

# Empowering UK Local Authorities: Navigating the path to Net Zero

Nigel Hartnup – Director of Energy & Carbon



# Introduction to LASER



**£2.6 Billion**

Worth of Electricity and Gas purchased in the last 3 years



**800+**

Public sector organisations supported



**22,188 MWh**

Clean renewable energy generated from our owned Solar Farm assets last year



**150**

Net Zero Projects delivered in 2023 alone



**120+**

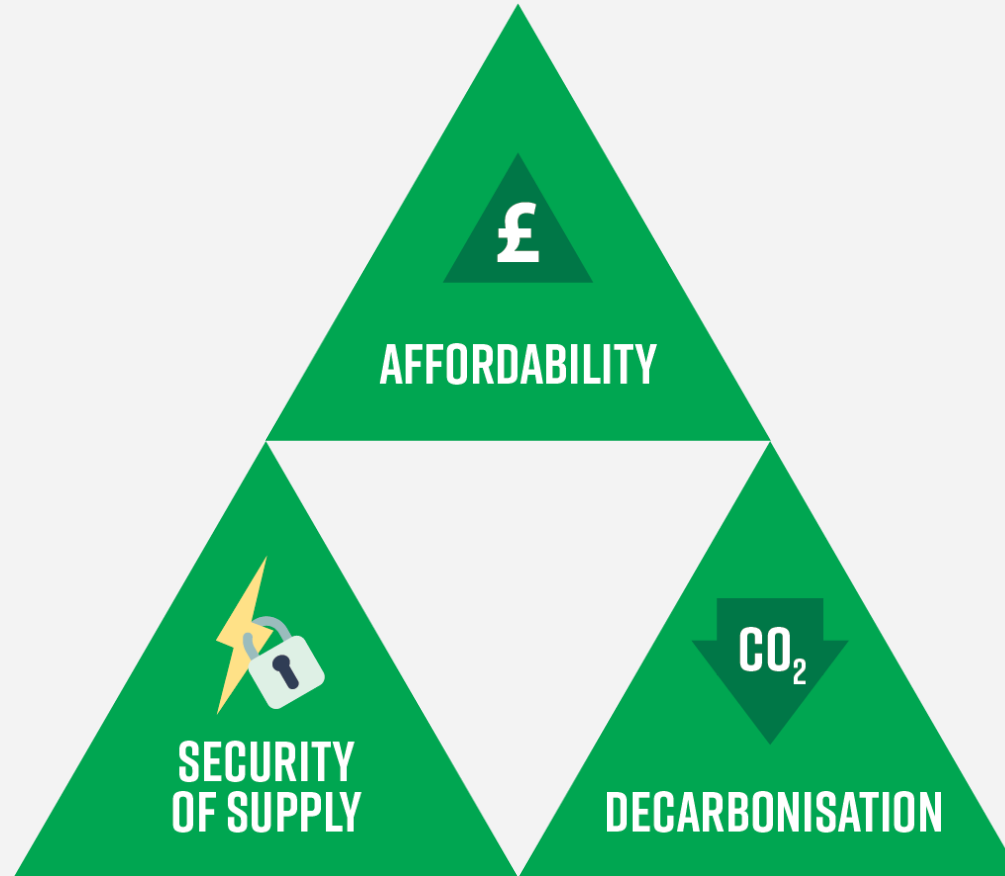
Dedicated staff across the UK



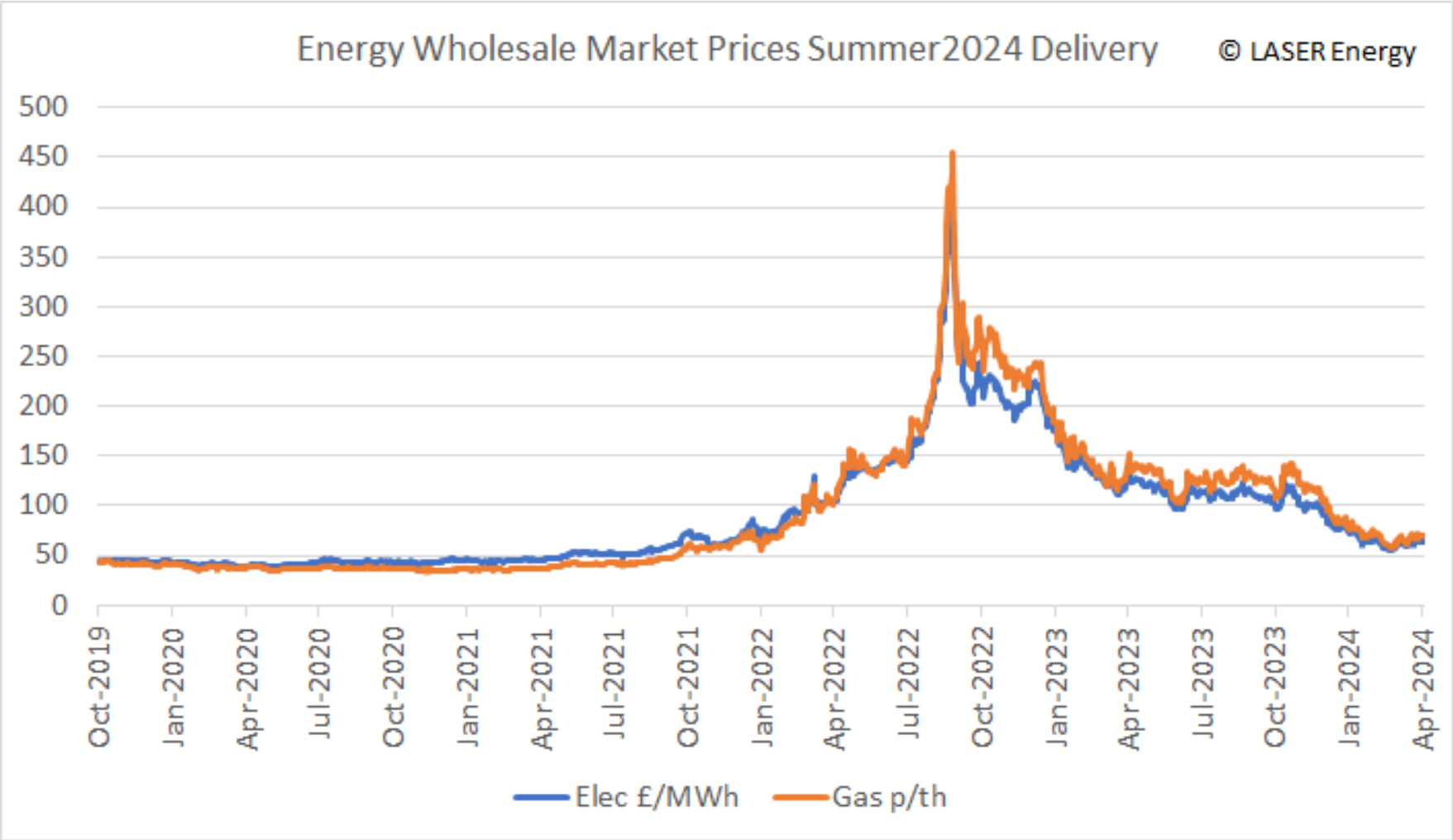
**91,000**

Electricity and Gas meters under contract

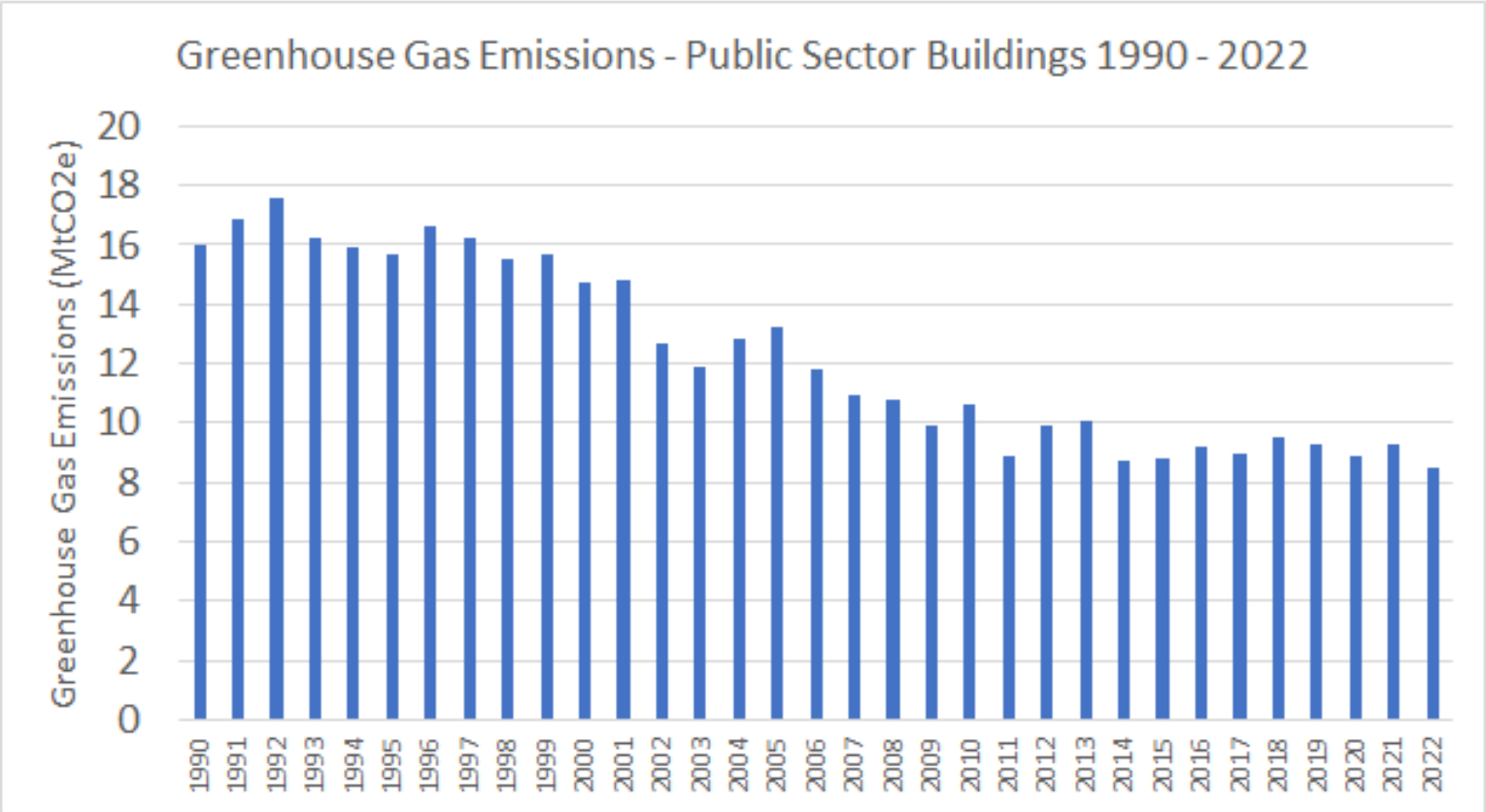
# Energy Trilemma



# What are we seeing?



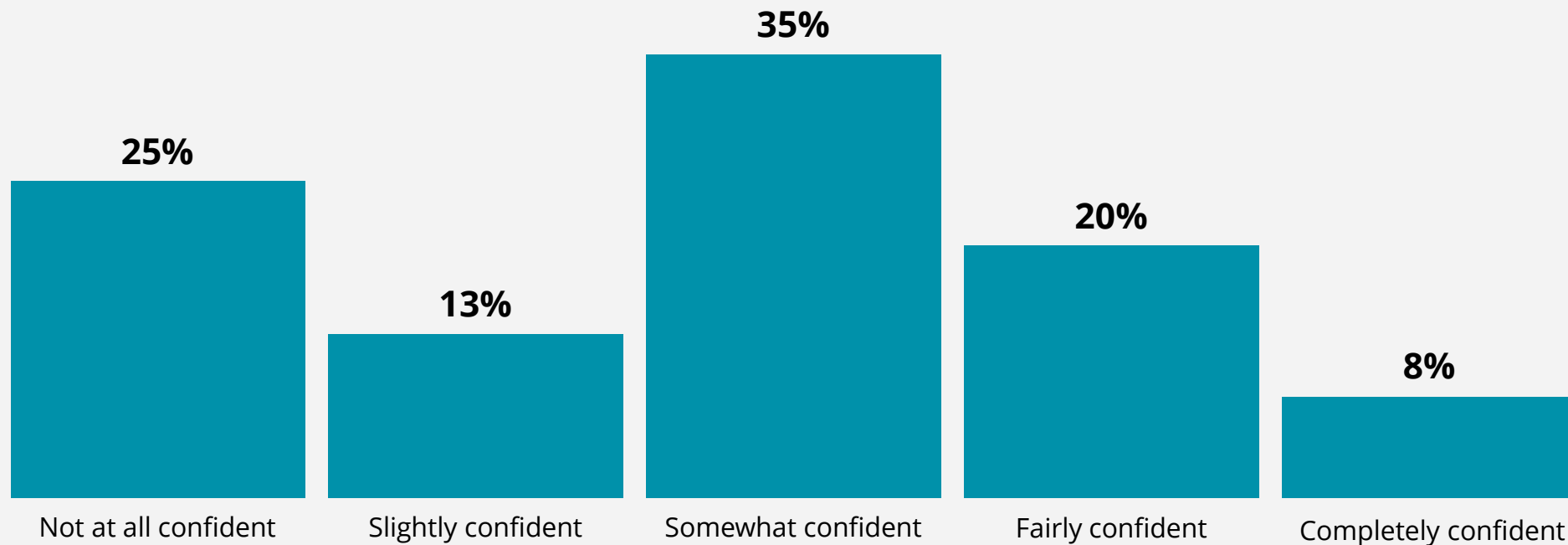
# What are we seeing?



Data Source: Department for Energy Security & Net Zero, 2022 UK Greenhouse Gas Emissions

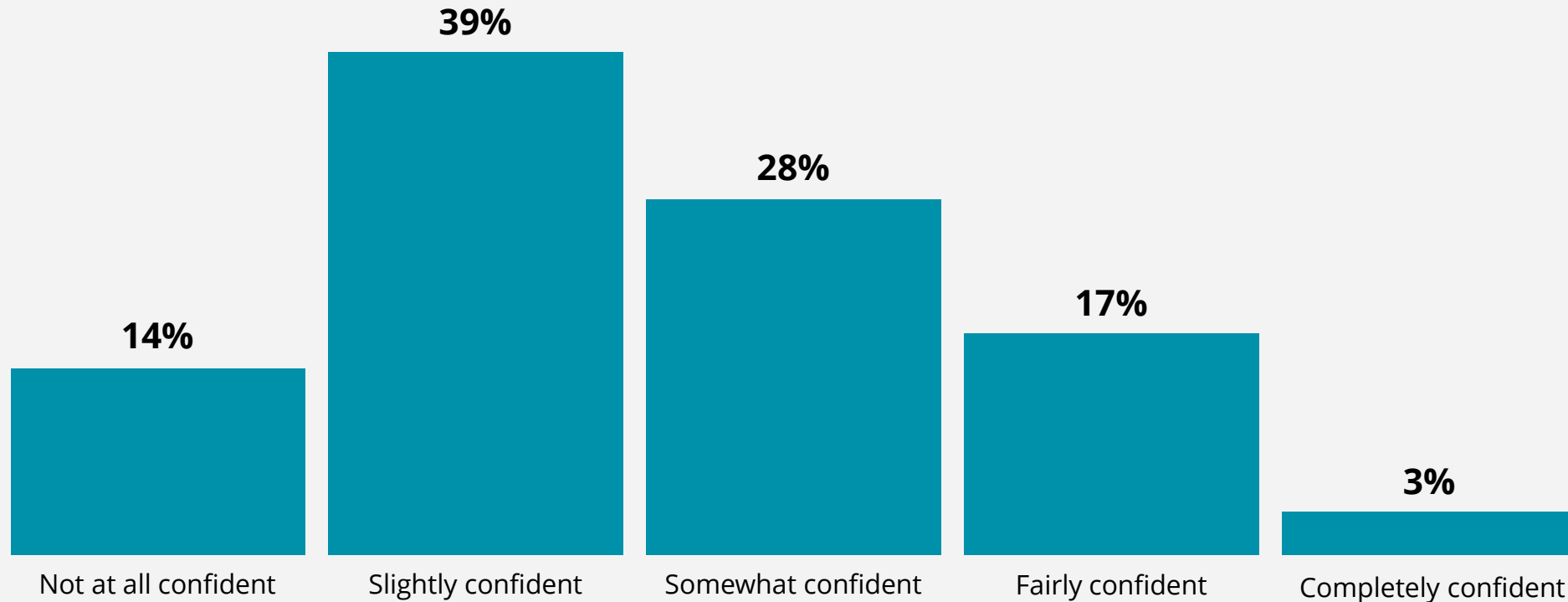
# What are we seeing?

- **LASER 2022** poll of public sector bodies:  
**How confident are you that your organisation will hit its Net Zero goals?**



# What are we seeing?

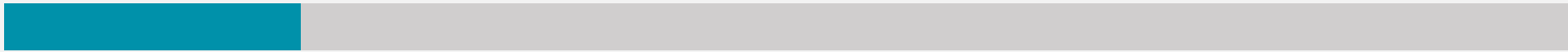
- **LASER 2023** poll of public sector bodies:  
**How confident are you that your organisation will hit its Net Zero goals?**



# What are we seeing?

- Barriers to achieving Net Zero goals:  
**What's your organisation's biggest challenge on hitting net zero targets?**

Understanding the activity needed - **19%**



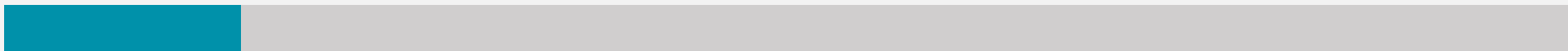
Funding projects - **66%**



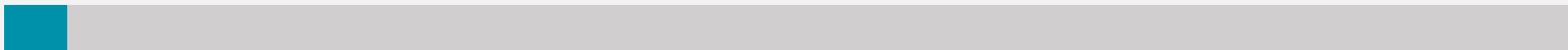
Capacity to manage projects - **43%**



Organisational commitment - **15%**



Other - **4%**





# What does the journey look like?

## REVIEW

Your position

- Carbon Footprint
- Net zero Roadmap
- Carbon Descent Plan

## REDUCE

Your energy use

- Compliant frameworks
- Expert Procurement support
- Project management

## REPLACE

With renewable alternatives

- Renewable Energy Tariffs
- Power Purchase Agreement
- Renewables Asset ownership
- Offsetting

# What does the journey look like?



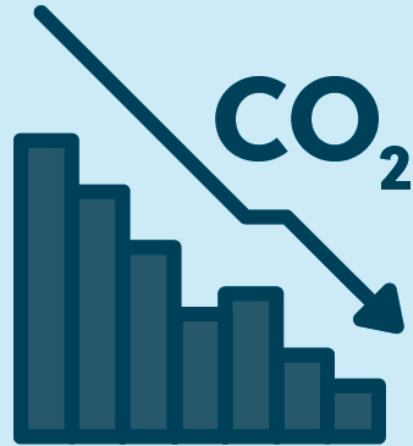
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# Planning the Journey



**Understanding  
your baseline  
emissions.**



**Set a costed  
strategy and  
path to reach  
Net Zero  
emissions.**



**Projects  
cascade from  
this strategy.**



**Iterative, not  
set and forget,  
so ongoing  
tracking  
needed.**

# Funding Routes

- There are a number of funding options available
- Most funding routes are heavily over-subscribed
- Being organised and prepared is vital



**Public Sector Low Carbon Skills Fund**



**Public Sector Decarbonisation Scheme**



**Social Housing Decarbonisation Fund**



**Scottish Energy Efficiency Loan Scheme**



**Wales Funding Programme**

### 3 Survey and Calculation methodology

The building survey was conducted on 26/01/2024 by LASER's Senior Energy Surveyor, Mert Sayin. Reference measurements were taken during the energy survey, to ensure the accuracy of the drawings and outputs. All areas of the building were thoroughly covered, with measurements obtained for openings, heat emitters, and ceiling heights in each area. Additionally, assessments were made of the heating and hot water systems and the Building Management Systems (BMS) were thoroughly checked.

A building model was developed using Design Builder software, incorporating building features and zones to accurately represent the activities occurring within each area.

Please refer to the building model provided below.

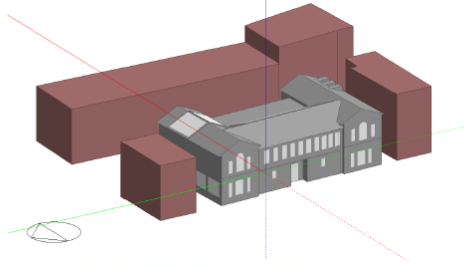


Figure 4.2.1 ASHP Condenser units' location

Title	Annual Savings			Project Cost	Simple Payback (Years)	Lifetime tCO <sub>2</sub> e saved	E/tCO <sub>2</sub> e saved
	Energy (kWh)	Cost (£)	Carbon (tCO <sub>2</sub> e)				
Air-to-Water Heat Pump (Low Temperature)	73,153	-£2,161	12.5	£249,627	NA	312.6	£798

Table 4.2.1 Low-Temperature Heat Pump, recommendation estimated costs and savings

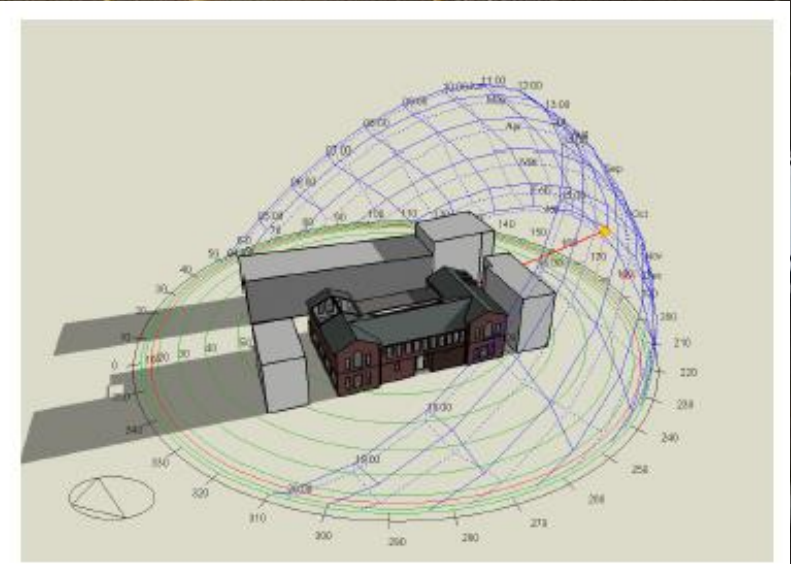
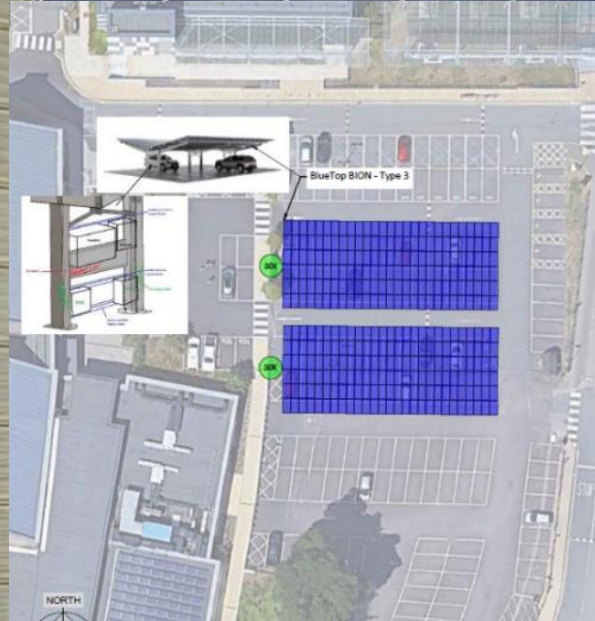


Figure 4.3.3 Building sunpath diagram and shadows winter month.

### 4.1 Building Fabric

After thorough examination, it has been determined that the walls, roof, and glazing of all fabric surfaces have been assessed. It has been concluded that upgrading skylights and flooring would not significantly contribute to energy savings, thus they are not recommended for enhancement. The impact of implementing the recommended measures on building fabric heat loss is summarized in the following chart.

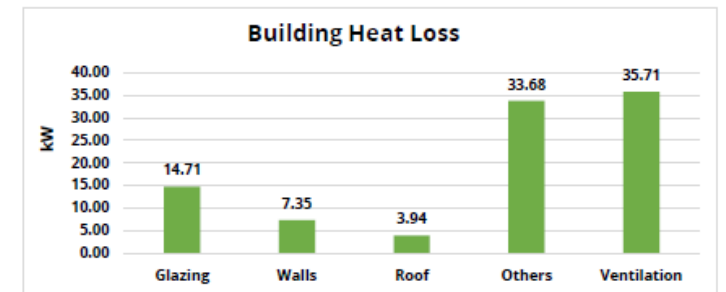


Chart 4.1 Proposed building fabric heat loss

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# Compliant Procurement Routes

We have procurement routes to **access over 100 suppliers, consultants or contractors** who specialise in a range of energy and carbon reduction technologies

Site surveys and modelling	Supply chain / lifecycle analysis
Education and communication programmes	Financial / legal advice
Grid connection and renewables consultancy	Vehicle fleet low carbon alternatives

Heat pump systems	Combined Heat and Power	Hydro power
District Heating schemes	Battery Storage	HVAC System Upgrade
Heat metering for District Heating	Building Management Systems	Site level Smart grid
Rooftop Solar PV	Biomass heating	Virtual power plant technologies
Ground mounted solar PV farm	Insulation of buildings and pipework	LED Lighting
Solar Thermal heating systems	Anaerobic digestion	Hydrogen systems





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**There is often a scale gap between  
the impact of onsite initiatives and net zero targets.**



## Power Purchase Agreements

- Long-term (>10-years) contract with renewable generator (no capital outlay).
- Can generate 'additionality'
- Can fix prices to 'delink' from wholesale energy market prices
- Transfer REGO Green Certificates



## Renewable Asset Ownership

- Capital outlay to develop or acquire, say, a solar farm.
- Provides 'additionality' if new build
- Provides income stream to offset import energy costs
- Creates REGO Green Certificates

## Do you see Power Purchase Agreements and / or Renewable Asset Ownership as part of your organisation's strategy to achieve decarbonisation?

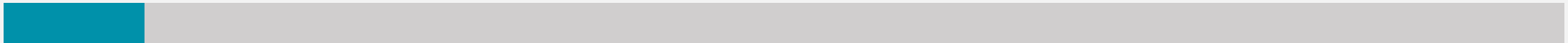
Definitely not – **4%**



Possibly – **34%**



Likely – **9%**



Definitely – **53%**



## Solar Projects >10MW

- Planning Permission Received
- Yet to commence construction

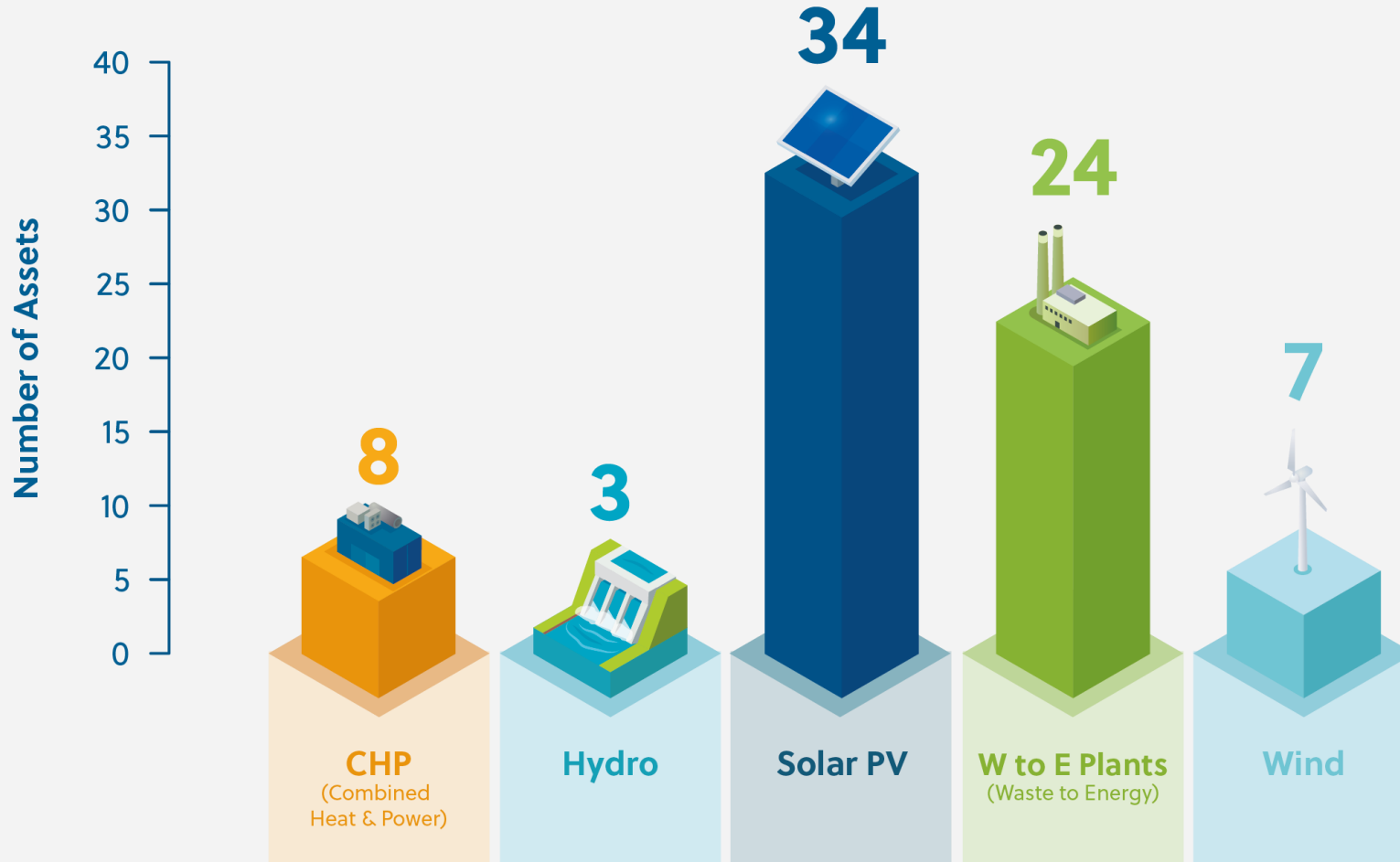


Layer 1

• Installed Capacity (MWelec) (Sum)

# Replace

## Electricity generation asset ownership of UK councils by technology type



Solar, Wind and Hydro self-supplies around 2% of UK Local Authority Electricity Demand



# Renewable Asset Ownership

- 21MW Solar farm situated on 91 acres of land in North Somerset. Engineered to be 'flood proof'
- Owned and operated by LASER on behalf of Kent County Council
- Provides around 60% of KCC's electricity requirements and 40% of decarbonisation targets
- Agricultural status of land preserved, with sheep grazing permitted on site

# Key Takeaways



**Many Local Authorities' net zero target dates are only 6 years away.**



**Officer confidence in meeting targets is decreasing.**



**Achieving Net Zero is possible, but there are hurdles to overcome.**



**LASER can support your organisation at any stage of the journey.**



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# Any Questions?

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