



MAST

Energy Developments

Renewable Transition-Enabling
Flexible Power

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Mast Energy Developments ('MED') | LSE:MAST

- **MED's vision** is to be a **leading provider** of **transitional energy capabilities** across multiple markets, ultimately providing a **dividend** to **investors** from the energy transition.
- **MED's goal** is to operate multiple **Dynamic Electricity Generating** ('DEG') assets - **modular quick-to-cashflow electricity generating assets**, including reciprocating gas turbine engines ('RGT'), batteries and "green gas", to generate electricity to complement and balance intermittent renewable electricity generation.
- There is currently **8GW** of active RGT assets in UK, expected to grow to **15 GW** by 2040.
- Most DEG assets are provided by private and PE-backed companies. **MED** is seeking to be the **leading publicly listed company** in the sector.
- **MED** is initially **focused** on **growing** its RGT assets to 300+ MW and will over time deploy batteries and "green gas" assets, as well as geographic expansion.



Reciprocating Gas Turbine Electricity Generation

Reciprocating Gas Turbine Electricity Generation (RGT) systems are a key part of the UK electricity grid

RGT assets are modular quick-to-cashflow electricity generating assets, to generate electricity to complement and stabilise intermittent renewable electricity generation. RGT assets are also flexible and can potentially be repurposed to use hydrogen and/or host battery storage.

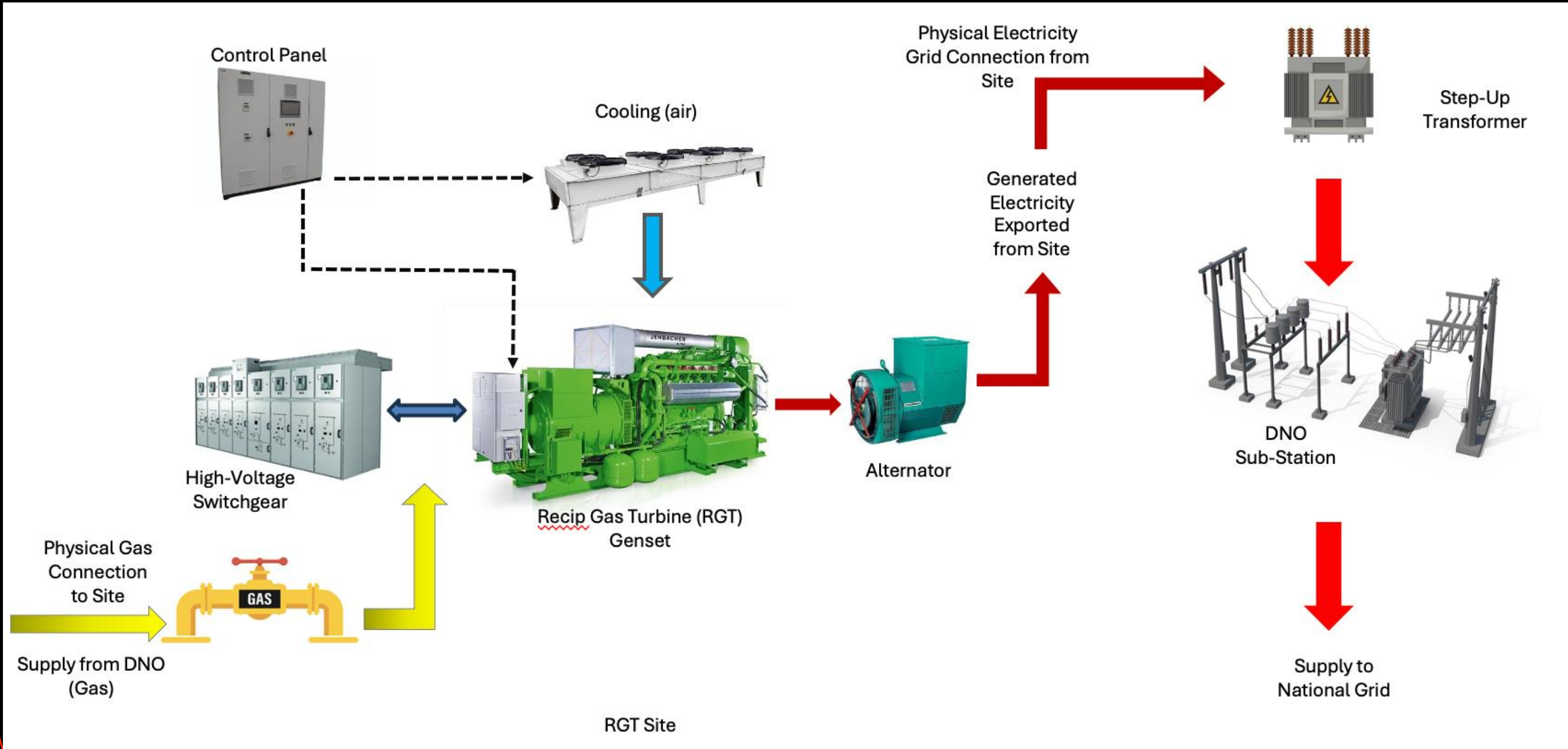
RGT assets provides two main capabilities:

- Supply electricity to fill demand when there is a lull in renewable electricity generation due to volatile weather patterns
- Provide electricity to maintain grid electricity balance (during times of peak demand and outages)

RGT assets generate revenues from four diversified and reliable key sources :

- **Power Purchase Agreement (PPA)** – generating trading revenue via PPA with Statkraft from arbitrage opportunity in electricity price volatility vs input costs
- **Embedded Benefits** – payments based on electricity generated (irrespective of electricity price) being delivered straight into national grid distribution system
- **Capacity Market (CM)** – guaranteed minimum payments from government to provide capability (capacity payment) up to 15 years
- **Balancing Mechanism (BM)** – additional income earned to balance the national grid when there are deficits between supply and demand

RGT Site Schematic

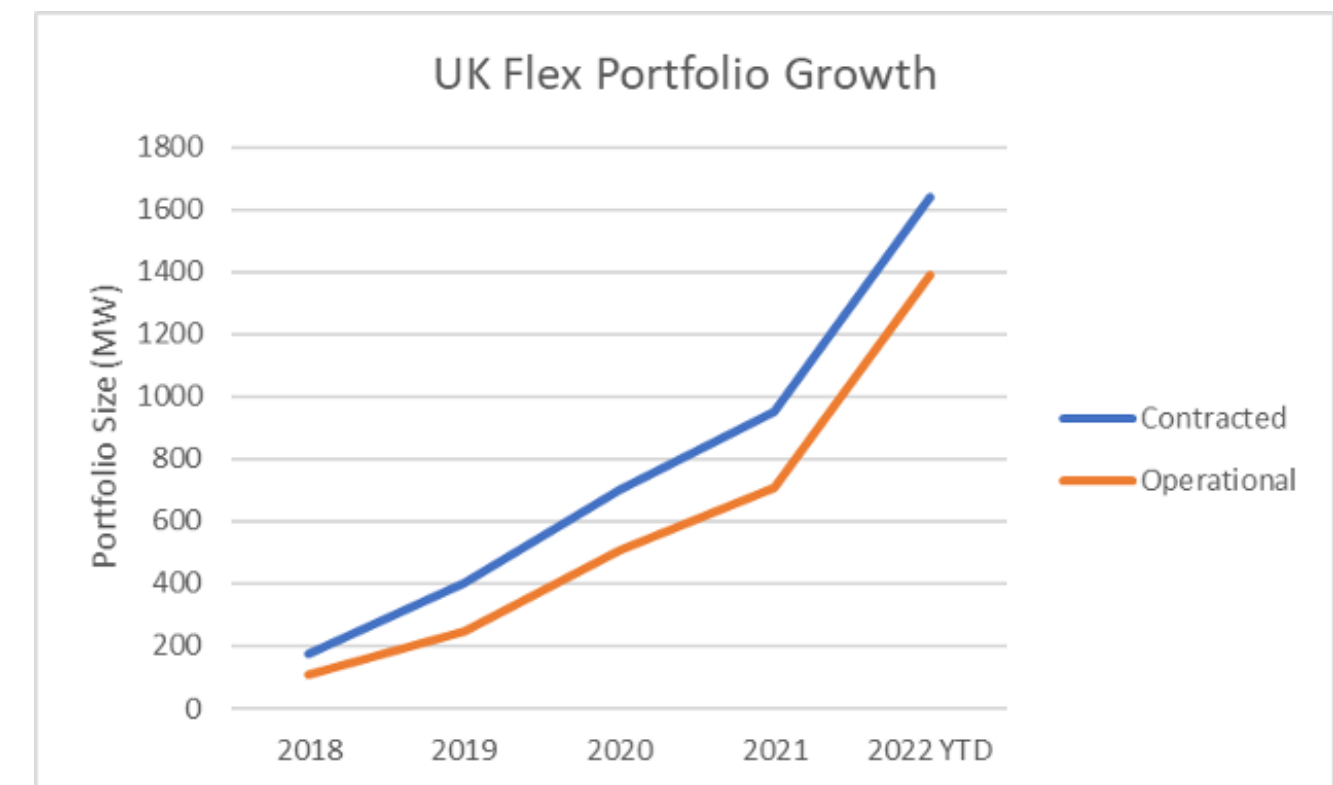


Electricity Trading Partner:



Statkraft

- Statkraft is a leading Norwegian state-owned energy company founded in 1895
- Statkraft is Europe's largest generator of renewable energy, operating in more than 20 countries
- Also specialises in energy trading in various markets, including UK
- For over 100 years Statkraft have optimised flexible hydro power assets and developed leading energy management capabilities
- Statkraft pioneered algorithmic trading in short term power markets as far back as 2013
- First UK Flex PPAs went live in late 2018
- Statkraft was the first party to trade the Intraday market algorithmically in Q4 2018
- UK's largest RTM and flex energy trader in 2024



128

Assets Contracted

1642

MW Contracted

~30%

Approx Market Share

#1

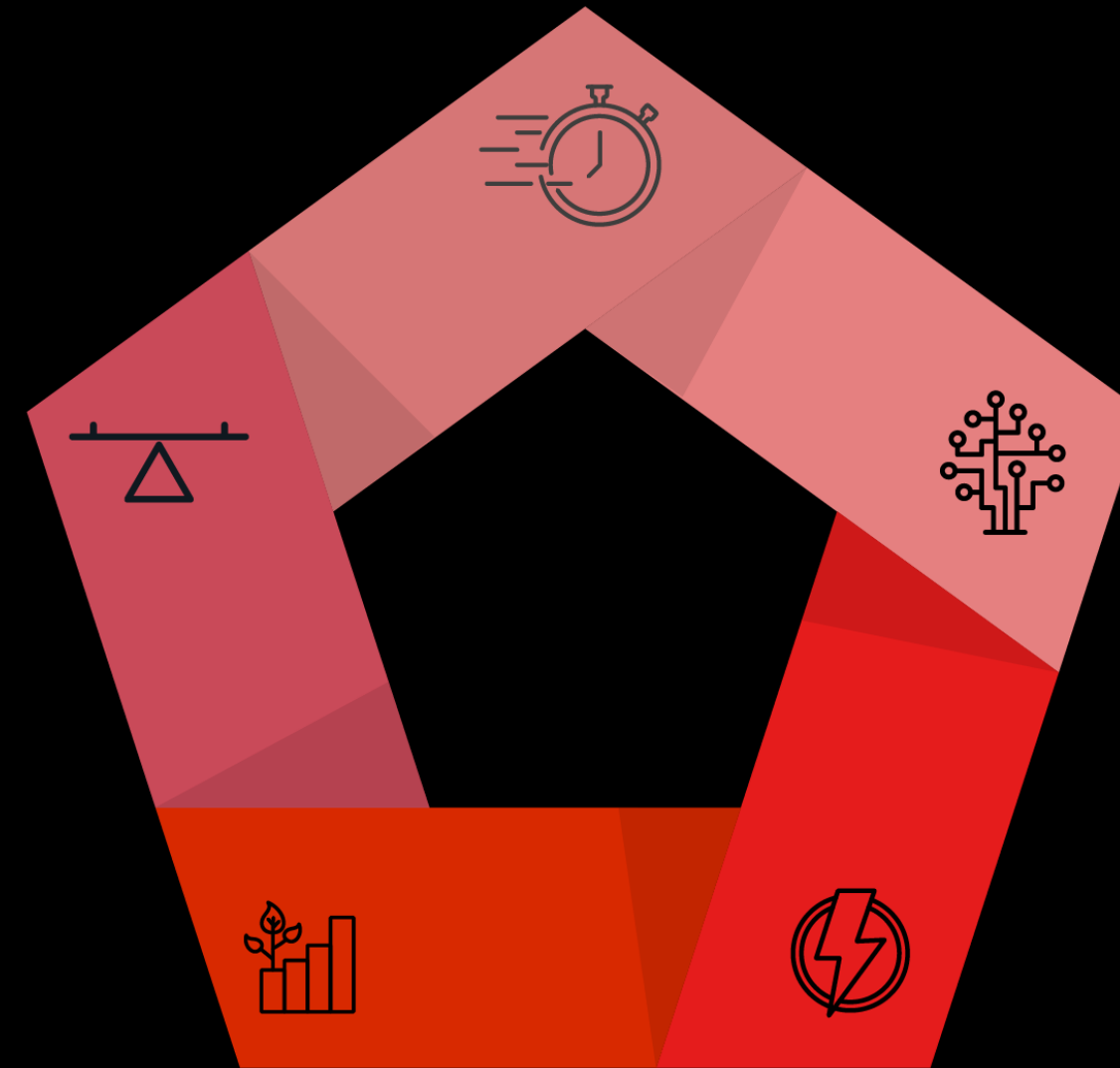
Portfolio Size

Market Analysis

RGT's are expected to play a critical role in balancing the UK power system over the next 20+ years as the power system decarbonises

RGT's are standard & modular so can be reliably deployed with highly flexible operating capabilities

Engines have high residual values that support asset-backed financing (with capabilities for redeployment)



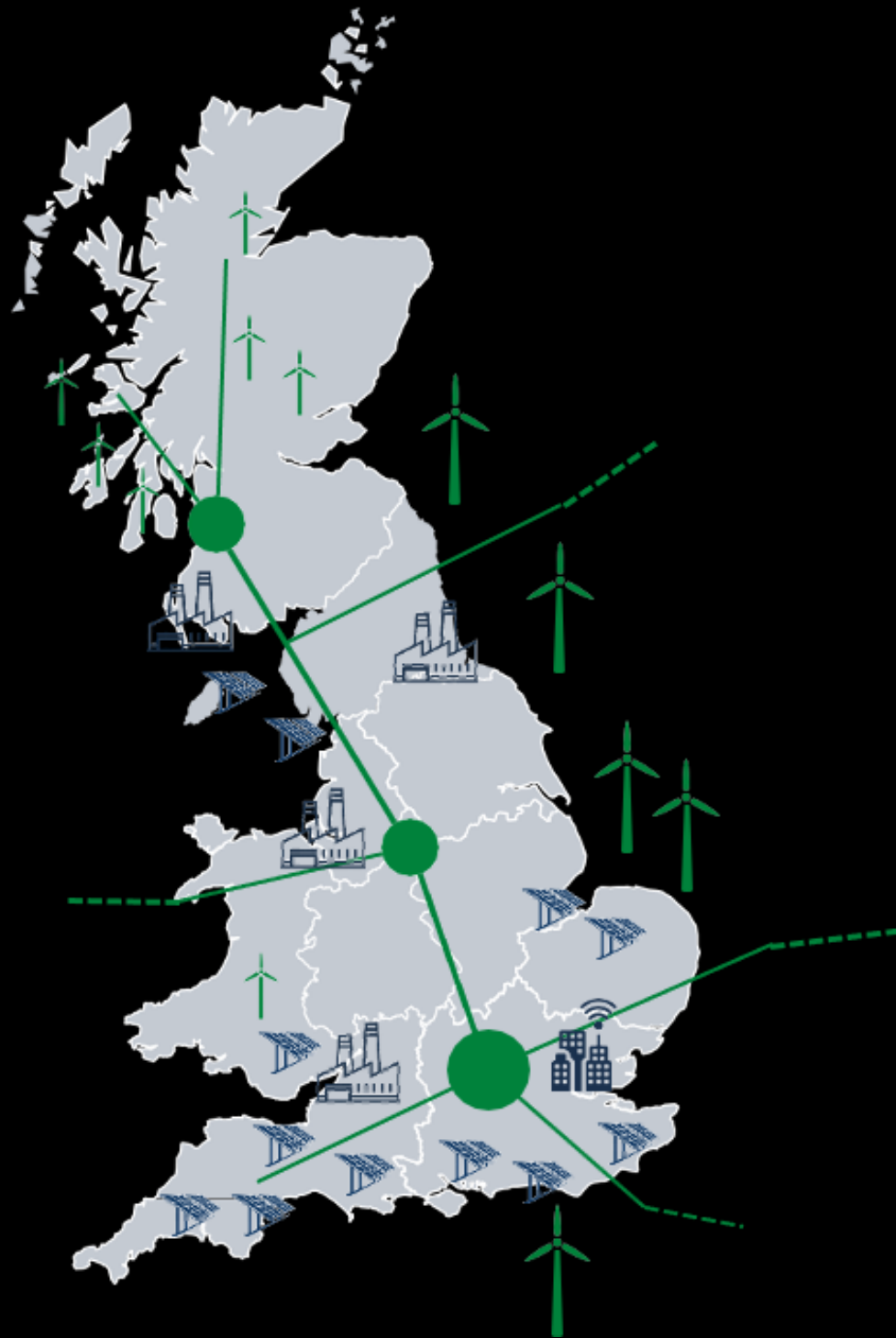
Mature engine technology with very fast ramp rates, capable of producing and delivering power up to 50% cheaper than alternatives (CCGTs)







Monetisation through liquid markets, with a significant component of long-term contracted cashflow through the Capacity Mechanism

High security of supply for the grid operators through distributed structure of despatch

Market Analysis

Rapid response fast-ramping RGT engines have an integral role to play as one of the flexibility solutions addressing system balancing to support renewable integration



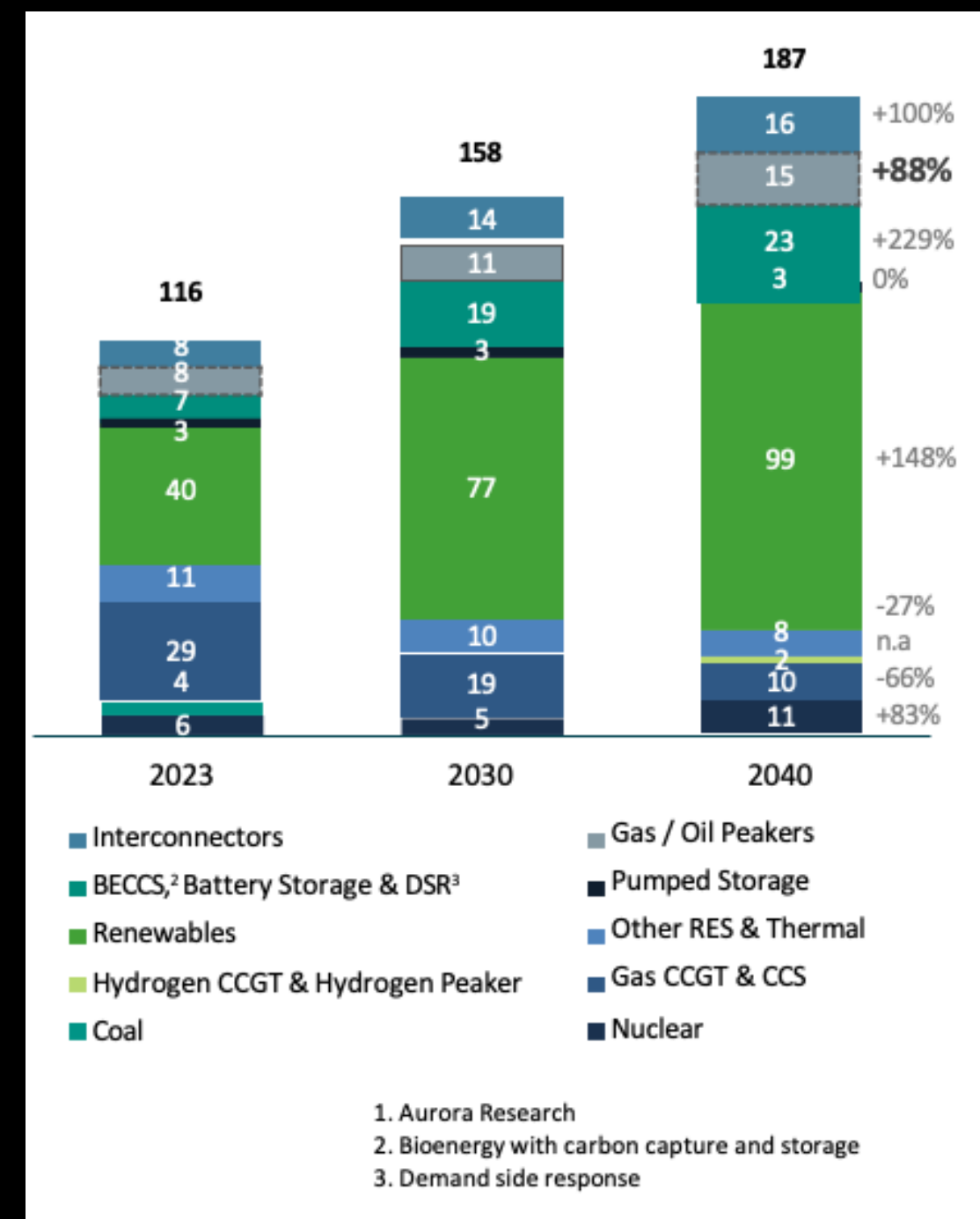
	+	-	
 Demand side response	Reduces pressure on the grid from supply side, with incentives for higher system flexibility	Consumer dependent, less reliable & limited capacity due to slow deployment	LOWER CAPEX
 Gas reciprocating engines ("recips")	Fast response, capable of multi-hour/day operation to enable National Grid to manage various system needs & can generate power to support positions in wholesale power markets	CO2 emissions, albeit for relatively short periods of operation that can be offset with carbon allowances, and higher marginal cost than traditional thermal generation used for sustained baseload running	
 Batteries	Very fast response time supports frequency regulation application and able to "absorb" power from the grid and dispatch power to it	Short duration with charge cycle limits restricts ability to respond to multi-hour balancing demands beyond frequency and restricts ability to perform in wholesale markets	
 Pumped hydro	Fast response, capable of multi-hour operation at reduced load	Limited viable resources & used for larger-scale frequency response with restricted ability to respond to short-term balancing needs	
 Large scale conventional ramping	Substantial existing capacity	Slowest response, relatively high CO2 emissions due to ramping needs, high capital cost & cost to manage short to medium run responses. Limited ability to provide required fast response flexible solution	
 Interconnectors	Greater pan-EU regional connectivity increases system flexibility	Limited capacity, long lead-times to construct & availability less reliable given that interconnectors respond to price signals rather than system needs	



Market Opportunity

- UK Capacity Market is a proxy for the market opportunity for DEG.
- Capacity Market is a government-managed scheme to encourage deployment of DEG assets to ensure electricity sufficiency. The government pays DEG providers to deploy and operate DEG assets.
- **Capacity Market** introduced in 2014 and since then **RGT generation** capacity grew from zero to **8 GW**¹
- **RGT generation** capacity is expected to almost double to **15 GW** by 2040¹ to accommodate large increase in intermittent renewables capacity (thus **significant room for growth**)
- Successful PE-backed players in market, notably:
 - Hartree Partners, Forsa Energy, Quinbrook, and Balance Power

UK Power Market Supply Outlook (GW)¹



MED Strategy

Phase 1 - Establish RGT Business Model

- First test site, **Pyebri** (8.1 MW)
- Successfully overhauled and recommissioned two 2.7 MW gensets, within budget and timeline
- Successfully overhaul and recommission 3rd and final genset with full Pyebri site generating optimally.
- Optimise financial model based on site data.
- Developing and applying experience and scale economies

Phase 2 - Scale RGT Business

- Bring existing pipeline of assets to full operation
- Develop further sites
- Acquire additional sites
- With goal of reaching 300+ MW of generating capacity from turbine business line.

Phase 3 - Expand Business Lines and Geos

- Expand into other modular yield-centric electricity generating technologies, including
 - Batteries
 - “Green Gas” / Hydrogen
 - Rooftop Solar
- Expand outside UK into other geographic markets

- MED core business systems to forecast, plan, secure and deliver sites
- MED core operational and management systems for optimal site management
- Statkraft – Electricity offtaker and trading partner (optimise electricity spread trading and forecasting)
- Cooper Östlund – EPC and O&M partner



MED Overview

Invest in Operating, Low-Risk, High Return, Proven Business Model, with Scope for Significant Growth

- UK Energy Market has **critical need** for **flexible generation**, with **demand to grow with 7 GW**, and RGT assets are proven and attractive solution
- MED has **tested and proven first asset**, with **clear plan to grow portfolio**
- Each **additional site** is quick to cashflow post acquisition, and will be acquired in phases
- **Ability** to continue to **grow** total portfolio to **300+ MW**
- Long-term **sustainability** of **business model** supported with **diversification** into alternative technologies in future, such as **batteries** and **“green” gas**
- **Portfolio growth** will enable **economies of scale, aggregated purchasing power, cost reductions, and increased profits**
- Increasing **free cashflow** will **enable regular dividends** and **distributions** to **shareholders** of MED

Revenue Model

Power Purchase Agreement (PPA)

- Long-term PPA with Statkraft, between 7–15 years, with option to renew / extend
- Statkraft employs each site's generation in Wholesale Market Optimisation (WMO)
- Statkraft also supplies gas to each site, via Corona (UK's largest gas supply aggregator) at reduced cost (due to aggregated buying power)
- Trading strategy based on operational and commercial parameters controlled by MED
- Statkraft takes % share of trading gross margin (with % reducing over larger portfolio)

Capacity Market (CM) Contract

- Capacity Mechanism introduced by the UK government in 2014 in order to balance grid and sustain base-load, due to growing intermittent renewables, and planned and unplanned outages
- CM contracts are awarded to qualified generators, and each contract's tariff are determined during a formal bid auction process
- Payments are made to generators with contracted capacity on the system irrespective of whether generating or not (i.e. payments are guaranteed)
- Capacity Mechanism payments provide 15-year UK government backed index-linked income, which in aggregate covers c.80% of capex

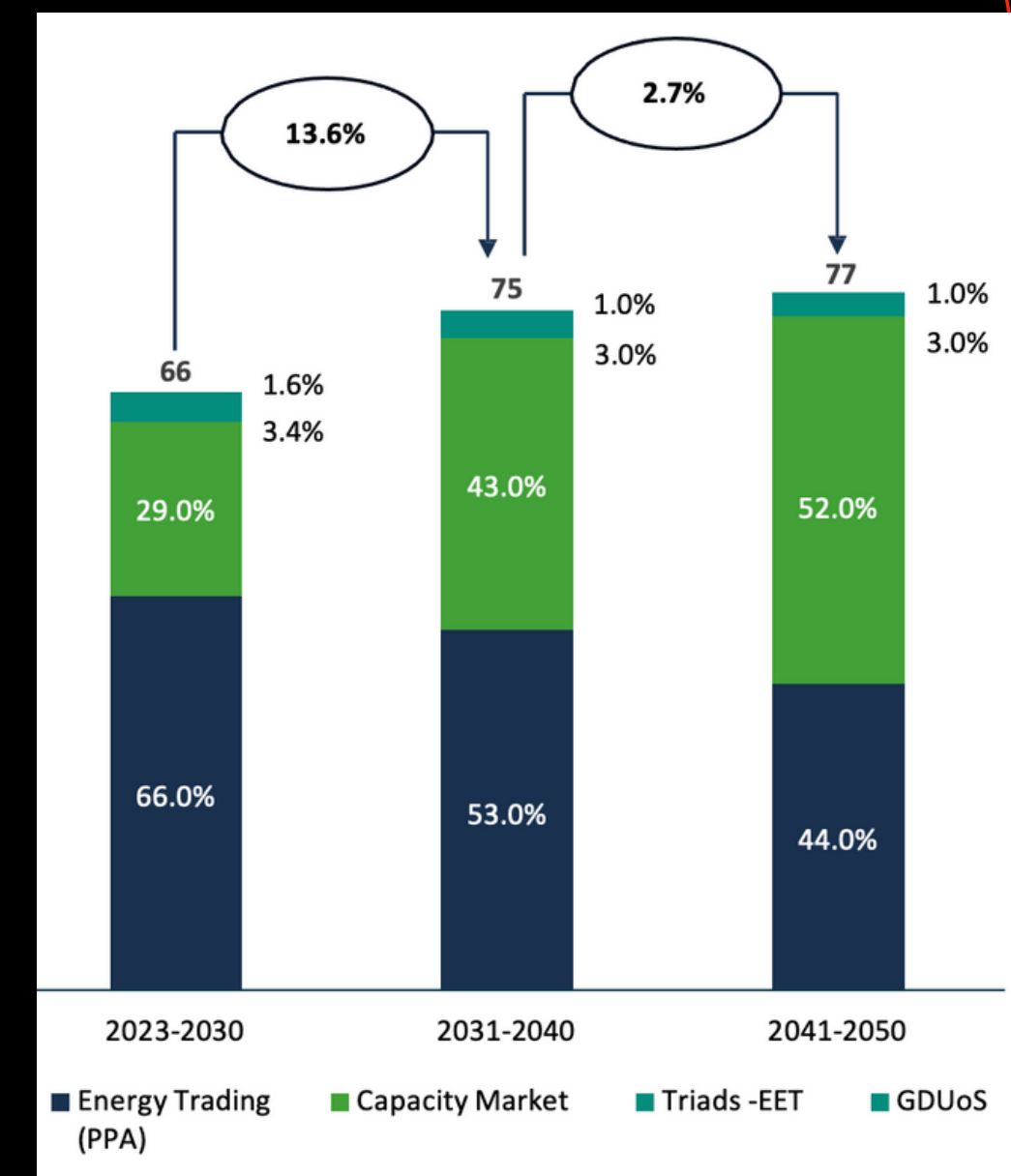
Revenue Model

RGT's have an attractive business case locking in a large share of contracted revenue through the Capacity Mechanism

Contracted / reliable margins

- The Capacity Mechanism provides 15 years of contracted revenue and represent a large share of total revenue for RGT's
- In addition to the Capacity Mechanism, RGT's have proven highly efficient in energy trading particularly during cold snaps and at times of unexpected events whether macro or due to dislocations arising from the transition of the energy system given their fast ramp rapid response capability
- RGT's also benefit from other reliable revenue streams including Embedded Benefits (such as Triads and GDUoS, due to Generators distribution use of systems), contributing directly to gross margin
- Over time RGT's gross margins are expected to grow driven mainly by the Capacity Mechanism
- Assets with existing Capacity Mechanism contracts can participate in subsequent Capacity Mechanism auctions once the initial contracts are over and re-secure contracted revenue

Components of total gross margin 1

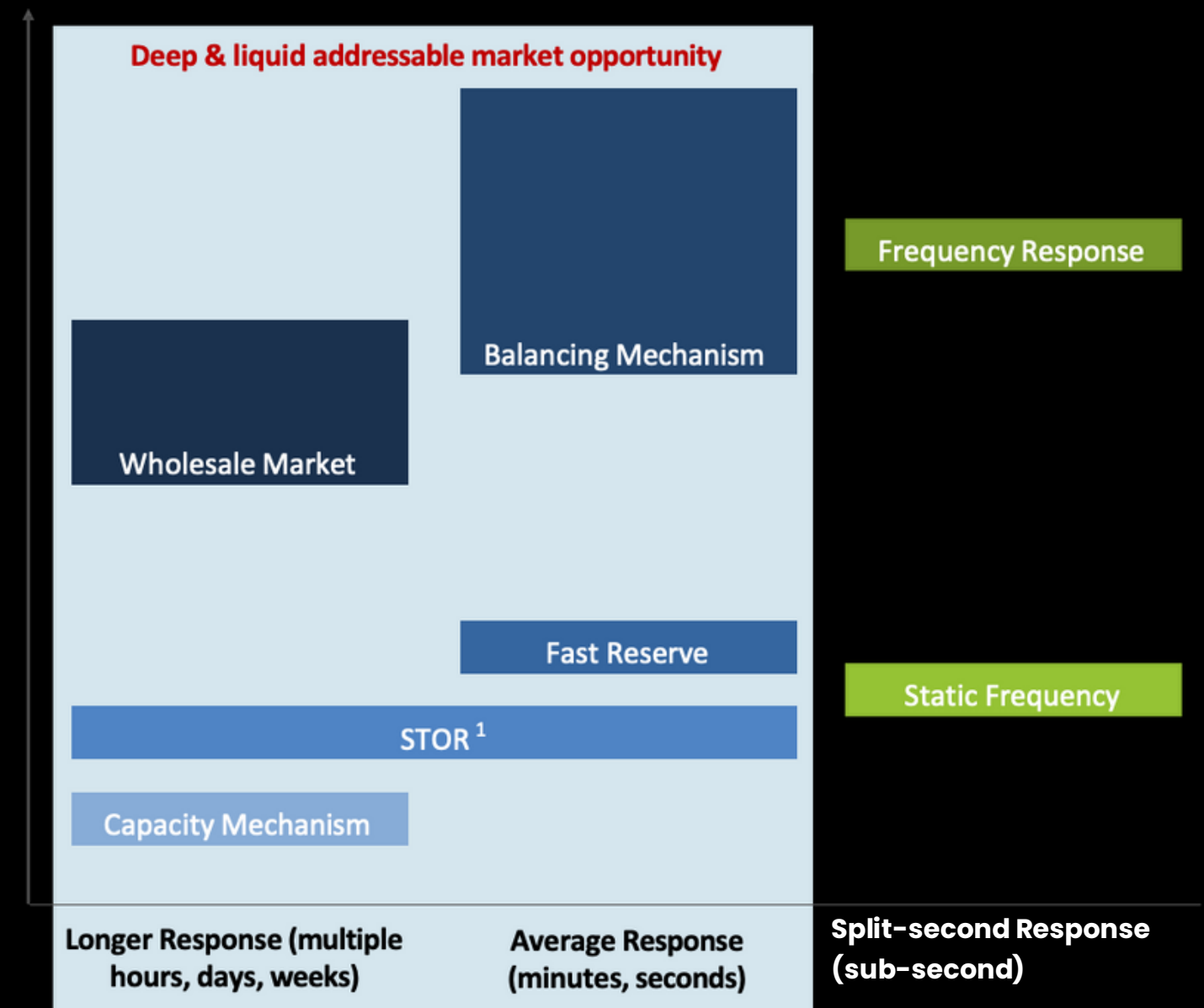


Revenue Model

Revenue is derived from deep and liquid markets through a “stacking” model that diversifies RGT revenue profile

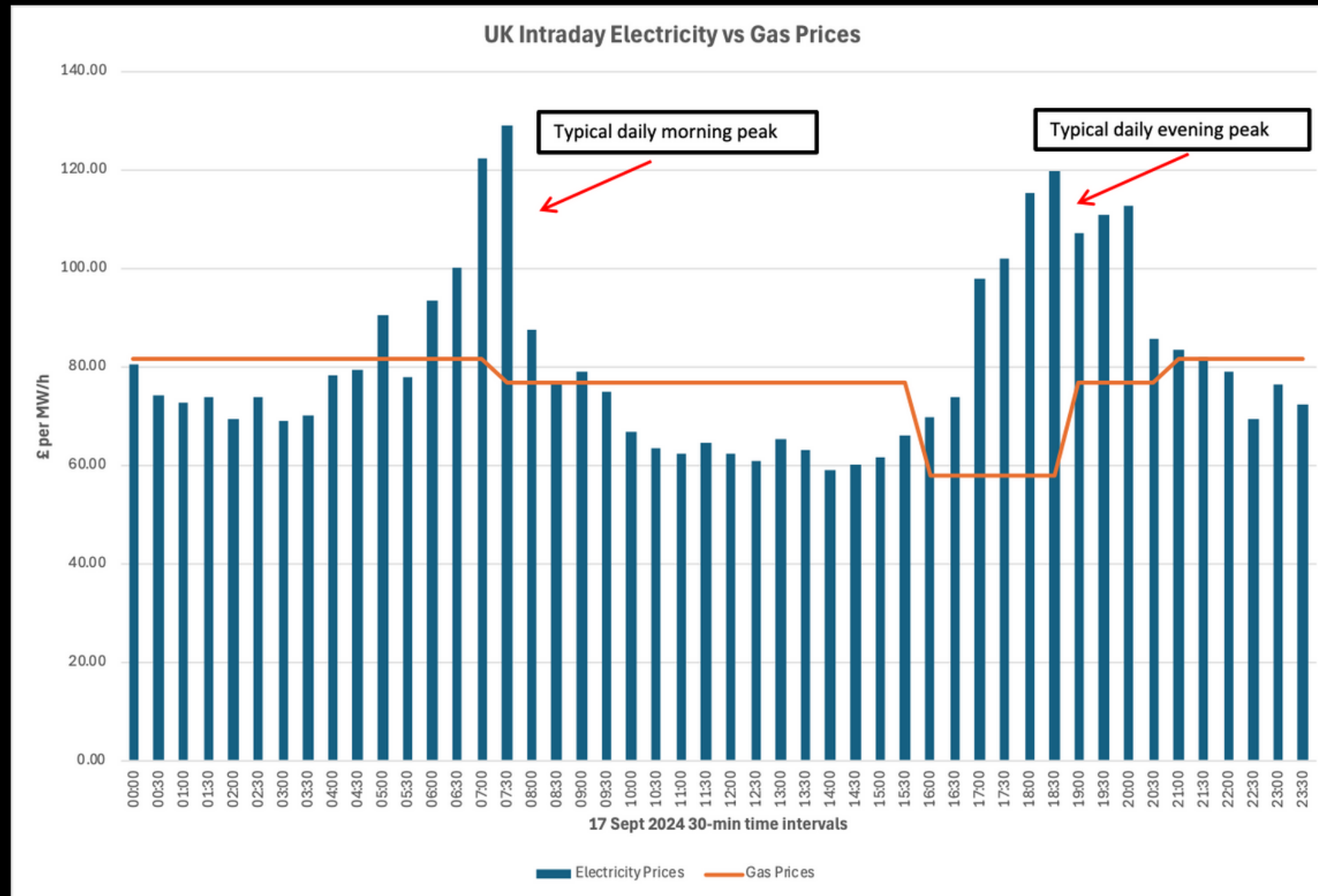
- National Grid contracts directly with generators and flexibility providers to balance the grid
- Given the operating capabilities of RGT’s, this asset class is able to participate in the BM and ancillary services, and looking to gain capabilities in frequency control
- Liquid wholesale power auctions allow markets to balance their immediate requirements, with substantial price “spikes” when the market is short
- There are opportunities to buy and sell power forward, up to two years ahead with longer-term structured PPA-style solutions developing
- Payments are made to generators with capacity on the system irrespective of whether generating or not
- Capacity Mechanism payments provide 15-year UK government backed index-linked income which in aggregate covers c.80% of construction costs

Annual Value (£/MW)



RGT Revenue Model

Generating trading revenue from arbitrage opportunity in electricity price volatility



- The graph illustrates the UK intraday electricity vs gas prices over a 24-hour trading period
- Typical daily morning and evening price peaks are clearly available
- Flexibility to set up turn-off/turn-on parameters deemed appropriate for revenue generation strategy, i.e. required spread between gas and electricity prices.

Live Commercial Pilot Site

Pyebriidge is fully constructed and permitted RGT power generation site, situated in the Pyebriidge Industrial Estate, Somercotes, Alferton, England

Pyebriidge is operational and performance data obtained from this site is used for broader model

The Pyebriidge site consists of the following key components, all held in a SPV:

- Freehold property
- 3x 2.7 MW Jenbacher J620 RGT gensets (i.e. 8.1 MW total)
- Constructed grid- and gas connections
- Balance of Plant

Full refurbishment work programme underway

- First 2.7 MW genset overhaul completed June 2024, and generating optimally since
- Second 2.7 MW genset overhaul completed December 2024, and generating optimally since
- Third and final 2.7 MW genset overhaul to commence

Generating optimally at full capacity, Pyebriidge can power up to c. 14,000 UK homes at a time



Key Market Data

Stock Exchange	LSE:MAST
Shares in Issue	426,354,067
Outstanding Warrants & Convertible Instruments	100,814,562
Fully Diluted	527,168,629
% Shares not in public hands	34.55%



MAST

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