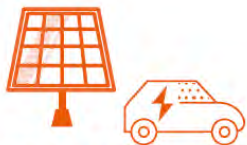# Future Energy Scenarios 2019

Negative emissions

37 million tonnes of CO_2 removed from atmosphere.

EVs enabling renewables

Smart charging vehicles could enable the storage of roughly one fifth of GB's solar generation for when this energy is needed.
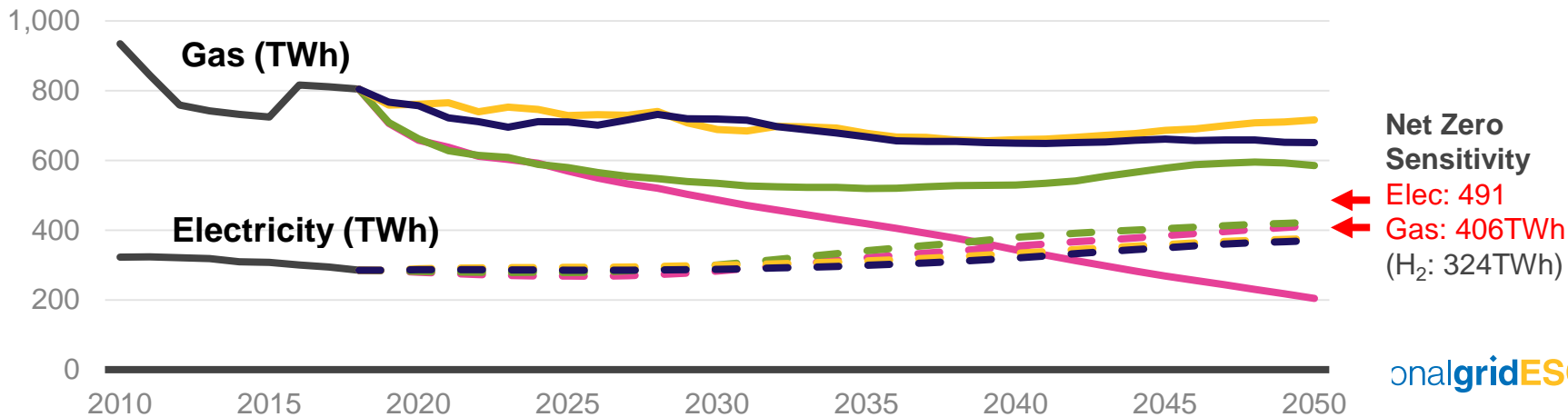
Clean heat challenge

By 2050[2], up to 85% of homes need to be very thermally efficient (at EPC class C or higher).
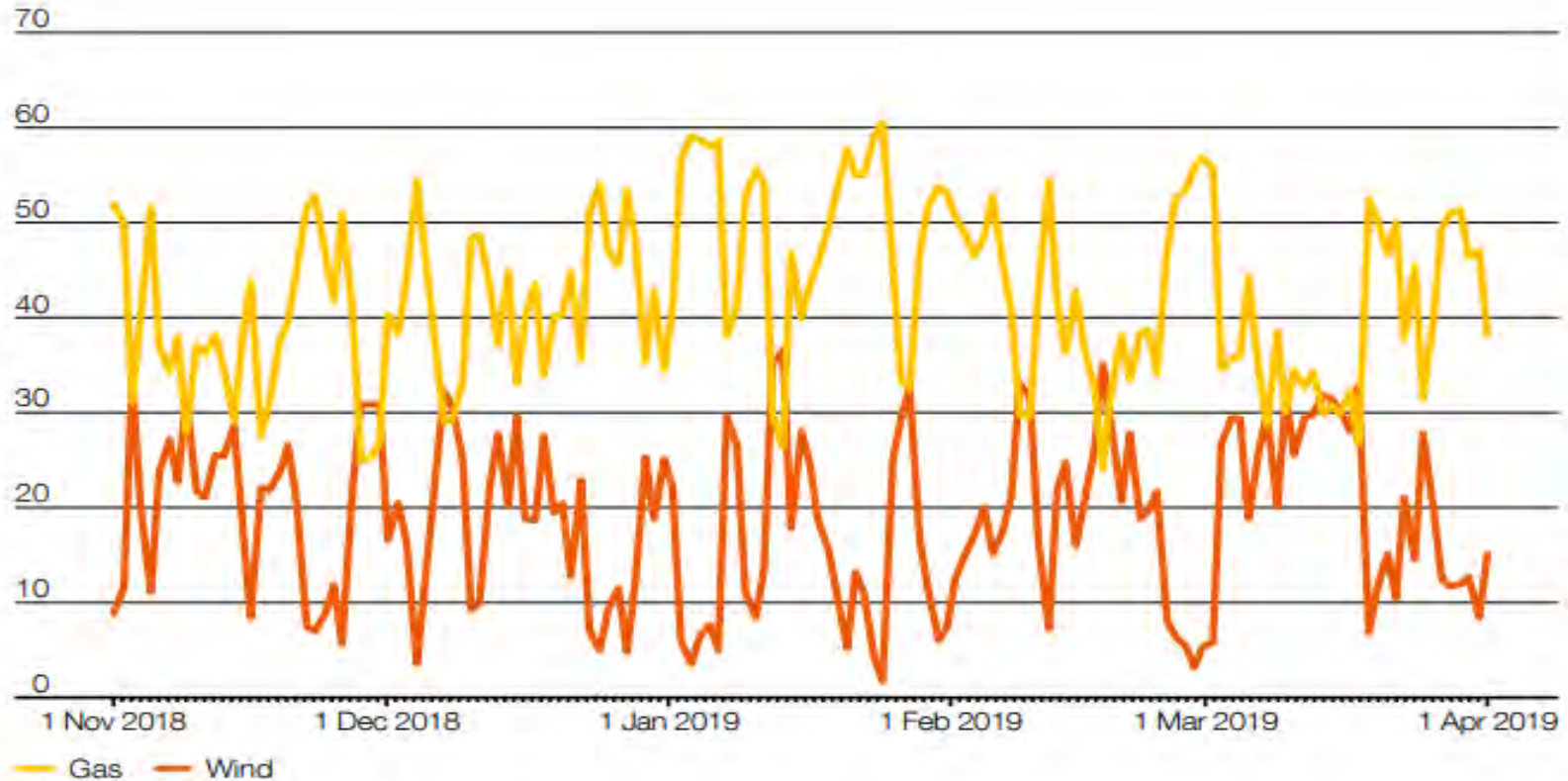
Whole system digitalisation

Well over 2.8 trillion data points will be collected in 2050 to understand where EVs are charging on the electricity system.

Net Zero Sensitivity

Elec: 491
Gas: 406TWh
(H_2: 324TWh)

Interactions across the whole energy system

Load factors for wind generation and gas fired generation in winter 2018/19

Legend: — Gas — Wind

Our goal: An electricity system that can operate carbon free by 2025

Key Enablers

New Technology	New Players	New Markets	New Control Room tools
New providers of inertia, short circuit infeed and dynamic voltage support to deliver innovative sources of flexibility and dynamic stability	Increasing participation of demand side along with the emergence of new business models and combined technologies	Marketplaces to efficiently source all of the new products and services that are needed, and opening up the markets to all	Advanced situational awareness and monitoring of system status plus real time dynamic analysis of system stability, improved forecasting

Timeline

NOA Pathfinders complete

RIIO2 Decision

Grid Stability market request for info

Inertia Monitoring on line

New build Grid Stability tender complete

New Control Room Tools

New Grid stability technologies on stream

1st Carbon Free Hour

2019　　2020　　2021　　2022　　2023　　2024　　2025

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