

Local Authorities to lead the transition to **net zero carbon**

to protect our **future**.

strategic investments turn capital into **long-term revenues**

support the core objective of serving the **community**

inspire strategic thinking

empower you with knowledge

raise **challenges**

the challenge...

Building Emissions:

20%

UK GHG Emissions



80%

2050 Building Stock
Already exists...



By 2031...



28%
Growth



33.5K
Homes



44K
Jobs



30-60K
EVs



By 2031...



>
Energy



>?
Emissions



Historic
landscape

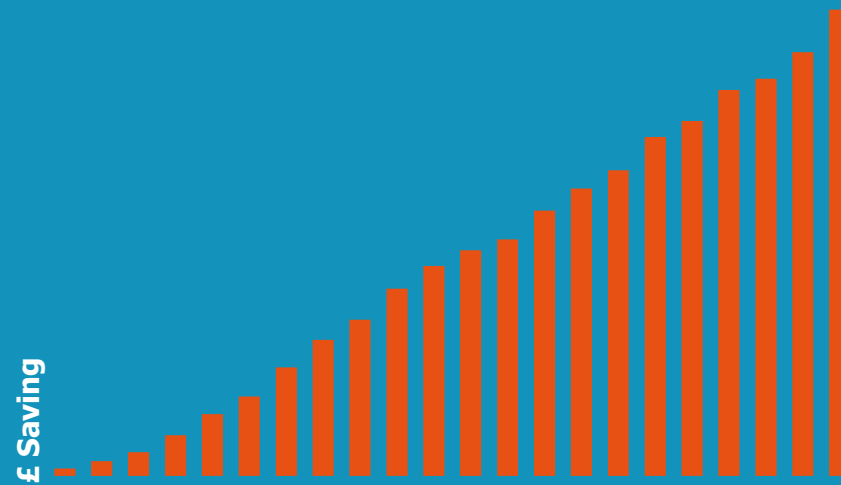
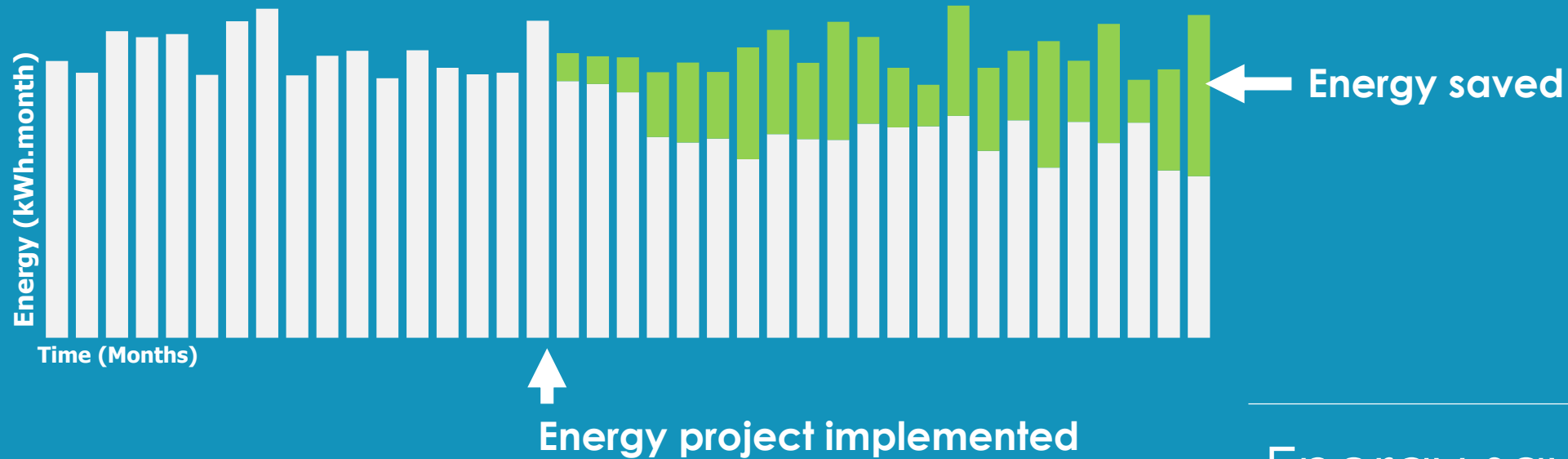


Aged
Infrastructure



energy project **economics.**

A conventional energy retrofit project >

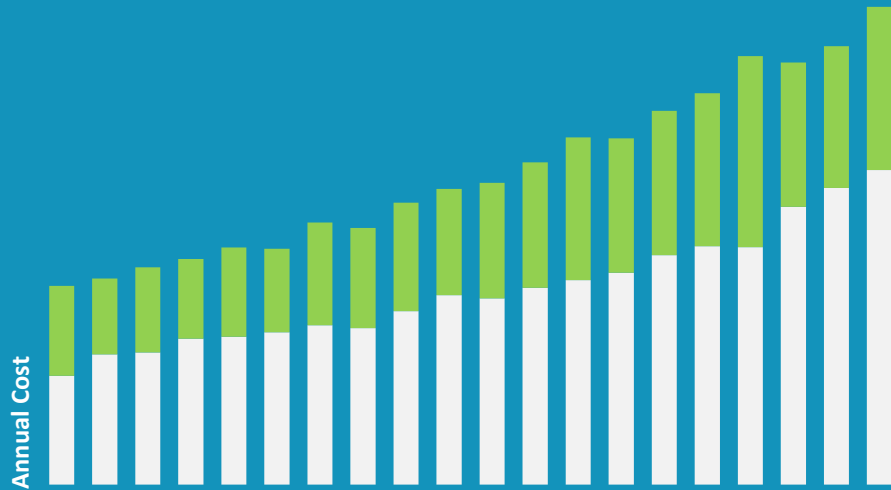
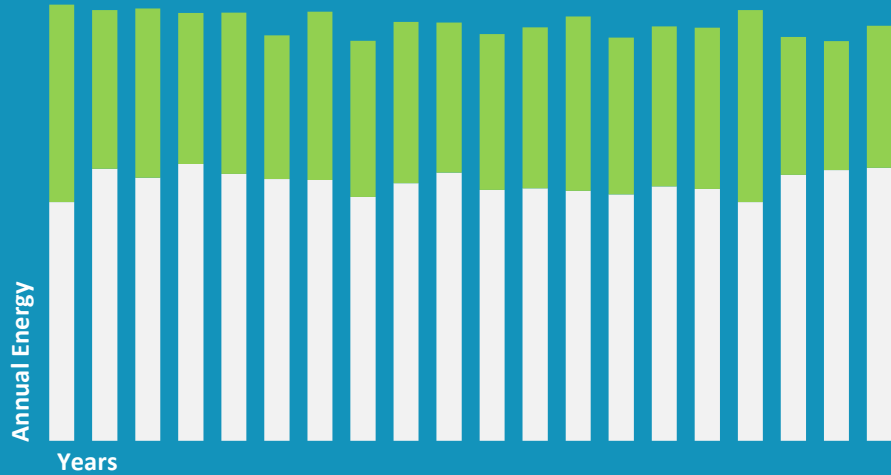


Energy savings **15-40%**

Cost savings **25-50%**

Carbon savings **20-50%**

A conventional energy retrofit project >



Payback Period **5 - 15 years**

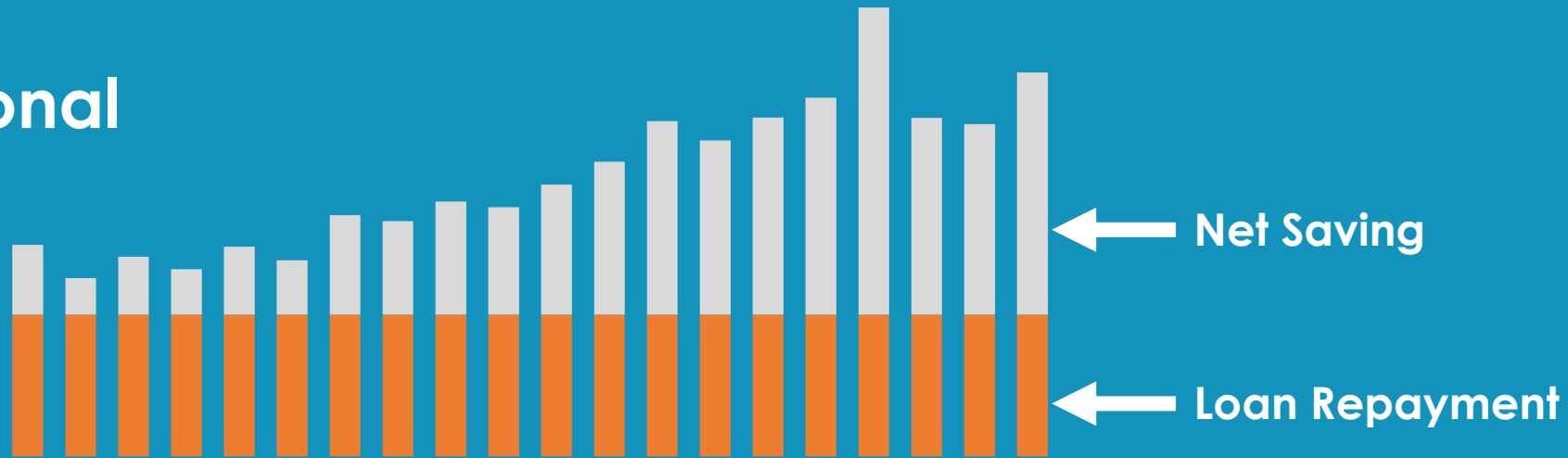
Lifespan **10 – 20 years**

Internal Rate of Return **6 – 10%**

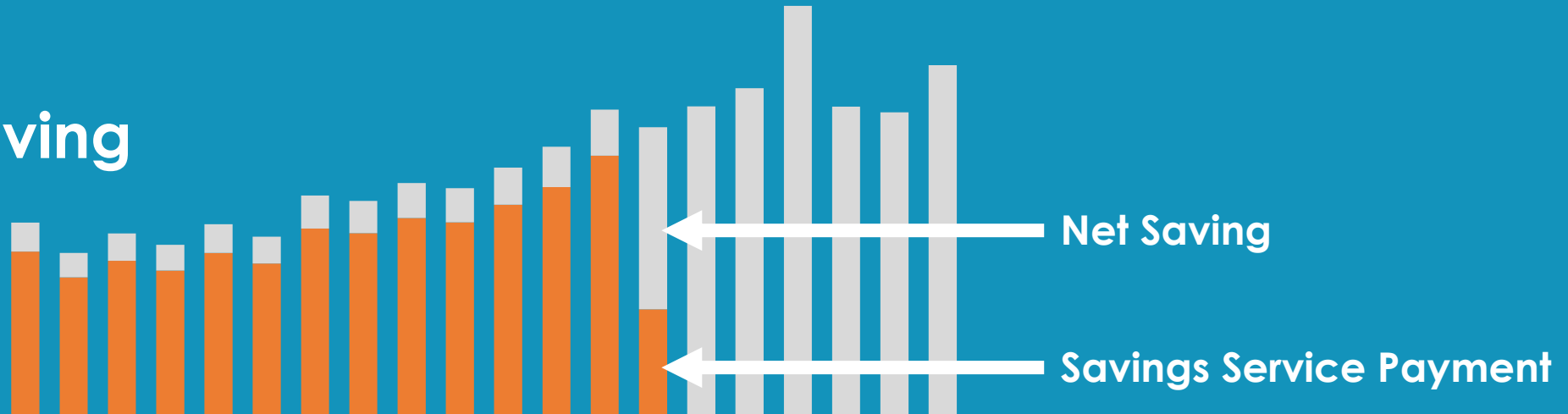


A conventional energy retrofit project >

Conventional Loan



Energy Saving Service





Energy Projects delivered in
Cambridgeshire

Schools Energy Efficiency

With CCC – Schools & Academies across Cambridgeshire



65 Sites Completed (15+ in pipeline)



>7,250,000kWh/annum saved



37,500 TCO₂ saved over project life*



£8,000,000 investment



No extra net cost to school

Guaranteed!



Cambridgeshire
County Council



*** Based on 15 year programme duration**



Council Building Energy Efficiency

With CCC, City Council, SCDC, FDC & HDC



14 Leisure Centres



6 Council Offices



2 Car Parks



& Other council assets



>1,250,000kWh/annum saved



5,000 TCO₂ saved over project life*



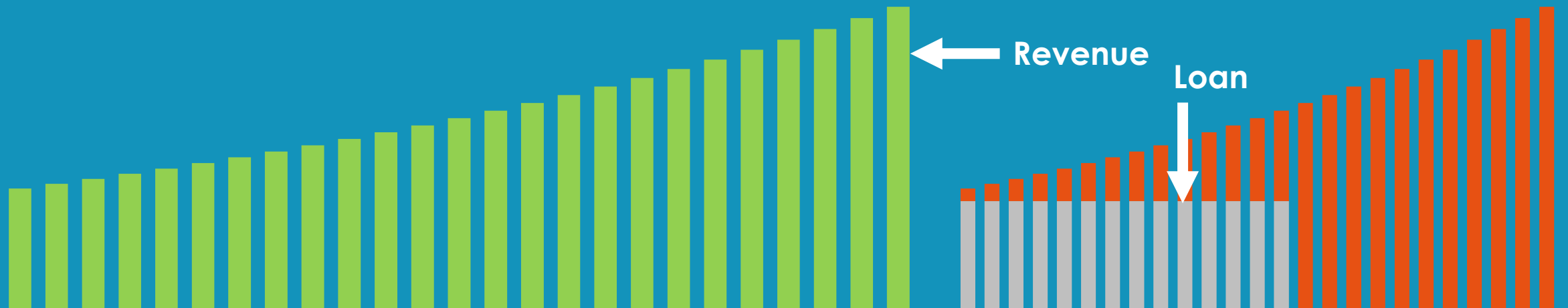
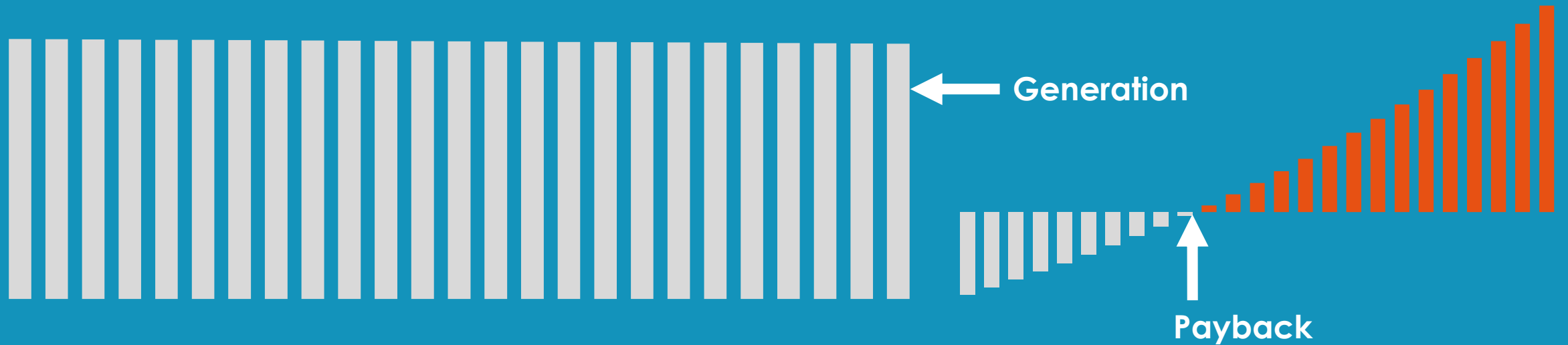
**Savings & revenues guaranteed
until all costs are recovered.**



*** Based on 15 year programme duration**



A standalone renewable energy project...



12MW Solar Farm

Provides enough power for 3,150 homes



Delivered for Cambridgeshire County Council in 2016



£9.4m investment by CCC



£25M revenue over project life



123,000 TCO₂ saved over project life



Savings & revenues guaranteed
until all costs are recovered.



electrification of transport

decarbonising heat

maximising asset revenue potential...

Moving toward an **integrated renewable energy system**.

increased population

the demand for 'smarter cities'

increased demands

aged infrastructure

An architectural sketch of a transport hub, likely a bus or tram stop, featuring large, curved solar panel arrays installed over the parking areas. The sketch shows a mix of greenery, trees, and a small building labeled 'STORAGE'. The overall style is a hand-drawn illustration with colored washes.

Transport Hub Smart Energy Grid Demonstrators

Transforms car parks into **renewable energy generation hubs**

Sustainable electrification of transport

A **positive impact** on the network

Target Sites:

- St. Ives Park & Ride
- Babraham Park & Ride
- Longstanton Park & Ride (future)

Renewable Heat to Rural Communities

Targeting areas on stored fuel

Sustainable alternative to natural gas

Centralised Ground Source Heat Pump

No extra cost to end-customers

Long-term revenue stream to Council

Swaffham Prior selected for demonstrator project





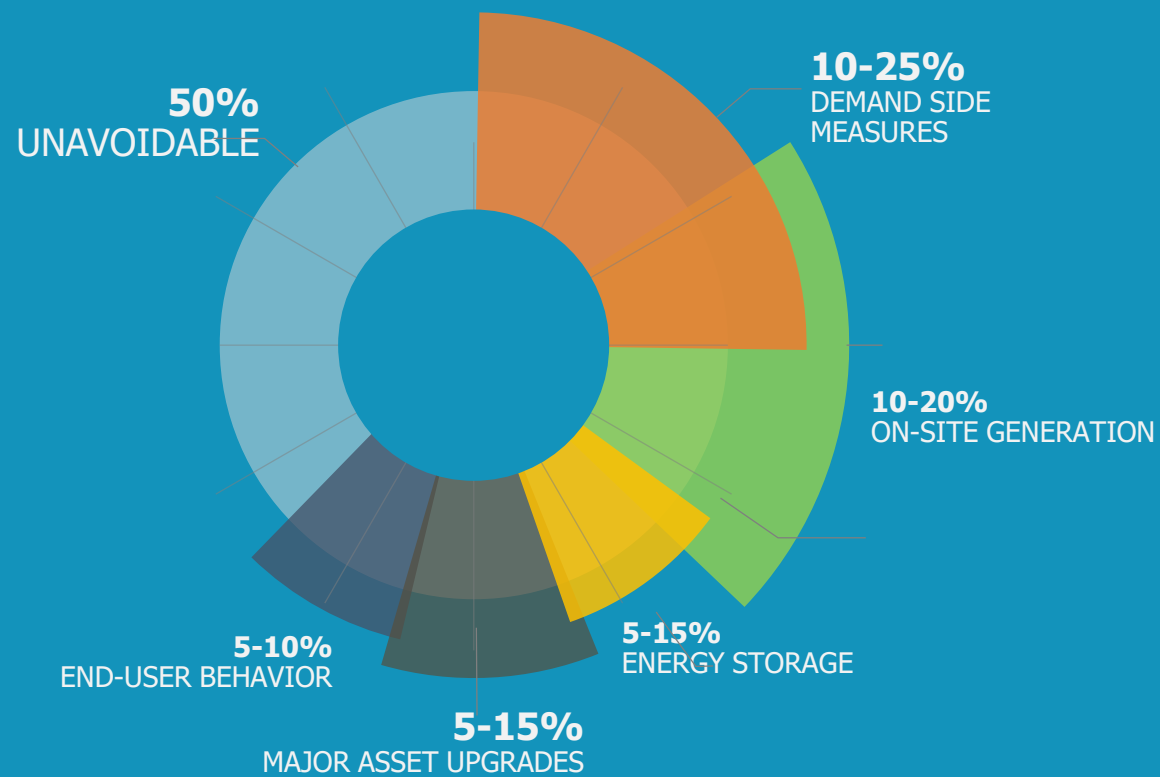
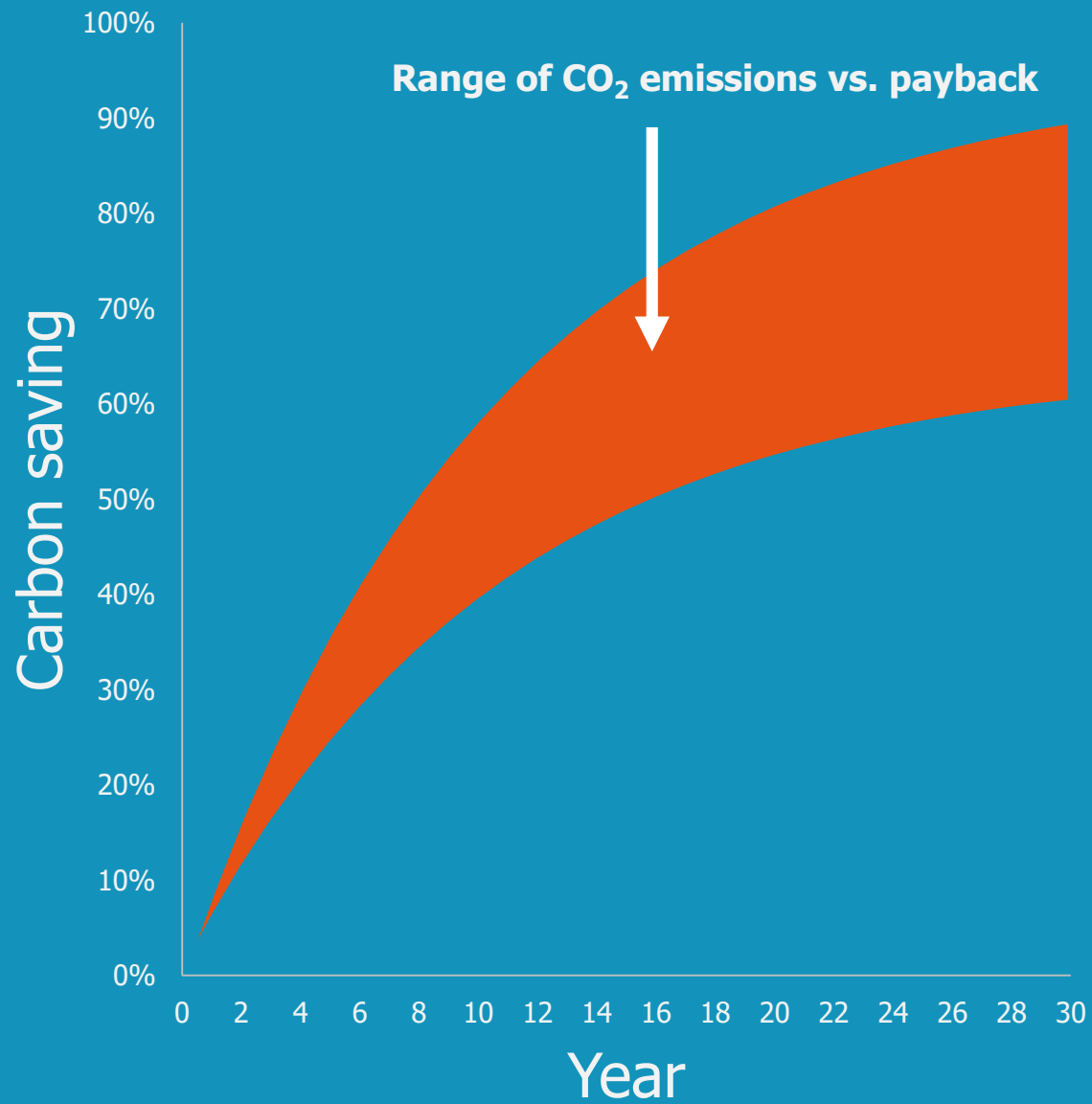
South Cambs Halls

Demonstrating retrofit potential with a **modern, energy efficient building**

A combination of renewable energy & energy efficiency measures

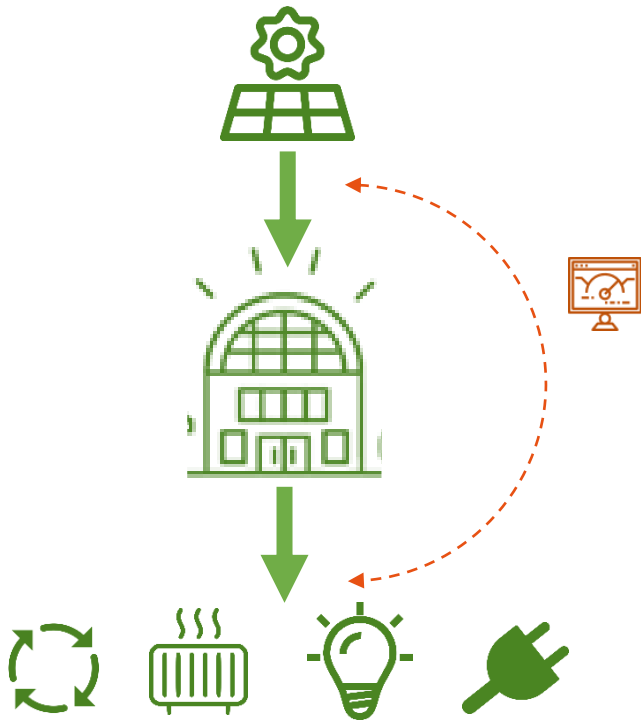
Integrating EV charging facilities

Toward **net zero carbon**



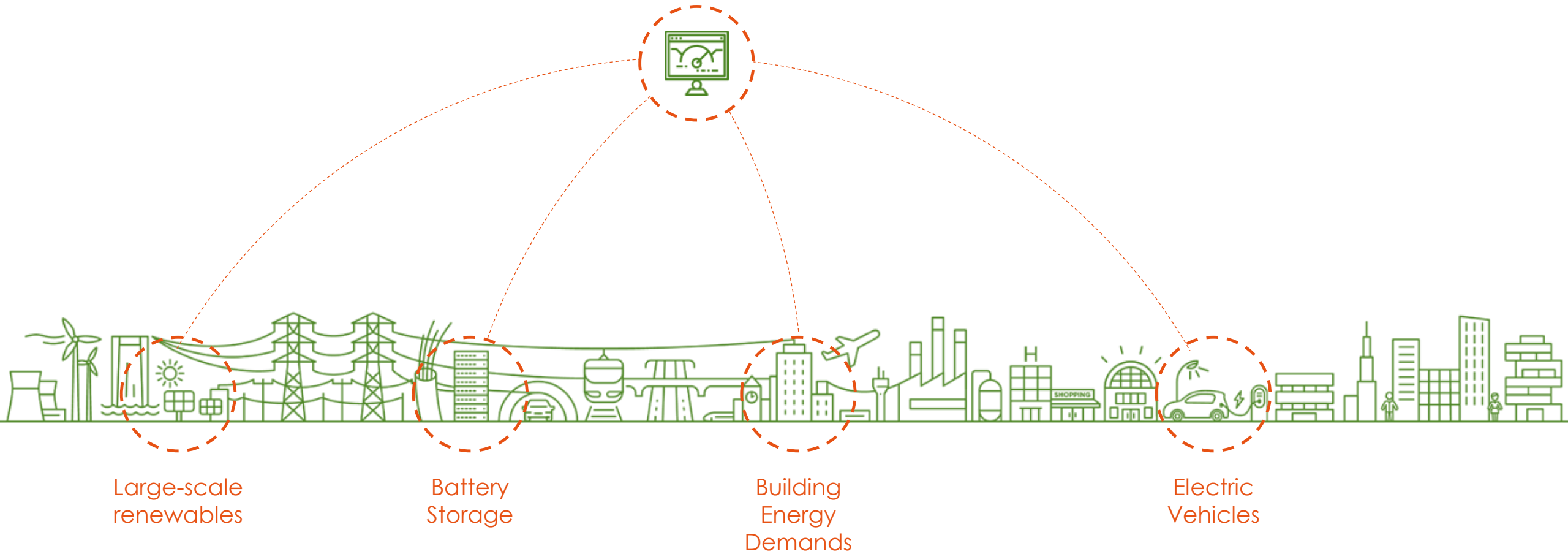
In order to maximise renewable energy and minimise **carbon emissions**

Actively controlling **building energy loads** with **renewable energy 'availability'**

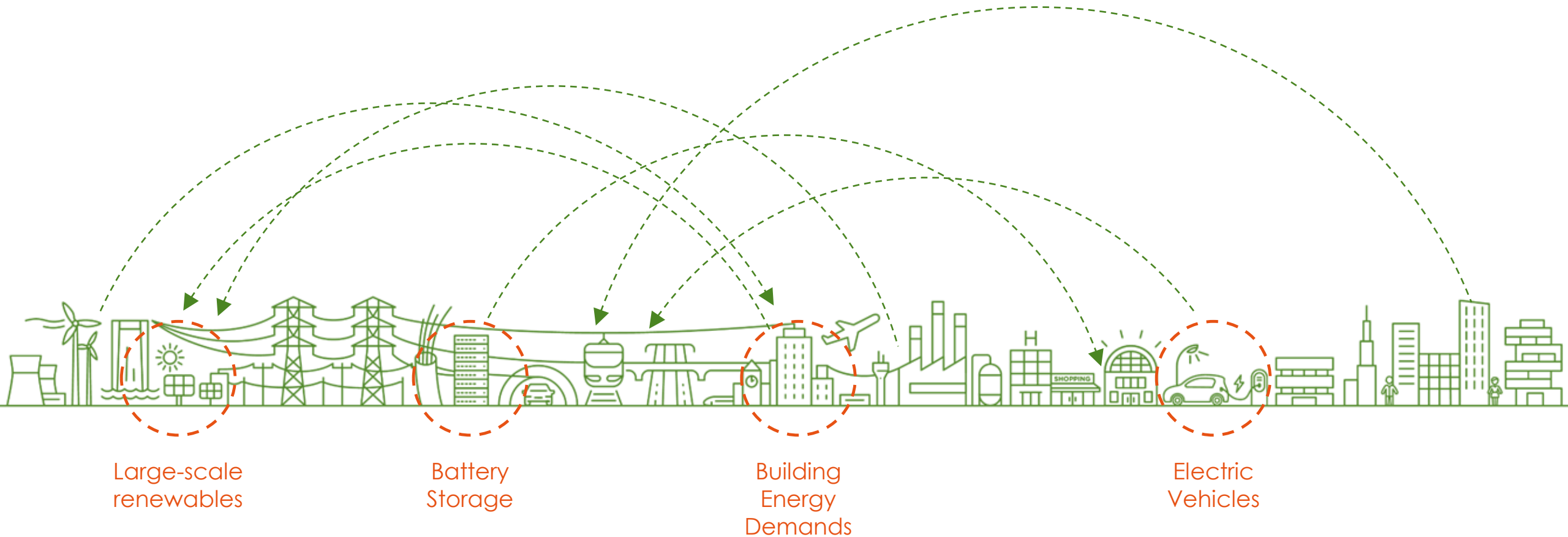




Utilising '**Distributed Energy Resources**' strategically to form a '**system**'



Develop **commercial models** and **reform regulations** to create **a self-sustaining market**



Why are **local authorities** so well placed?

A drive to '**balance the books**'

Commercialisation - transform **Capital** into **long-term revenue**

Access to **low cost finance**

A varied portfolio of **assets**

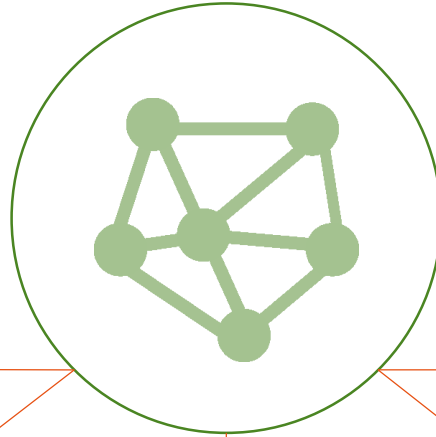
Opportunity to **collaborate** with other **PSOs**

The power to **influence change**

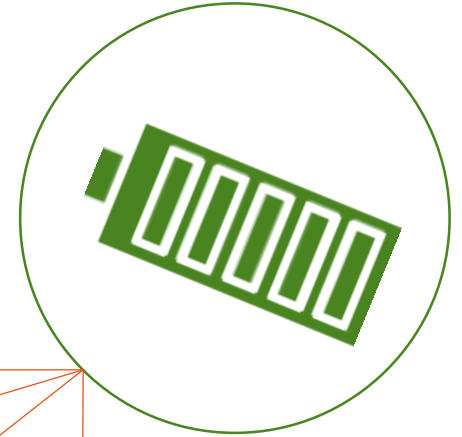
Some of the key challenges to address on the pathway to **zero carbon**.



Decarbonisation of **Heat**



Local P2P Electricity **Trading**



Energy Intermittency



Electric Vehicle Charging



The **Distribution Network**



The **Landlord...**

to summarise...



Retrofitting our **existing building stock** is necessary and viable

A **proven** model through our work to date in **Cambridgeshire**

Future **barriers** to unlock in order to **continue in our journey**

Local authorities are well placed to **pioneer innovation**



Thank you.



Shared **innovation**

