

Building a Sustainable Edinburgh

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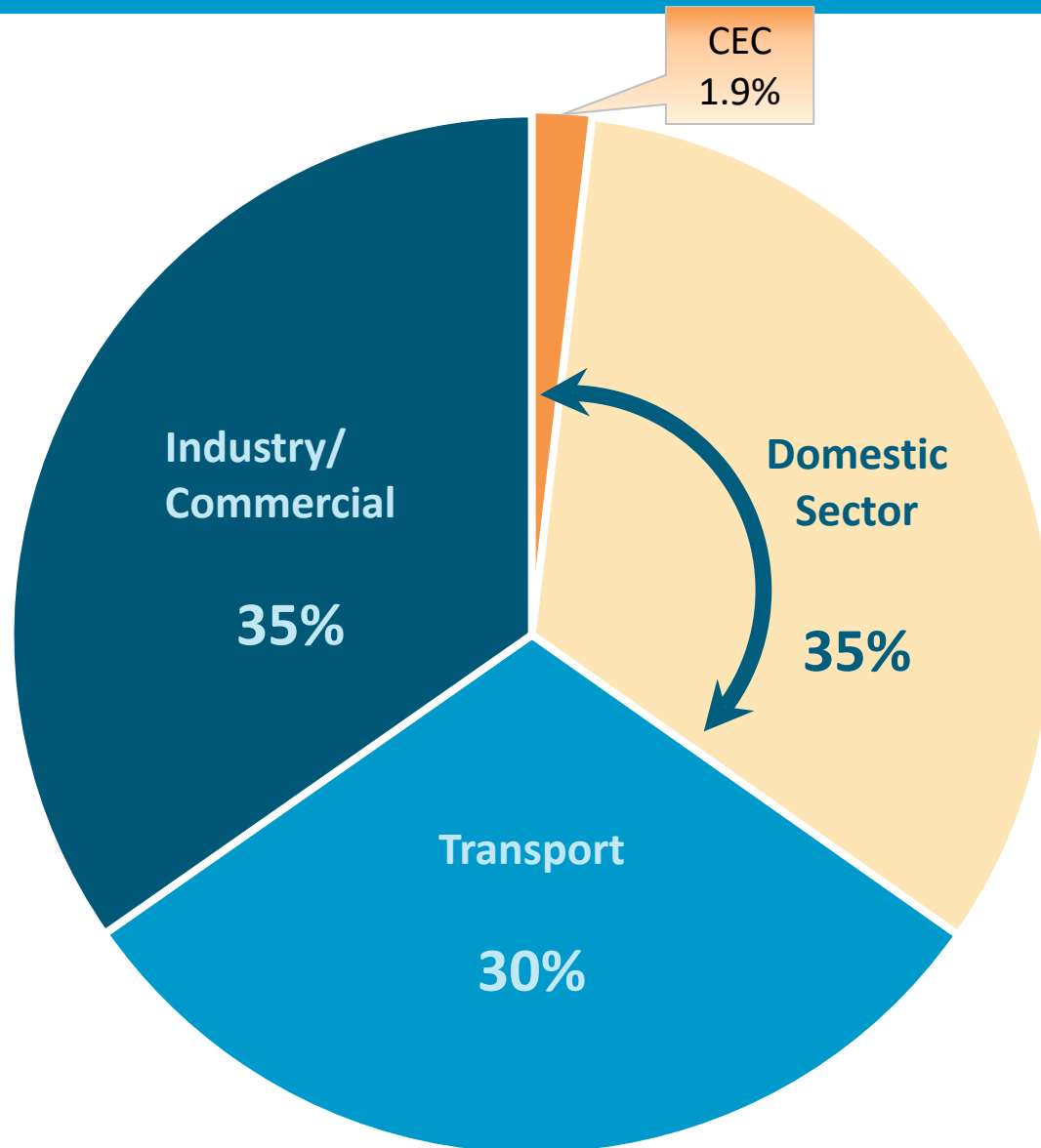
◆ EDINBURGH ◆
THE CITY OF EDINBURGH COUNCIL



Achieving Net Zero in the City of Edinburgh

- Edinburgh has declared a **'climate emergency'** and set ambitious targets for reducing emissions to zero by 2030, with a hard-target for 2037. This compares to the Scottish Government target of 2045.
- There are four key sectors for reducing emissions in the city:
 - **Domestic housing**
 - **Public and commercial buildings**
 - **Transport**
 - **Industry**
- Independent research analysis evaluates the scale of **cost, energy and emissions impacts** on Edinburgh's economy, demography, infrastructures and built environment.
- This determines the **emissions pathways and decarbonisation opportunities** that the city can institute at a high-level.

Edinburgh's Carbon Emissions



Domestic emissions account for **35%** of Edinburgh's overall emissions

95% of domestic sector emissions come from the owner occupier sector, the private rent sector and other RSLs

CEC owned housing emissions account for only 1.9%

Good progress in CO2 reductions across CEC housing; **71% at EPC C or B.**

CEC Housing represents **8.6%** of homes but only **5.3%** of domestic sector emissions

All new build CEC housing has an **EPC B**

The most effective city wide interventions

Carbon Effectiveness	Category
Highly Effective	• Domestic Insulation Improvements
	• Domestic Heating Provisions & Controls
	• Commercial Cooling Mechanisms
	• Office Building Stock Fabric Condition
	• Transport Electrification
Very effective	• Domestic Electricity/Heat Demand Reductions
	• Commercial Heating Provisions
	• Domestic Lighting

Edinburgh Housing Context



Edinburgh's Zero Carbon target is 15 years earlier than the rest of Scotland. Edinburgh is the 1st city in Scotland to set this level of ambition

232,000 homes in Edinburgh

- 142,000 (61%) owner occupied
- 56,000 (24%) private rented
- 20,000 (9%) Council homes
- 15,000 (6%) RSL homes

High percentage of hard to treat properties. 33% built before 1919. 14% before 1945



High levels of mixed ownership creates significant difficulties in gaining agreement to carry out repairs & improvements



Almost 70% of social housing in Edinburgh has EPC B or C. Less than half of the private sector homes meet this standard.

Edinburgh has the third lowest % of fuel poor households in Scotland for social housing (23%)

Over 10,000 energy efficiency measures installed in Council homes since April 2016;

- 4,400 new heating systems
- 3,200 homes insulated
- 2,700 new windows & front doors



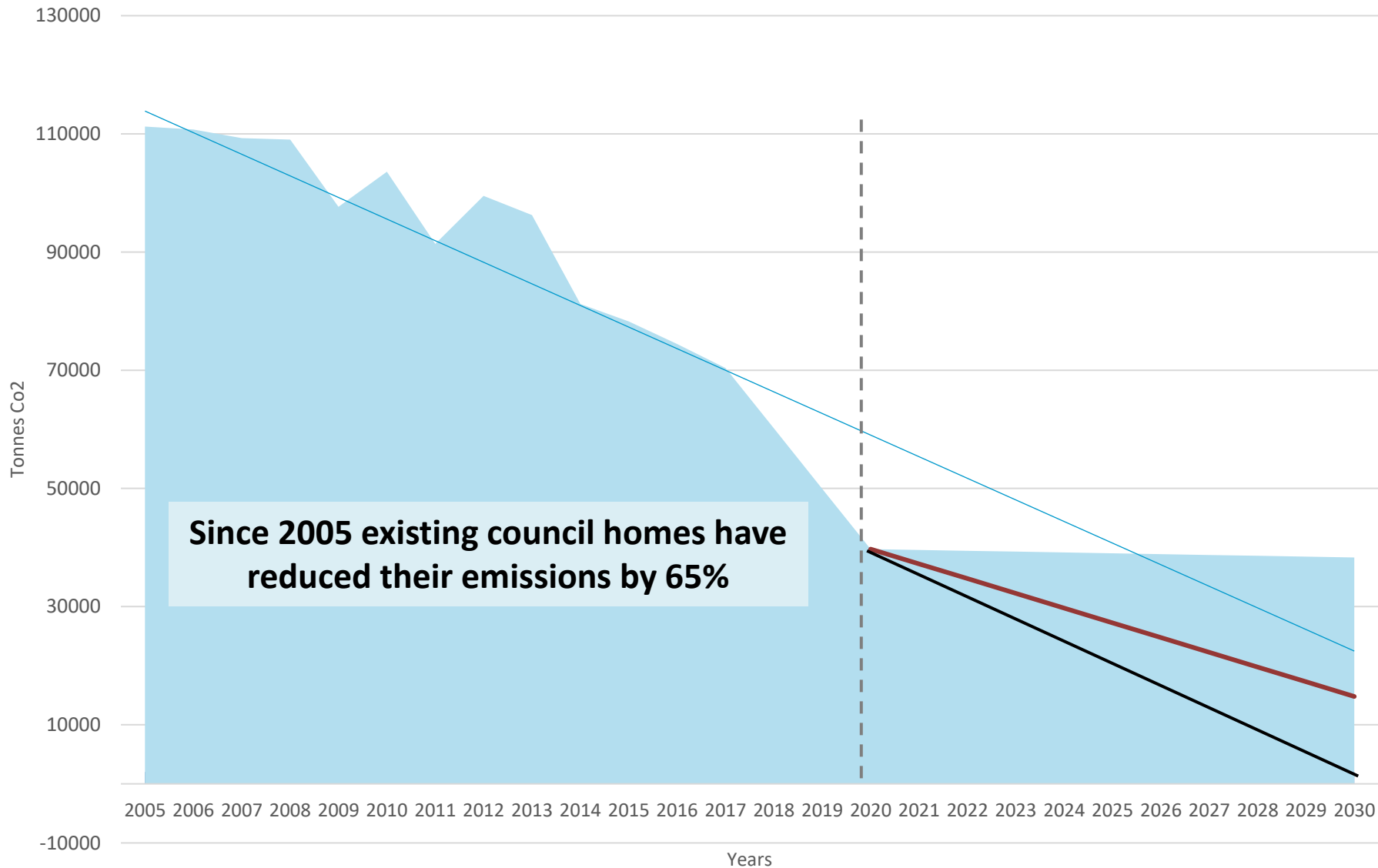
New private homes built to Bronze Sustainability standard



All new build Social housing built to Silver sustainability standard (EPC B)



Carbon Reduction - Progress to Date



New Build emissions across all 10,000 new homes will only increase CEC housing emissions by +9%. Once net zero carbon design brief is rolled out this will fall significantly

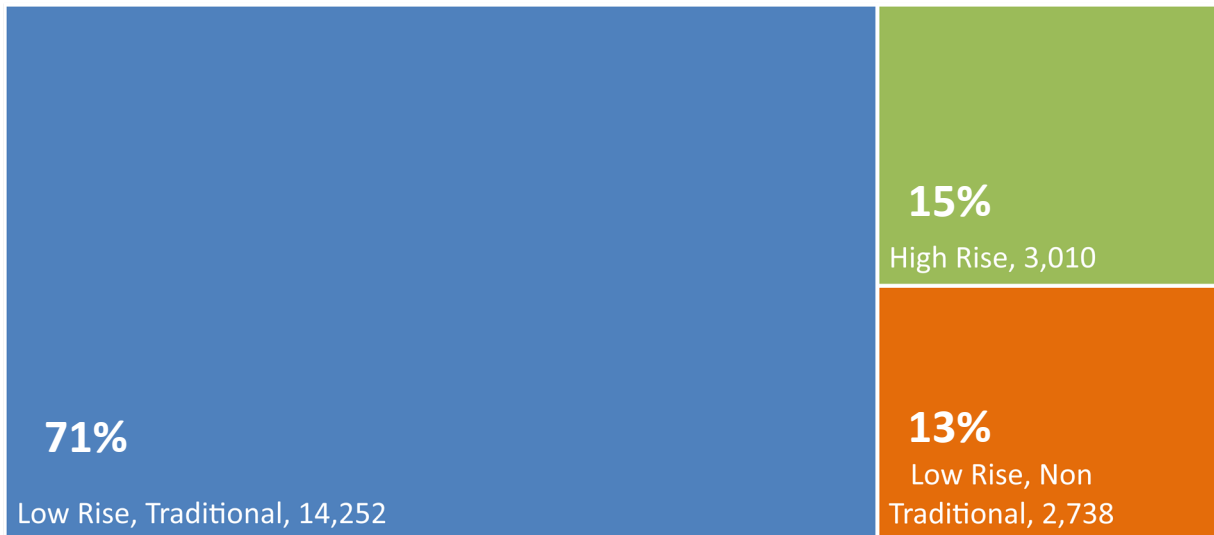
By achieving EnerPHit existing council homes could reduce their emissions by 87%

Closing the gap for existing homes via LZCT and Carbon Offsetting

CEC Existing Homes (Stock & Tenure Profile)

Approx. 20,000 existing CEC homes will require deep retrofit by 2030. CEC is the largest housing landlord in the city. Tenant base is generally more socio-economically deprived across a number of factors and thus have more challenging needs which can be severely impacted by high energy costs / poor thermal comfort

CEC Build Type



Multies Tenure Mix



- 73% of homes within favourable tenures (full or majority)
- Largest barrier across low rise trad, 4,396 within 50/50 or minority CEC

97% of CEC homes in multi-storey blocks sit within a full CEC majority ownership tenure. Multi-Storeys provide the greatest opportunity for Whole House Retrofit as they have the lowest mixed tenure barriers.

CEC Housing Sustainability – Strategic Approach

Fabric First

- Focus on reducing demand through improved building fabric measures for new build and existing homes to deliver health, comfort and affordability to tenants via fabric first
- Existing homes - holistic deep WHR aligning energy efficiency, building improvements and asset management which goes far beyond ESSH2

Energy Supply

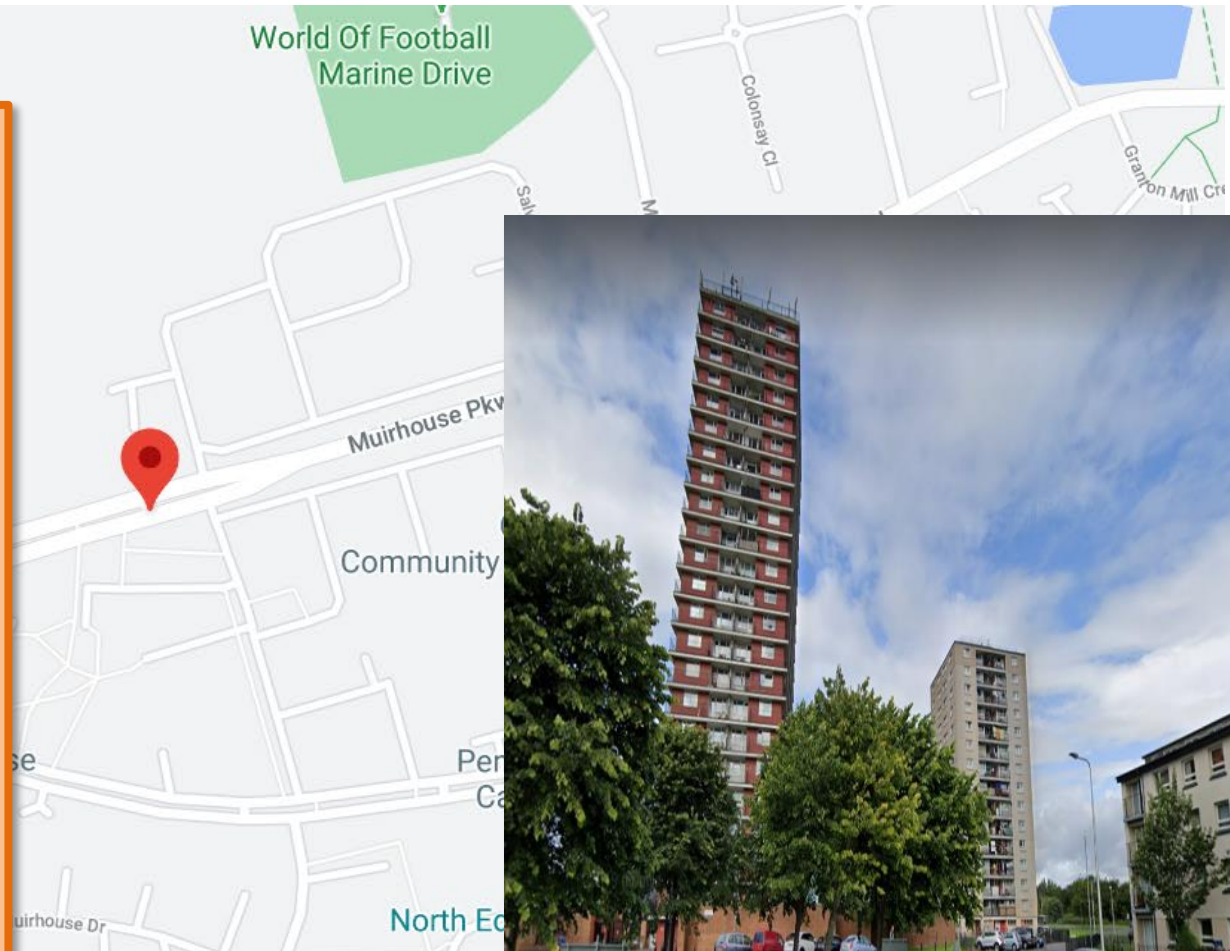
- New Build - Wider roll out of LZCT to meet net zero carbon
- Existing homes - a risk based approach to LZCT - WHR approach gives LZCT the best chance to work in the long term, if installed without advanced fabric measures risks pushing tenants inadvertently into fuel poverty.

Asset Mgmt.

Long term maintenance issues future proofed as Asset management and energy efficiency are strategically aligned at the design stage to achieve a consistent approach for the improvement of homes and embed future maintenance savings (enable a proactive maintenance, repairs and adaptation service)

Multi storey blocks – Enerphit pilots

- **Multi storey - Majority CEC ownership could be used as flagship**
- **Pilot projects to be progressed to understand the practicality of EnerPHit / advance WHR in terms of delivery and benefits to tenants.**



Net Zero Carbon and New Build Homes

Design Brief for all new homes to achieve net zero carbon (including LZCT)

All new build homes will be designed to achieve net zero carbon. This will follow a fabric first approach and allow the design and construction approach to be tailored to meet the requirements of the site and select the most appropriate low carbon heating solution. Proof of concept will be tested at Western Villages.

Sustainability embedded across all aspects of the development

Sustainability measures will be embedded across developments to complement the net zero carbon design brief for homes. These measures will include (as a default) low / minimum parking, active travel prioritisation, biodiversity enhancements and climate adaptation via advanced sustainable urban drainage (SUD)'s schemes.

Alignment with future statutory regulations

New build housing approach complies with the 2024 deadline which will prevent new build homes from connecting to the gas grid.

The net zero carbon design solution also pre-empts any future statutory Platinum Standard within the Scottish Building Regulations.

New Homes

Proof of concept - holistic approach to Net Zero Carbon



Underground Waste



Active Travel



SUDS



Pocket Park

Net Zero Carbon

- Renewable Heat Source (ASHP Farm)
- Increased PV Panels
- Battery Storage
- Increased fabric to reduce heat demand to below the cost of gas (electricity = 4 x more £ than gas)
- Upgrade to electric grid to power ASHP
- Carbon Offsetting for residual carbon

Developing a Net Zero Carbon Delivery Plan

The two-year assessment period will culminate in the development of a Net Zero Carbon Strategy, Investment and Delivery Plan. The key components of the assessment period are detailed below:

1. **Structural and condition surveys**

Structural integrity and condition surveys to be progressed across archetypes to identify blocks and individual properties suitable for advanced WHR, aspects of advanced WHR and properties not suitable for investment or for disposal.

2. **Design Principles**

Determining the most effective design principles to provide options as to how best to achieve the strategic WHR outcomes. Key outcome will be a suite of design principles covering all property types.

3. **New Build Design Guidance**

will ensure all new build homes will be designed to achieve net zero carbon. This will follow a fabric first approach and allow the design and construction approach to be tailored to meet the requirements of the site and select the most appropriate low carbon heating solution. Proof of concept for this new net zero carbon design brief will be tested.

4. **EnerPHit Pilot projects**

4/5 pilot projects to be progressed to understand the practicality of EnerPHit / advance WHR in terms of delivery and benefits to tenants. The pilots will be key demonstrator projects with before and after social and technical monitoring put in place for the duration of the pilots.

5. **Developing the approach to mixed tenure**

Blocks with 100% CEC ownership will be prioritised for investment. Where CEC is 50-50 or minority owner the approach to encouraging private owners needs to be developed, this will explore support measures (Climate KIC test of change proposal) and effective marketing and engagement strategies to communicate options to private owners.

Conclusions

Questions?