

# Digital Engineering

Powered by data. Driven by innovation.

## Weather Modelling for Power Generation

### Course On-Demand

#### Instructors

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Peter Hollingsworth

Mr. Hollingsworth has more than 30 years of experience in delivering weather-based solutions to the industry. In the last 20 years, his focus has been largely to the energy sector, particularly transmission, distribution, generation and energy trading industries in the USA, the UK, Australia and New Zealand.

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James Parr, M.Eng.

Mr. Parr has a master's degree in Mechanical Engineering. He has managed numerous significant innovation projects for utilities in the United Kingdom including National Grid Electricity Transmission as well as Scottish Power Electricity Networks.

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Dirk Cannon, Ph.D.

Dr. Cannon finished his doctorate in Meteorology and has experience in machine learning techniques for weather and electrical grid applications. He is the Lead Meteorologist at Digital Engineering.

# Agenda

8:45 am Meet & Greet

9:00 am An introduction to weather modelling

- What is a weather model
- Where do weather models come from
- What are the differences in weather models
  - Global
  - Mesoscale
  - Re-analysis
  - Deterministic
  - Ensemble
  - Blended
  - Seasonal
  - Climate

Super computers and weather modelling

- 1986 storm that changed the world of meteorology
- UKMO, GFS & ECMWF models
- Other global model providers

BREAK

10:45 am How do weather models work for transmission and distribution

- Raw model data
- High resolution WRF model data
- Fine-tuned forecast data
  - Nudged spot forecasts
  - Short term vs long term forecasts (operations vs planning)

How to improve weather models & model data for our networks

- Additional weather stations
- Proxy data from weather stations
- Finding alternative sources of high-quality data

LUNCH

1:00 pm Uses of weather data for Power Generation

- Weather warnings – Keep ahead of upcoming severe weather events
- Spot forecasts – Use these to maximise your power generation output
- Long range forecasts – Enhance medium term operation planning
- Seasonal forecasts – Improve your long term planning

Reading weather charts and visualising weather

- Synoptic chart
- Weather cycle
- Seasons explained
- Warm and cold front cross sections
- What to look for

3:00 pm Closing Remarks

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# Contact us

If you'd like to find out more about our ground-breaking technical solutions, on-demand courses, or have a specific issue you would like to discuss with us, please get in touch.

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