



# Aberdeen Heat & Power (AH&P)



## APSE - The Big Energy Summit



Walton Hotel & Spa

26<sup>th</sup> May 2016



Aberdeen  
Heat & Power

Delivering Affordable Warmth .



# Aberdeen Heat & Power (AH&P) Background

- Aberdeen City Council's Housing Stock = 23,500
- Investment over many years through Housing Capital Programme - vast majority of low rise homes had gas central heating and basic insulation (loft and cwi)
- 1999 adopted Affordable Warmth Strategy
- Policy to target the least thermally efficient homes - mainly multi storey flats





# Aberdeen Heat & Power (AH&P) Background

- In 2001 Council commissioned options appraisal of all 59 multi storey blocks (4,500 flats)
- Had electric storage or warm air heating
- 70% in fuel poverty
- Recommended install CHP in clusters of multistoreys
- Appointed a CHP Engineer through tendering process to work up a costed Feasibility Study for a cluster of multistoreys





# Aberdeen Heat & Power (AH&P) Which business model?



- Whole life costings considered: CHP is higher in capital costs, but considerably lower in running costs - could take occupants out of fuel poverty
- If the Council fully fund the connection of all 59 multis to CHP/DH scheme would take 30 years+ for this to be affordable
- Commercial ESCos could gain access to 3<sup>rd</sup> party investment to accelerate deployment but required returns on investment would significantly increase heat cost - undermine the objective of reducing fuel poverty
- So ....



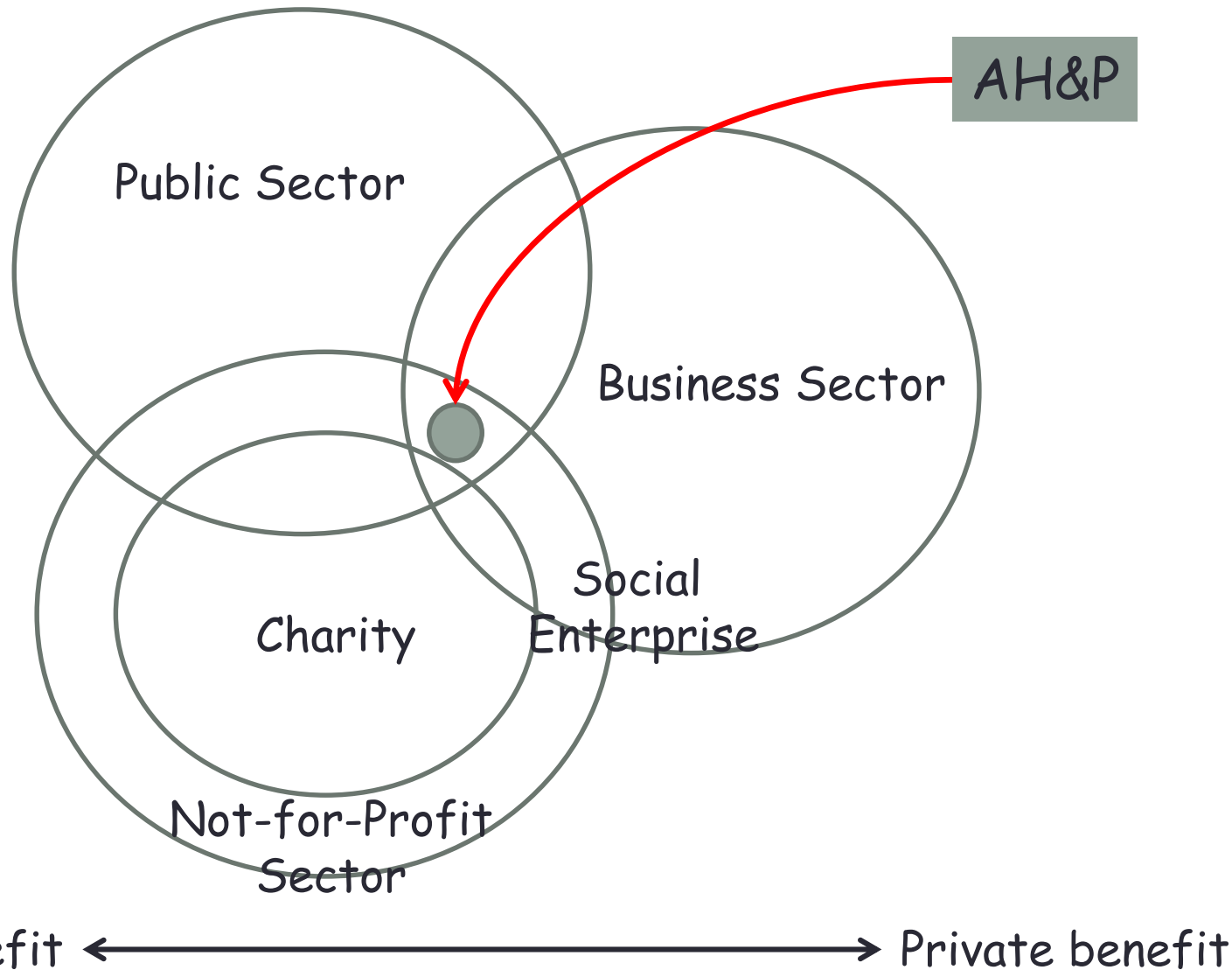
# Aberdeen Heat & Power (AH&P) a not-for-profit model

- In 2002 the Council established Aberdeen Heat and Power
  - Independent - not-for-profit company,
  - limited by guarantee,
  - to develop and manage DH / CHP schemes "for the benefit of the people of Aberdeen"
- With the aims of:
  - Delivering affordable heat to hard to heat properties
  - Helping to alleviate fuel poverty
  - Reducing Aberdeen City Council's carbon footprint
  - Developing and managing combined heat and power district heating systems (CHP) in a strategic way in high heat density areas of Aberdeen





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# Aberdeen Heat & Power (AH&P) Governance and manpower

- The Board consists of volunteer Directors with a range of skills (Technical, Management, Financial, Community, etc.)
- Two seats reserved on the Board for Council elected members - ensures long-term interests of the Council are met
- We employ 3 members of staff - CEO, Operations and Maintenance Manager, Office Admin
- Appoint external specialists - CHP Engineer, Financial services, for procurement of fuel, HR, legal services





# Aberdeen Heat & Power (AH&P) Legal Agreements

- 50- year Framework Agreement between the Council and AH&P
- Then for each project:
  - Installation Agreement inclusive of project costs (although Council carry capital risk, AH&P must manage project costs within budget)
  - Licence to occupy land for energy centre and wayleave for underground services
  - Heat Supply Agreement
  - Maintenance Agreement







# Aberdeen Heat & Power (AH&P)

## The Framework Agreement

- Council specifies buildings to which heat is to be delivered
- AH&P agree to procure, install, operate and maintain systems to facilitate provision of heat
- AH&P warrants performance and delivery of heat, with plant operated to Good Industrial Practice
- Teckal Exemption - Council appoints AH&P to develop DH/CHP projects without tendering; AH&P must abide by public procurement procedures





# Aberdeen Heat & Power (AH&P)

## Framework Agreement (cont'd)



- Ownership of the equipment passes to Council at point of supply (i.e. everything installed inside flats + from entry to block)
- AH&P is responsible for maintenance of whole of the system
- Conditions of failure or discontinuance, emergency procedure
- Project conditions
  - Licences, consents, and permissions including planning and wayleaves must be applied for and obtained by AH&P
  - Agreed project dates (specific to each project)



# Aberdeen Heat & Power (AH&P) Capex



- For housing full capital costs need to be covered
- If capital had to be borrowed the heat charge would increase and occupants would be back in fuel poverty
- To date full capital for the housing from combination of:
  - Housing Capital Programme - at approx same unit cost as low rise housing having electric changed to gas heating
  - Charge to owners for connections
  - Government grants - Community Energy Programme Grant (CEP) - from Scottish Government
  - Fuel utility grants - EEC, CERT, CESP, ECO

For public buildings used CEEF or Spend to Save.

Means AH&P has had no borrowing to repay on domestic connections

Delivering Affordable Warmth .



# Aberdeen Heat & Power (AH&P)

## Opex

- In 2014/15 turnover of £2.94 million; operating surplus of £437k; no overdraft but took out £1 million loan from Scot Gov in 2015 to purchase additional generator.
- Sources of income:
  - Sale of electricity 37%
  - Sale of heat to domestic customers 38%
  - Sale of heat to non-domestic customers 25%
- Costs:
  - Fuel - 75% of costs
  - Maintenance - 11% of costs
  - Overheads, inc staff, depreciation & rates - 14% of costs





# Progress thus far...?



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# Aberdeen Heat & Power (AH&P)

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- 2013/14 - Connections to city centre line - public buildings





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- 2014/15 - New energy centre at Tillydrone - 7 blocks, primary school, community centre







# Aberdeen Heat & Power (AH&P)

## What we have achieved so far

- Of the 59 multis, 33 now provided with heating and hot water from CHP district heating schemes, plus 8 have communal gas heating designed to link into a wider heat network without needing any further internal works. None of the occupants of these 41 multis are now in fuel poverty
- 15 public buildings connected to the heat networks
- Development of an overall strategic plan for district heating across the high heat density areas of Aberdeen
- A reputation for delivering projects on time and on budget



Stockethill





Stockethill

Hazlehead



Stockethill

Seaton

Hazlehead



Stockethill

Seaton

Hazlehead



Stockethill

Seaton

City Centre

Hazlehead



= Projects 2012-13



Stockethill

Seaton

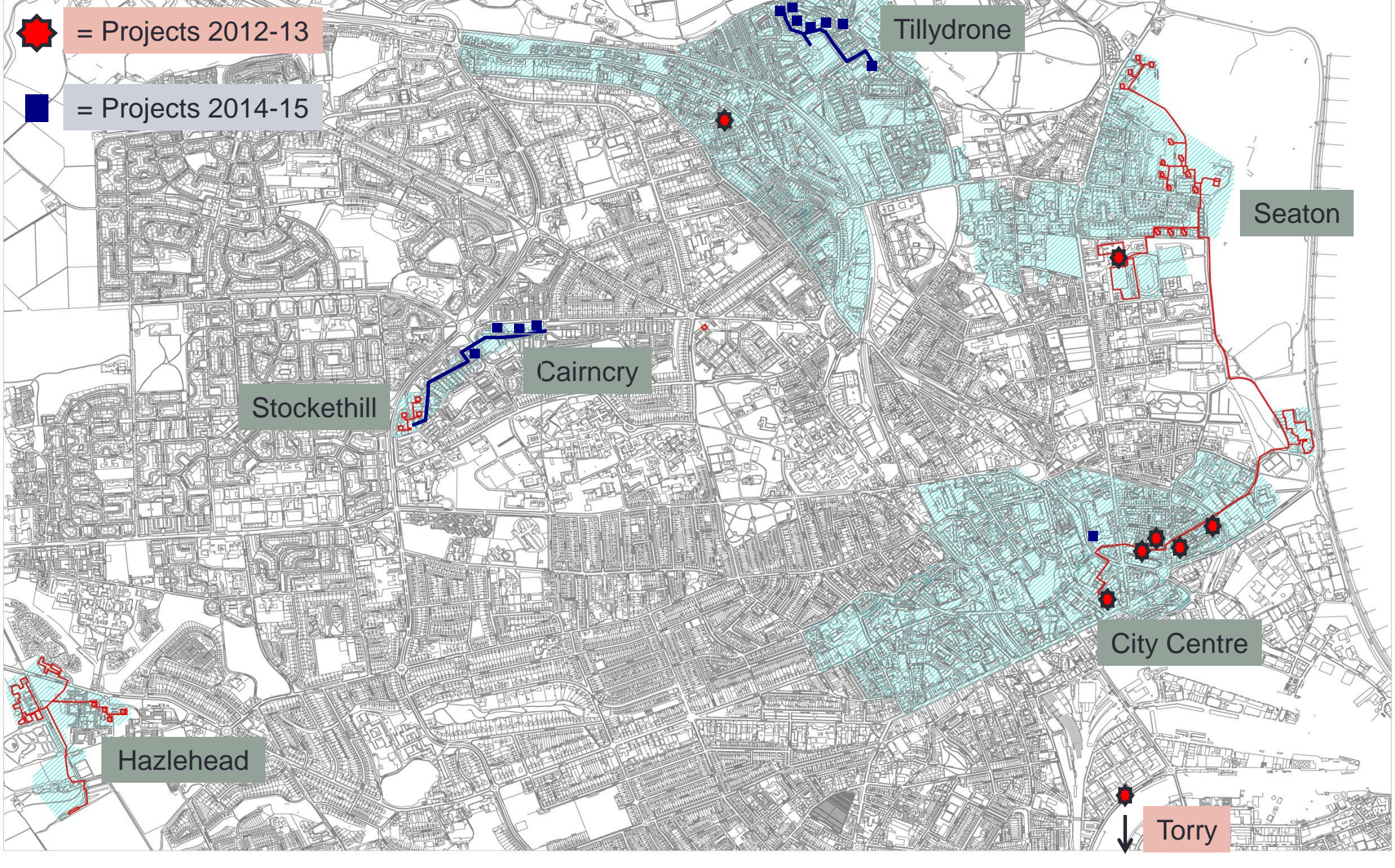
City Centre

Hazlehead

Torry

 = Projects 2012-13

 = Projects 2014-15



Tillydrone

Seaton

Cairncry

Stockethill

City Centre

Hazlehead

Torry



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Tillydrone

Seaton

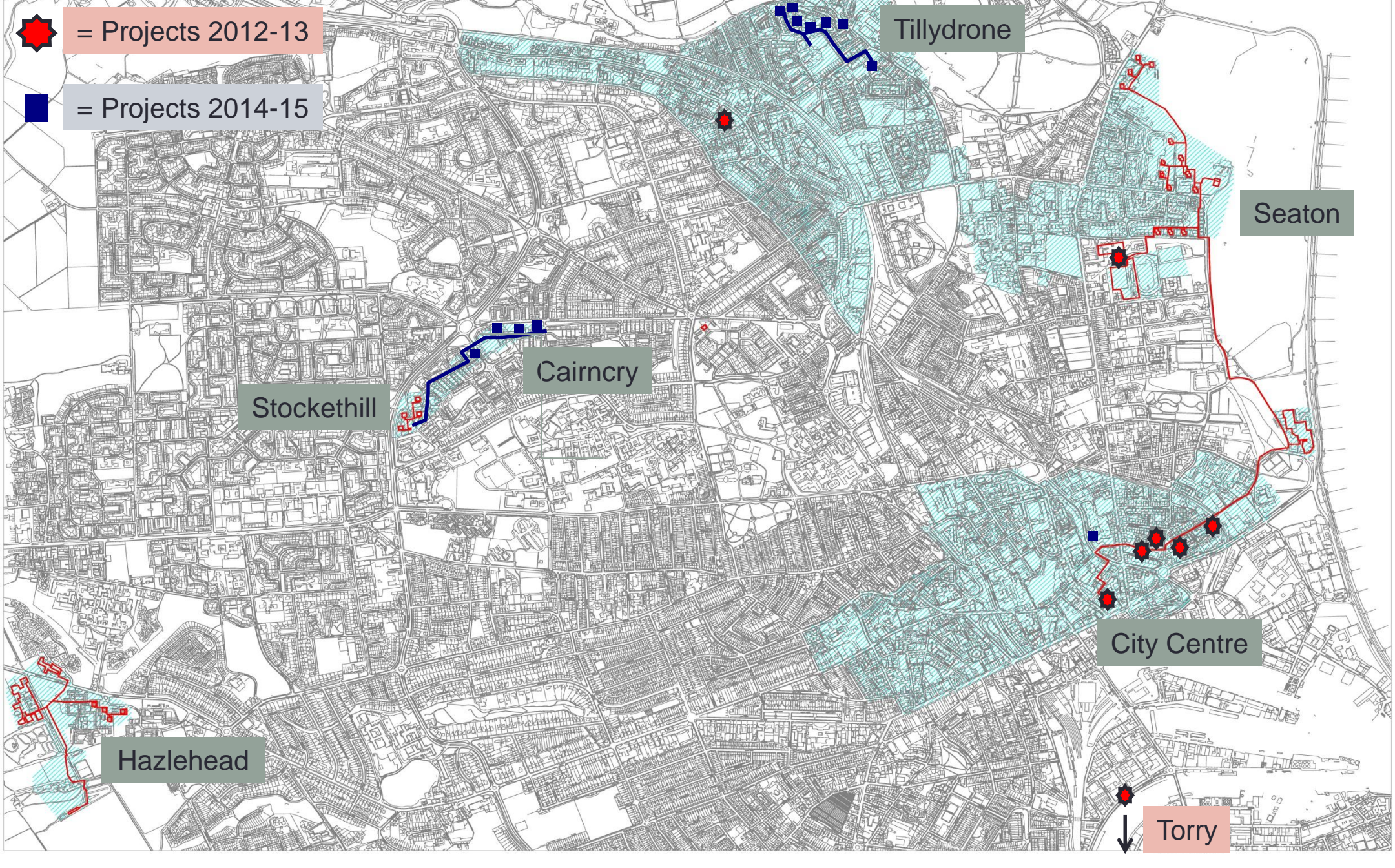
Cairncry

Stockethill

City Centre

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 Torry





# Aberdeen Heat & Power (AH&P)

## Why Separate Company and not in-house?

- Council did not have in-house skills e.g. procurement, finance, engineering
- Independent Company can be just that - independent
- Guaranteed continuity for Council - walk-in rights should Company fail
- Project management, operations, maintenance functions and risks transferred but Council retains influence/direction
- Council get on with running the Council, AH&P get on with running a District Heating business to deliver affordable heat.





# District Energy Aberdeen Ltd (DEAL)

- DEAL established in 2013 as a wholly owned subsidiary of AH&P
- Profits from DEAL returned to AH&P as parent company to:
  1. keep heat prices at affordable levels
  2. contribute to further investment of heat network
- AH&P is the Network Operator - not for profit:
  - Retails heat supply to Council domestic, (including domestic owner / occupiers) and non-domestic premises
  - Private wire electricity supply to Council where applicable
  - Wholesale heat supply to DEAL
- DEAL is a profit making subsidiary and retailer of:
  - Heat supply to non-Council, non domestic customers
  - Private wire supply to non Council customers where applicable





# Aberdeen Heat & Power (AH&P)

## So has the Business Model worked?

### Objectives:

- Tackle fuel poverty and provide affordable heat
- Reduce carbon emissions
- Strategic development of district heating across high heat density areas





# Aberdeen Heat & Power (AH&P)

## So has the Business Model worked?

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- Strategic development of district heating across high heat density areas

### Outcomes:

- Our 2015/16 weekly heat charge for a 2 bedroomed flat is £10.54 and no-one living in fuel poverty. Reduction in costs by 20-50%
- Gas-fired CHP carbon saving of 40% compared to electric heating
- Future proofing of network as we go.
- Future plan - multiple CHP stations around city linked to one city-wide network
- Reviewing renewable technologies to "bolt on" at front end





# Aberdeen Heat & Power (AH&P)

## So has the Business Model worked?

Improved standards of housing

- Multis are much warmer
- Reduced turnover
- Reduced damp
- Improvements in health
- Improvements in social conditions
- Much reduced level of complaints





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### National and International Awards

- Environmental sustainability COSLA award 2008
- Global District Energy Climate excellence award 2013
- VIBES Product and Service award 2015



# Aberdeen Heat & Power (AH&P)

## So has the Business Model worked?

YES!

We are still meeting our original aims

and

we are a financially viable company







# Where next ...?



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Delivering Affordable Warmth .

 = Projects 2012-13

 = Projects 2014-15

Tillydrone

Seaton

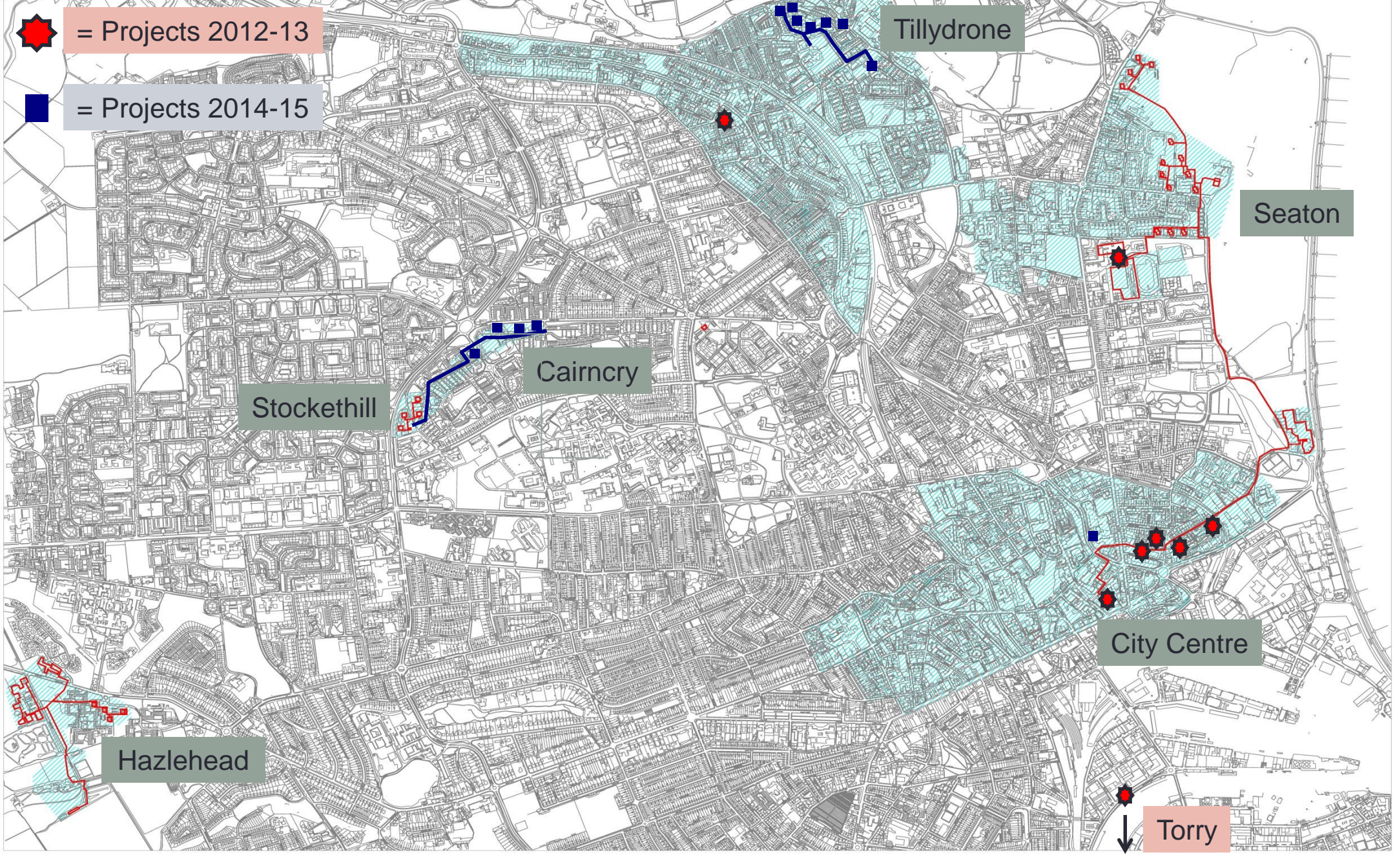
Cairncry

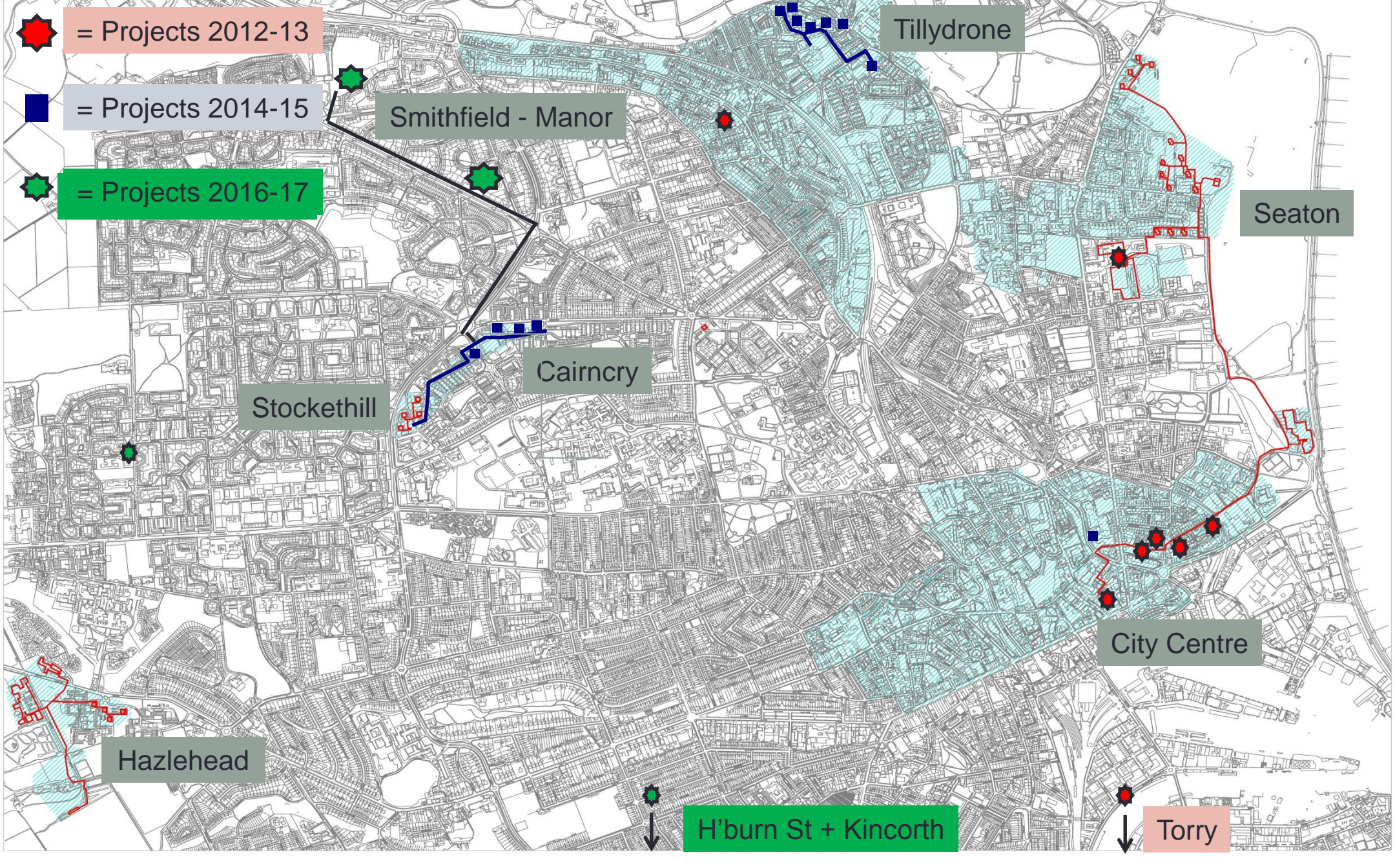
Stockethill

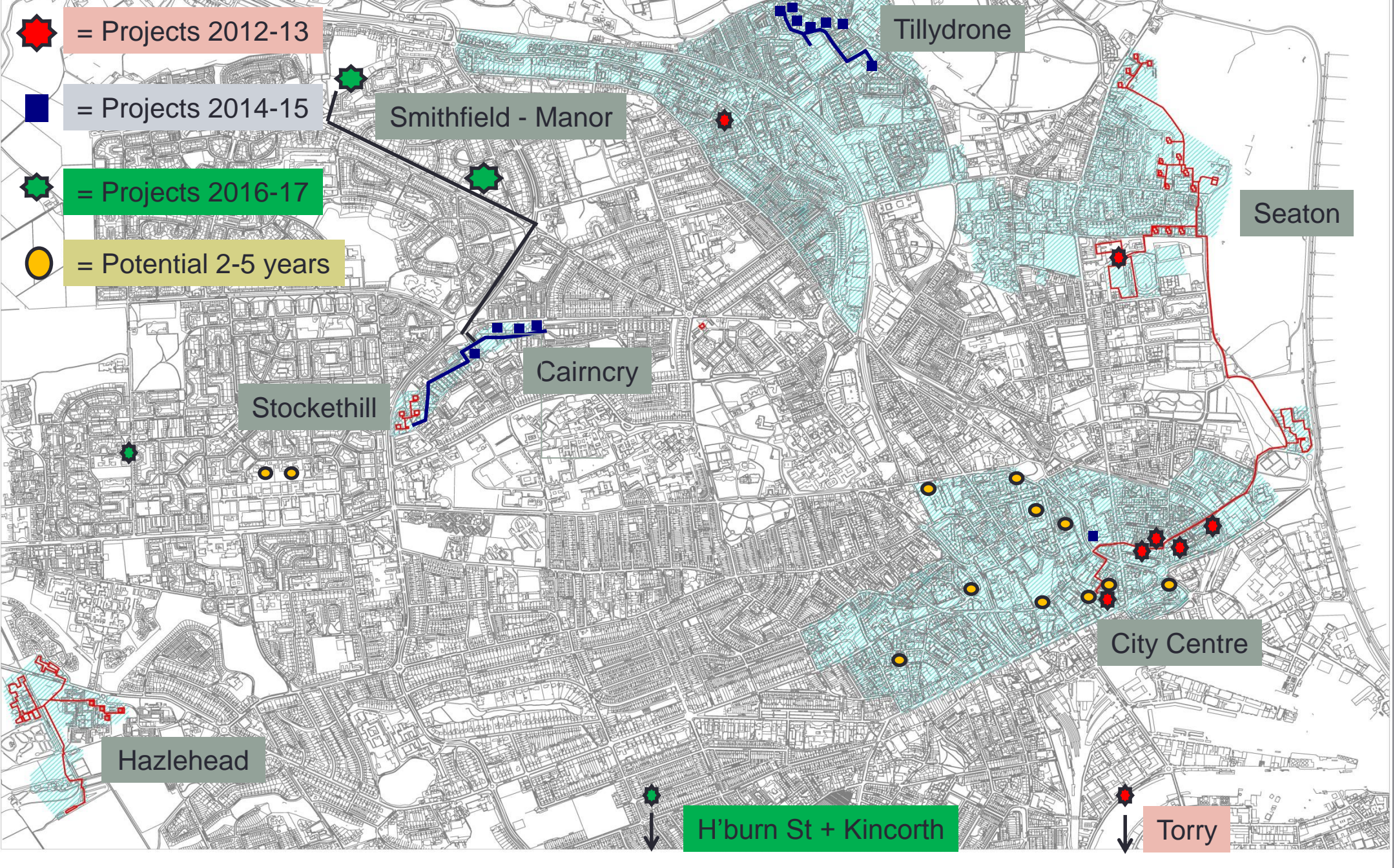
City Centre

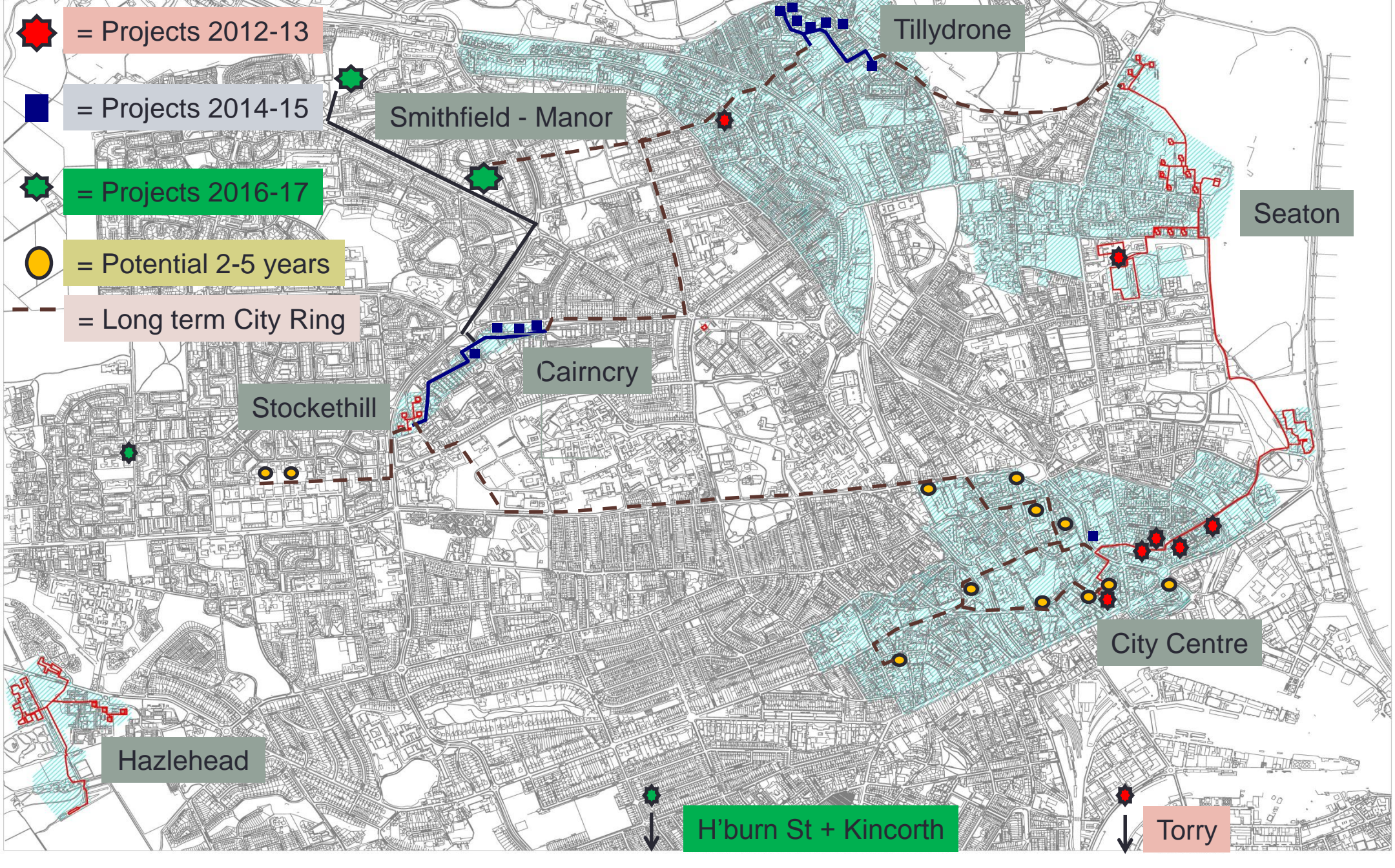
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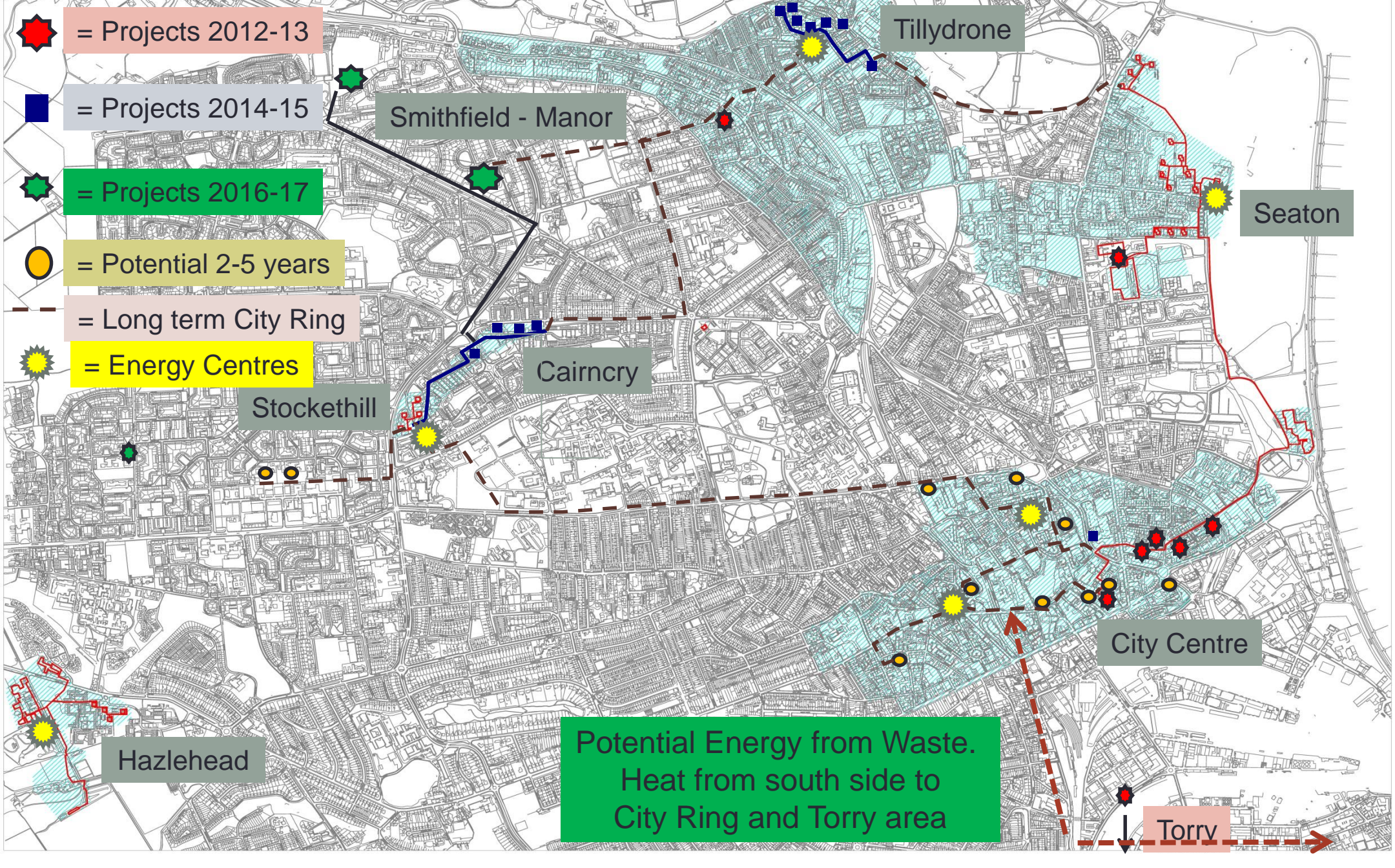
 Torry

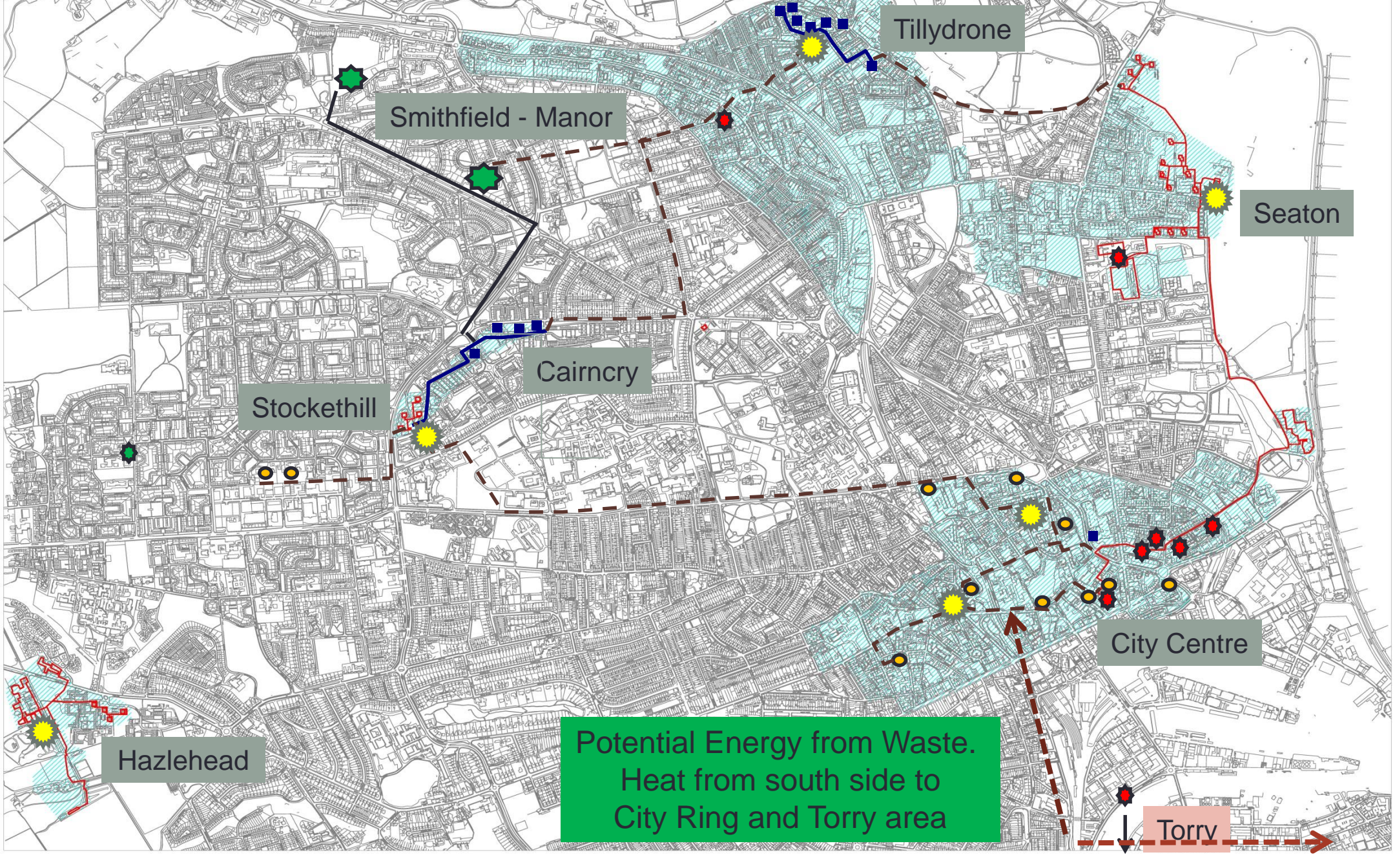












Tillydrone

Smithfield - Manor

Seaton

Cairncry

Stockethill

City Centre

Hazlehead

Potential Energy from Waste.  
Heat from south side to  
City Ring and Torry area

Torrey



# The Future.....

- New subsidiary company District Energy Aberdeen Ltd (DEAL) now set up as a heat retail arm to develop links to non-Council and non-Public Sector connections and identify infrastructure developments.
- Extend the DH network at a pace which is financially and practically viable. Make use of heat mapping and previous development work
- Consider funding for more new projects through the District Heating Loan Fund and other funding opportunities but mindful of the risks
- Build and sustain partnerships and agreements for future connections
- Multiple CHP stations around the City linked into one city-wide heat network
- Consider and review alternative heat source technologies that can be "bolted on the front end" (geothermal, water source heat pumps, absorption heat pumps, hydrogen derived technologies, solar, etc)







## Contact Details .....



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