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MicroGrids:

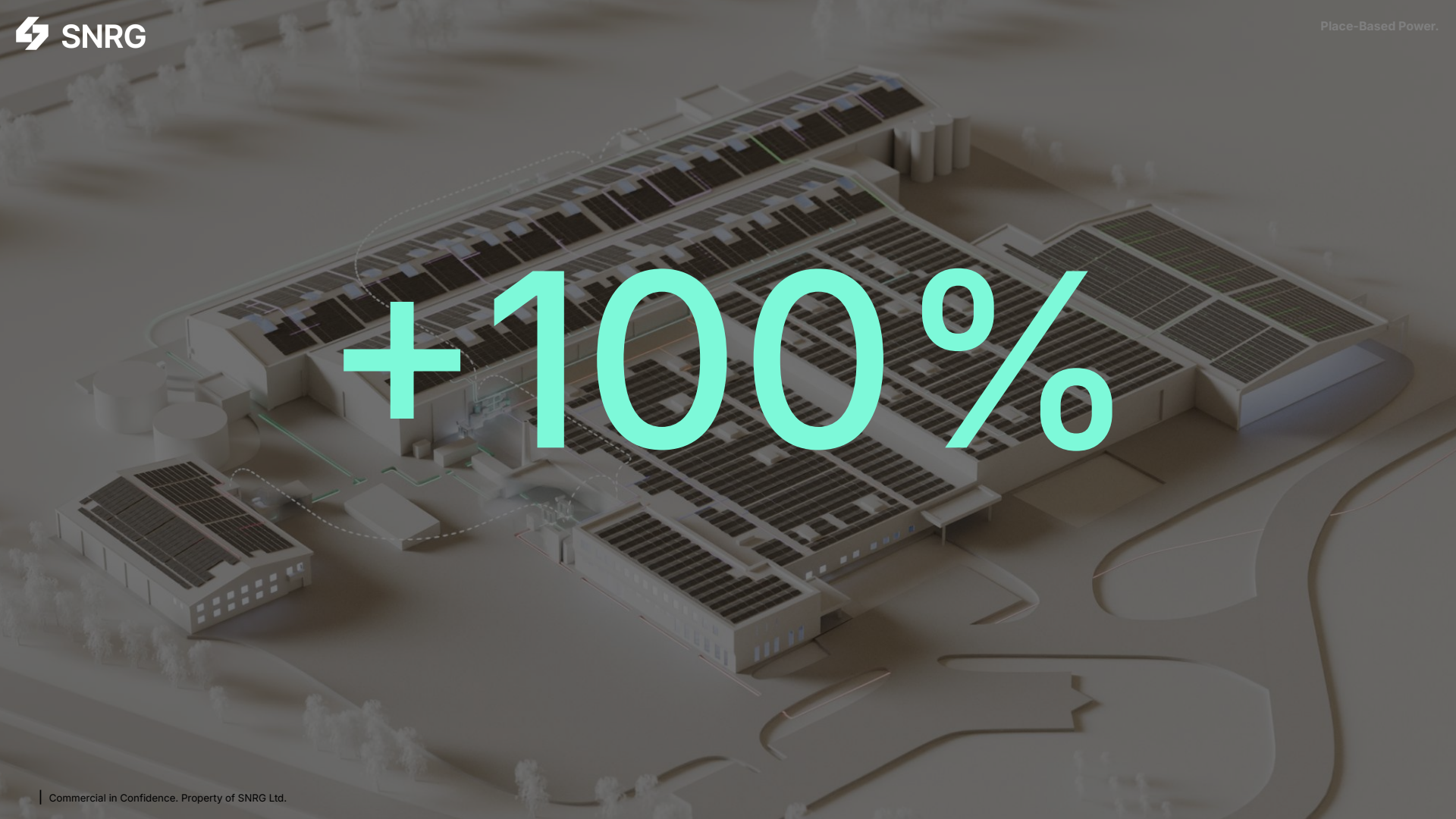
Opportunities for microgrids to increase renewable energy deployment and overcome grid constraints for real estate development.

Henry Leivers

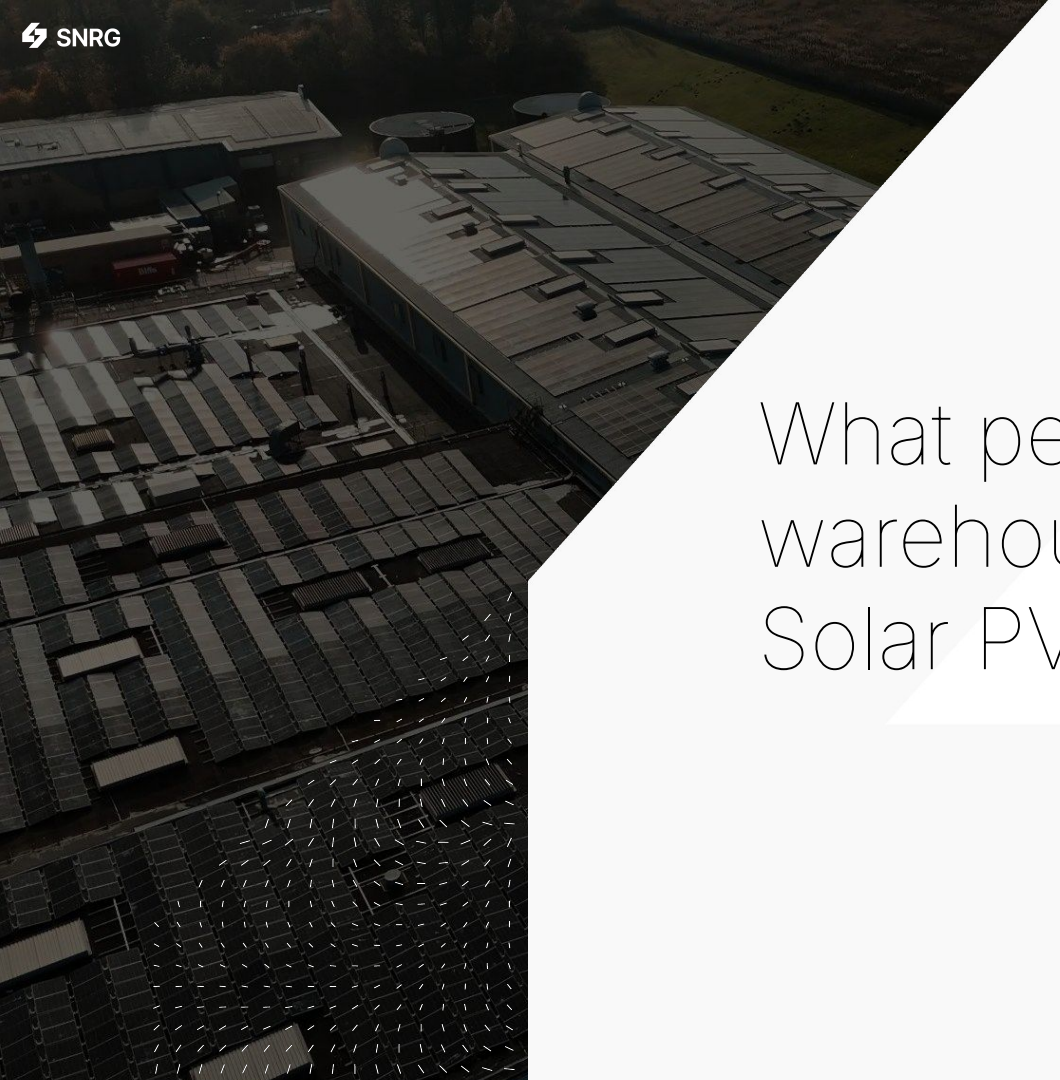
SNRG

By what percentage could you increase the total UK solar generation capacity by using only 20% of the UK's largest warehouses?

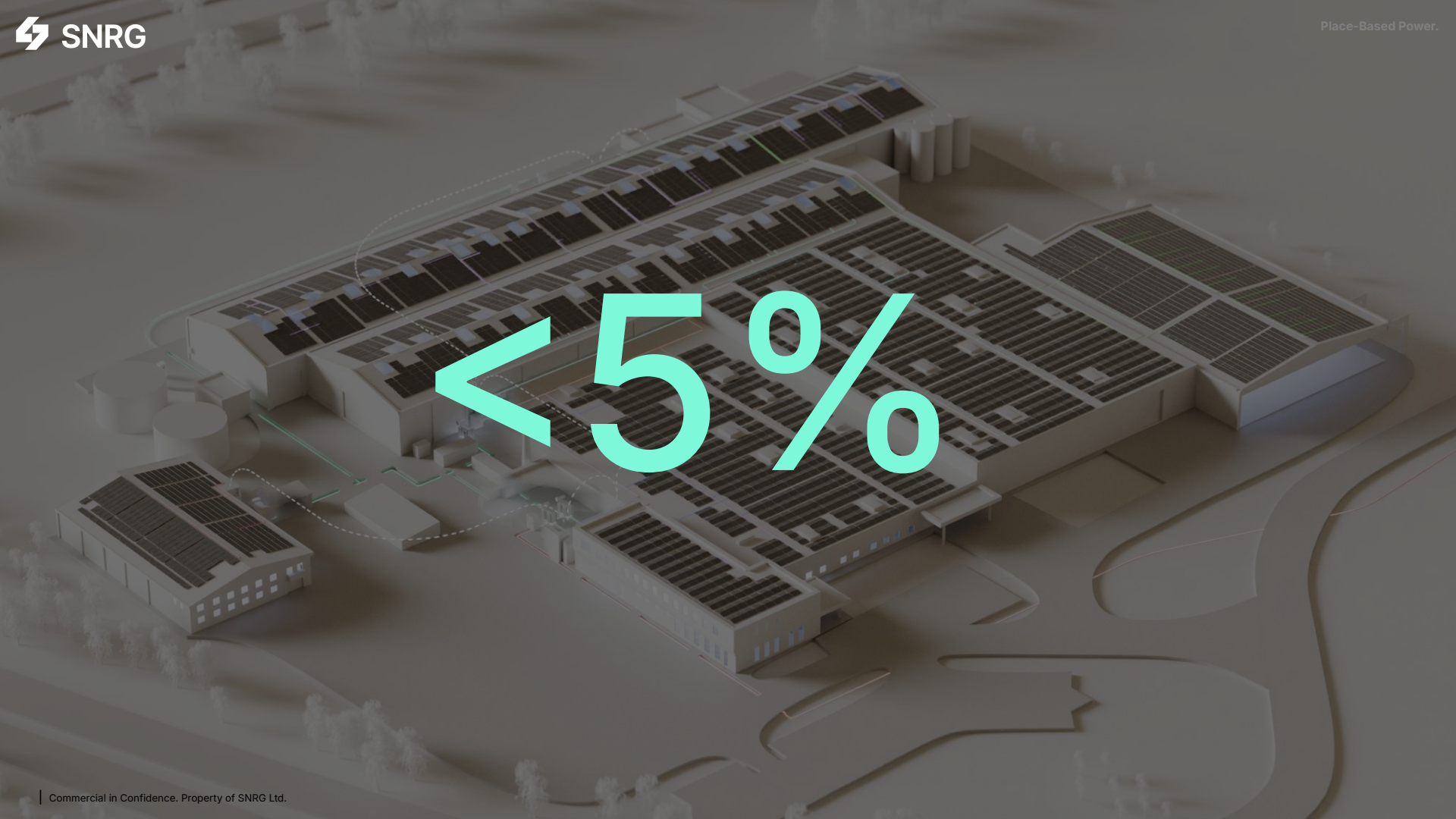
Place-Based Power.



SNRG



What percentage of UK warehouses currently have Solar PV?



Place-Based Power.


How Did I Get Here?

UNIVERSITY OF CAMBRIDGE

MA Geography
Climate Science

Sustainability

Entrepreneurial Mindset

Innovation Projects

Commercial Roles

Grid Constraints

System Thinking

Overcoming Commercial Barriers

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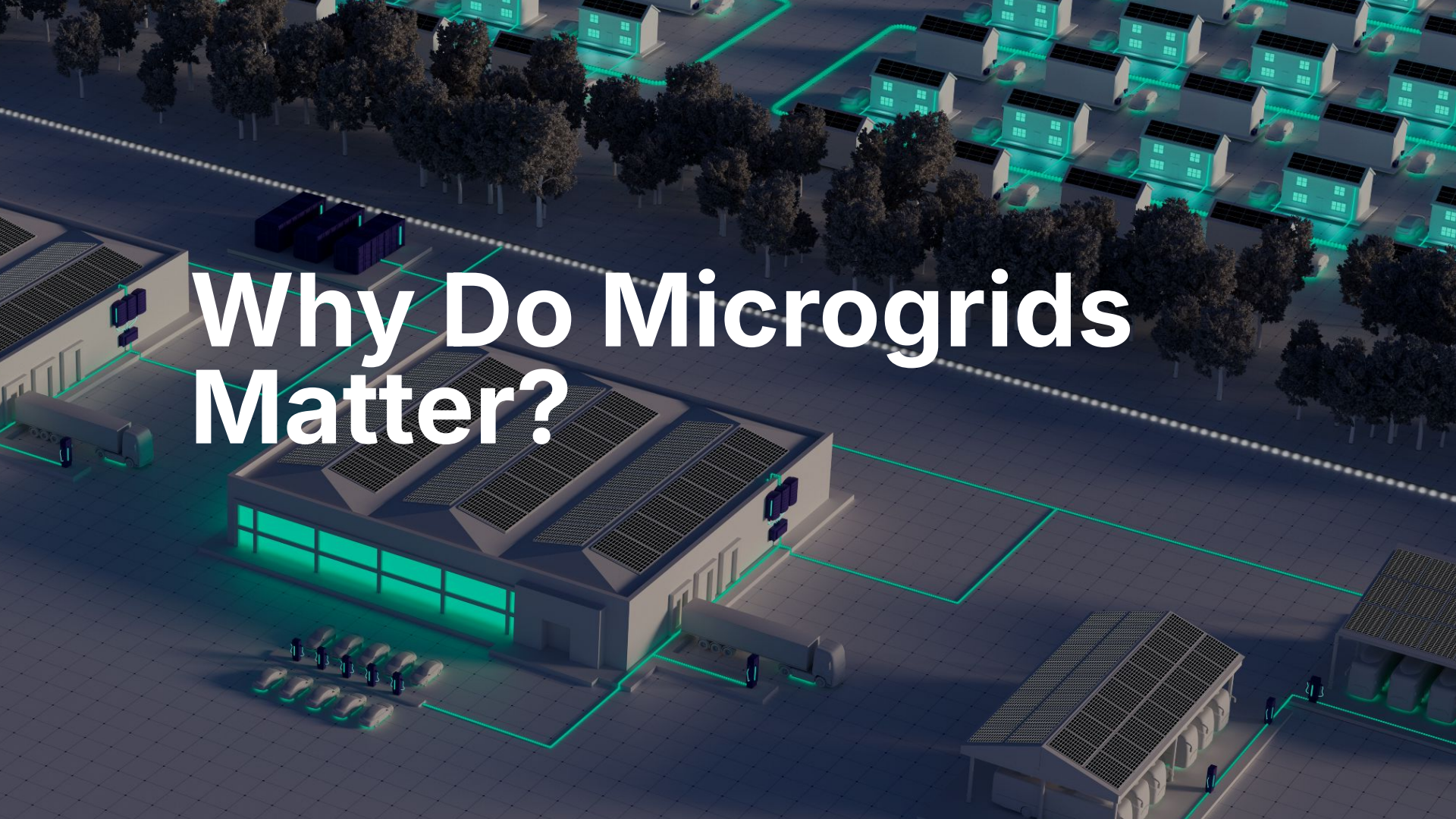
SmartGrids

Place-Based Power.


Why Do Microgrids Matter?

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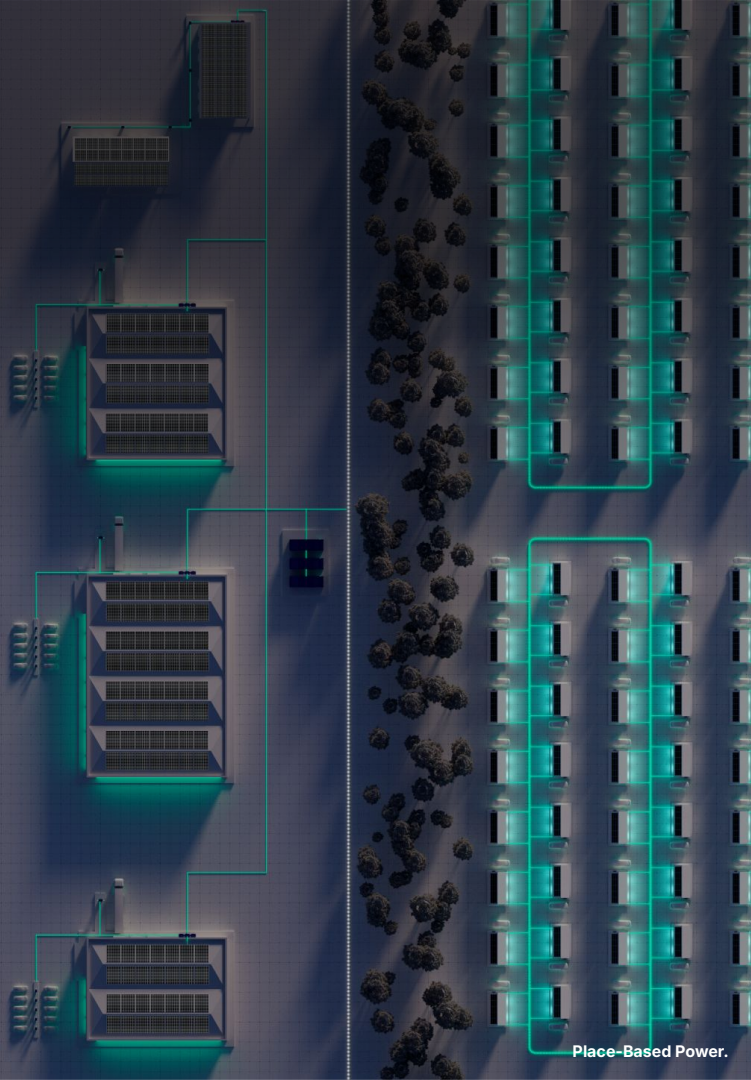
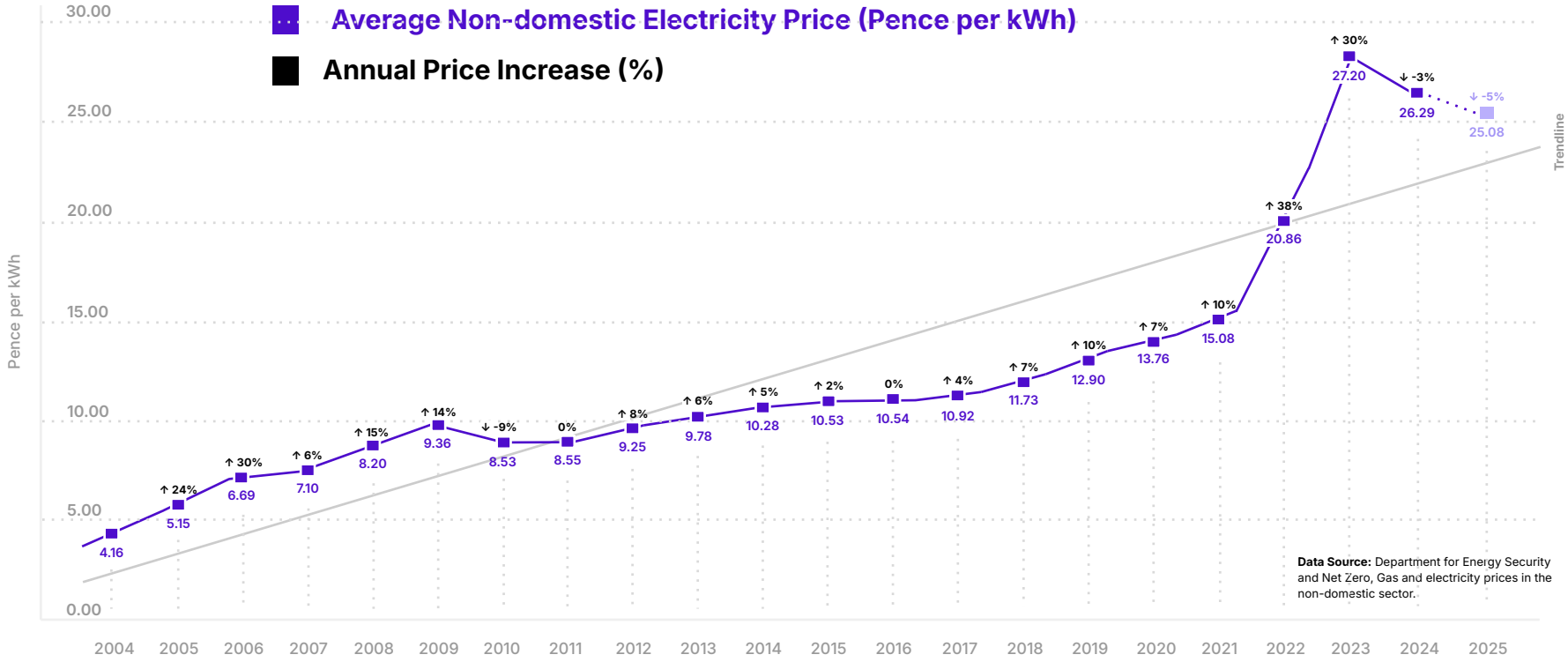
Challenges for Real Estate:

- Increasing Energy Costs
- Grid Connection Barriers
- Higher Up-Front Costs
- Operational Complexity

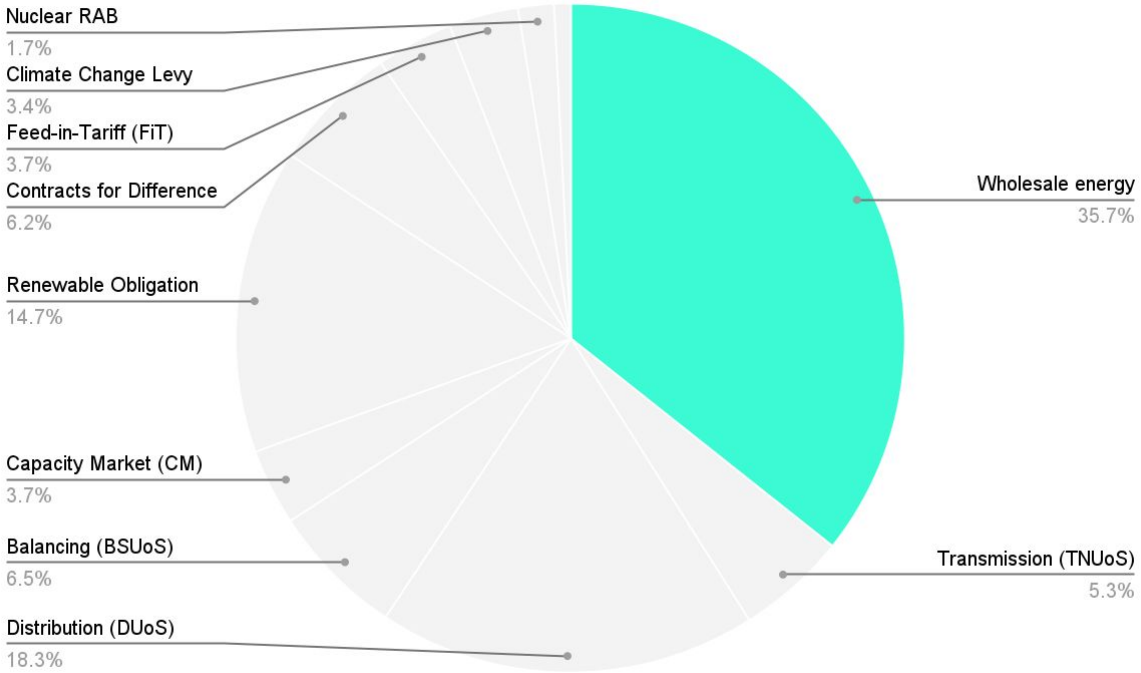


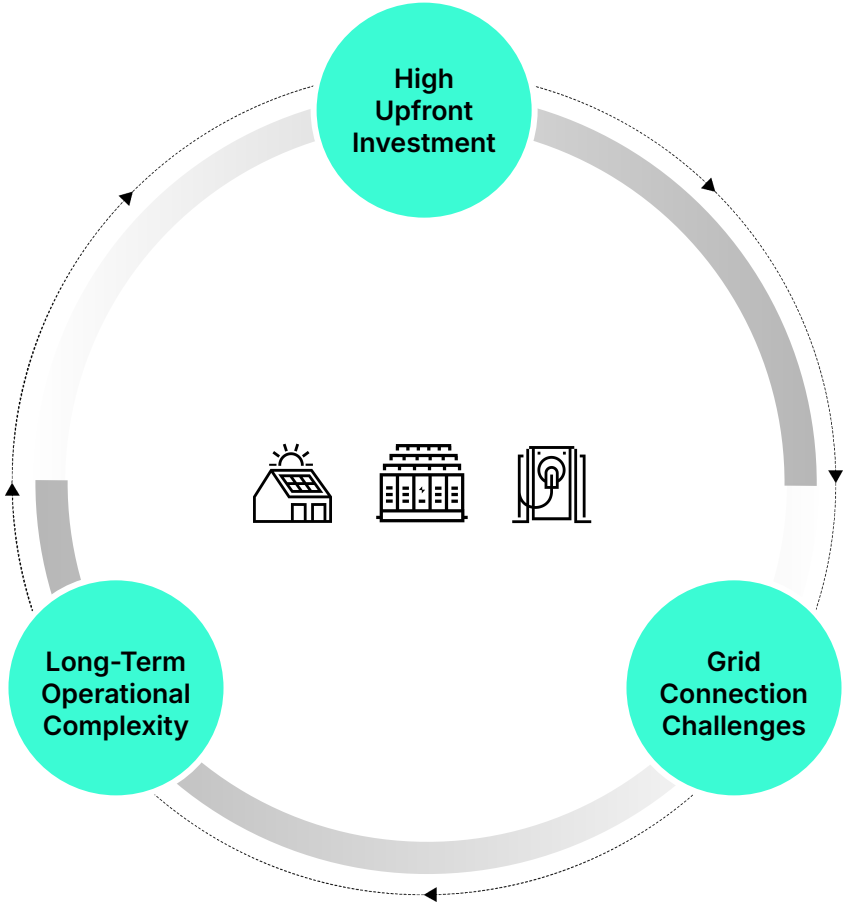
UK Non-domestic Electricity +532% 2004 and 2024 - av. of 10.25% pa.



>60% of what you pay is not the energy itself

- **Commodity/ Wholesale Costs**
- **Non-commodity Costs**

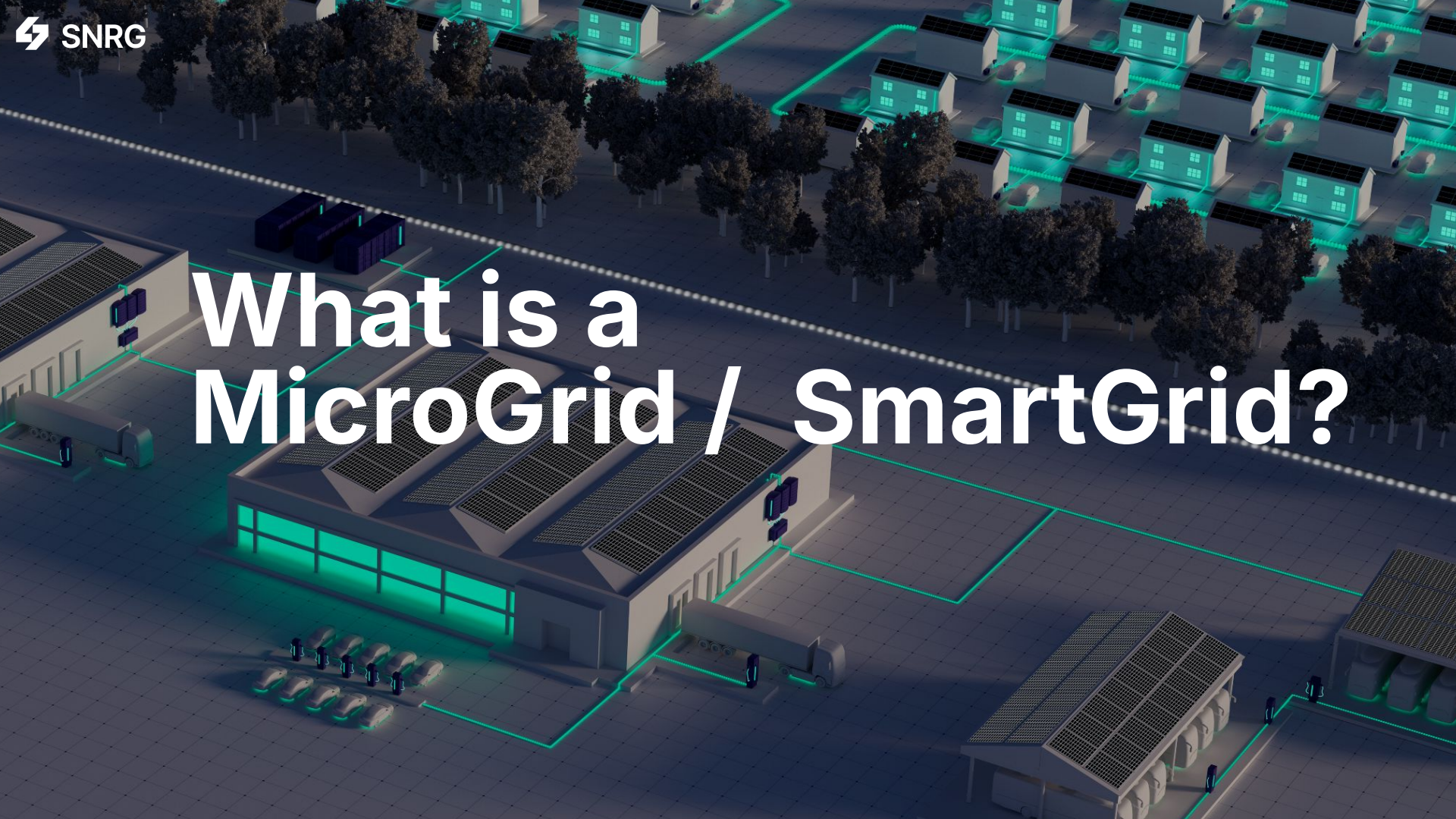




SmartGrids

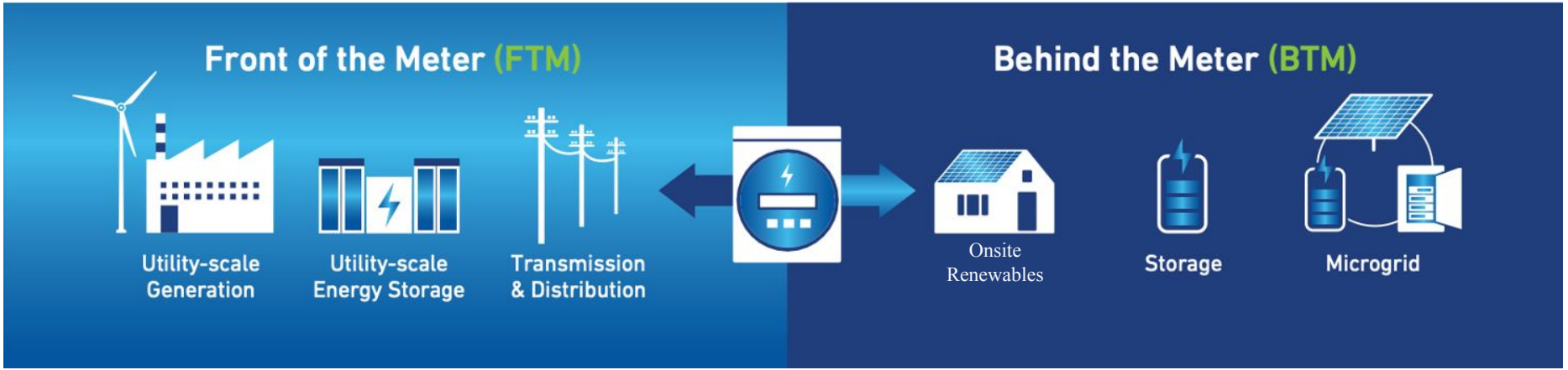
Unlock Value

SNRG



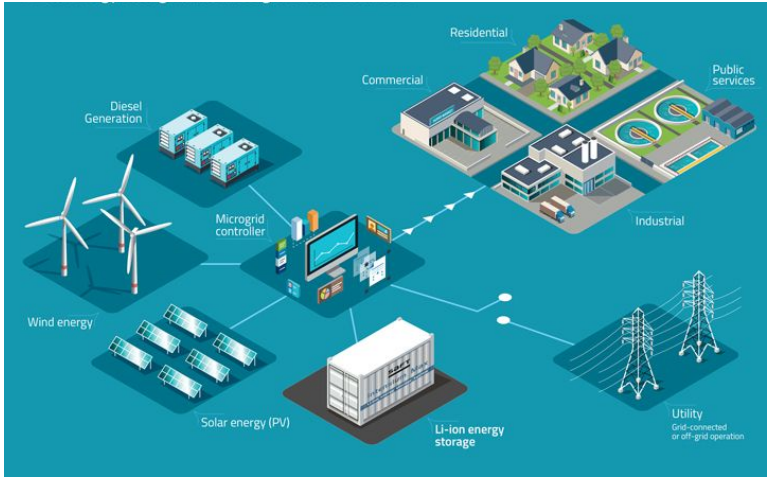
What is a MicroGrid / SmartGrid?

Key Concept A

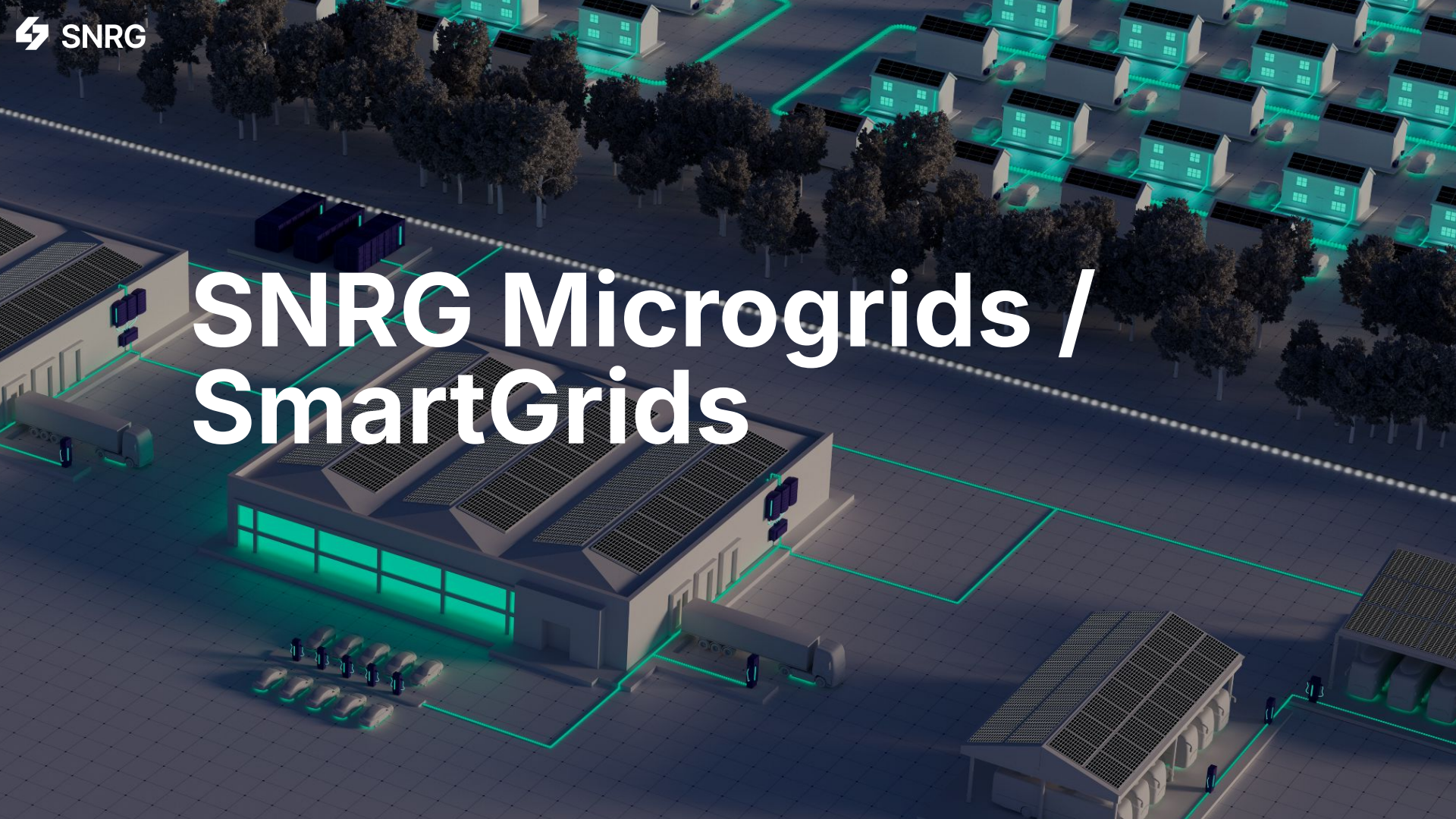


Key Concept B

Grid Connected MicroGrid



Islanded MicroGrid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SNRG Microgrids /
SmartGrids

A SNRG SmartGrid is:

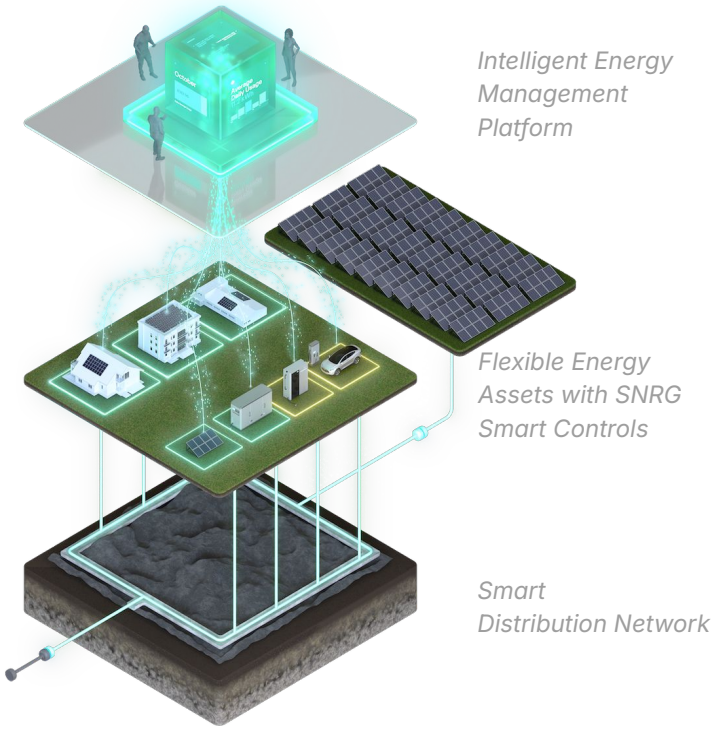
Network Led

Place Based

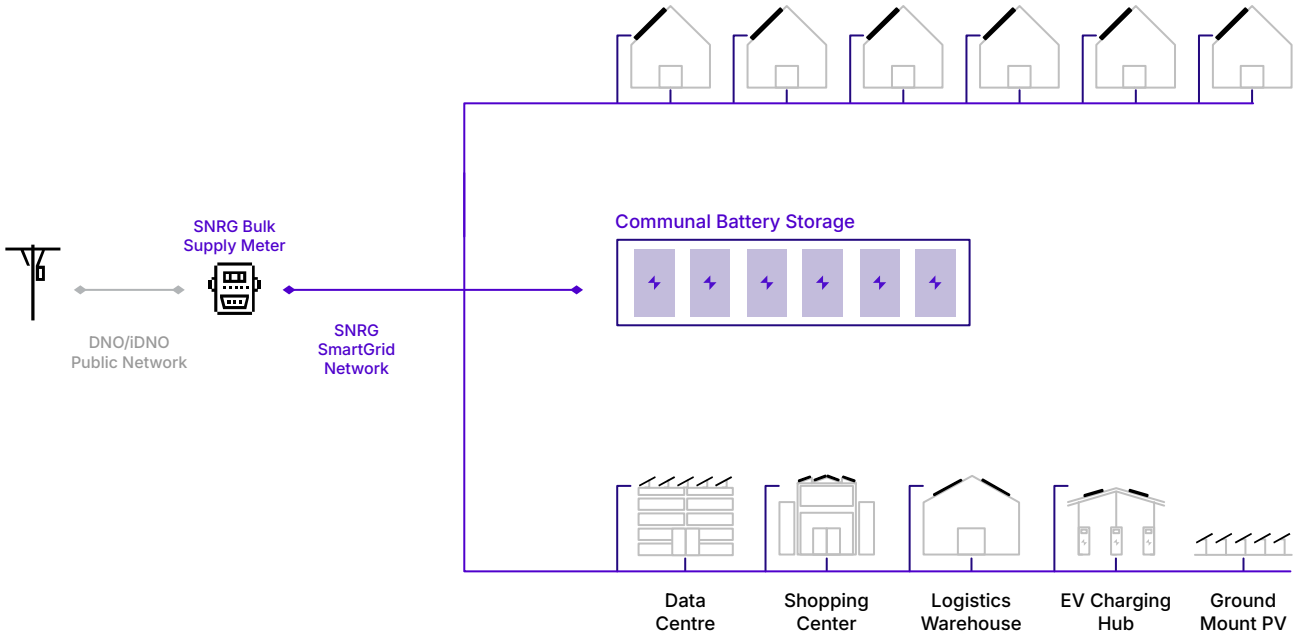
Intelligent

Regulatory Compliant

Real Estate Compatible



A SmartGrid Network Approach

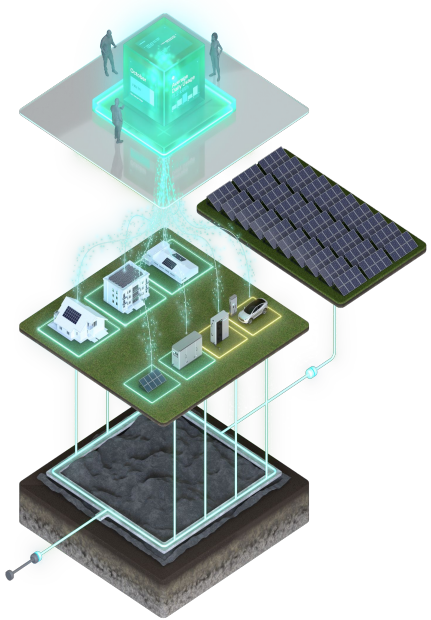


SmartGrid Overview

Control & Monitoring System

Renewable Energy & Flexibility

Smart Networks



SmartGrid Control & Monitoring System
Smart Private Wire integrated with Smart iDNO

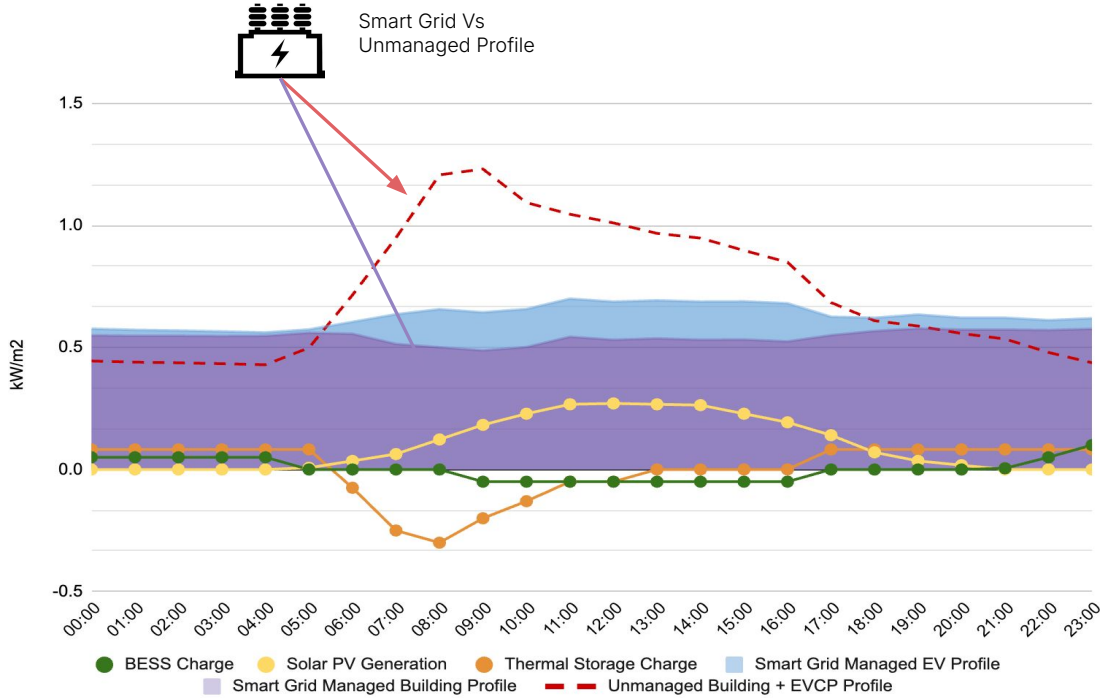
Smart Meters (Demand, Generation, Storage)

Flexible Assets	Onsite Generation	Onsite Flexibility
Renewable Generation Every Rooftop, Car Ports, Ground Mount	■	
Battery Energy Storage On every SmartGrid; coordinated across the site	■	■
Smart EV Charging Public, Workplace, Communal, Remote & Private		■
Heat Pumps: Space Heating & Stored DHW Every home, and many non-domestic buildings		■

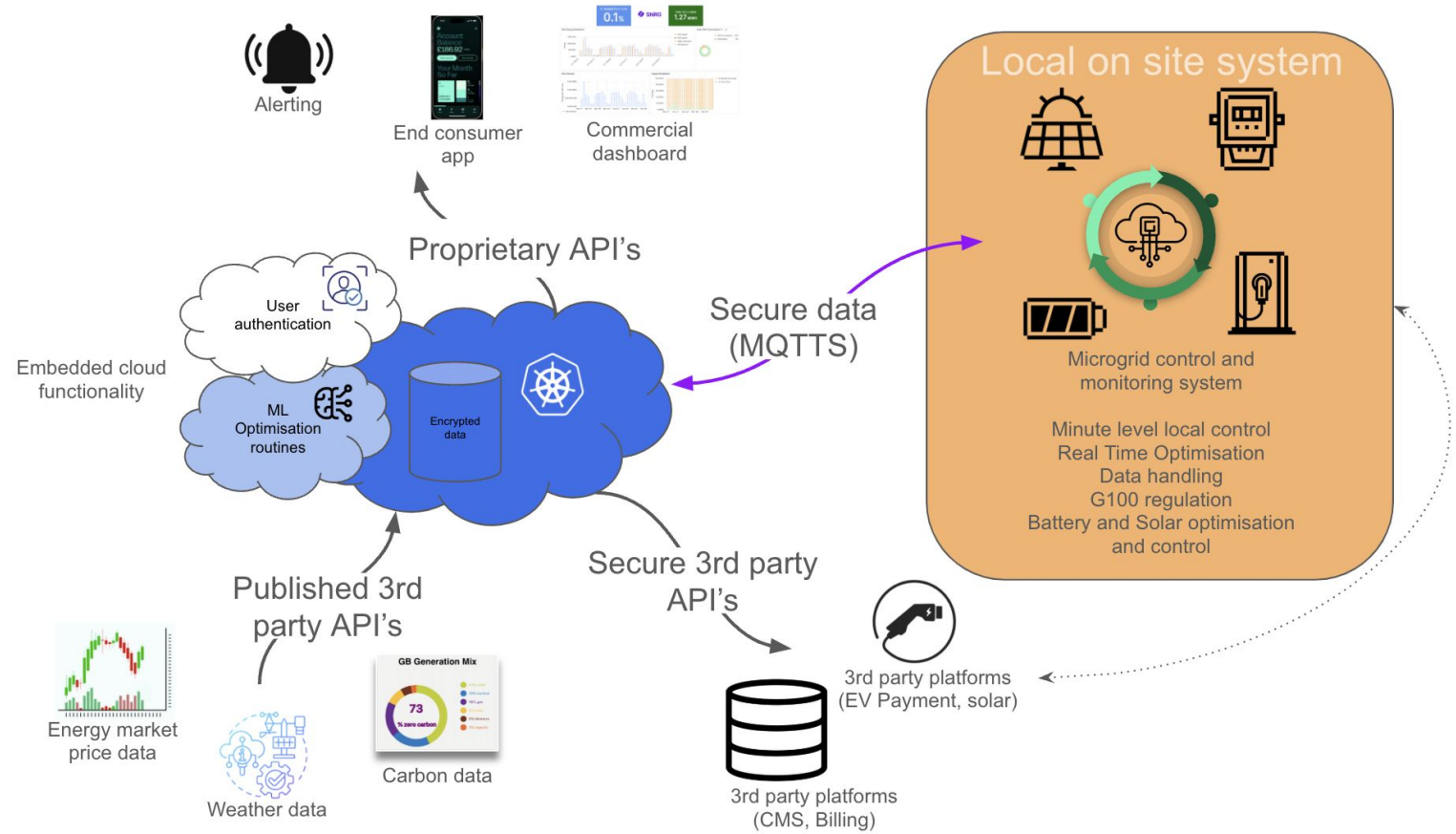
Private Communication Networks (Fibre & Ethernet)

Micro-Grid (Private Network) & IDNO Networks

Optimising Grid Capacity.
What Does That Mean In Practice?



SNRG Cloud Platform



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Case Studies

SNRG Story

2018 | 2019 | 2022 | 2023 | 2024 | 2025

SNRG Founded

centrica — Majority Shareholder

ANTIN — Majority Shareholder

UtilityAssets — SNRG IDNO Acquired

E-MOBILITY

UNITS

5 —  Uno Bus

22 —  Uno Bus

I&C NEW BUILD

Sq ft Project Size

1.5m —  Harwell

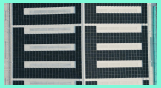
2.0m —  Otterpool Park

5.0m —  Wellcome Hinxton Campus

I&C RETRO

KWp Project Size

200 —  Bradford AFC

300 —  London Metric Plc

1,400 —  Donaldson Group

2,400 —  Marelli

11,000 —  Brick Manufacturer

RESIDENTIAL

UNITS

1* —  Solus Apartment

12 —  Bourne View

212 — 

West Works

1,500 —  Chelmsford

8,500 —  Otterpool Park

20,000 — Coming Soon

* 1 Apartment, 16 homes

Otterpool Park Net Zero ‘SmartGrid’

The UK’s largest Net-Zero new town funded and operated by SNRG

01 / DEVELOPMENT OVERVIEW

The new town in Kent is being promoted by Folkestone & Hythe District Council through their special development vehicle Otterpool Park LLP

- 8,500 homes
- 150,000m2 of office, retail, leisure & schools
- 27,000 residents
- HS1 railway station
- All electric construction machinery used

SNRG will provide the IDNO service and integrated microgrids across the site.

02 / SNRG SOLUTIONS AND BENEFITS

12 MW solar farm, delivered by SNRG, connected to

Up to **35 SmartGrids** providing zero carbon energy to all residents and businesses (with approximately 35 MW funded PV & more than 20 MW BESS)

SNRG’s IDNO will adopt the offsite network and ring main, providing a **one-stop-shop electrical infrastructure solution**

Up to **£382m development cost savings**
At least **£93m reduction in residential energy bills** over 30 years

22 MW of additional rooftop solar PV

>20 MWh communal battery storage

Community ESCO revenue for asset stewardship

Recurring revenue share for the Council

Off-site renewable energy supply

SNRG

Science and Innovation Campus

Location:
Oxford

Client: HARWELL

How to you unlock grid constrained development and maximise the deployment of renewable energy technologies on a campus?

PHASE 1 SNRG SOLUTIONS AND BENEFITS

10 Buildings connected to the SmartGrid

>1MWh BESS growing as demand is connected across the site

1 MW Solar fully funded, rooftop and ground mounted

Convert site to SmartGrid and provide additional capacity for growth, avoiding network constraints

FULL SOLUTION BUILDOUT

19 MW
Solar PV

5m sqft
Site demand

5 MWh
communal battery storage

Wind Power
Potential

23 GWh
Energy Supply

£14m
capex avoidance

Marelli Sunderland SmartSite

Location:
Sunderland

Client:
MARELLI

How do you unlock grid-constraints and maximise the deployment of renewable energy technologies on complex multiple building sites?

6
Buildings with rooftop solar PV

~£1.5m
Upfront cost saved by SNRG PPA

~2.4MWp
Rooftop solar PV to be deployed

50kW / 100kWh
Battery storage system

142%
More solar PV than grid export limit

~£90k
Est. electricity bill saving annually

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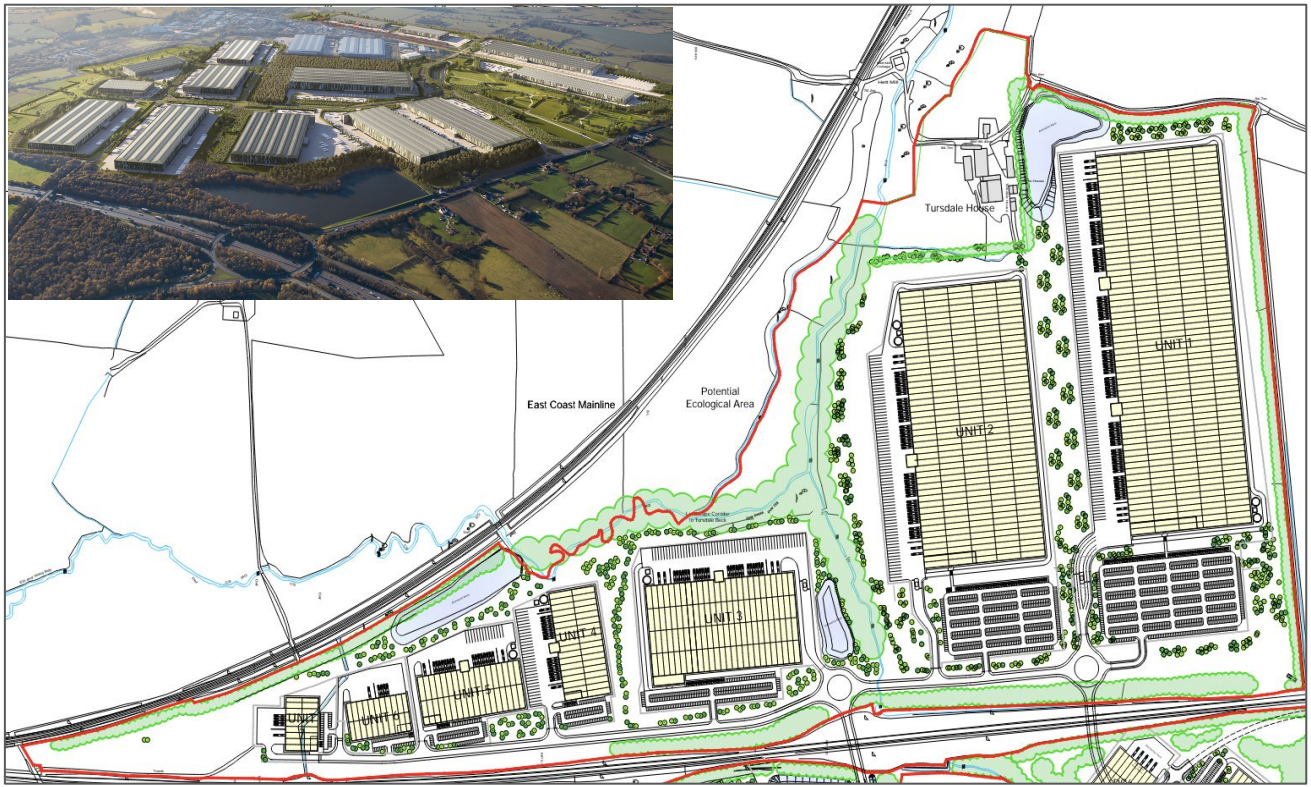
What Next for SNRG?

Cracking the Big Shed Market

2.4M sq ft

Solar PV

- 31MVA Max
- 5.5MVA Optimal
- 0.7MVA Min for Reg



Tenant Counterfactual Analysis

	Counterfactual - Connected to Grid	SNRG SmartGrid	Saving
Grid Import Costs	23.67p/kWh	22.66p/kWh	1.01p/kWh
On-Site PV supply	n/a	16.3p/kWh	7.37p/kWh (31%)
UoS	n/a	0.48p/kWh	-
Total tenants' bill (per annum)	£2,600k	£2,350k	£250k (10%)

SNRG able to procure energy for the site at HV and pass through savings to customers

On-site generation cheaper than customer grid import

Private Wire UoS charges will be required under all Smart Grid scenarios to recover SNRG network capex and ongoing management costs

Total tenant bill will be lower than the counterfactual when using a SNRG SmartGrid

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What Next for MicroGrids?


SNRG
Q & A

Thank you

Want to know
more about SNRG?

Learn more

Click on the link above
to read our 2025 Capability Report