## **Group Operations - Highlights**



#### UK

Speciality Steels

Lochaber Smelter

Liberty Engineering Group

Marble Power

Uskmouth coal conversion

Glenshero 168MW Wind Project

#### **USA**

Georgetown

Keystone Steel & Wire

Johnstown Wire

### **Continental Europe**

Aluminium Dunkerque

Chateauroux wheel plant

Galaţi,Romania Skopje, North Macedonia Piombino, Italy

Ostrava, Czech Republic

Dudelange, Luxembourg Liege, Belgium

#### **Australia**

OneSteel

Zen Energy

280MW PV @ Whyalla



## Operational loads – Electric Arc Furnaces



EAFs recycle scrap steel back to useful product

Peak loads at Rotherham 200MW, instantaneous swings up to 100MW

### Flexibility strategies pursued:

- Capacity Market
- Dynamic Frequency Response
- Static FR
- Imbalance / BM



### Operational loads – Aluminium Smelter



80MW hydro plant connected to 24km of tunnels, commissioned in 1929

10MW export/50MW import capacity being expanded to 80MW export/59MW import

### Flexibility strategies assessed:

- Capacity Market
- Static Frequency Response
- Dynamic Frequency Response
- Balancing Mechanism



# Renewable generation development





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