

HUMBERZER



Immingham Industrial Area

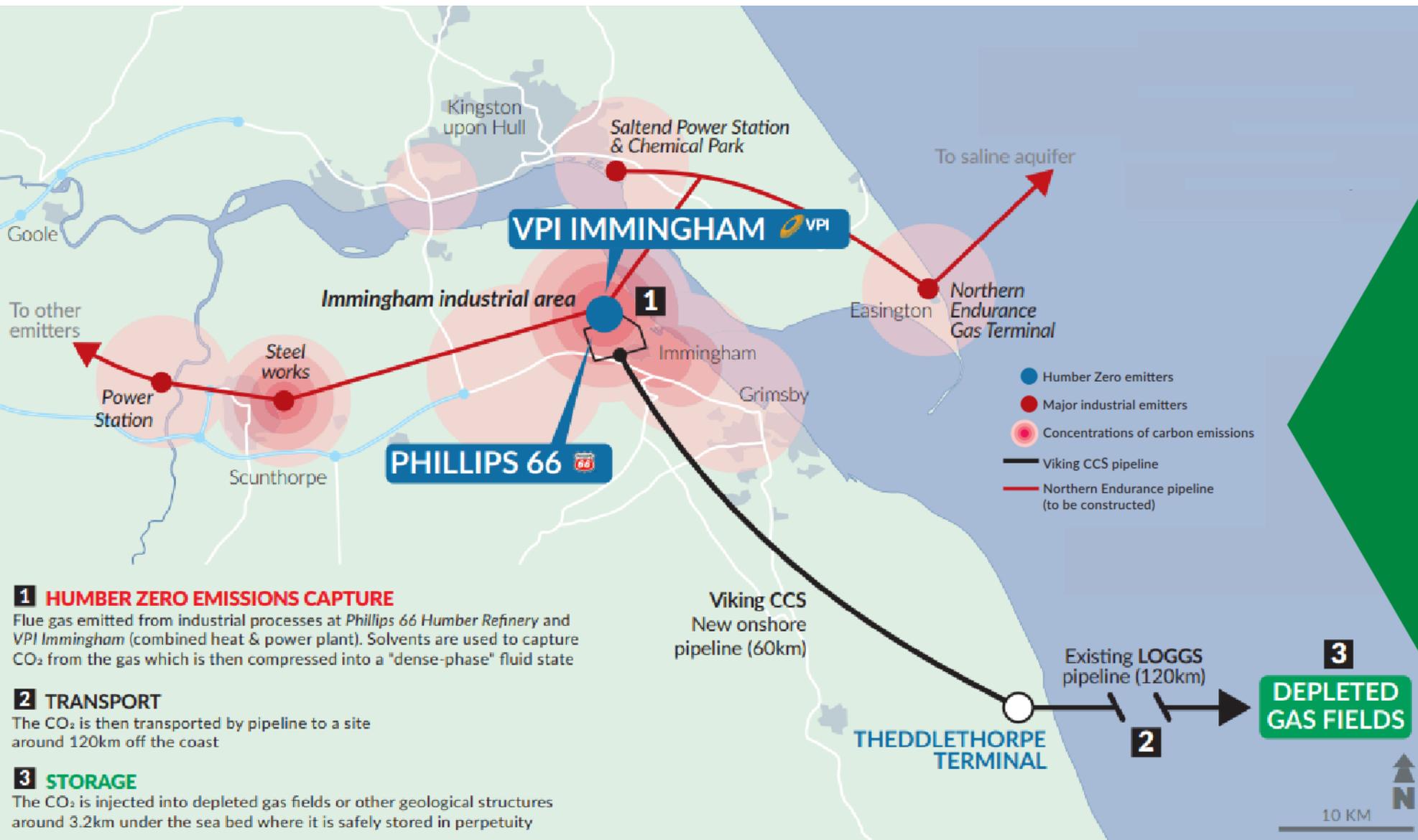
VPI Immingham CHP

- 1.2GW capacity - up to 5% of UK peak time energy supply
- Electricity to homes and businesses via National Grid
- Steam to neighbouring refineries – 930 tonnes per hour
- Uses off-gas from Humber Refinery to generate electricity

Phillips 66

- 6m litres processed per day – 20% UK domestic fuel supply
- UK's first production of sustainable aviation fuel
- Europe's only producer of battery coke
- Emerging energy and refinery of the future





Developing Infrastructure

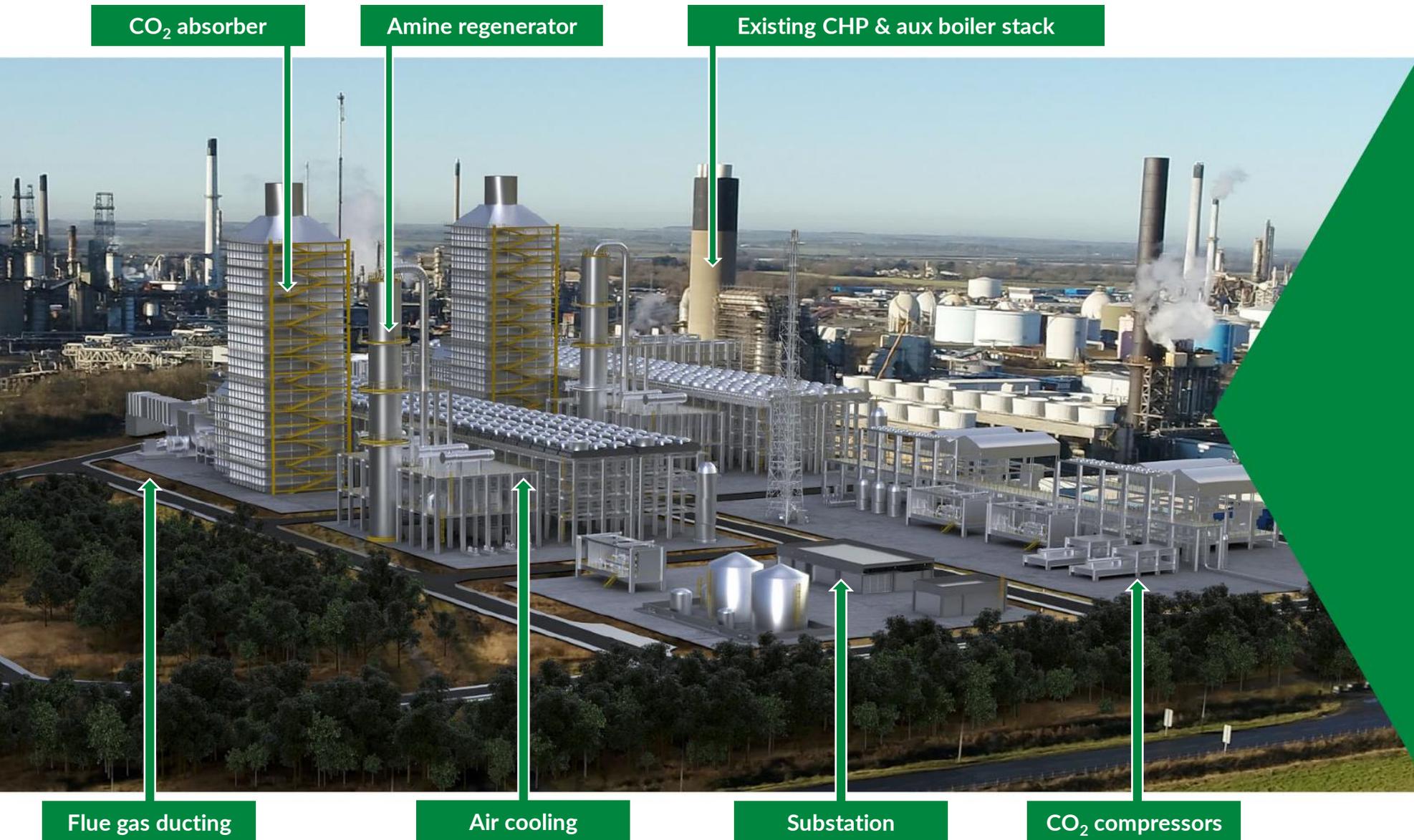
A large-scale, industry led project to remove up to 8 million tonnes of CO₂ from the Immingham industrial area every year by around 2030.

Supports a vision for a low carbon future in the Humber.

The first phase (post-combustion carbon capture) focuses on industrial decarbonisation of Phillip 66's fluid catalysing cracker and on industrial and power decarbonisation of VPI's Combined Heat and Power Plant (CHP)

Full decarbonisation of Humber requires two, inter-connected CO₂ T&S systems

Metrics



CO₂ absorber

Amine regenerator

Existing CHP & aux boiler stack

Flue gas ducting

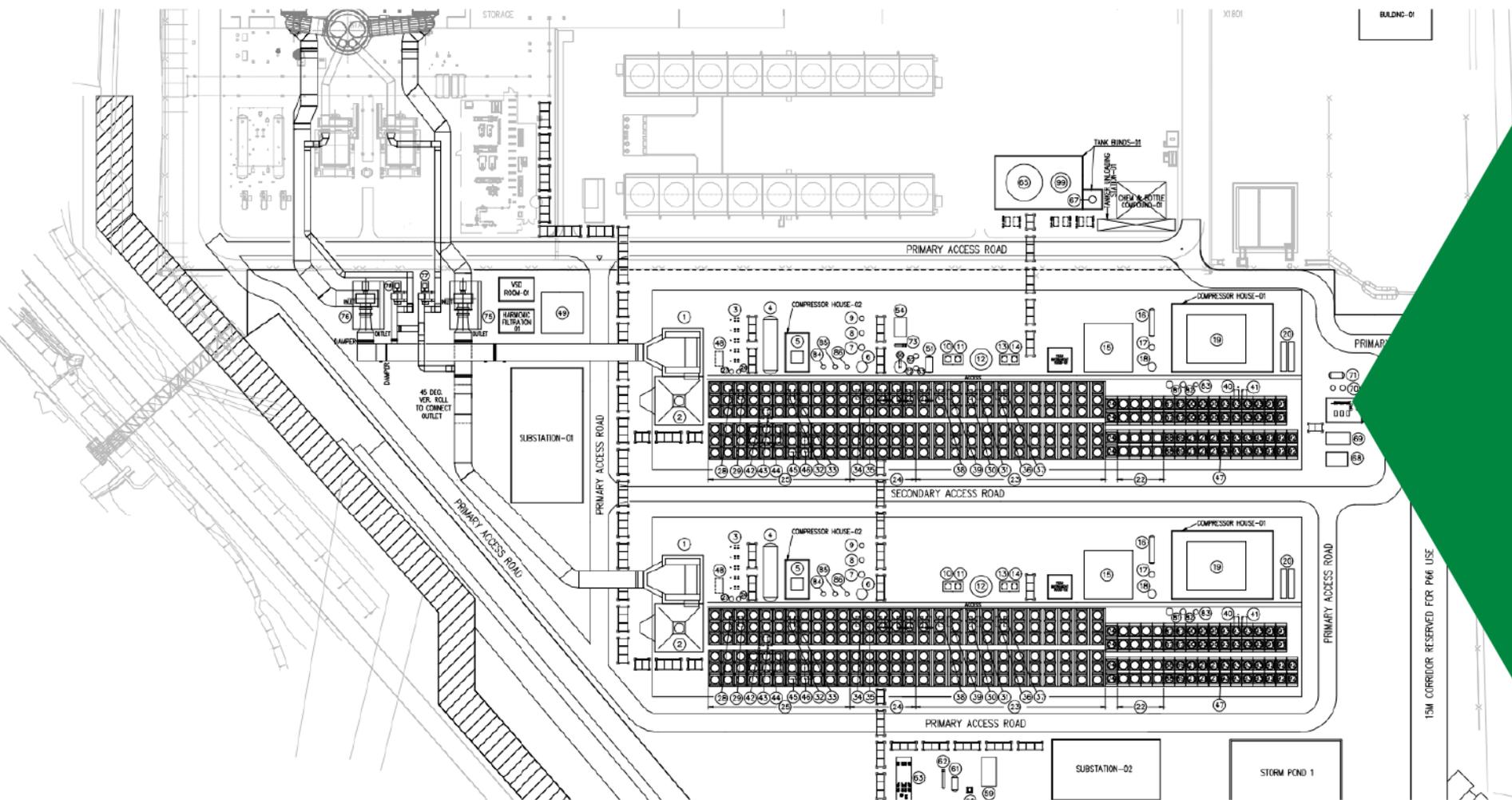
Air cooling

Substation

CO₂ compressors

- Circa 170 Equipment Items
 - 7 Process Columns
 - 4 Compressors
 - 23 Vessels & Tanks
 - 18 Heat Exchangers
 - 40 Air Cooled Heat Exchangers
 - 30 Pumps
- 29km piping
- 4,800 Instruments
- 118km Cabling
- 9,700 Tonnes Structural Steel
- 3,800 Piles
- 17,000m³ Concrete

Metrics



- Circa 170 Equipment Items
 - 7 Process Columns
 - 4 Compressors
 - 23 Vessels & Tanks
 - 18 Heat Exchangers
 - 40 Air Cooled Heat Exchangers
 - 30 Pumps
- 29km piping
- 4,800 Instruments
- 118km Cabling
- 9,700 Tonnes Structural Steel
- 3,800 Piles
- 17,000m³ Concrete

Procurement Strategy

- Early identification and engagement with key vendors and sub-contractors
- Supply chain engagement roadshow held:
 - More than 260 people from suppliers attended
 - Companies from across the UK made the journey
 - Overwhelmingly positive feedback received
- Equipment vendor list (>300 vendors) established and 60% of RFQs issued for budget quotes
- Sub-contract strategy established and work packages under development (19 work packages, 83 sub-contractors)
- Local content review conducted

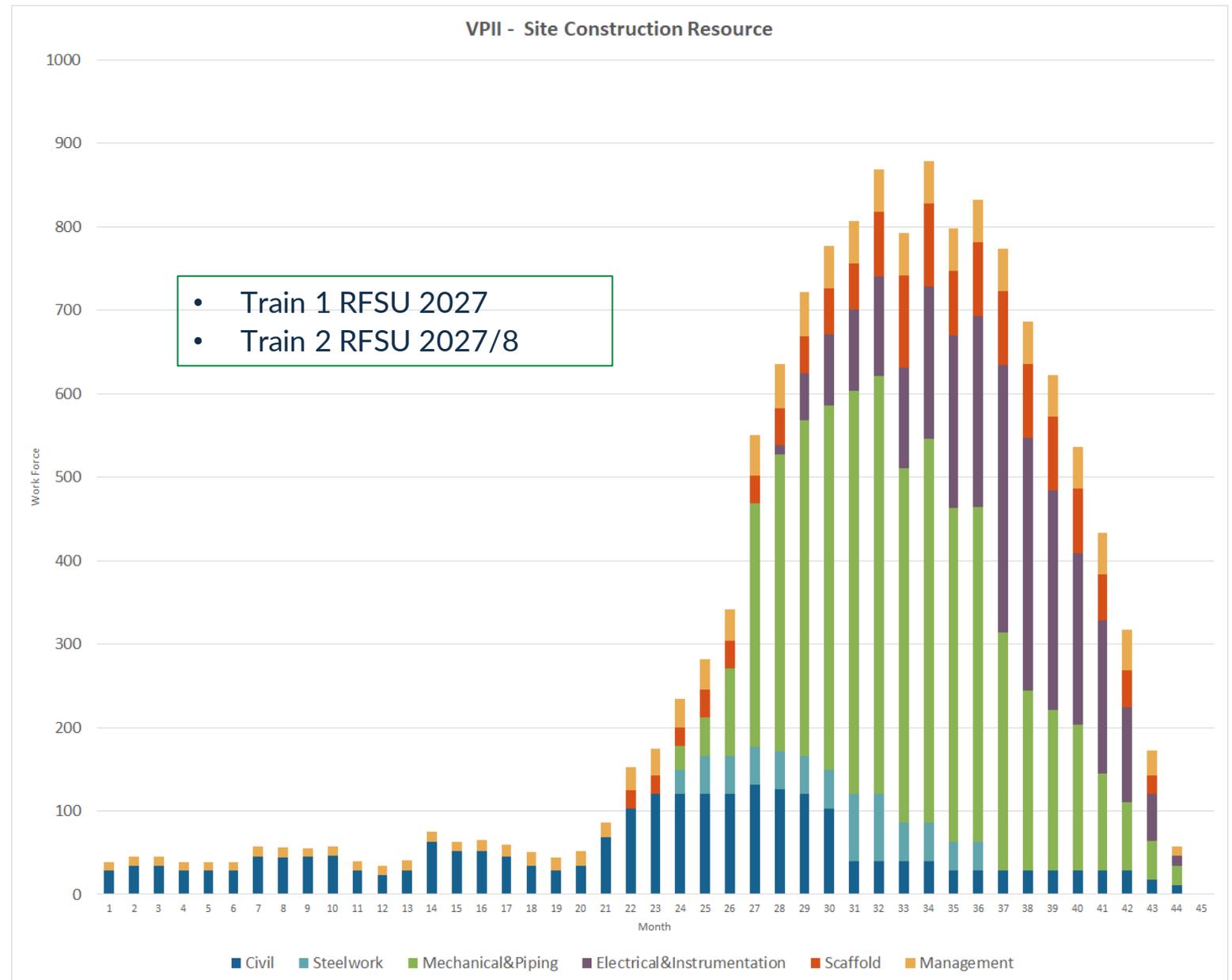


Supplier Outreach Day - 2022



260+ delegates from UK-wide

Construction Site Resources



Permitting and Consenting

Run in parallel with Phillips 66

Planning Strategy

- Town and Country Planning Authority: North Lincolnshire Council

Permitting

- Authority: Environment Agency

Regulatory Context (first of a kind issues)

- Intellectual Property Disclosure
- Amine emission modelling

Principal Activities

- Stakeholder Engagements
- Baseline Studies: Air Quality, Noise, Traffic, Landscape and Visuals, Geo-environmental, Heritage, Archaeological surveys
- EIA Scoping
- Public Consultation
- Environmental Assessment and Reporting
- Archaeological Survey (Trial Trenching)
- Construction Access Road Planning
- Finalisation of planning and permit documents



HUMBERZER

Jonathan Briggs

VPI Project Director
Humber Zero

JBriggs@vpi-i.com

