STONEHAVEN

MANAGING DECLINE

A REGULATED ASSET BASE FOR LEGACY GAS IN THE AGE OF CLEAN POWER

May 2025

KEY POINTS

01 The UK lacks a plan to manage the decline of its aging gas plants, threatening its 2030 clean power goals of decarbonisation, energy security and lower consumer bills.

02 Gas still supplies ~30% of electricity and yet sets the wholesale price of electricity 98% of the time, leaving the UK exposed to global gas markets and higher bills.

03 These plants need to be withdrawn from the market but kept available for backup to ensure energy security.

04 A Regulated Asset Base (RAB) model with central control by the National Energy System Operator (NESO) offers a fast, effective way to manage this transition.

04

INTRODUCTION

The UK's 2030 clean power mission (CP2030) presents—and attempts to resolve—the central challenge of electricity policy for successive governments known as the 'energy trilemma': achieving decarbonisation, consumer affordability and energy security.

Nowhere is this challenge starker than in managing the decline of the country's aging gas plants. These assets must be gradually wound down to deliver decarbonisation and protect consumers, but also must be kept available to secure the system during periods of low renewable generation.

The Government's CP2030 Action Plan sets the right overarching vision. It sees unabated gas generation reduced to the minimum necessary for day-to-day system security, only occasionally setting the marginal price of electricity and therefore cutting bills. It also rightly acknowledges the need to retain adequate gas capacity to cover prolonged periods of low renewable output until clean, long-duration flexibility can be scaled. In other words, it calls for an operationally constrained—but ready-to-go—gas strategic reserve that can keep the lights on as we transition to full clean power.

However, current policy proposals to achieve this lack clarity on how unabated gas generation will be limited to achieve the CP2030 target. This undermines the commitment to cut consumer bills. At the same time, there is no guarantee that the proposals will not force gas off the system after 2030, threatening long-term system security.

This paper makes two main arguments. First, and most importantly, gas must be removed from electricity markets in order to protect consumers and gradually wind down their generation. Second, a new out-of-market mechanism to manage a gas strategic reserve must urgently be implemented to do so: a Regulated Asset Base (RAB) model for legacy assets. The RAB—centrally dispatched by the National Energy System Operator (NESO)—would provide a fixed charge to plants to cover operational costs plus an agreed return up to the end of their lifetimes. It offers an affordable and effective route to managed decline that can be implemented well in advance of 2030.

SUMMARY OF RECOMMENDATIONS:

1. Prohibit unabated gas generation from entering GB electricity markets after 2030, including wholesale, balancing and Capacity Markets.

2. Implement a RAB for strategically necessary, unabated gas plants with central NESO dispatch.

TAKING UNABATED GAS OUT OF THE MARKET

WHERE WE ARE NOW

CP2030 recognises the critical importance of Britain's legacy gas plants—a fleet of around 35 combined cycle turbines (CCGTs) built from c.1985-2000 amid the dash for North Sea gas and deregulation of electricity markets.[1] CP2030 sees a drastic reduction in the use of those generators which have not converted to hydrogen-firing or carbon capture and storage (CCS) technology by 2030. According to the plan, these will count for less than 5% of generation annually,[2] down from around 26% today.[3] This will be achieved through several measures, including a massive expansion of renewable energy and a combination of mandates and support for new or refurbishing plants to decarbonise.

The Government hopes this will break the link between the price of electricity and the price of natural gas on international markets, bringing down electricity bills. Wholesale electricity in Britain is traded on a 'marginal' price basis, meaning the most expensive generation asset needed to meet demand at a given time sets the price for the rest of the market. Gas-fired plants set Great Britain's marginal price of electricity around 98% of the time (despite only operating around 30% of the time)—the highest marginal rate in Europe and a significant distortion on the market.[4] As gas is traded internationally, this means UK electricity prices are uniquely exposed to external gas price shocks such as that which occurred following Russia's invasion of Ukraine in February 2022.

This is exacerbated by costs added to bills from the Capacity Market (CM) and Balancing Mechanism

1 Full list available in the Annex
2 Department for Energy Security and Net Zero (2024), 'Clean Power 2030 Action Plan'. Available at: Clean Power 2030 Action Plan—GOV.UK
3 NESO (2025), 'Britain's Electricity Explained'. Available at: Britain's Electricity Explained: 2024 Review | National Energy System Operator
4 Behnam Zakeri and Iain Staffel (2023), 'The role of natural gas in electricity prices in Europe', UCL Bartlett Institute for Sustainable Resources. Available at: the_role_of_natural_gas_in_electricity_prices_in_europe_updated_may_2023.pdf

"

This will be achieved through several measures, including a massive expansion of renewable energy and a combination of mandates and support for new or refurbishing plants to decarbonise.

"

The Government hopes this will break the link between the price of electricity and the price of natural gas on international markets, bringing down electricity bills...

"

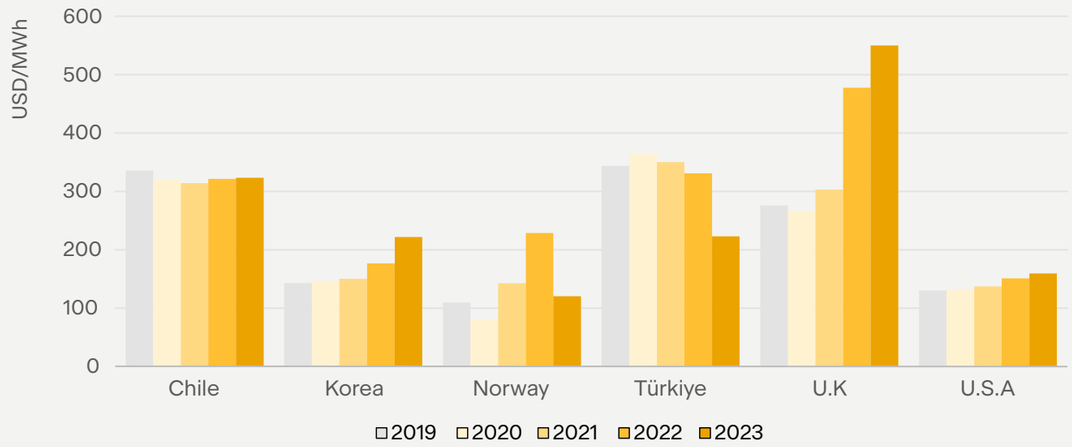
As gas is traded internationally, this means UK electricity prices are uniquely exposed to external gas price shocks such as that which occurred following Russia's invasion of Ukraine in February 2022.

(BM)—the tools through which, respectively, NESO purchases backup capacity to manage future 'stress events', and balances supply and demand on the grid in real-time. In the absence of adequate policy support for energy storage, unabated gas has become essential for ensuring security of supply as intermittent renewables have replaced decommissioned nuclear and coal plants. In 2024, at least £846m was paid to 'turn up' gas generators through the BM.[5] The CM, which operates via a clearing auction, has also seen costs rise substantially, with record-breaking clearing prices a regular occurrence since 2020.

The pass-through of this market power to electricity bills is stark—according to the International Energy Agency (IEA), the UK ranks among the highest for average household electricity bills, particularly since 2022.[6] Through a rapid expansion of clean power and energy storage, the hope for CP2030 is that it drastically reduces the time that expensive gas can influence electricity prices—for example, setting the marginal price no more than 16% annually, according to NESO's projections.[7]

5 Regen (2024), 'Toxic constraint coverage could damage clean power plan'. Available at: Regen
6 International Energy Agency (2024), 'Electricity 2024: Analysis and forecast to 2026'. Available at: Electricity 2024—Analysis and forecast to 2026
7 NESO (2024), 'Clean Power 2030: Advice on Achieving Clean Power for Great Britain by 2030'. Available at: Clean Power 2030 | National Energy System Operator

Average household electricity prices in USD/MWh in purchasing power parity (PPP), 2019-2023



IEA. CC BY 4.0.

Note: Residential electricity prices include taxes and have been converted from local currencies to USD/MWh (PPP) using PPP conversion rates provided by the IMF PPP database. 2023 value is the average of Q1-Q3 2023 for all the countries except Chile, which is based on Q1-Q2 2023 average. The countries shown here are chosen due to data availability for 2023 as the time of publication of this report.

Sources: IEA electricity prices database, IMF, PPP database.

At the same time, CP2030 expects to maintain c.35 GW of unabated gas reserve capacity to protect security of supply. This is especially pertinent as the rollout of low-carbon, long-duration flexible energy capacity—including large battery storage systems, hydrogen, pumped hydro and gas CCS—remains in its early stages. Under current plans, select strategic and refurbishing gas plants will be maintained through multi-year contracts in the CM.[8] This is aimed at providing revenue certainty and investor confidence to allow aging plants to extend their operating life. Indeed, a significant proportion of the CCGT fleet is close to or has exceeded design lifetime (around 25 years) and around 4-8 GW of plants could retire by 2030 and 15 GW by 2035.[9]

Keeping CCGTs operational requires significant capital expenditure (capex) for refurbishment and component replacement, particularly turbines which need replacing around every ten years. Current CM rules, however, make it difficult for operators to justify these investments. The CM offers one-year agreements for existing gas plants that do not require significant capex investment, three-year agreements for refurbishing plants that meet a specific capex threshold, and fifteen-year agreements for new or majorly refurbished plants. The Government believes the threshold for three-year agreements (£135/KW) is too high and is proposing to reduce this substantially to £50/KW, albeit with requirements that the agreements will be used for refurbishment and life extension. There are also plans to place strict emissions limits on unabated peaking plants after 2034, meaning they will only be able to run for 750 hours per year.[10]

BALANCING SYSTEM SECURITY WITH AFFORDABILITY AND DECARBONISATION

The challenge of CP2030 is to decarbonise electricity while ensuring system security and cutting consumer bills for good. This is the classic 'energy trilemma' that has formed the basis of energy policy for successive UK governments.[11] What is unique about CP2030 is that it attempts to resolve this trilemma in accelerated fashion by replacing merchant unabated gas generation—whose price is impacted by volatile international markets—with 'cheap, homegrown clean power', while retaining a strategic reserve of backup gas plants.

8 Department for Energy Security and Net Zero (2024), 'Capacity Market: Consultation on proposals to maintain security of supply and enable flexible capacity to decarbonise'. Available at: Proposals to maintain security of supply and enable flexible capacity to decarbonise: consultation document
9 Baringa Partners and AtkinsRéalis UK Ltd (2024), 'Assessing the deployment potential of flexible capacity in Great Britain—an interim report'. Available at: Assessing the deployment potential of flexible capacity in Great Britain—an interim report
10 Department for Energy Security and Net Zero (2023), 'Capacity Market 2023: strengthening security of supply and alignment with net zero (Phase 1)'. Available at: Capacity Market 2023: strengthening security of supply and alignment with net zero (Phase 1)—GOV.UK
11 House of Commons Library (2020), 'Energy Policy: An Overview'. Available at: Energy policy: an overview—House of Commons Library

"

Under current plans, select strategic and refurbishing gas plants will be maintained through multi-year contracts in the CM. This is aimed at providing revenue certainty and investor confidence to allow aging plants to extend their operating life.

However, it is unclear how unabated gas generation will be limited to the envisaged 5% under current policy proposals. While the Government has acknowledged the need for a 'novel out-of-the-market mechanism' for managing this reserve once low-carbon long duration flexibility has been scaled, nearer-term action is required to achieve the goals of CP2030. Current plans may incentivise some investment in life extensions for ageing CCGTs, but they will add to system and consumer costs while hindering progress towards decarbonisation—without guaranteeing long-term system security.

INCREASED COSTS

Most obviously, with more CCGTs receiving multi-year CM contracts the cost of payments by the NESO will increase. These are then passed on to consumer electricity bills in the form of CM levies. With the threshold reduced so drastically, this could also mean plants that would have refurbished anyway using the system to receive unnecessary extra capital, reducing liquidity and competition in CM auctions without any system benefit. Most importantly, however, **because these plants will still be left free to bid into power markets indefinitely, the Government will not be able to break the distorting link between the price of gas and electricity.**

SLOWED DECARBONISATION AND RISK TO CP2030:

Ultimately, the CM reforms will extend the life of ageing and polluting fossil gas plants. As mentioned above, they will remain free and unburdened to bid into self-dispatchable wholesale and balancing markets, allowing them to dispatch power and make profit whenever prices are favourable, regardless of their emissions impact. This not only weakens investment signals for clean alternatives but also puts the Government's commitment to cap unabated gas at 5% of electricity generation by 2030 at serious risk— without any regulatory mechanism to intervene once that threshold is breached.

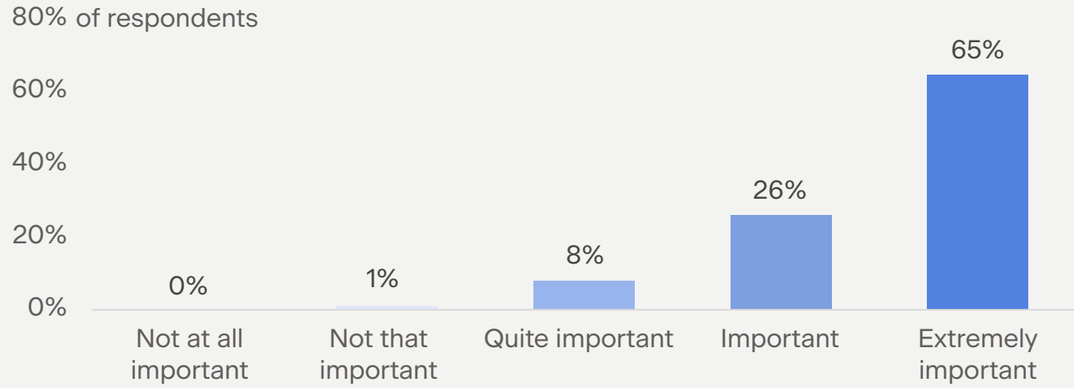
NO GUARANTEE OF LONG-TERM SYSTEM SECURITY:

Many of the gas plants in question are aging, with significant portions of the fleet nearing or exceeding their design lifetimes. This raises concerns about reliability, especially under stress conditions. Furthermore, the financial incentives under the proposed CM framework may still be insufficient to prompt necessary capital investments in refurbishment. This is particularly true for plants with existing 15-year contracts that run until after 2030 once they come off them. There is a significant risk that such plants will have to be nationalised at short notice and therefore at high cost.

Lowering energy bills in the UK is an urgent economic, social, and political imperative. Stonehaven polling indicated before the 2024 election that the public consider the cost of living among the most important issues facing the UK, with energy bills at the core of this. Given also the well-known systemic impact of high energy prices on the UK's industrial growth, addressing high energy costs is a defining challenge for a Labour Government for whom economic growth is the number one 'mission'.

> "
>
> Lowering energy bills in the UK is an urgent economic, social, and political imperative. Stonehaven polling indicated before the 2024 election that the public consider the cost of living among the most important issues facing the UK...

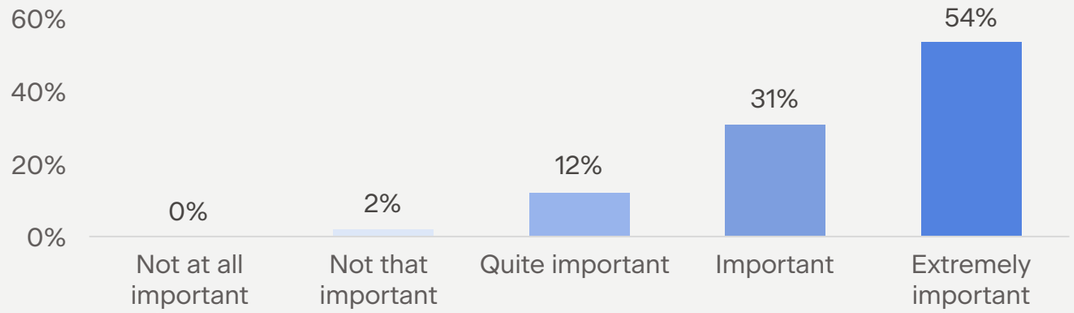
How important is tackling the cost of living for the next government?



Data source: Stonehaven Polling | April 2024 | Total n = 2,036

STONEHAVEN

How important is reducing energy bills for the next government?



Data source: Stonehaven Polling | April 2024 | Total n = 2,036

STONEHAVEN

While the Government has emphasised expanding homegrown renewable electricity to reduce reliance on volatile fossil gas prices, this alone is insufficient. The UK's high energy costs are structurally embedded in a system historically dominated by privately owned gas-fired power. CP2030 necessarily includes retaining these gas assets as back up, but their market power must be curtailed to resolve the energy trilemma. Current plans to extend the life of ageing CCGTs within the CM, while leaving them free to bid into other electricity markets, provide only the promise—not a guarantee—of security.

To achieve the goals of CP2030, then, **fossil gas must be prohibited from participating in the CM, wholesale and balancing markets**. This will ensure that electricity bills are no longer shaped by expensive gas and that decarbonisation targets remain achievable. Plants with existing long-term CM contracts will be compensated by being moved onto a novel out-of-market solution. In the following section, we explore what this might look like.

A REGULATED ASSET BASE

As suggested by organisations including Unite, Regen and Common Wealth, one option for managing a gas strategic reserve is outright nationalisation.[12] While this may be an option in the long term, it is unclear whether all necessary plants could be brought into public ownership in time to achieve 2030 targets given likely legislative and legal hurdles. It is also unclear whether the proposal would fit into the Government's stringent fiscal rules based on 'Public Sector Net Financial Liabilities' and its 'Financial Transaction Control Framework', as even Common Wealth has admitted. To achieve the Government's 35 GW target, it is possible a small number of new plants may have to be built before 2030, which would significantly add to costs under a nationalised model (currently the UK has around 33 GW).

A less contentious and more easily implementable alternative to nationalisation before in the short-to-medium term is a Regulated Asset Base (RAB) model. Under this approach, selected legacy gas plants would exit competitive markets (including the wholesale market, CM and BM) and instead receive a regulated return in exchange for making their capacity available as part of a centrally managed, publicly controlled backup fleet. In practice, these plants would be treated much like a nationalised strategic reserve—remunerated for their availability and performance, not for selling electricity at market peaks.

The RAB model has a strong precedent in the UK. It has been successfully applied in regulated utilities (water, electricity and gas networks) and large infrastructure projects such as new nuclear. These cases have shown it can deliver low-cost capital by reducing investor risk through long-term, predictable returns tied to regulatory benchmarks rather than volatile markets.[13]

12 Unite (2023), 'Unite Investigates: Renationalising energy—costs and savings – full report'. Available at: Unite Investigates: Renationalising energy—costs and savings—full report; Regen (2023), 'REMA Insight Paper: Capacity Market reform—greater resilience and value for money, with less carbon'. Available at: 67e3c22c898856df55bda6bd_Rema Insight Paper Capacity Market Reform.pdf; Common Wealth (2025), 'Nationalise Gas to Lower Bills: How a Public Strategic Reserve Can Lower Costs and Enhance Energy Security'. Available at: Nationalise Gas to Lower Bills: How a Public Strategic Reserve Can Lower Costs and Enhance Energy Security | Briefing | Common Wealth

13 Department for Business, Energy and Industrial Strategy (2022), 'Guidance on on development costs and the nuclear Regulated Asset Base model'. Available at: https://assets.publishing.service.gov.uk/media/6384ae9ce90e0778a2122668/development-costs-nuclear-rab-model-guidance.pdf

HOW DISPATCH COULD WORK UNDER NESO

In the gas context, the RAB would be a bespoke, consulted-upon design—but the principle is the same. Participating plants would agree to be dispatched exclusively by the NESO and compensated based on a regulated cost-plus model, incorporating agreed rates of return, operational and maintenance costs, refurbishment needs, and possible end-of-life provisions. In return, they would relinquish access to market earnings, removing the ability to extract high prices during stress events.

Under this model, NESO would take over dispatch control of the RAB-designated plants, treating them as a strategic operational reserve. This represents a significant shift from the current decentralised, market-driven dispatch paradigm. Based purely on levelised cost of electricity, we estimate this would cost around £17 billion over the remaining lifetime of existing plants, though it could be higher or lower than this depending on the outcome of any consultation, and the need for any further refurbishments.[14] It could also incentivise construction of any new-builds needed

14 Number calculated using fixed cost per MW, average plant size of 877.7 MW (n=34), and assumed load factor of 93% as per Government data. Cost and load factor assumptions available at: https://assets.publishing.service.gov.uk/media/6556027d046ed400148b99fe/electricity-generation-costs-2023.pdf. Plant data available at: Digest of UK Energy Statistics (DUKES): electricity—GOV.UK

to meet the 35 GW unabated gas target. While this may sound like a high figure, it is important to remember that consumers and Government are paying billions every year to gas plants due to their participation in the wholesale market, the CM and BM—which would be prohibited under a RAB model.

While the full details of the RAB would need to be modelled and negotiated, the following features could be included:

- **Availability-based payments:** Generators would be paid primarily for being available, with supplementary compensation for starts and ramping. Crucially, this would sever the link between scarcity and reward, ending the incentives for strategic withholding or price gaming seen in today's markets.

- **Centrally procured fuel via forward contracts:** To prevent exposure to volatile spot gas prices and eliminate profit incentives tied to market conditions, NESO could act as the sole buyer of fuel for RAB-designated plants. Gas would be procured in advance through forward contracts, ensuring cost predictability and reinforcing the role of these assets as publicly controlled strategic reserves rather than market participants.

- **Centralised dispatch based on system need:** Rather than responding to price signals, NESO would trigger RAB gas plants based on real-time system needs (e.g. low wind, low inertia, or frequency events), similar to how ancillary services are activated today.

- **Performance-linked revenue:** The RAB model could include output-based incentives or penalties linked to responsiveness, availability rates, and emissions performance.

- **Sunset clause or repurposing plan:** Contracts could be designed with an expiry or repurposing date, aligning with the UK's decarbonisation targets. This would allow for orderly decommissioning or retrofit (e.g. CCS or hydrogen conversion) of these assets, which—once decarbonised—could be allowed to re-enter the market. Alternatively, it could also allow for a smoother path to nationalisation in the long run for certain plants.

By design, this arrangement enables NESO to treat these plants as system assets, not market actors—allowing better coordination, improved cost transparency, and strategic optimisation of backup capacity.

ADVANTAGES OVER NATIONALISATION: NAVIGATING ECONOMIC, LEGAL AND POLITICAL RISKS

Compared to nationalisation, in the short-to-medium-term the RAB model provides a lower-risk and more institutionally tractable path to securing affordable, reliable backup capacity—while preserving flexibility and investor confidence:

The RAB model avoids large public capital outlays and new debt. Instead, it channels the logic of private investment into public objectives, using regulated returns to attract investors. Because remuneration is based on a low-risk profile, the cost of capital is far lower than for merchant assets, reducing system costs for Government and consumers. Unlike nationalisation, which socialises all operational risk, the RAB structure enables better risk-sharing and cost control through transparent regulation.

From a legal perspective, there is no forced transfer of ownership, so the legal risks associated with nationalisation—especially international arbitration or claims under investment treaties, a key challenge Unite has highlighted—[15] would be avoided. Participation would be contractual and voluntary, with clear regulatory oversight and dispute resolution mechanisms set and overseen by Ofgem.

Politically, RAB would be consensus-enabling. It provides public-interest outcomes—price control, reliability, system oversight—without triggering ideological disputes or major resistance from markets. It avoids the reputational risks of compensation disputes, international investor backlash or the charge that the state is 'nationalising failure'. In an environment where nationalisation may be broadly popular but economically and fiscally challenging, it allows Government to achieve public control without public ownership (which a RAB could still pave the way for in the long run).

Because of this, it can be implemented quickly, enabling CP2030 targets to be achieved.

Overall, a RAB model is much easier to implement. It requires fewer new institutions, leverages existing Ofgem and NESO structures, and can be phased in plant-by-plant. NESO would assume dispatch oversight as part of its broader system coordination role, and Ofgem would regulate cost recovery via consumer bills—just as it does for networks. This makes the model scalable, reversible, and adaptable to future system needs. In the age of clean power, a RAB for unabated gas can strike the right balance between affordability, energy security and climate action.

15 Unite, 'Renationalising energy'.

> To prevent exposure to volatile spot gas prices and eliminate profit incentives tied to market conditions, NESO could act as the sole buyer of fuel for RAB-designated plants.

> The RAB model avoids large public capital outlays and new debt. Instead, it channels the logic of private investment into public objectives, using regulated returns to attract investors.

CONCLUSION

The UK’s clean power transition demands a clear, coordinated strategy to phase out unabated gas generation while maintaining energy security and lowering consumer bills. The current policy framework falls short of this goal by allowing aging gas plants to retain market influence, thereby undermining decarbonisation efforts and keeping bills high. A RAB model offers a pragmatic solution that removes these plants from competitive markets while preserving their strategic value through central dispatch by NESO. This would sever the link between gas prices and electricity bills while de-risking investment in plant refurbishment, ensuring a managed decline in fossil gas generation.

Future economic work on the RAB model is needed to focus on refining cost structures and our early estimations, regulatory oversight mechanisms, and market integration to ensure efficiency and value for consumers. Key areas could include developing accurate models for availability payments, assessing the long-term fiscal impacts of various RAB contract designs, and evaluating the broader system benefits of reduced market volatility.

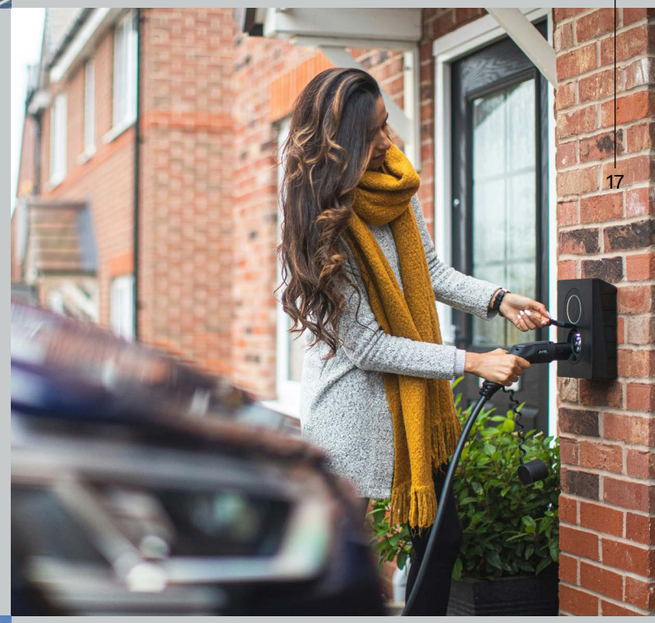
Additionally, future analysis must consider how the RAB interacts with emerging flexibility technologies and decarbonisation timelines, ensuring that this transitional mechanism evolves in step with the UK’s clean energy ambitions. The RAB model for gas, if implemented swiftly and carefully, can become a cornerstone of the UK’s strategy to help address the energy trilemma through CP2030.

“

The UK’s clean power transition demands a clear, coordinated strategy to phase out unabated gas generation while maintaining energy security and lowering consumer bills.

“

Future economic work on the RAB model is needed to focus on refining cost structures and our early estimations, regulatory oversight mechanisms, and market integration...



“

The RAB model for gas, if implemented swiftly and carefully, can become a cornerstone of the UK’s strategy to help address the energy trilemma through CP2030.

ANNEX: OPERATIONAL CCGTS IN GREAT BRITAIN (AS OF MAY 2022)

Company Name	Site Name	Installed Capacity (MW)	Year Commissioned (/refit)
Calon Energy	Baglan Generating Ltd	520	2002
Calon Energy	Severn Power Ltd	850	2010
Calon Energy	Sutton Bridge Power Generation	819	1999
SSE Group and Cheung Kong Infrastructure Ltd	Seabank Power Ltd	1234	2000
Energy Capital Partners	Saltend Power Station	1200	2000 (2022)
EPUKi	EP Langage Ltd	905	2010
EPUKi	EP SHB Ltd	1365	1997
ESB	Carrington Power	910	2016
ESB	Corby Power Station	407	1994
Intergen	Coryton Energy Company Ltd	800	2002 (2025)
Intergen	Rocksavage Power Company Ltd	810	1998
Intergen	Spalding Energy Company	950	2004 (2018)
Marchwood Power	Marchwood Power	898	2009
Part of PX Group	Fellside CHP	155	1995
RWE Npower	Didcot B	1450	1998 (2011)
RWE Npower	Great Yarmouth	420	2001
RWE Npower	Kings Lynn	395	1997 (2019)
RWE Npower	Little Barford	723	1995 (2012)
RWE Npower	Pembroke	2199	2012
RWE Npower	Seal Sands	55	1999
RWE Npower	Staythorpe	1772	2010
SSE Group	Keadby	735	1982
SSE Group	Medway	755	1995
SSE Group	Peterhead	1180	1980 (2000)
UK Transition Limited	West Burton CCGT	1332	2013
Uniper UK	Connahs Quay	1380	1996
Uniper UK	Cottam Development Centre	445	1998
Uniper UK	Enfield	408	1999 (2021)
Uniper UK	Grain	1517	2011
Vitol	Blackburn	60	2002
Vitol	Damhead Creek	805	2000
Vitol	Rye House	715	1993
Vitol	Shoreham	420	2000
Vitol	VPI	1252	2004 (2021)