Delivering Heat

Hamish Martin

Strategy Officer (Local Heat & Energy Efficiency)

Our Climate Matters

Fife Council

Local Heat & Energy Efficiency Strategy

*Provide a focus for Fife to improve the energy efficiency and decarbonise heat sources of buildings in a climate friendly, ready, and **just manner** to meet targets.*

1. Being **Climate** Friendly & Ready
2. Tackling **Fuel Poverty**, Health, and the Just Transition
3. Supporting an **Inclusive Economy**, Jobs, and Skills
4. Maximising **Knowledge** and Awareness
5. Ensuring **Certainty** of Success
6. Transitioning the **Energy** System
7. Improving the Energy **Efficiency** of Buildings
8. **Decarbonising** Heat Sources

Local heat & energy efficiency strategy (LHEES) and delivery plan | Fife Council

Fife Council

Our Climate Matters

A Just Transition – Backbone of Fife's LHEES

How can we:

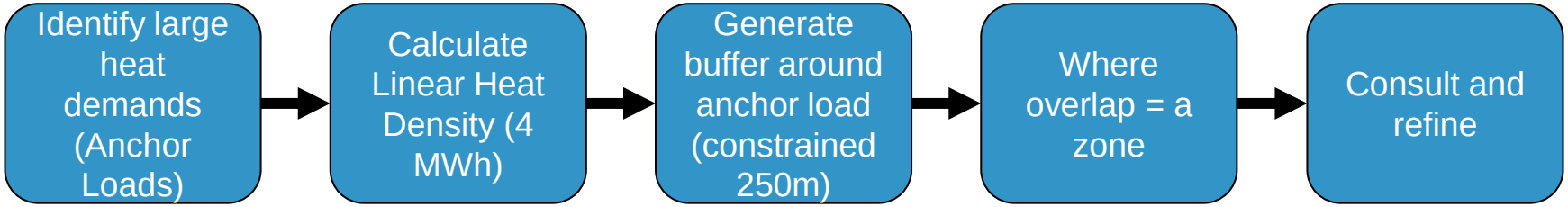
- **bring everyone** along with us on this journey to **decarbonise heat**?
- ensure we only have **positive impacts** on communities/build **community wealth**?
- ensure **fuel bills** do not increase and **fuel poverty** is reduced?
- Find solutions for **conservation areas** and **historic buildings**?
- minimise "**heat deserts**" – areas with no decarbonised heating solution

Fife Council

Our Climate Matters

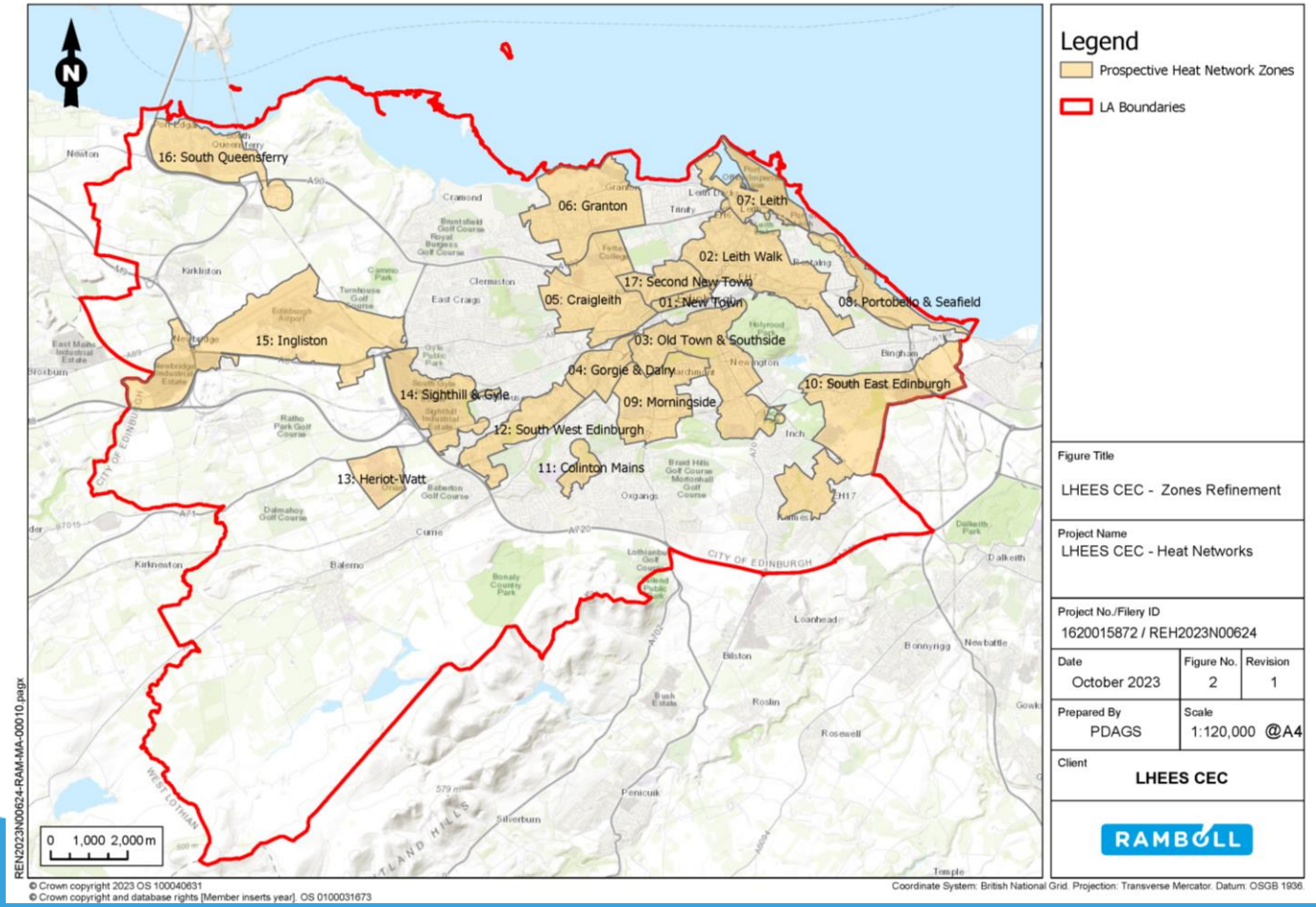
Zoning

LHEES approach:



- Strong focus on maximising commerciality
- Risk of cherry picking
- Dependent on location of large non-domestic heat demands
- Large areas of housing often excluded
- Heat “islands” and “deserts” outside of largest cities…

Heat Continents…

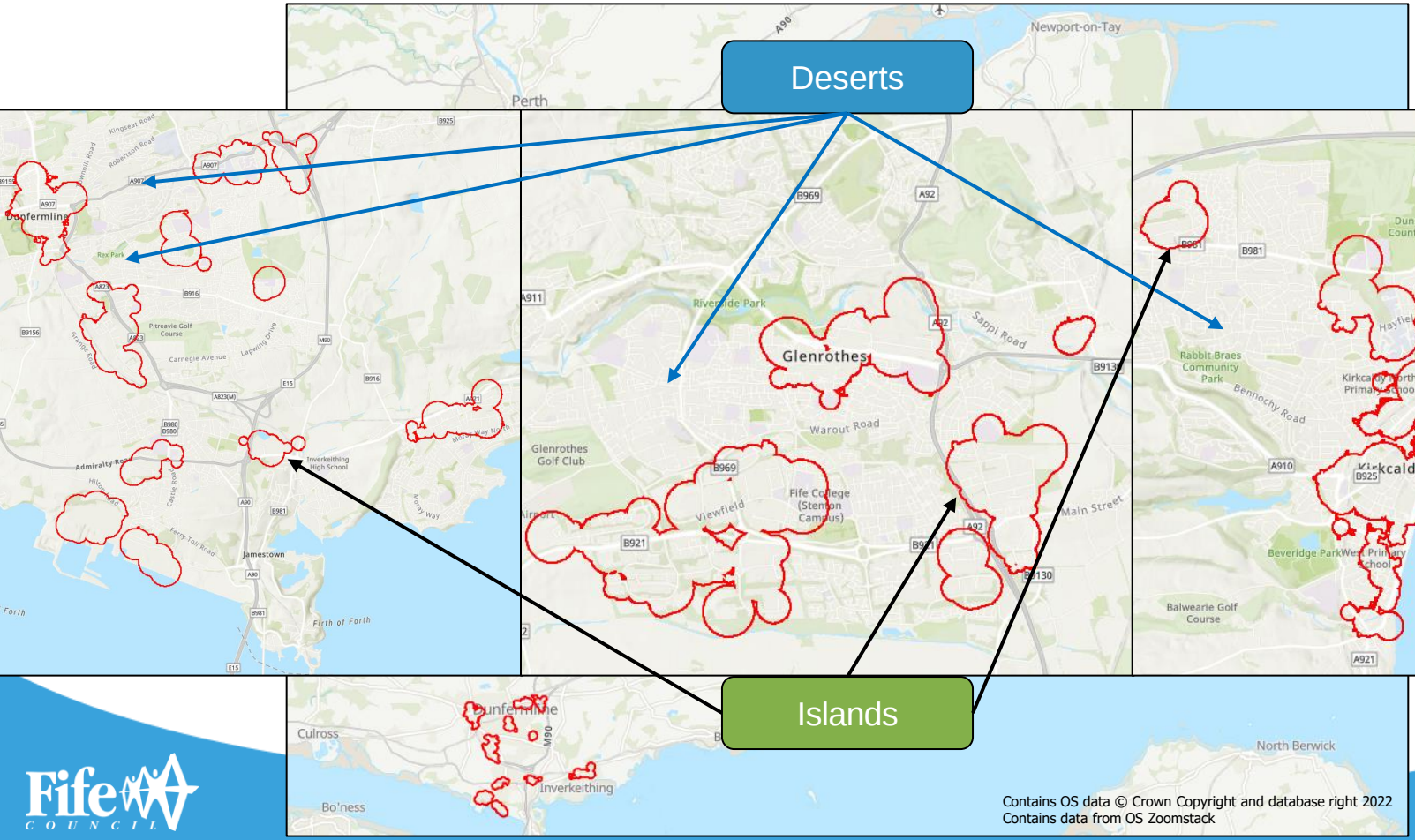


[Local heat and energy efficiency strategy (LHEES) – The City of Edinburgh Council]

Fife Council

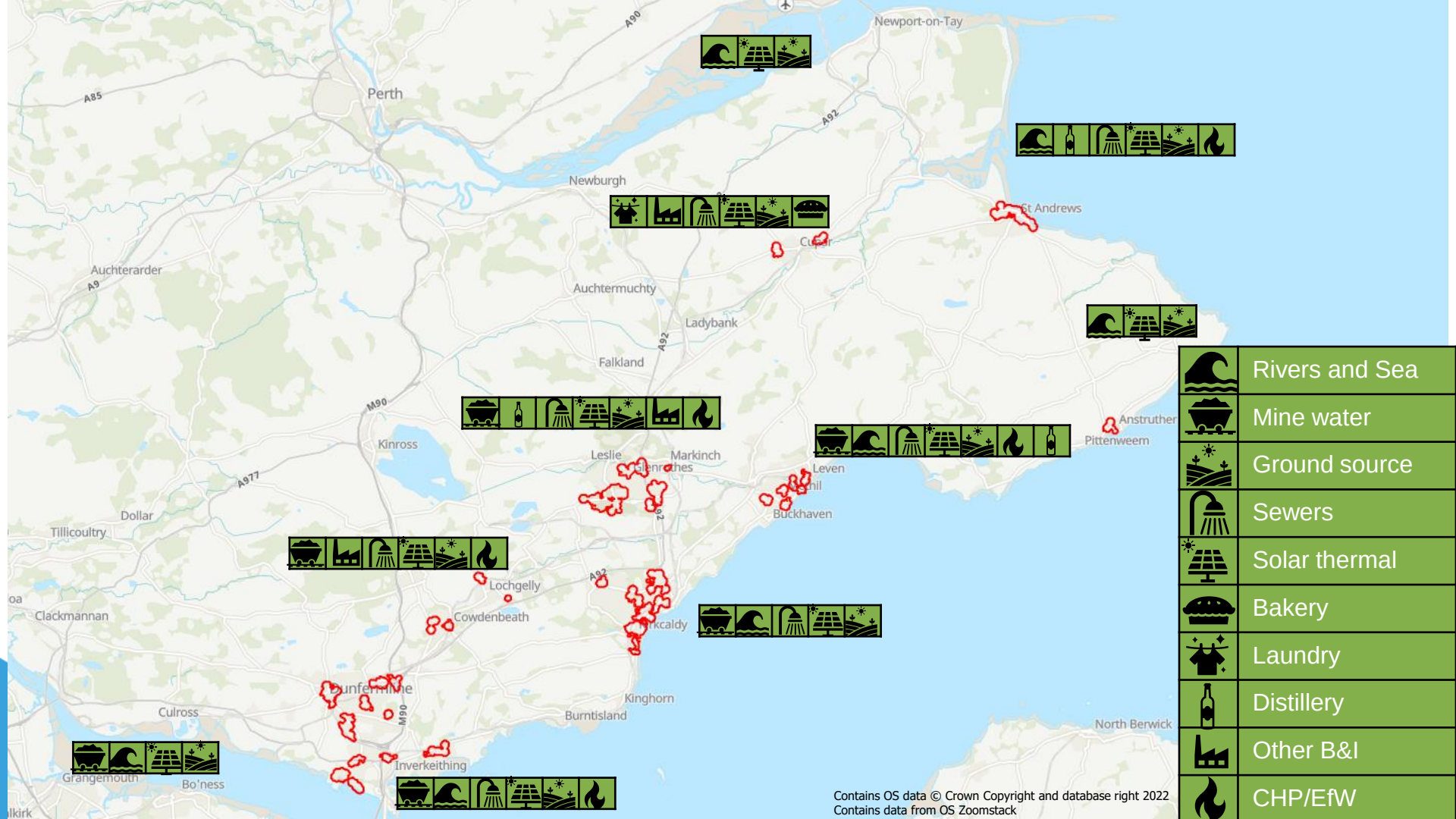
Our Climate Matters

Heat Islands & Deserts…



Fife Council

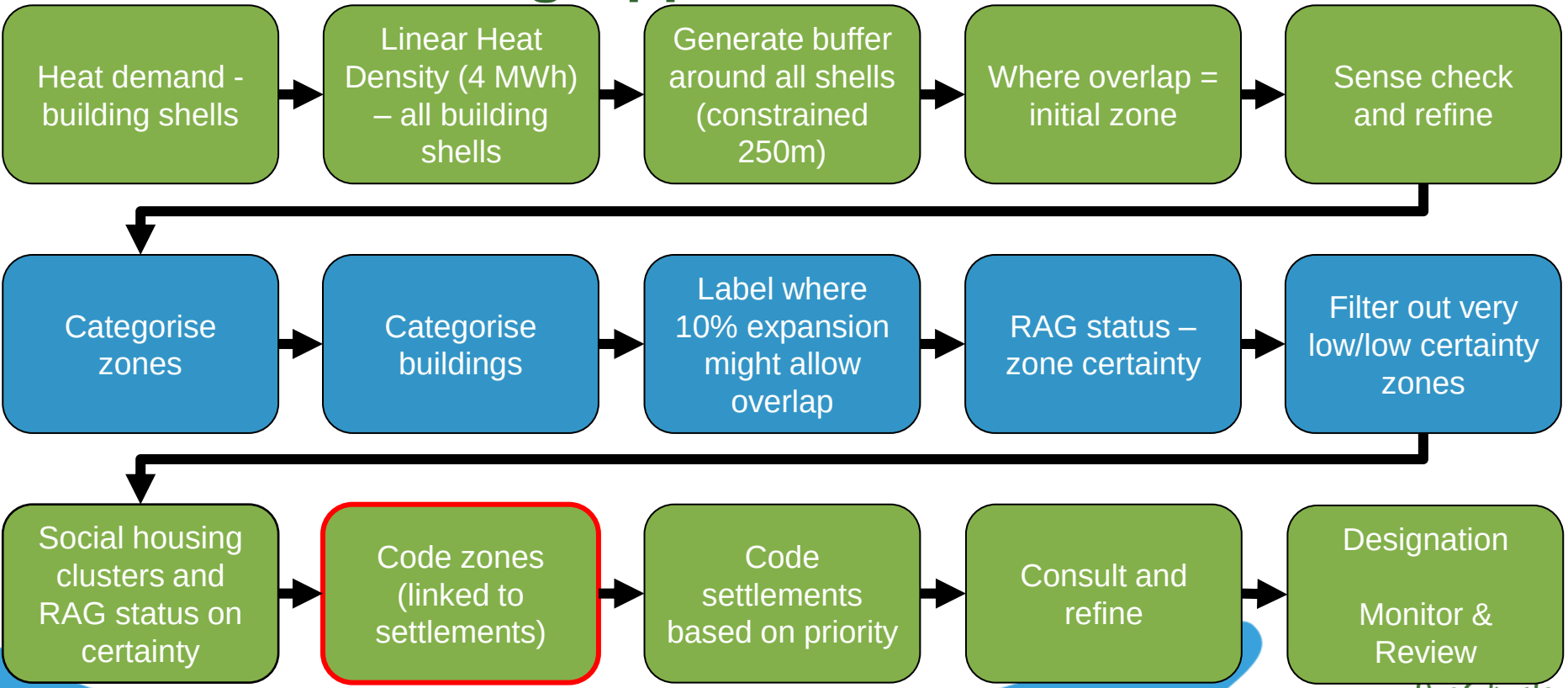
Our Climate Matters


Newport-on-Tay
Perth
Newburgh
St Andrews
Auchterarder
Auchtermuchty
Ladybank
Falkland
Kinross
Leslie
Markinch
Leven
Buckhaven
Anstruther
Pittenweem
Dollar
Tillicoultry
Lochgelly
Cowdenbeath
Clackmannan
Kinghorn
Burntisland
Culross
Inverkeithing
Grangemouth
North Berwick
A90
A85
A92
A9
A977
M90
Rivers and Sea
Mine water
Ground source
Sewers
Solar thermal
Bakery
Laundry
Distillery
Other B&I
CHP/EfW
Contains OS data © Crown Copyright and database right 2022
Contains data from OS Zoomstack

Summary of issues

- High number of homes outside of zones with no decarbonised heating solution
- High number but relatively small zones
- Heat network operators told us they want settlement level opportunities.
- Other issue = data uncertainties/gaps meant we cannot be sure air source heat pumps would not increase fuel bills for homes – fuel poverty risk
- Needed solution for identifying large-scale heat network zones

Fife's New Zoning Approach



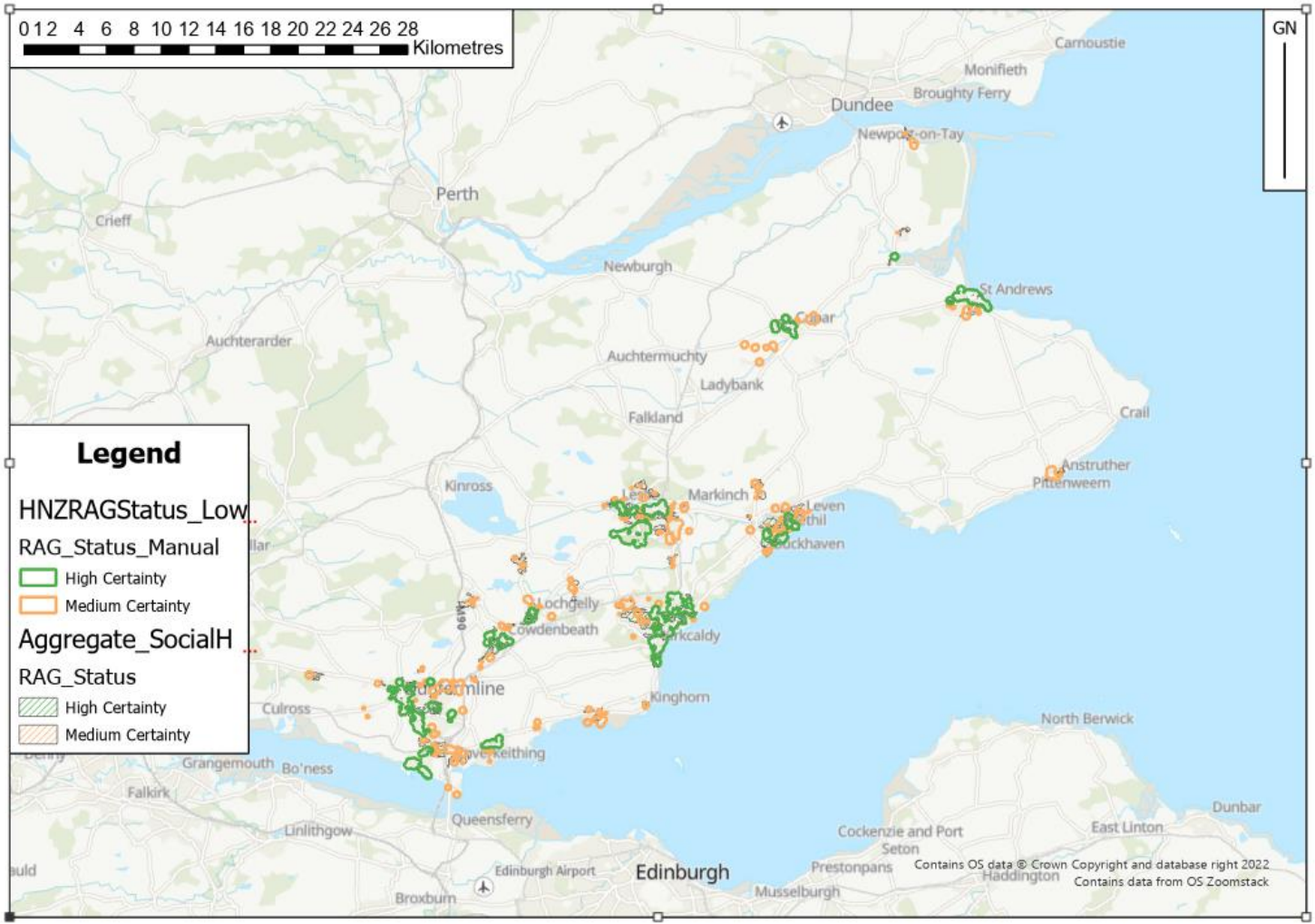
Fife Council

Our Climate Matters

The result

Amended potential heat network zones

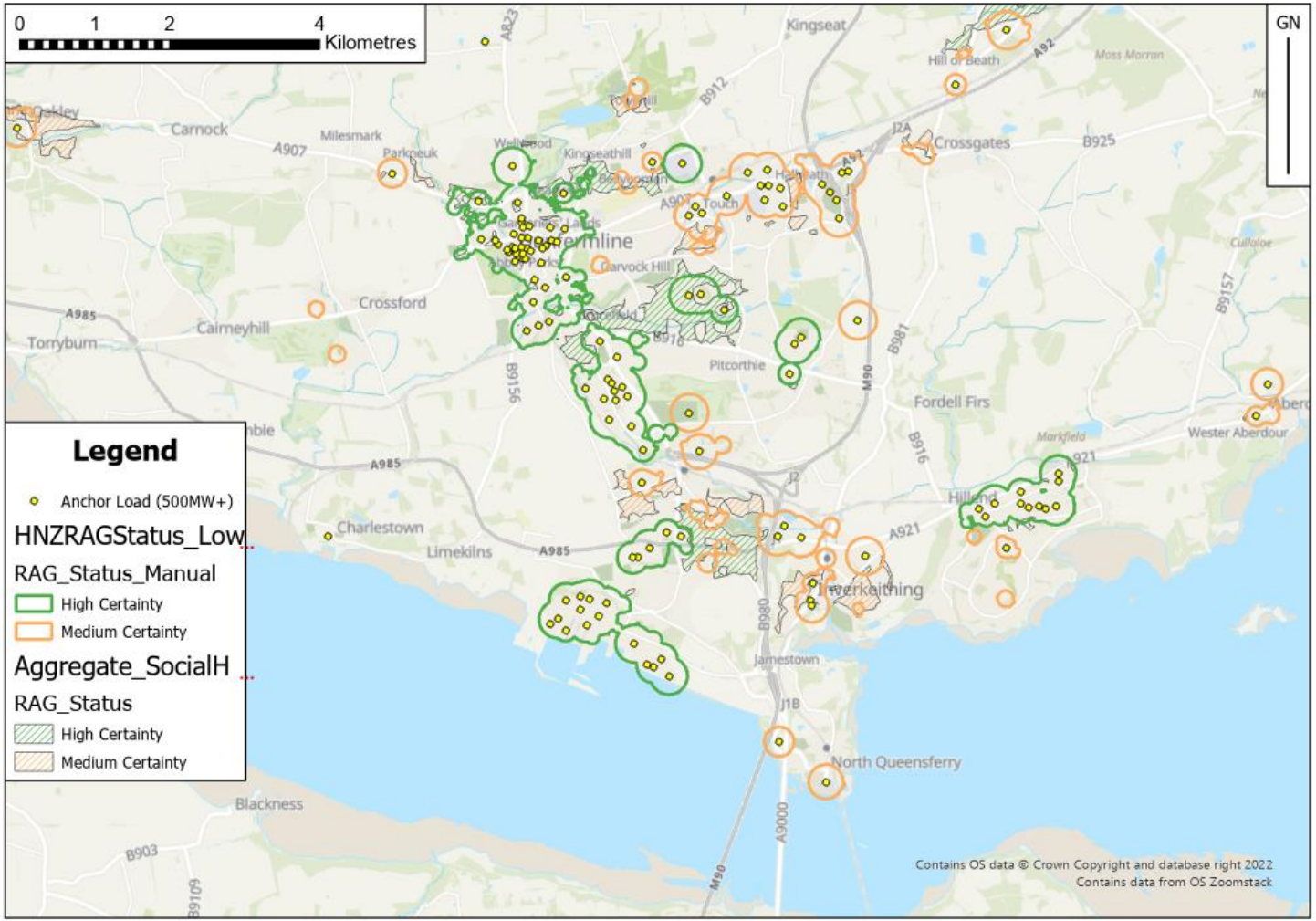
Subject to change following review



Dunfermline Rosyth

Amended potential heat network zones

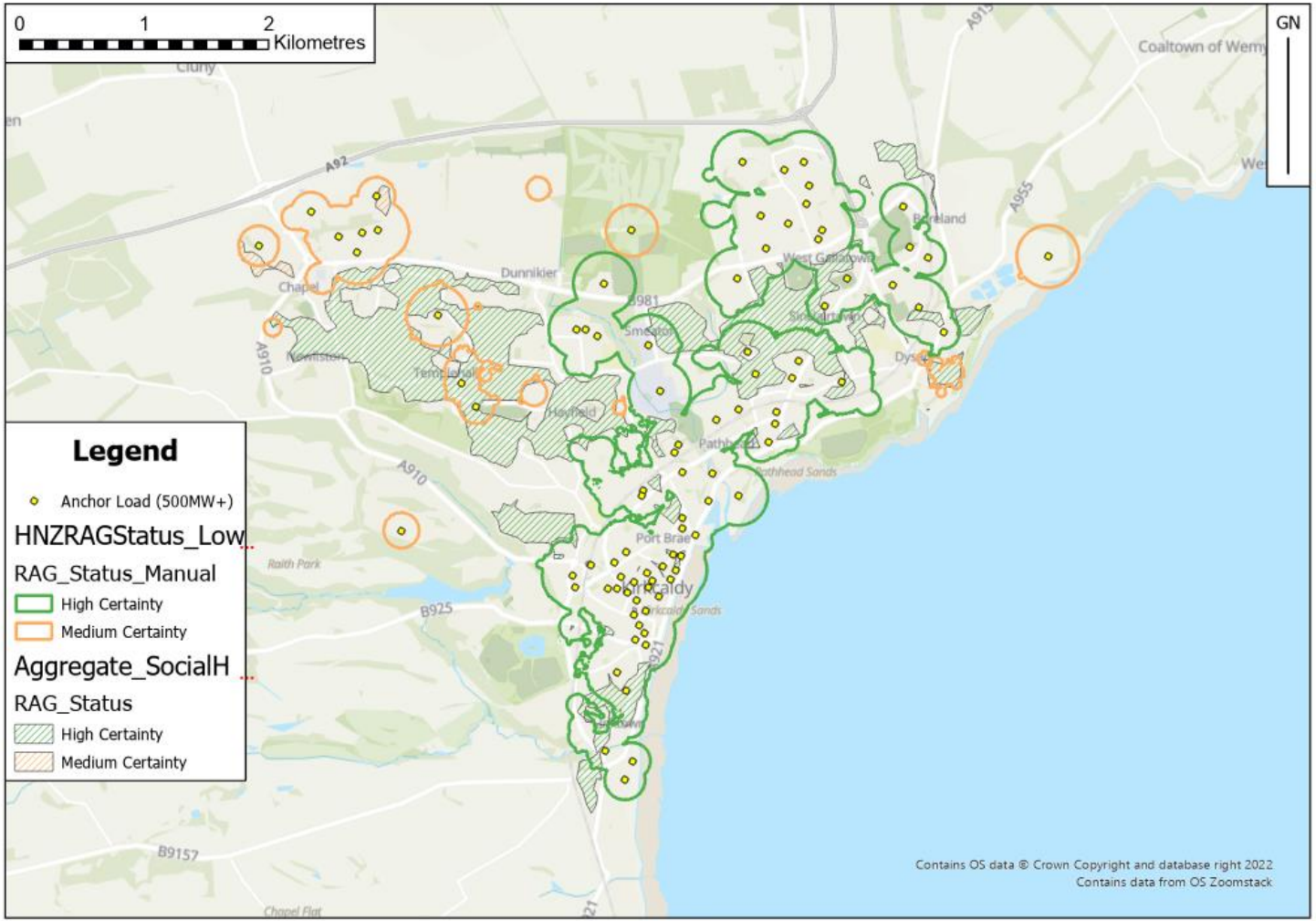
Subject to change following review



Kirkcaldy

Amended potential heat network zones

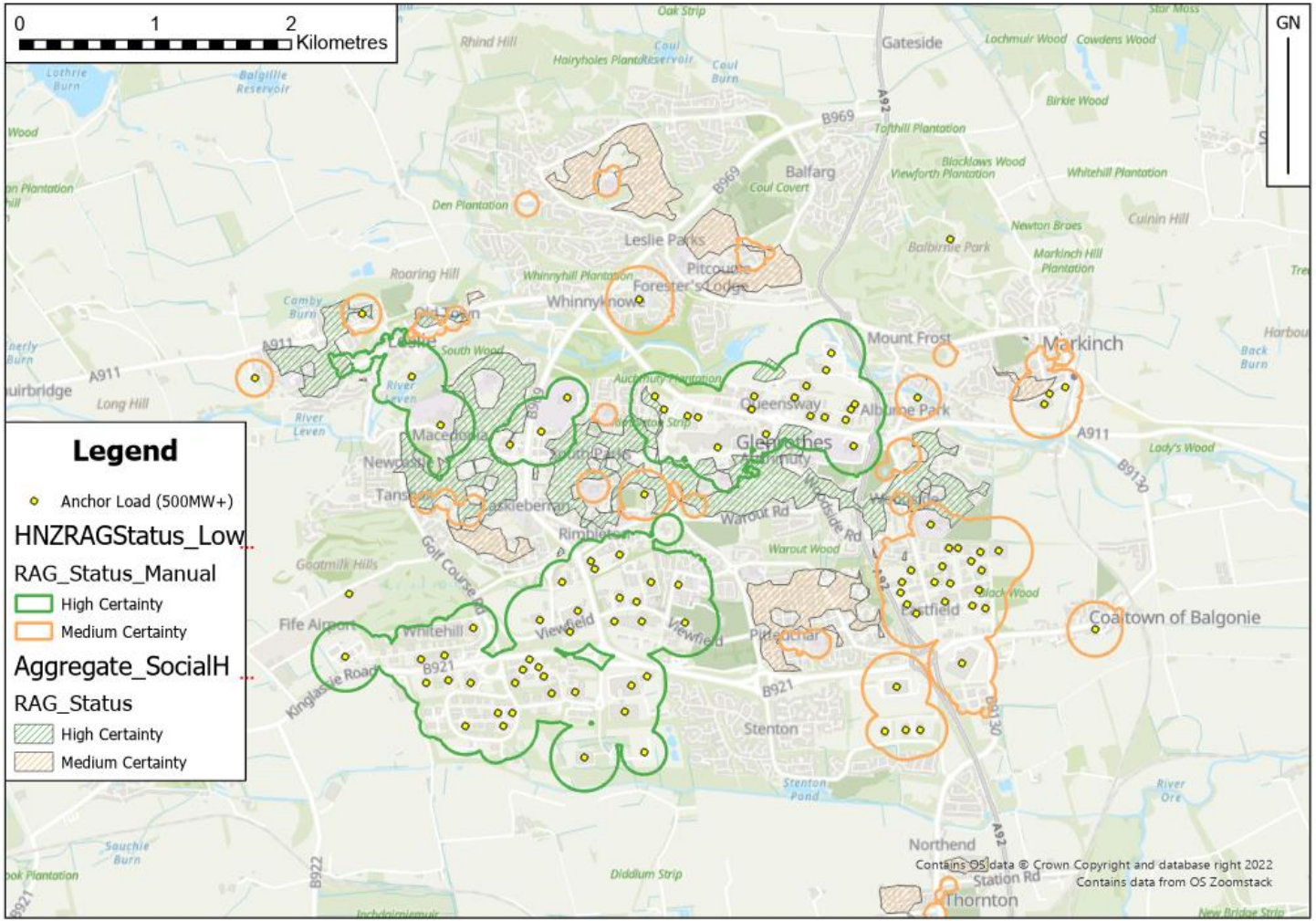
Subject to change following review



Glenrothes

Amended potential heat network zones

Subject to change following review



Fife Council

Questions – and how we are answering them

- What are wider energy infrastructure projects/needs; how impact/support heat networks?
- What is the best approach to deliver a heat network at scale?
- To what scale can heat networks reduce potential load on grid?
- What are potential energy/cost savings for customers, and how can these be realised?
- How do we galvanise support for stakeholders to be engaged in the process?

Our next steps

- Our LHEES states **changing use** of existing **energy infrastructure** and interaction with **wider energy system must be considered** when planning heat decarbonisation.

- Climate Fife – Big Energy Move (Making the energy system cleaner, more **sustainable** and more **efficient**)

- Considering wider energy opportunities is the only method to practically enable **large scale, deliverable** networks in Fife. This will help access **wider funding** streams, making heat networks **more viable**.

Dunfermline & Rosyth Energy Plan

Pilot plan developed as prospectus and shared vision for community.

- Explore & model **large-scale** heat network vision for an area.
- Consider how **energy generation/storage/resilience opportunities and constraint risks** may impact network.
- Heat network would be the anchor project supported by wider energy analysis

City status

Forth Green Freeport

New Inverkeithing High School

High levels social housing & homes at risk of fuel poverty

Proposed major electricity upgrades

Existing heat network, and large heat network zones

Good potential sources of waste heat (ambient)

Multiple strategic development land proposals

Multiple large energy loads

High number of homes unsuitable for heat pumps

Fife Council

Our Climate Matters

Dunfermline & Rosyth Energy Prospectus

Up to **40%** of electricity demand could be met by local renewables

11% less *annual* electricity demand needed for heating compared to air source heat pump counterfactual

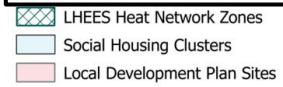
Increase in annual demand from new developments

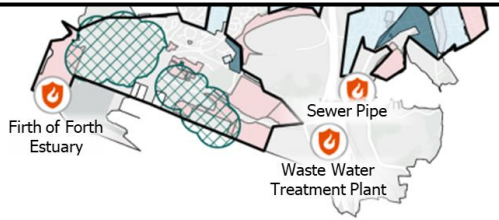
Heat **20%**

Power **23%**

At least **90%** increase in *annual* electricity demand to meet future power, heat and transport demands

190 MWh of battery storage needed to support optimised energy system





Place-based energy plans – next steps

Additional funding received to:

- Bring in heat network experts to develop full Dunfermline & Rosyth Energy Plan.
- Appoint legal support to help find the most appropriate delivery model(s) for delivering heat networks (wider energy) at scale

Here is where needed additional resource and support outside of initial LHEES funding and internal skillset.

Thank you

Hamish Martin
Strategy Officer (Local Heat & Energy Efficiency)
hamish.martin@fife.gov.uk