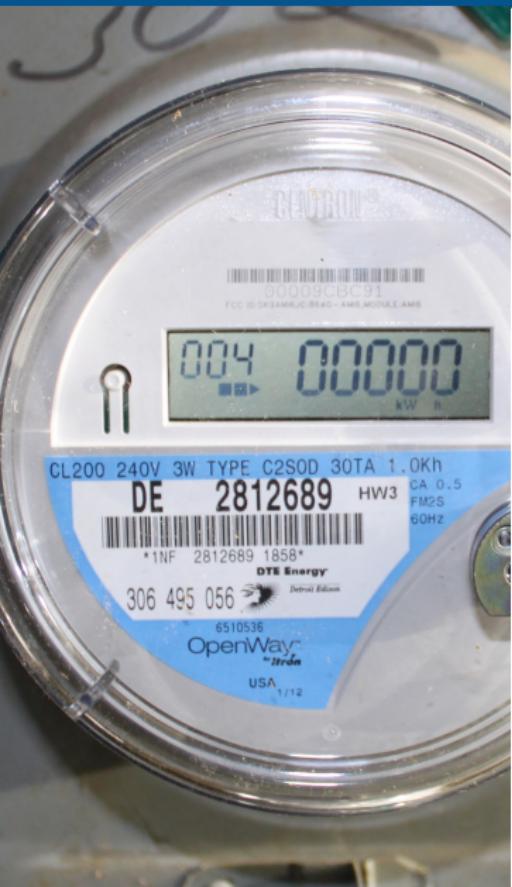
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- 2 Understand how your forecasts will be used
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# Some resources

## Blogs

- [robjhyndman.com/hyndsight/](http://robjhyndman.com/hyndsight/)
- [blog.drhongtao.com/](http://blog.drhongtao.com/)

## Organizations

International Association for Forecasting  
International Institute of Forecasters

## Books

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## Blogs

- [robjhyndman.com/hyndsight/](http://robjhyndman.com/hyndsight/)
- [blog.drhongtao.com/](http://blog.drhongtao.com/)

## Organizations

- International Institute of Forecasters:  
[forecasters.org](http://forecasters.org)
- International Association for Forecasting  
[www.ifa.org](http://www.ifa.org)
- European Association for Forecasting  
[www.eaforum.org](http://www.eaforum.org)

## Books

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- IEEE Working Group on Energy Forecasting:  
[linkedin.com/groups/IEEE-Working-Group-on-Energy-4148276](https://www.linkedin.com/groups/IEEE-Working-Group-on-Energy-4148276)

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## Books

- Dickey and Hong (2014) *Electric load forecasting: fundamentals and best practices*.  
[gutenberg.org/cache/epub/13/pg13.html](http://www.gutenberg.org/cache/epub/13/pg13.html)

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