Understanding The UK Energy Market

Non-Commodity Costs

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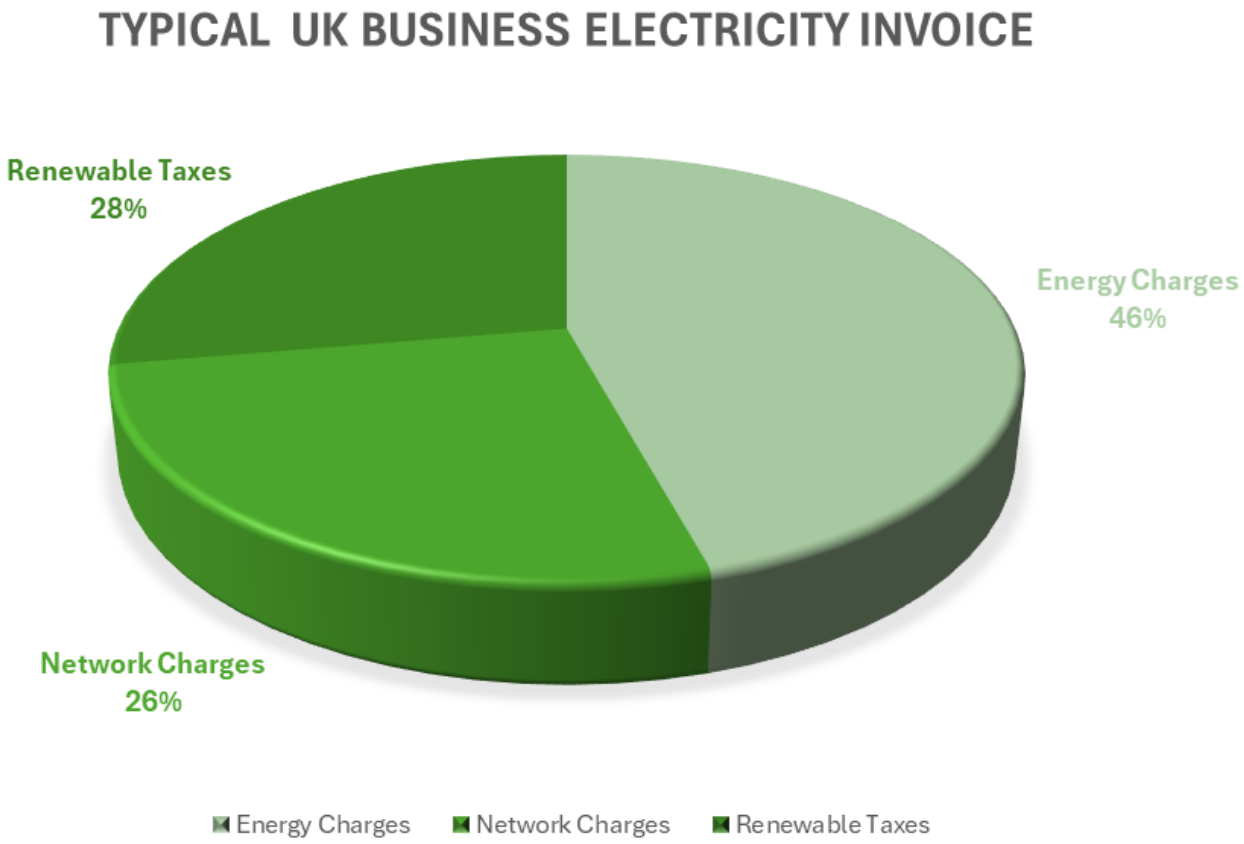
UK Electricity Invoice Breakdown



- Non-commodity (non-comms) costs are increasing every year
- Network charges are being invested in improving National Grid efficiency
- Renewable taxes are used to fund more large-scale renewable projects

1. Network & System Costs

Network and system charges fund the infrastructure needed to transport electricity across the UK and maintain grid stability, with costs shaped by demand, location, investment needs, and the shift to a low-carbon system.

TNUoS charges recover the cost of the national transmission network and include:

•**Locational charges:** Vary by region, with lower costs in the north (closer to generation) and higher costs in the south (further from supply).

•**Residual charges:** Network-wide costs increasingly recovered through fixed charges following the Targeted Charging Review.

For businesses, large high-demand sites—especially in southern regions—typically face higher TNUoS, making it a key driver of non-commodity cost differences between sites.

Distribution Use of System (DUoS)

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DUoS charges recover the cost of local distribution networks that deliver power from the transmission system to end users. Costs are set by each **Distribution Network Operator (DNO)** and vary by region.

DUoS Structure

DUoS charges include:

> **Unit rates** (red/amber/green time bands for HH sites)

> **Fixed daily charges** (growing under TCR reforms)

> **Capacity charges** (kVA-based charges for HH metering)

> **Reactive power charges** (for poor power factor)

What Drives DUoS Differences

> Local network congestion

> Reinforcement needs (e.g., EV charging, heat pumps, industrial load)

> Regional investment plans

> Age of infrastructure

Impact on Businesses

> Time-of-use charges still apply for many tariffs.

> Peak demand or poor power factor can significantly increase DUoS costs.

> Multi-site businesses may see large DUoS cost variation between regions.

Balancing Services Use of System (BSUoS)

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BSUoS recovers the costs incurred by National Grid ESO to keep the system balanced in real time.

What BSUoS Covers

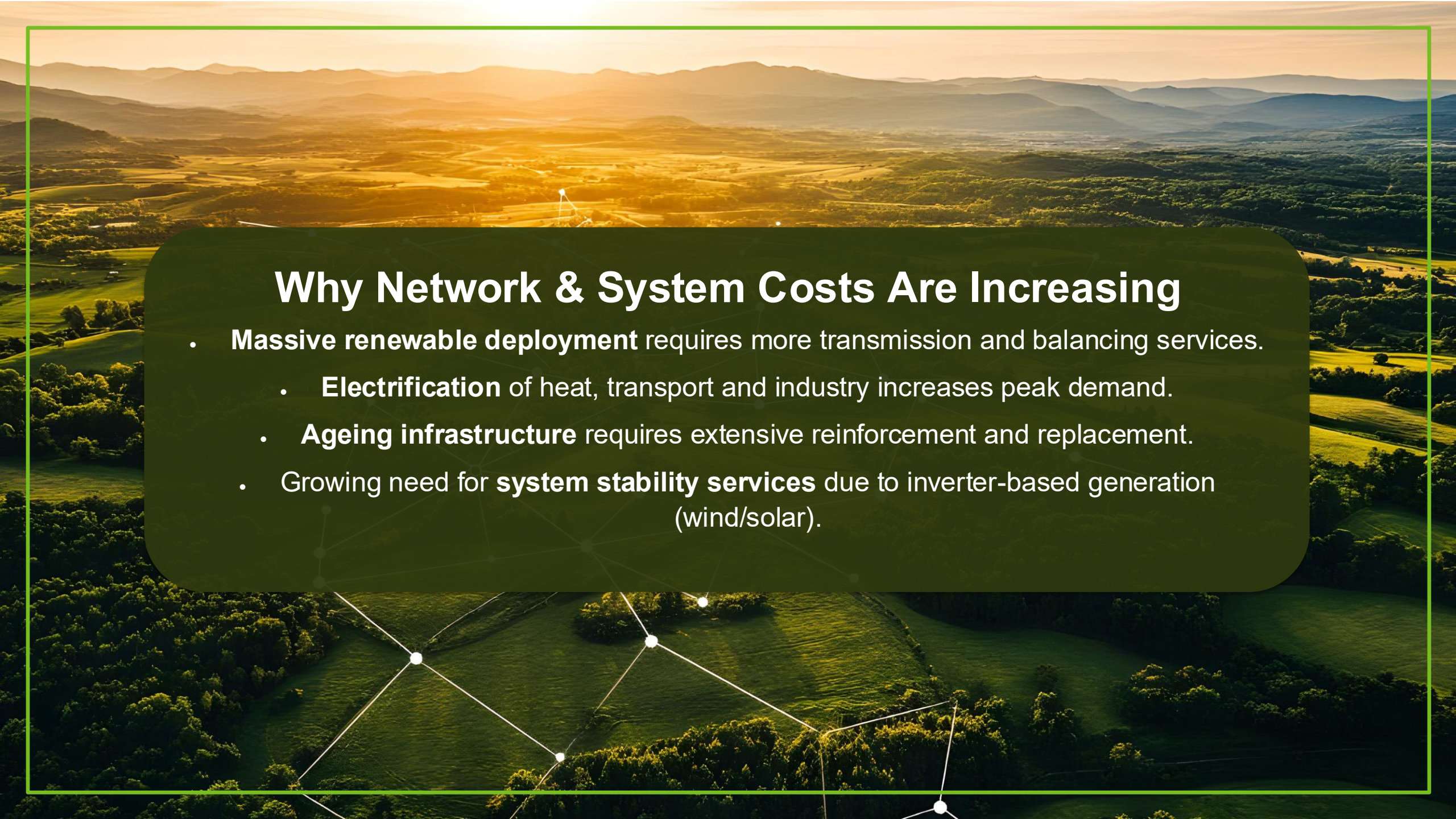
Frequency management, reserve services, constraint payments to generators, response services, system stability measures.

Drivers of BSUoS Costs

Variable renewable output, weather patterns, system constraints (e.g., limited transmission capacity), gas prices and generation mix, market volatility.

Impact on Businesses

Since 2023, BSUoS is charged as a fixed tariff rather than half-hourly variable rates for end users, improving predictability. Costs still rise systemwide when balancing becomes more challenging — meaning future bills may reflect growing complexity of net zero operations.



Why Network & System Costs Are Increasing

- **Massive renewable deployment** requires more transmission and balancing services.
- **Electrification** of heat, transport and industry increases peak demand.
- **Ageing infrastructure** requires extensive reinforcement and replacement.
- Growing need for **system stability services** due to inverter-based generation (wind/solar).

2. Policy & Environmental Levies

Policy and environmental levies fund government programmes that support low-carbon generation, energy efficiency and system security. These charges help deliver the UK's decarbonisation targets but add significant cost to business electricity bills.

These levies apply to almost all electricity users, with exemptions for some energy-intensive industries through schemes like BICS.

Contracts for Difference (CfD)

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The CfD scheme guarantees low-carbon generators a fixed “strike price” for their electricity.

How It Works

> When the wholesale price is below the strike price, generators receive a **top-up payment**, funded by consumers.

> When wholesale prices exceed the strike price, generators pay back the difference.

Impact on Businesses

> The cost of CfD rounds varies based on wholesale price movements.

> As more offshore wind comes online, CfD costs may increase despite lower generation costs due to volume.

Renewables Obligation (RO)

The RO is a legacy support mechanism for renewable generators built before 2017.

How It Works

- Suppliers must obtain a set number of Renewable Obligation Certificates (ROCs) or pay a “buy-out” price.
- Costs are passed through to consumers.

Impact on Businesses

- Although closed to new generators, the RO remains a **major levy** due to the long lifespan of accredited assets.
- RO costs are one of the largest policy charges on business bills.

Capacity Market (CM)

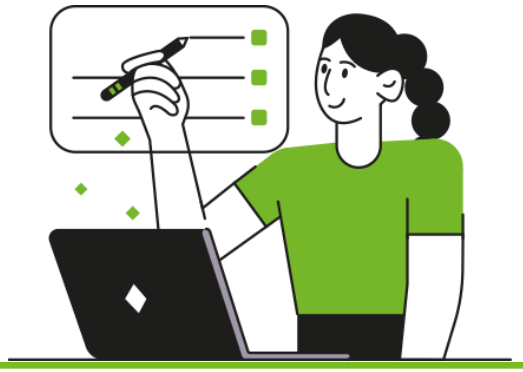
The Capacity Market ensures enough generation is available during system stress events.

What the CM Pays For

- Standby generation
- Demand-side response services
- Large generators guaranteeing winter availability

Impact on Businesses

- CM costs fluctuate annually based on auction outcomes.
- Recent auctions have cleared at higher prices due to the need for new flexible capacity, increasing the cost burden.



Climate Change Levy (CCL)

A tax on non-domestic electricity and gas use designed to encourage energy efficiency.

Key Features

- Applied per kWh
- Reduced rates available via Climate Change Agreements (CCAs)
- Not linked to the wholesale market or network costs

Impact on Businesses

- A substantial fixed component of electricity bills, especially for sites without CCA exemptions.
- Applies regardless of metering type or consumption profile.

Other Policy Costs & Emerging Levies

Feed-in Tariff (FiT) Legacy Payments = Supports small-scale renewables installed before the scheme closed.

Future Hydrogen Levy = A potential levy to fund low-carbon hydrogen production and infrastructure.

Industrial Decarbonisation / CCUS Support = Costs associated with carbon capture clusters and CO_2 transport infrastructure may be recovered through future levies.

Energy Intensive Industry (EII) Relief & BICS = Eligible sectors may receive exemptions from:

- RO
- FiT
- CM
- CfD (potential partial relief)

This shifts a larger share of these costs onto **non-eligible businesses**.

Why Policy & Environmental Costs Are Increasing

- Expansion of offshore wind and low-carbon generation capacity
- Rising capacity market requirements due to coal closures
- Increasing need for flexible, dispatchable low-carbon power
- Government support for hydrogen, CCUS and industrial decarbonisation
- Long-term contracts continuing into the 2030s and 2040s

3. Fixed & Standing Charges (Expanded Detail)

Standing charges are fixed daily or annual electricity costs paid regardless of consumption and are becoming a more significant part of non-commodity energy costs following Ofgem's network reforms.

They cover the cost of providing access to the electricity system, including:

- **Network cost recovery:** A growing share of TNUoS and DUoS is recovered through standing charges to ensure stable funding as consumption patterns change.

- **Residual network charges:** Non-locational costs that, after the Targeted Charging Review, are now largely recovered through fixed daily charges.

- **Metering and data services:** Costs for metering operation, data collection, and settlement, particularly for half-hourly metered sites.

- **Supplier administration:** Billing, settlement, risk management, and customer service activities included within the standing charge.

Why Standing Charges Are Increasing

Several structural changes in the UK power system are pushing standing charges upward:

Targeted Charging Review (TCR)
Ofgem's TCR shifted many charges from consumption-based to fixed. This reduces economies of scale for high-usage customers and increases the baseline cost for low-usage sites.

Rising Grid Investment Requirements
Significant investment is needed to connect renewables, support electrification, and reinforce ageing infrastructure. To ensure stable and fair cost recovery, more of these multi-billion-pound costs are moved into fixed charges.

Decarbonisation Infrastructure
New carbon capture, hydrogen, and flexible generation projects require greater grid capacity and resilience, with some costs increasingly recovered through fixed network charges.

Lower Consumption in Some Sectors
Improved efficiency and on-site generation reduce volumetric revenues, leading networks and suppliers to rely more heavily on fixed charges.

How Standing Charges Are Calculated For Businesses

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Fixed Pricing Bands (TCR Bands)

Each site is assigned into a band based on:

- line capacity
- agreed supply capacity (kVA)
- historical consumption
- metering type

Each band has a fixed standing charge level set by the distribution network and transmission system.

Capacity Charges (for HH-Metered Sites)

In addition to standing charges, many large users pay:

- **Agreed Capacity Charges** (per kVA/month)
- **Excess Capacity Penalties** if demand exceeds the agreed limit

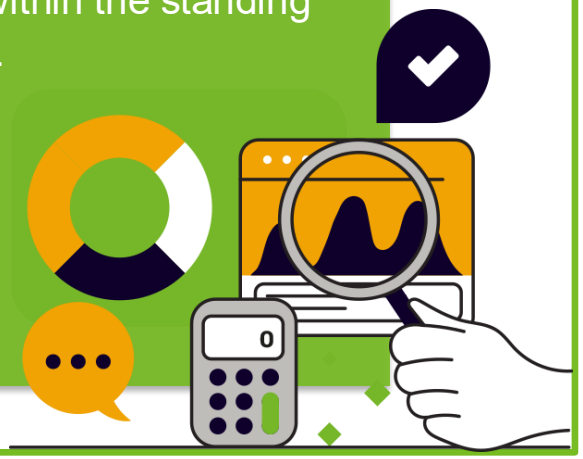
These capacity components operate alongside standing charges but behave similarly: fixed, predictable, and not tied to kWh consumption.

Supplier Uplift

Suppliers add a margin to cover:

- billing
- risk
- credit arrangements
- compliance

This appears within the standing charge as well.



What This Means for Large Users

For large energy users (such as organisations using ~10,000,000 kWh/year standing charges have material strategic implications:

1) Standing Charges Form a Larger Share of Total Cost
Standing charges stay fixed or rise, limiting the benefit of lower commodity prices.

2) Peak Demand Management Matters More
Demand spikes can push sites into higher bands, increasing fixed costs for years.

3) Location Matters
DUoS standing charges vary by region, creating large fixed-cost differences for similar sites.

4) Efficiency Doesn't Reduce All Costs
Standing charges stay the same despite lower consumption, affecting decarbonisation ROI.

5) More Transparency & Forecasting Required
Rising fixed charges demand better forecasting and clearer cost breakdowns.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