



Aberdeen Heat & Power (AH&P)



Presentation to International Workshop on Public
Owned Energy Companies (POEC's)
Edinburgh 10th -11th May 2018

*Aberdeen Heat & Power -
"A growing Not-for-Profit Model"*



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





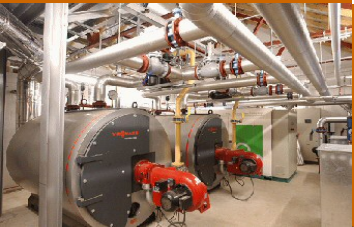
Aberdeen Heat & Power (AH&P) Background

- 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?

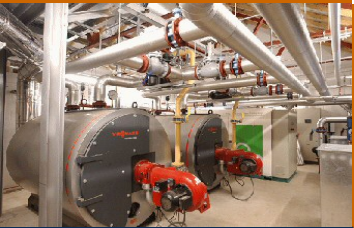


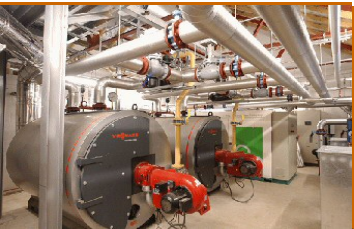
- Whole life costings considered: CHP is higher in capital costs, but considerably lower in running costs - could take occupants out of fuel poverty
- If the Council fully fund the connection of all 59 multis to CHP/DH scheme would take 30 years+ for this to be affordable
- Commercial ESCos could gain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



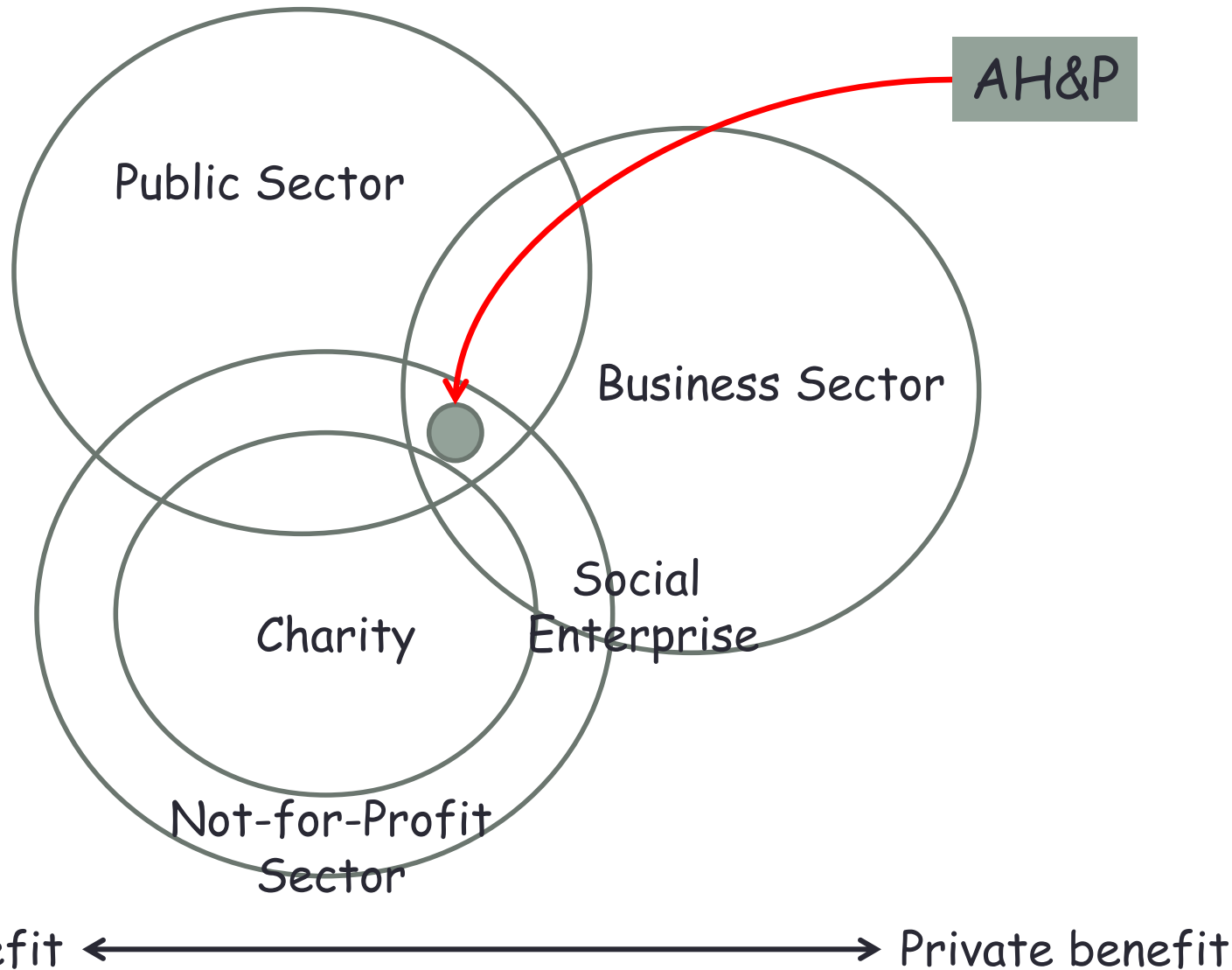
Aberdeen Heat & Power (AH&P) a not-for-profit model

- 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 4 members of staff - Chief Executive Officer, Operations and Maintenance Manager, Project Manager (new) and Office Administrator part-time
- Appoint external specialists - CHP Engineer, Financial services, for procurement of fuel, HR, legal services





Aberdeen Heat & Power (AH&P) Legal Agreements

- 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 the buildings to which heat is to be delivered
- AH&P agree to procure, install, operate and maintain systems to facilitate provision of heat
- Supply period is to 31st March 2052
- AH&P warrants performance and delivery of heat, with plant operated to Good Industrial Practice and Standards
- Teckal Exemption - Council appoints AH&P to develop DH/CHP projects without tendering; AH&P must abide by public procurement procedures





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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

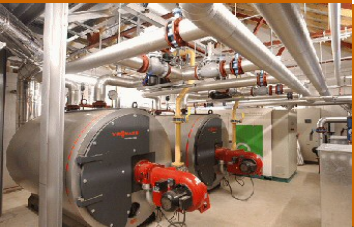
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Aberdeen Heat & Power (AH&P)

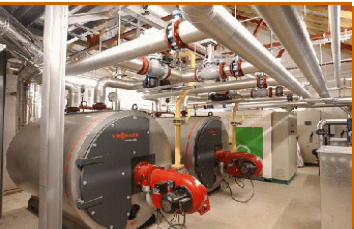
Opex

- In 2017/18 turnover of £3.8 million; operating surplus of approx £420k; 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)

What we have achieved so far

- Of the 59 multis, 33 now provided with heating and hot water from CHP district heating schemes, plus 12 have communal gas heating designed to link into a wider heat network without needing any further internal works. None of the occupants of these 45 multis are now in fuel poverty. Currently working on another three blocks to connect this summer
- 19 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

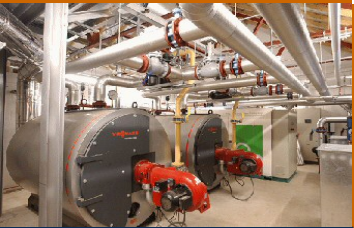




Aberdeen Heat & Power (AH&P)

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)

- AH&P is the Not-for-Profit company and Network Operator:
 - Retail 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 established in 2013 as a wholly owned subsidiary with profits returned to AH&P as the parent. DEAL is a retailer of:
 - Heat supply to non-Council, non domestic customers
 - Private wire supply to non Council customers where applicable





Where next ...?



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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)





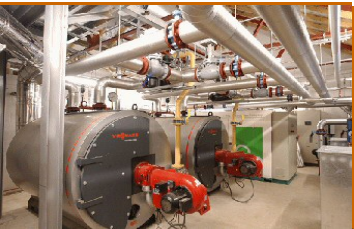
Aberdeen Heat & Power (AH&P) So has the Business Model worked?

YES!

We are still meeting our original aims

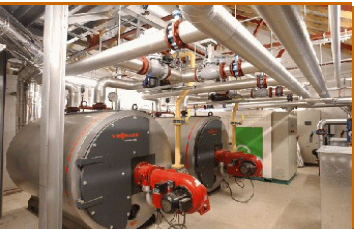
and

we are a financially viable company





Aberdeen Heat & Power (AH&P) Successes and Challenges



Objective:

Tackle fuel poverty and provide affordable heat



Actual:

Our 2015/16 weekly heat charge for a 2 bedroomed flat is £10.54

No-one connected to the CHP schemes is now in fuel poverty

Costs per household reduced by 20-50%





Aberdeen Heat & Power (AH&P) Successes and Challenges

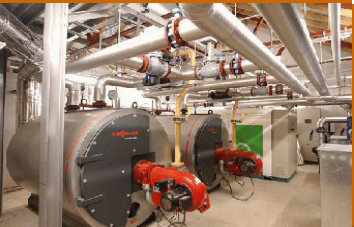
Objective:

Reduce carbon emissions

Actual:

With existing gas fired CHP - carbon saving of 40% compared to electric heating;

Reviewing renewable technologies to "bolt on" the front end (e.g. EfromW, Geothermal, large scale heat pumps, biofuels, hydrogen)





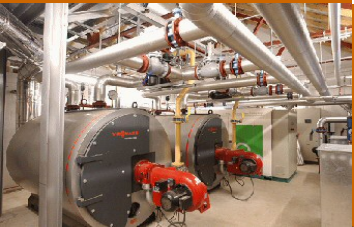
Aberdeen Heat & Power (AH&P) Successes and Challenges

Objective

Strategic approach to development of district heating across high heat density areas of Aberdeen

Actual

Desktop study to identify potential heat demand
Enabled future proofing of the network as we go
Future plan - multiple CHP stations around the City linked into one city-wide heat network





Aberdeen Heat & Power (AH&P) Successes and Challenges

Positive

- Meeting original aims of the Company and Council
- AH&P - regarded as non-political, cross-party support on objectives
- Fully funded projects for domestic connections to date
- Working as a small company with autonomy and independence

Negative

- Challenge going forward to achieve same level of funding
- Working as a small company with autonomy and independence - not enough clout!
- Competing priorities for local and national strategic aims can slow down development - need clear direction

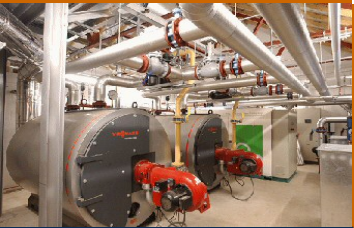




Aberdeen Heat & Power (AH&P) Successes and Challenges

Opportunities and Views

- Do not re-invent the wheel
- Local and / or national municipal energy supply company(s), public owned, not-for-profit, to deliver energy at affordable prices, and provide clear direction
- Build on whatever is out there already (e.g. Our Power and others)
- Expect a kick back from big six suppliers





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