Renewable Heat Incentive (RHI) Effect in Reducing Carbon Emission in Aberdeen City

Gadis Vikha Natari

UNIVERSITY OF ABERDEEN

BACKGROUND

- RHI is a financial scheme to reward those who use renewable energy to heat their properties
- RHI is offered to support the mitigation of carbon emission by increasing the uptake of renewable heat technologies
- In Aberdeen, housing sector accounts for 28% of carbon emission which is mostly caused from space heating
- Carbon emission is dominated from the use of electricity and gas as heating sources
- Aberdeen has a target in reducing carbon emission by 31% and 50% by 2020 and 2030.
- The use of renewable heat technologies is one of the program promoted by ACC

OBJECTIVES

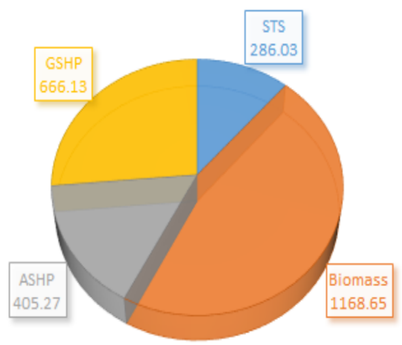
- How effective has the RHI scheme been in supporting carbon reduction from domestic sector in Aberdeen?
- What technology would be profitable for different sizes of housing in Aberdeen?

METHODOLOGY

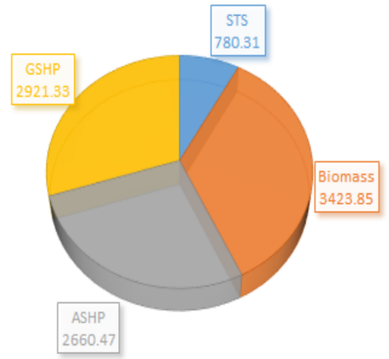
- Cost Benefit Analysis (CBA)
- Sensitivity Analysis

FINDINGS

Reduction of Carbon Emission ($kgCO_2$) using Renewable Heat Technologies



REPLACING GAS HEATING

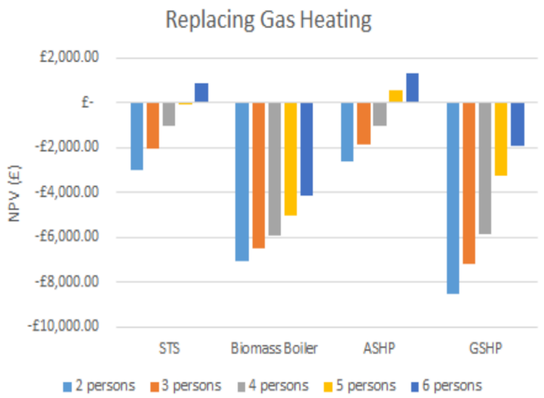


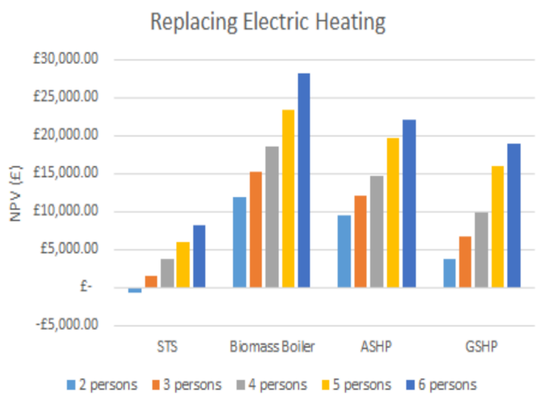
REPLACING ELECTRIC HEATING

Conventional Heating

Heating Methods	Gas	Electric
Annual Bill (£)	£ 739.06	£ 2,531.76
Annual Carbon Emission (kg)	1564	3819.2

NPV (£) of Renewable Heat Technologies for Different Sizes of House





CONCLUSION

- Renewable heat technologies have a significant potential in Aberdeen
- For replacing gas heating, installation of renewable heat is not advisable.
- For replacing electric heating, installation of renewable heat is profitable
- For different sizes of house, ASHP and biomass are the most profitable for replacing gas and electric heating
- RHI scheme is able to generate 20% - 40% of the total benefits
- Renewable heat technologies could reduce between 9Ktonnes to 30Ktonees carbon emission per year

Gadis Vikha Natari gadis.v.natari.16@aberdeen.ac.uk +44 (0) 7729-203622 www.abdn.ac.uk
University of Aberdeen, King's College, Aberdeen, AB24 3FX