Paris Session 2022

Summer 2020 in Great Britain: A view of future residual demand?

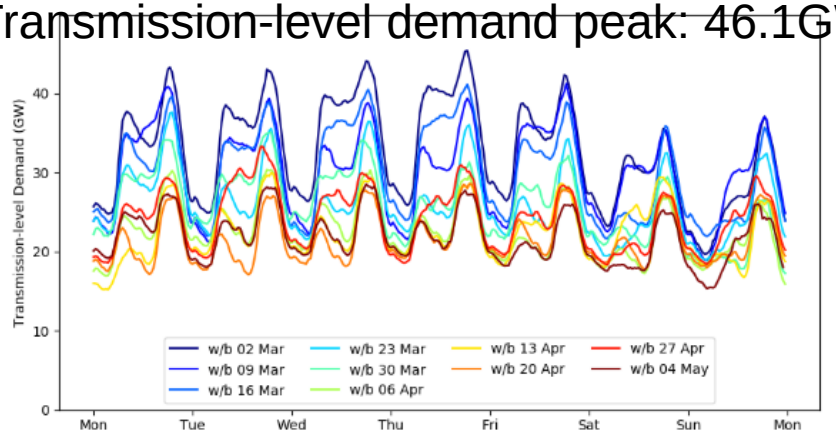
C1 – Power System Development and Economics

Question 3.1.4: What are some of the lessons learnt over the pandemic period and which can be seen as ground-breaking factors to consider in the future?

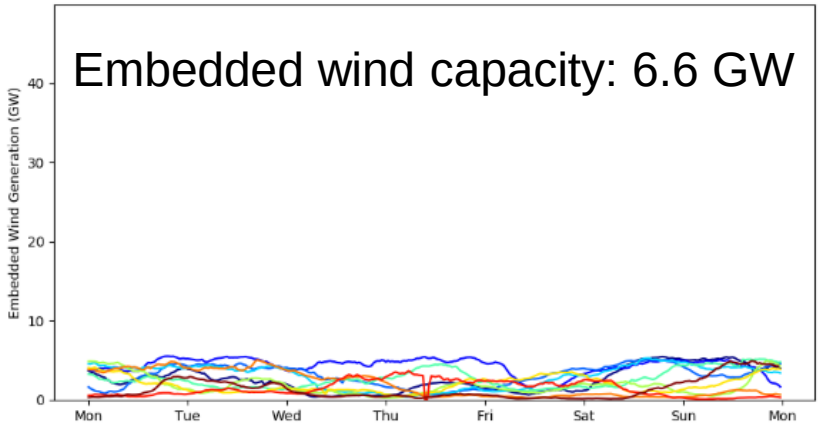
Dr Graeme Hawker, UK

Residual demand during first CV-19 lockdown

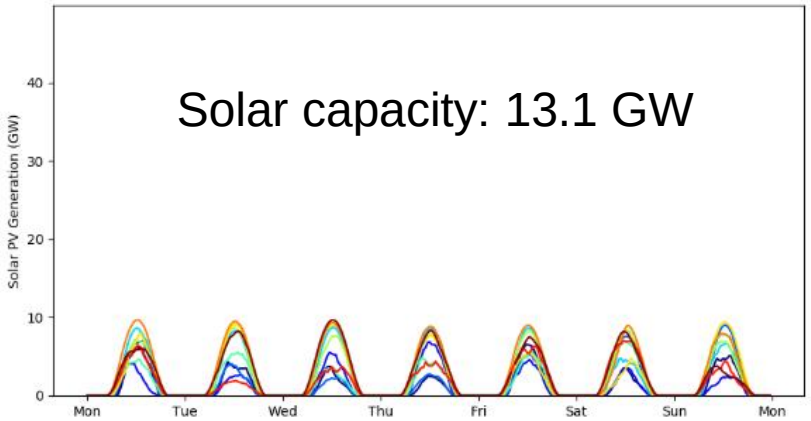
Transmission-level demand peak: 46.1GW

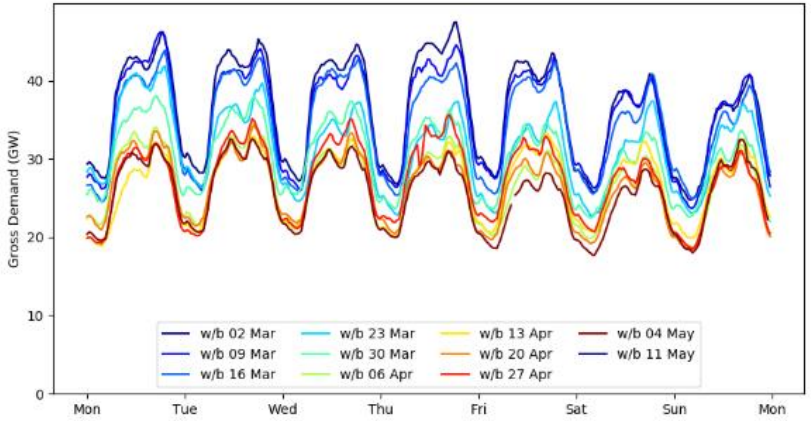


Embedded wind capacity: 6.6 GW

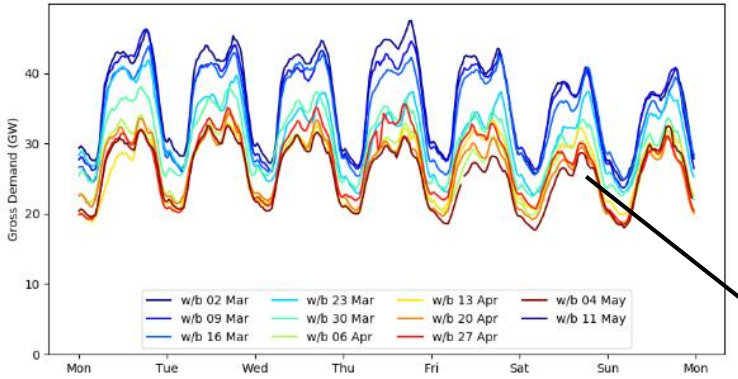


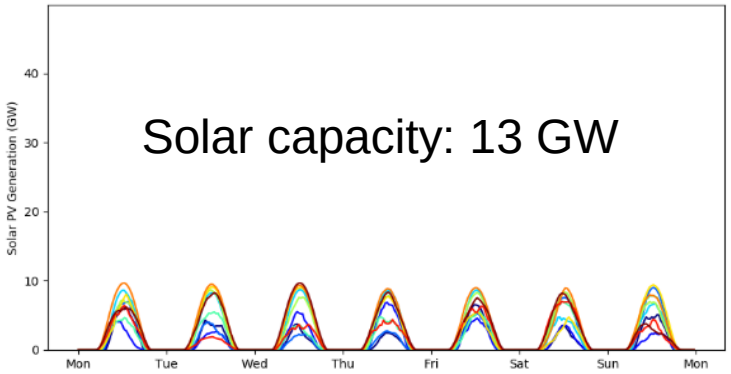
Solar capacity: 13.1 GW



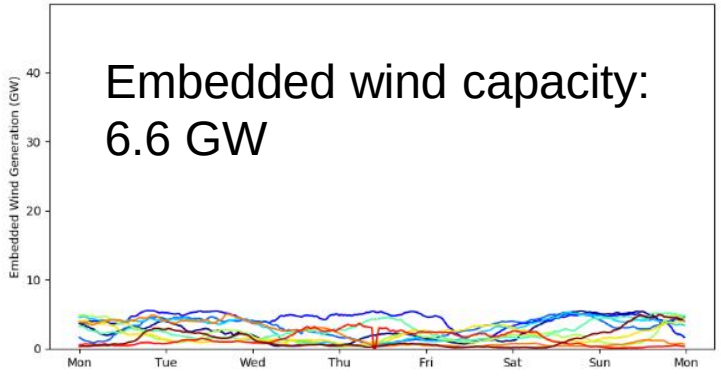


Mid-day minimum distribution-level demand: 26.4 GW





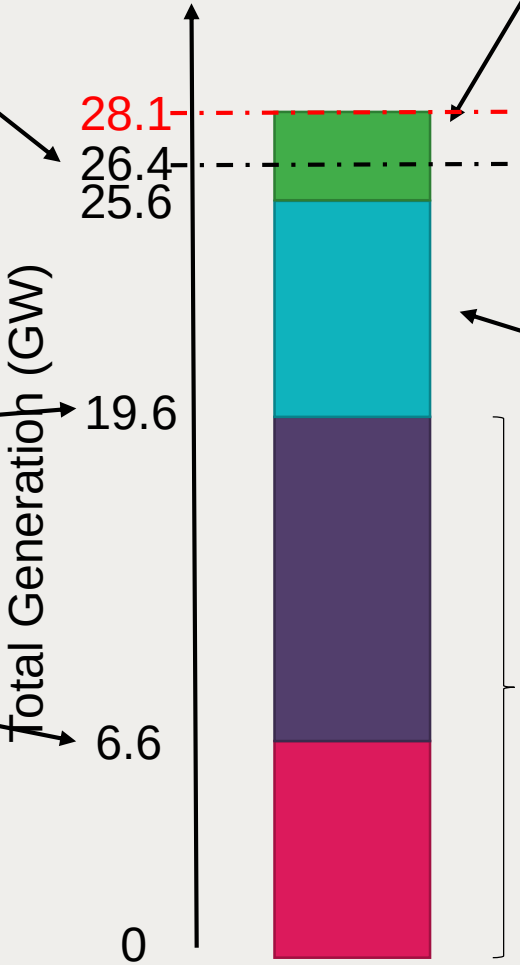
Solar capacity: 13 GW



Embedded wind capacity: 6.6 GW

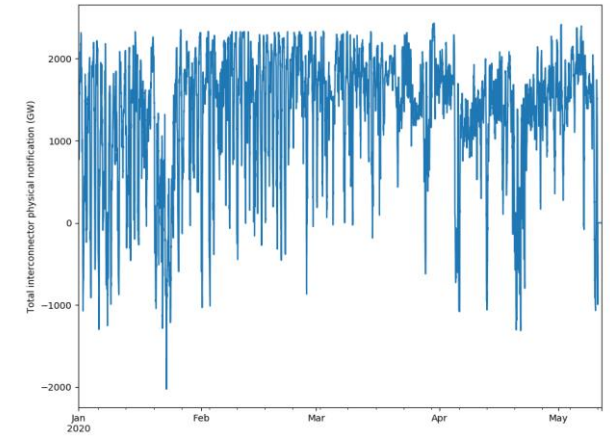
Mid-day minimum demand during lockdown: 26.4 GW

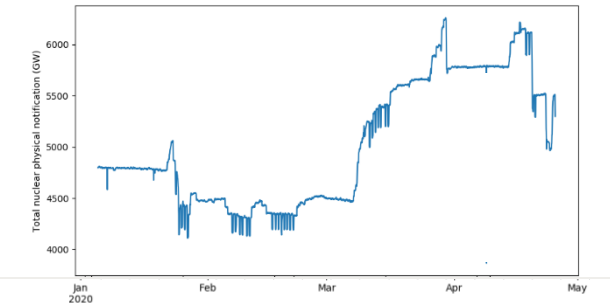
Interconnector trading; up to 2.5 GW import



Nuclear; currently ~6 GW

Potential total non-dispatchable renewable output on a windy, sunny day at mid-day





(and this assumes all 15.2GW of transmission-connected wind is also running close to capacity and is being paid not to generate at a cost of around £1m/hour)

A view of future system operation?

- The operational margin during low demand periods minimised by non-dispatchable DG
- Driver to increase flexibility options
  - Need for increased visibility and control of DG
  - Avoidance of suboptimal economic dispatch (constraint of zero-marginal cost generation)
- Preparation for future events which may further suppress demand
  - Elevated energy prices
  - Increased energy efficiency
  - Other 'black sky' events
- Assumptions around consumer behaviour during stress events

COMMODITIES NEWS MAY 6, 2020 / 10:03 AM / UPDATED 2 YEARS AGO

EDF asked to lower Sizewell nuclear plant output to help balance UK grid

By Susanna Twidale 3 MIN READ

LONDON (Reuters) - EDF Energy has been asked to temporarily reduce output at its Sizewell B nuclear plant in the east of England to help balance the grid and prevent blackouts, EDF and grid operator National Grid said on Wednesday.