

# Adopting a Strategic Approach to Energy Transformation

## The Highland Council



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# APSE Energy Summit - Stirling

## Agenda

### 1. Evolution of energy projects and management

- The Highland Council's energy portfolio
- Example projects we have not delivered

### 2. Tools, techniques and mechanisms aiding development

- Heat and energy mapping
- Internal relationships

### 3. Future project plans

- Local Heat and Energy Efficiency Strategy (LHEES)
- Example energy projects

# APSE Energy Summit - Stirling

## Alternative Agenda

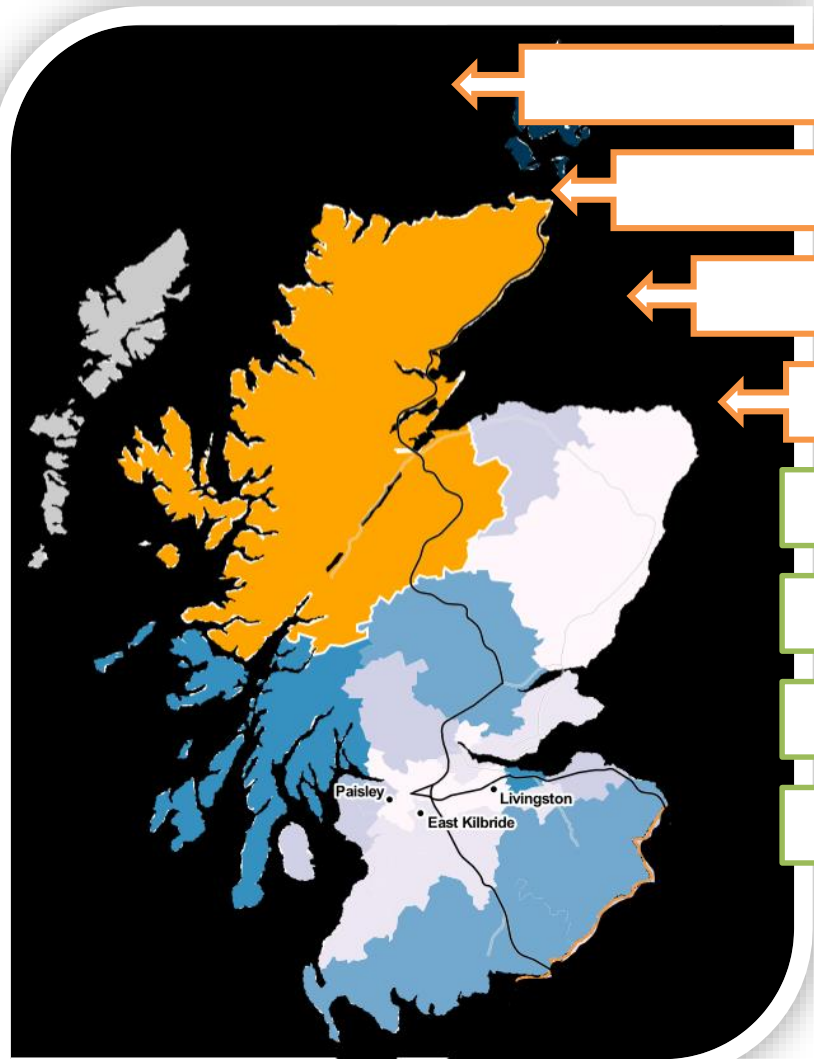
1. What we **have** delivered
2. What we **have not** delivered
3. **How** we are trying to deliver
4. **What** we are trying to deliver

# 1. Evolution of energy projects and management

- **The Highland Council's energy portfolio**
- Timeline of energy installations and milestones

# Energy Transition Challenges

## The Highland Council Context



**1/3** of Scotland's land mass

Same size as Belgium - **98%** less people

**72%** dwellings off-gas

**50%+** fuel poor households

Electricity grid constraints

Long lead times

Challenging climatic conditions

Expensive installations, high running costs

- HQ in **Inverness**; **21** Council Wards
- **40,000** utility bills processed per year
- **2400** non-domestic sites, **13,500** houses

# Low Carbon Portfolio\*

## The Highland Council

### Non-Domestic

Heat

**143 sites**

**22 MW**

Power

**93 sites**

**1 MW**

### Domestic

Heat

**1200 dwellings**

**10 MW**

Power

**25 dwellings**

**35 kW**

\* approximate

# Low Carbon Heat Installations\*

## Non-Domestic

Biomass

**90**  
sites

**21**  
MW

Air Source  
Heat Pumps

**30**  
sites

**900**  
kW

Ground  
Source Heat  
Pumps

**6**  
sites

**300**  
kW

Solar  
Thermal

**17**  
sites

**48**  
kW

\* approximate

# 1. Evolution of energy projects and management

- The Highland Council's energy portfolio
- **Example projects we have not delivered**



# Still to Deliver

## Low Carbon Heat

### 1. District Heating

#### BARRIERS

- Bad case study (Wick)
- Low population density
- Mostly retrofit options
- Cost



#### PROGRESS

- Ignis Wick Ltd
- Assessment methodology
- Planning support
- Awareness raising



#### FUTURE?

- Planning alignment
- Reliable anchor loads
- Coordinated partnerships

### 2. Energy from Waste

#### BARRIERS

- Perception of scheme
- Negative political will
- Cost



#### PROGRESS

- Successful case studies
- Greater understanding
- Legislation



#### FUTURE?

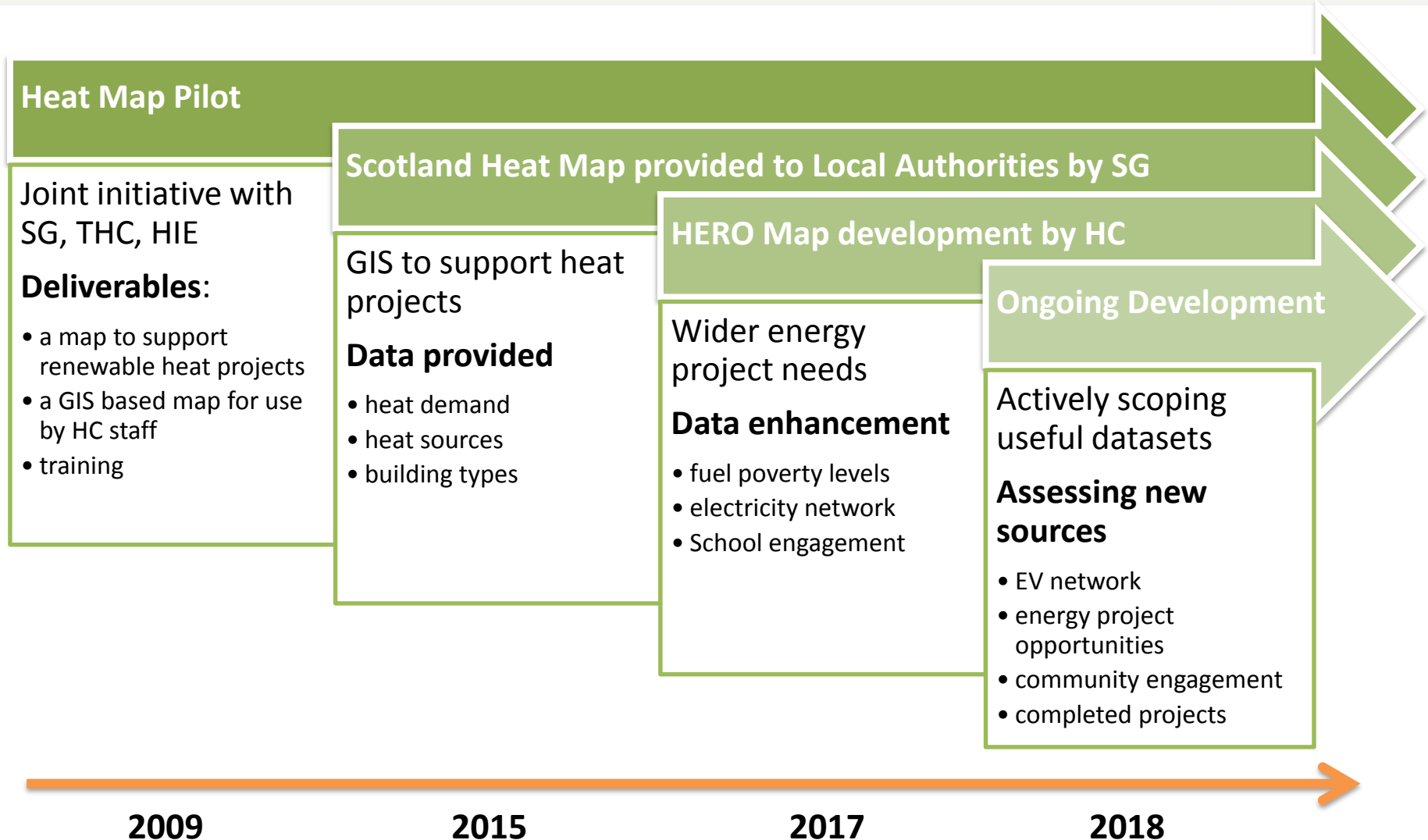
- Likely to be considered
- Positive political will
- Collaboration required

## 2. Tools, techniques and mechanisms aiding development

- Heat and energy mapping
- Internal relationships

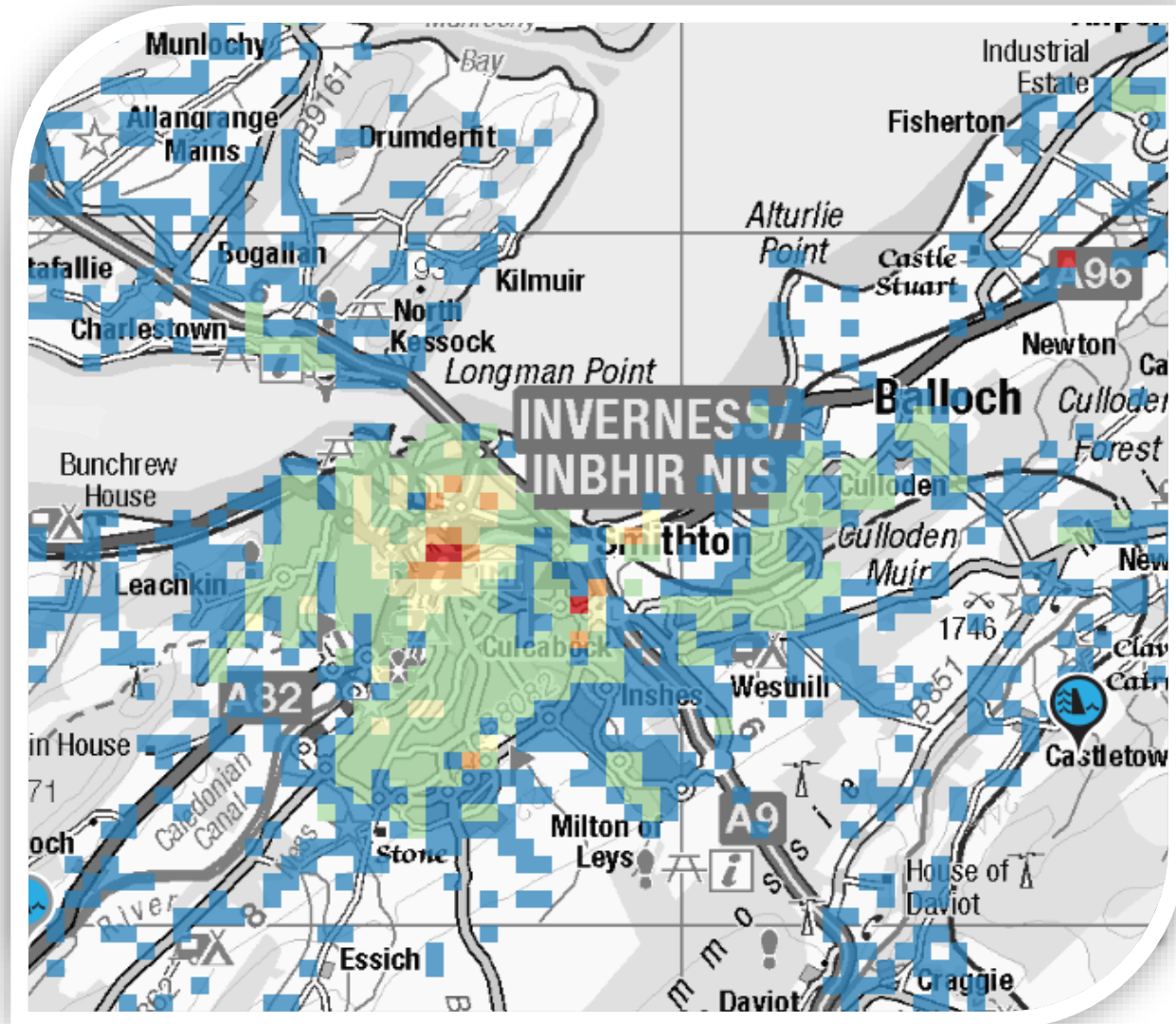
# Heat Map

## Progress to Date



# Scotland Heat Map

## Intended Functionality

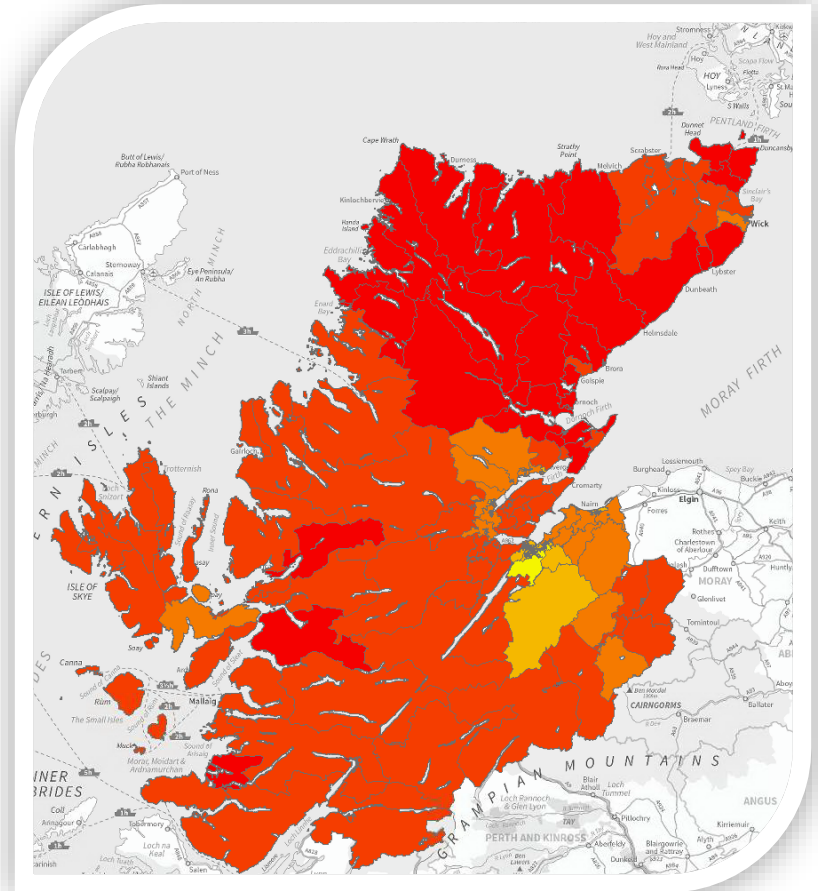


# Heat Map ► Energy Map

## Enhanced Functionality



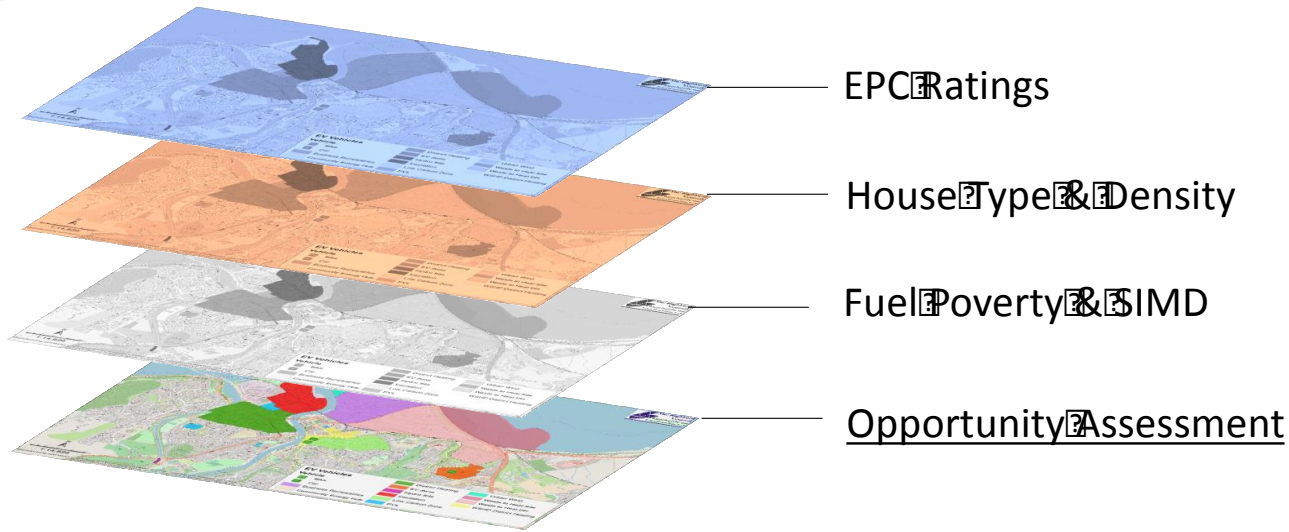
**Electricity Network**



**Fuel Poverty Level**

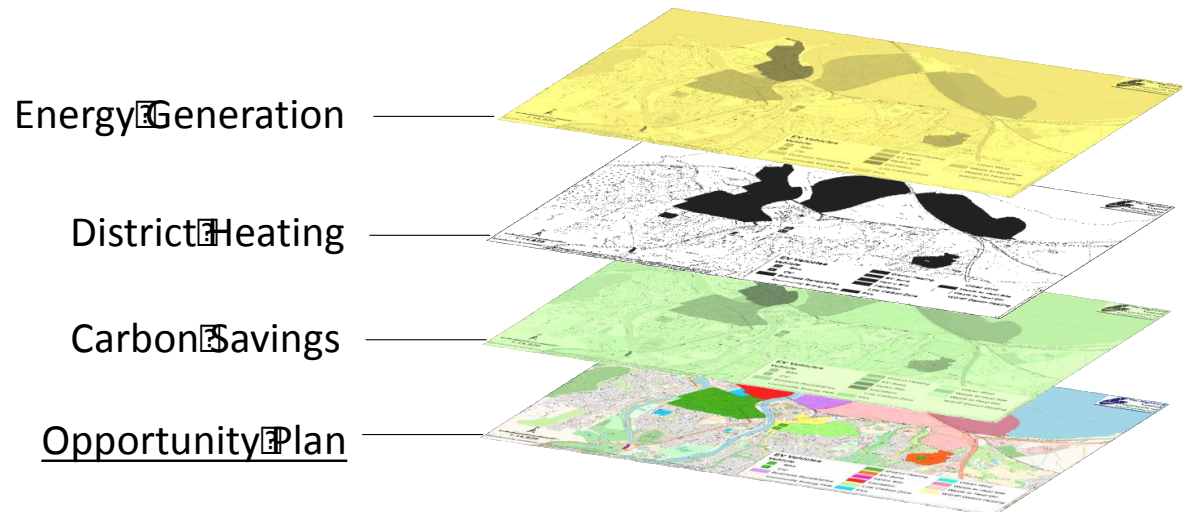
# Highland HERO (Energy) Map

## Strategic Functionality



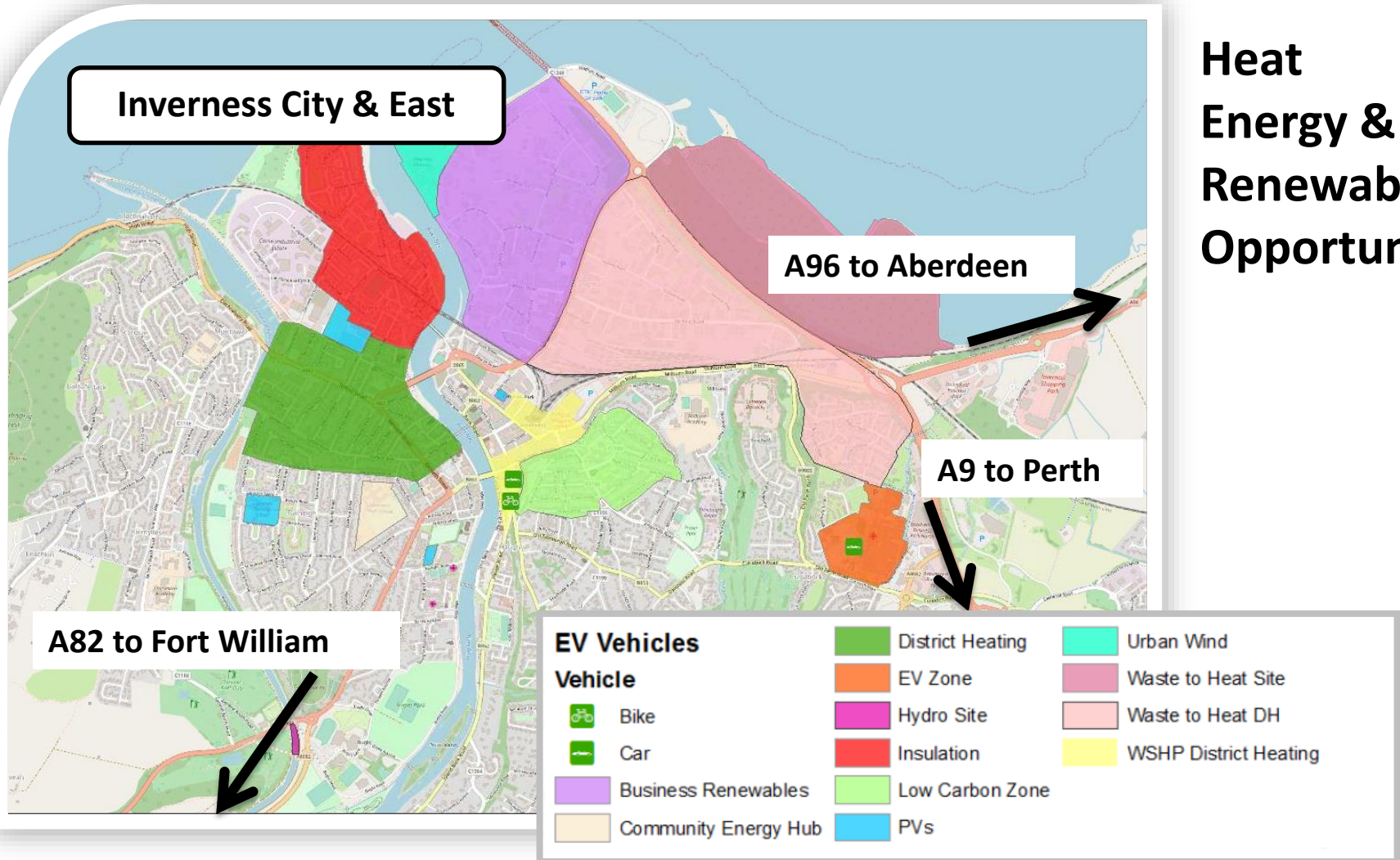
Data Assessment & Analysis

Project Assessment and Evaluation



# Highland HERO (Energy) Map

## Strategic Functionality



**Heat  
Energy &  
Renewable  
Opportunities**

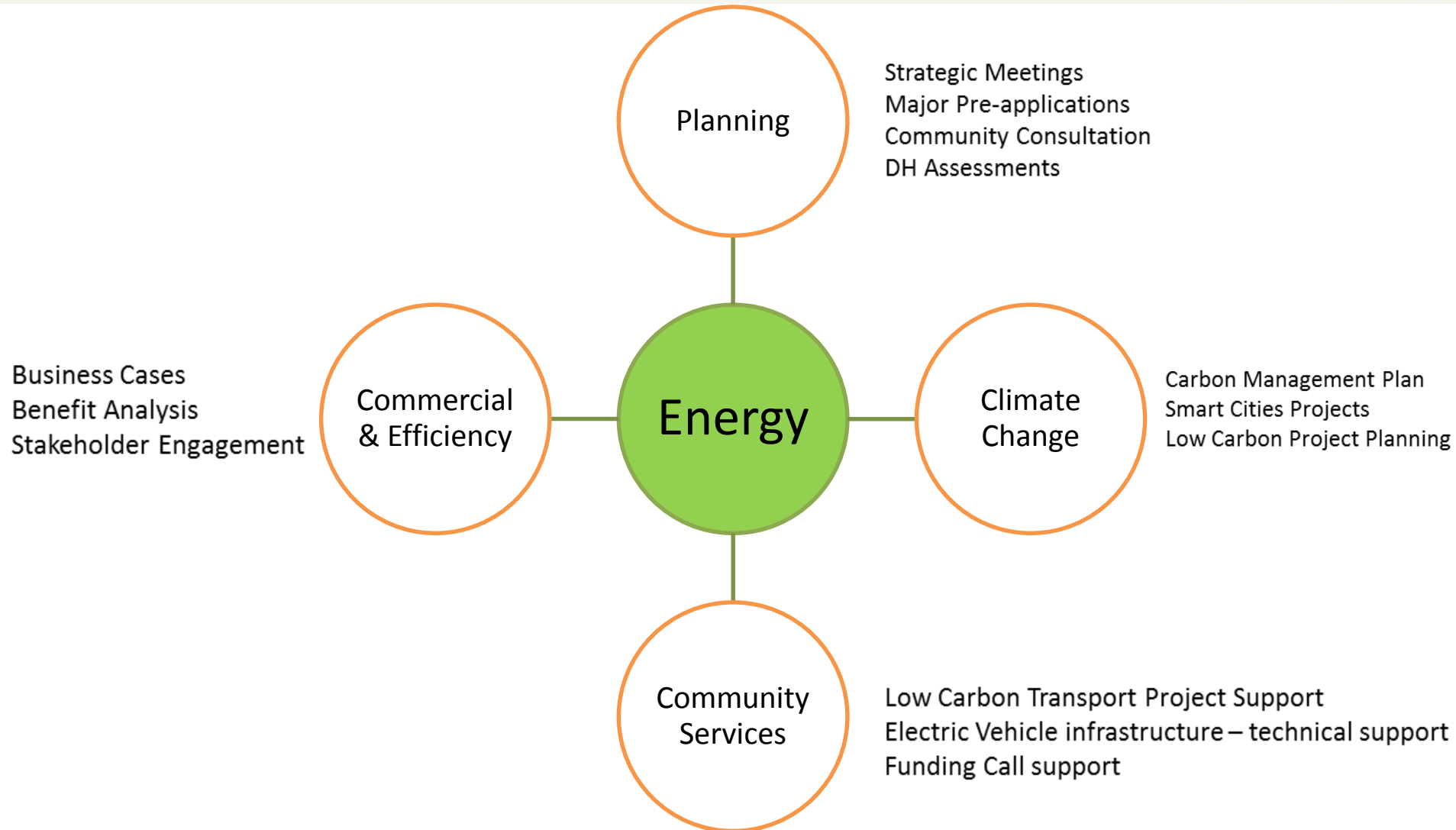
## 2. Tools, techniques and mechanisms aiding development

- Heat and energy mapping
- **Internal relationships**



# Internal Relationships

## Energy & Low Carbon Planning



# Internal Relationships

## Commercial & Efficiency Team

### Inputs

#### Communication

- Consistent 2-way dialogue
- Candid discussions/compromises

#### Opportunity Scoping

- Joint periodic scoping workshops
- Short, medium & long term goals

#### Procedural Support

- Governance & approval
- Stakeholder engagement



### Outputs

#### Effective Relationships

- Awareness of wider agenda
- Aligned objectives

#### Project Acceleration

- Electricity - self-generation
- SALIX projects (in development)

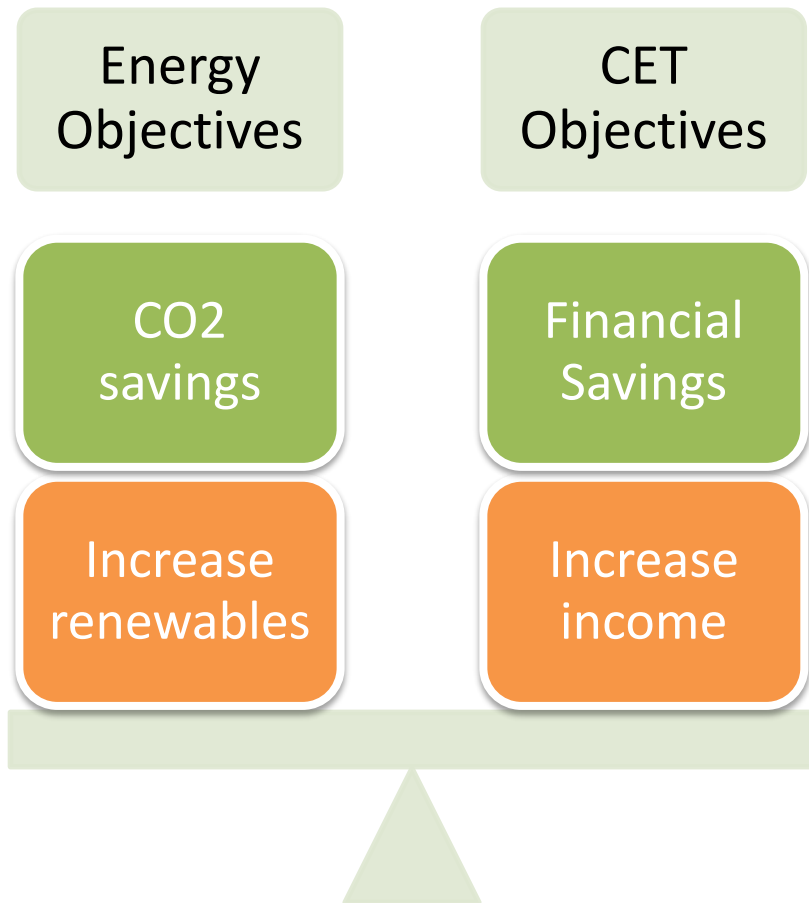
#### Project Delivery

- PV Programme
- River Ness Hydro Scheme

# Internal Relationships

## Commercial & Efficiency Team

### Main Achievements



- ✓ Refocusing **objectives** for worthwhile projects
- ✓ Identifying **income** streams
- ✓ Setting up **commercial board**
- ✓ Stronger **member relationships**
- ✓ Organisational acceptance of **self-financing models**
- ✓ Gained committee approval for **Highland Council ESCO**

### 3. Future project plans

- Local Heat and Energy Efficiency Strategy
- Example energy projects

# What is LHEES?

## Overview

Proposed in Scottish Government consultation:

- a statutory duty for LAs to develop a **Local Heat & Energy Efficiency Strategy (LHEES)**
- to cover a **15-20 year period**
- setting out **authority-wide** energy efficiency and heat decarbonisation strategy
- Local authorities will be offered **development support**



# LHEES - Highland Preparation

## Pilot Participation

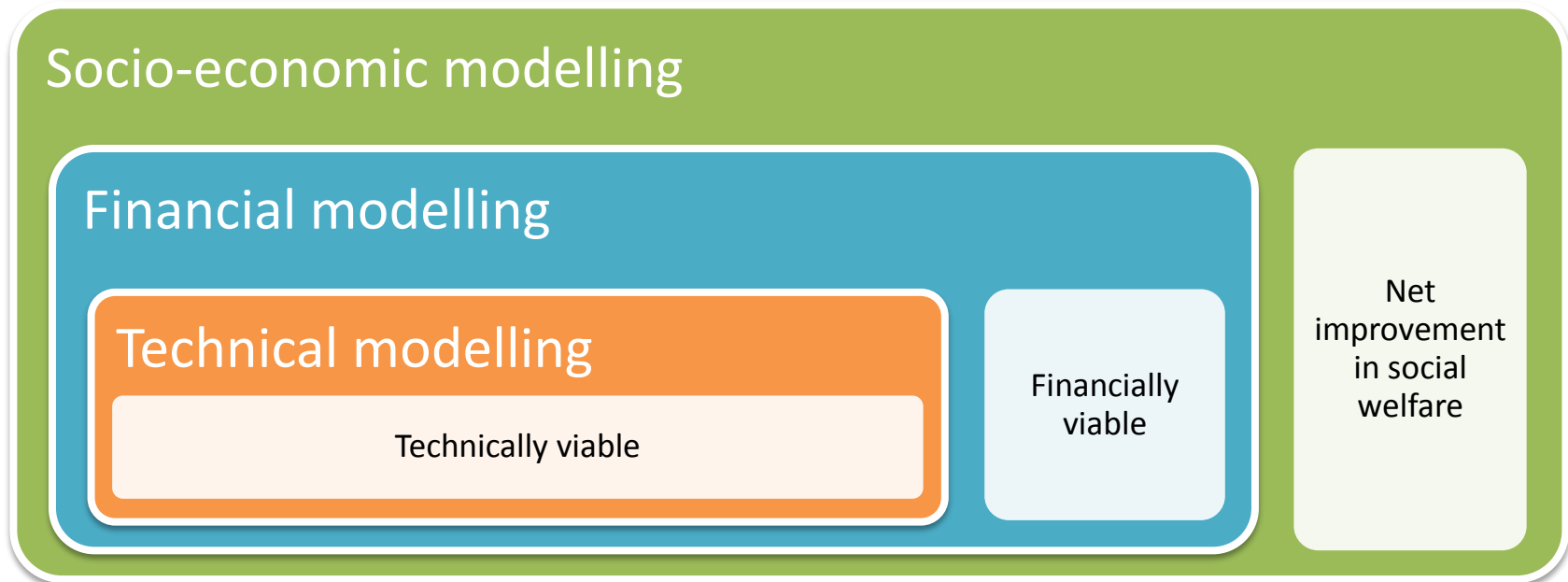
- Phase 1 – 12 local authorities involved
- Range of scopes and expected outputs for wider benefit
- Enhancement of Energy Mapping Group provides additional (voluntary) support to participants



# Expected LHEES Pilot Outputs

## The Highland Council

1. Options appraisal to identify low carbon projects
2. **Socio-economic** evaluation report



e.g. carbon emissions, local environmental impact, social, fuel poverty...etc.

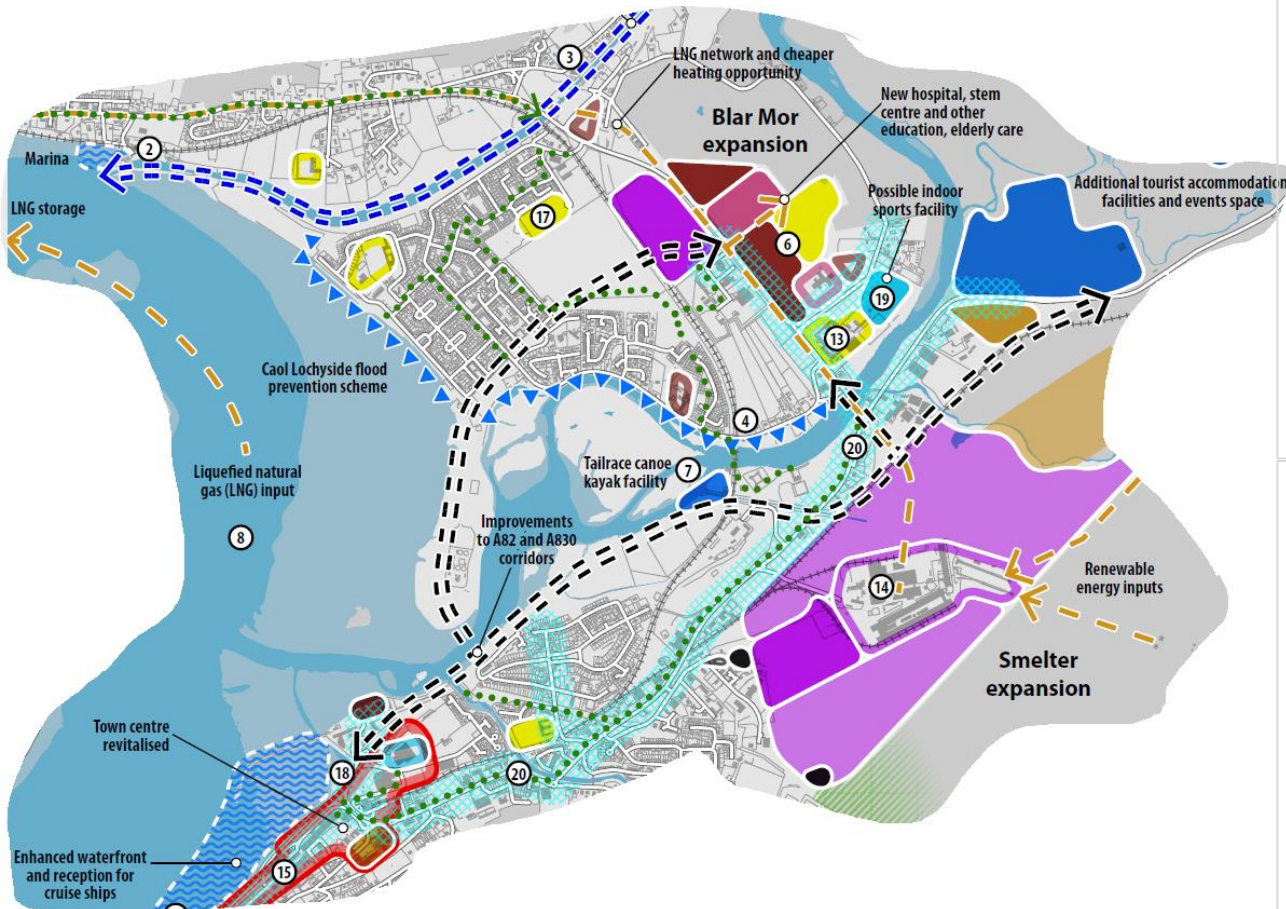
### 3. Future project plans

- Local Heat and Energy Efficiency Strategy
- **Example energy projects**



# Lochaber Vision

## Fort William 2040



### Site Description:

- Expansion of smelter
- New housing
- New hospital
- Activity centres

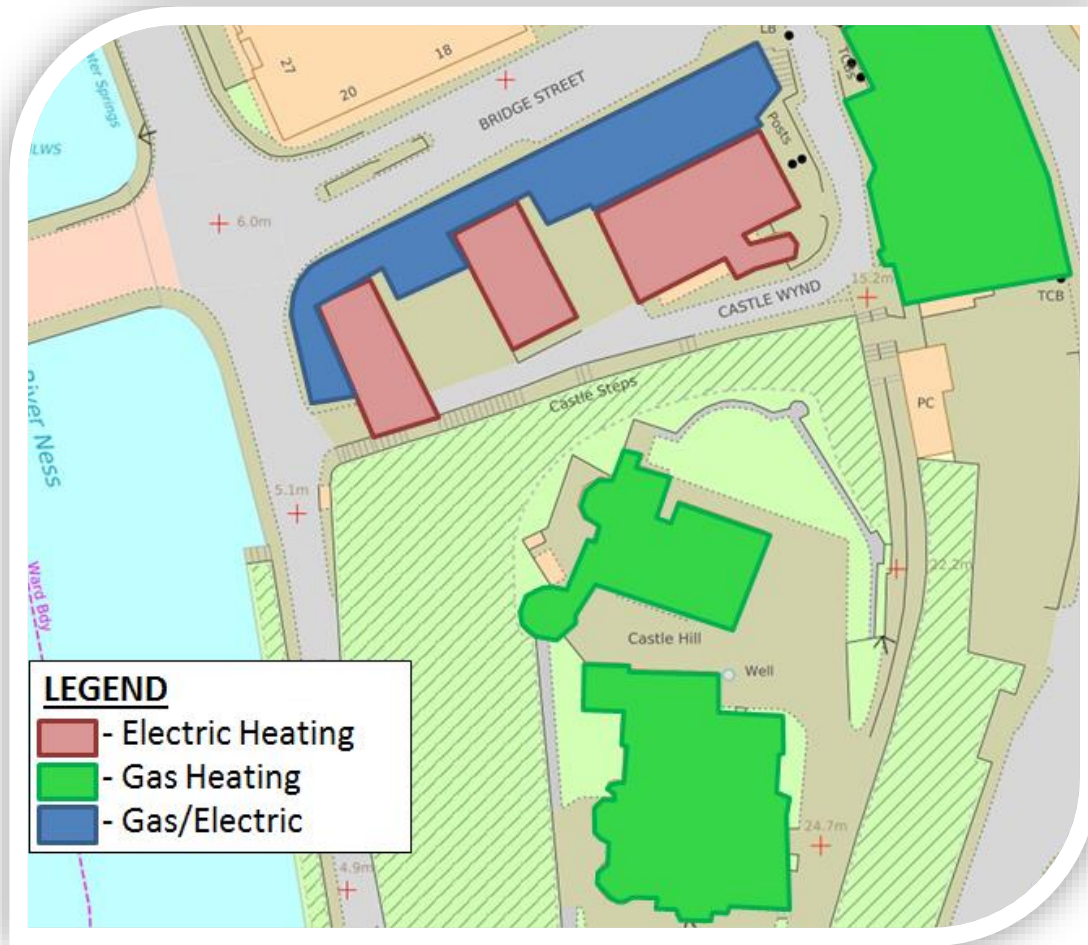
### Potential Heat Solutions:

- CNG
- District Heating
- Biomass
- LPG

**Gas decarbonisation opportunities?**

# Inverness City

## Castle Redevelopment



### Site Description:

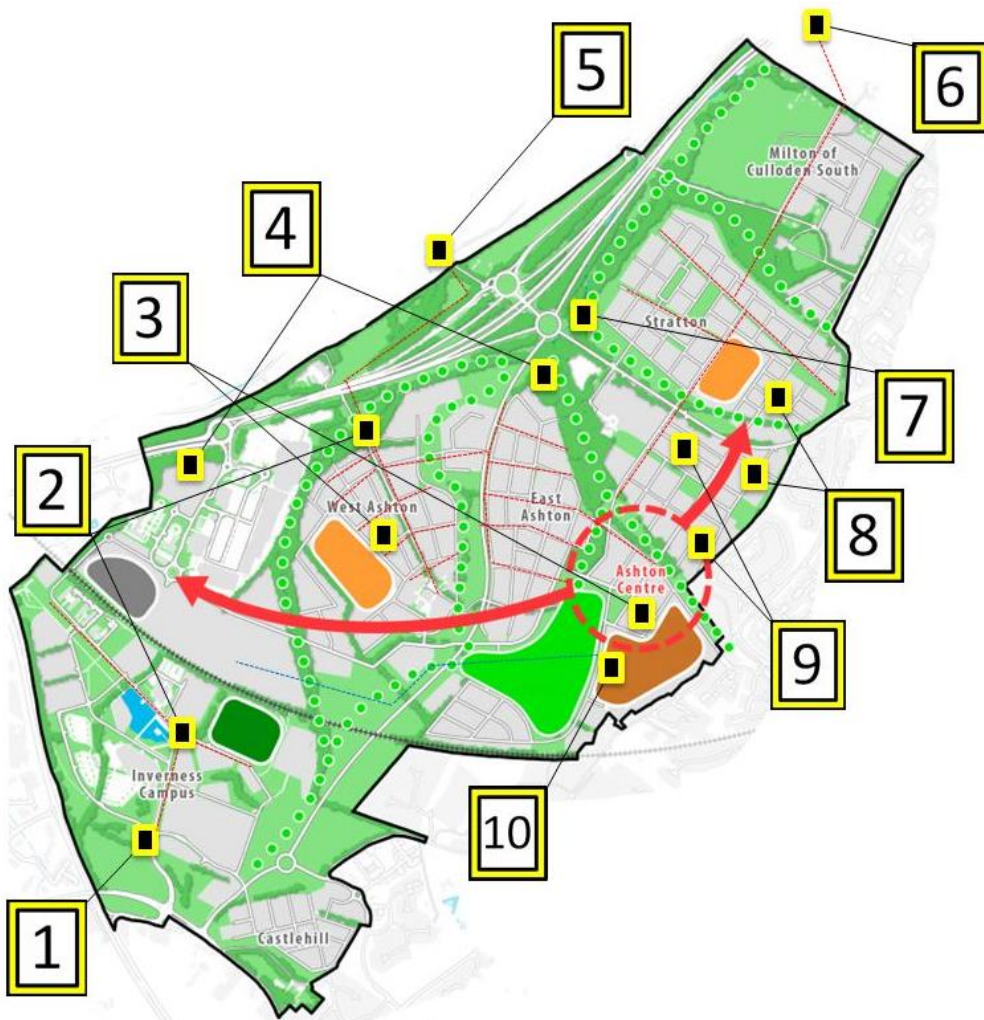
- Prominent City Centre Site
- Visitor Attractions
- Office/retail outlets
- Accommodation

### Potential Heat Solutions:

- WSHP
- Thermal Storage
- District Heating
- Access to Mains Gas

# Inverness East

## Expected Future Development



### Site Description:

- 20 year plan
- 3,000 homes
- 3 schools
- park/community facilities

### Potential Heat Solutions:

- 1 - Community ASHP
- 2 - Power/Heat Storage Stations
- 5 - Community WSHP
- 6 - Wastewater Heat Recovery

# Summary

## Alternative Agenda

1. What we **have** delivered
  - Biomass, heat pumps, solar, CHPs
2. What we **have not** delivered
  - District heating, energy from waste
3. **How** we are trying to deliver
  - Energy mapping, aligning internal objectives, information sharing
4. **What** we are trying to deliver
  - Sustainable, efficient projects with a **strategic approach**



thank you

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