

# **Resident Opinion on the Prospective Use of Waste Process Heat for District Heating in Neath Port Talbot, South Wales**

## **Results Summary**

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## Project background

This study is part of a wider research project undertaken by the University of Manchester, entitled 'Thermal Management of Industrial Processes' (EPSRC grant EP/GO60045/1). This in turn is part of the Process Industry Thermal Energy Management Network (PROTEM), an EPSRC interdisciplinary research network comprising academic organisations, government bodies, non-governmental organisations (NGOs) and industrial organisations. An MSc thesis with full results, by Fiona Chisholm, plus a report on focus group perceptions of district heating, undertaken in Newcastle, will be available at: <http://www.tyndall.ac.uk/research/energy/thermal-management>

## Synopsis

District heating can recycle waste heat generated from industrial production processes and use this to provide buildings with space and water heating. By recycling waste heat, district heating can reduce greenhouse gas (GHG) emissions from the heating sector and lower the cost of energy bills for consumers. In Neath Port Talbot in South Wales, Corus and the local authority are investigating the possibility of implementing a district heating scheme in the local area, which would use waste process heat from Corus, to meet local residential and commercial heat demand. To inform this process, this study investigated residents' opinions of the proposal to implement a district heating scheme in the local area. Postal questionnaires were distributed to 3,000 Neath Port Talbot residences and 312 responses were received. This is a modest response rate and the findings are not those of a representative poll. Nonetheless, they show that the majority of respondents have a positive view of the prospect of district heating, both in principle and once they have learned more about it. It is also clear, however, that there is also substantial uncertainty and that most want more information on what exactly would be involved. Most respondents view the prospect of long term lock-in to heating contracts unfavourably, but they are willing to accept inconveniences such as street disruption and heat exchanger installation. While substantially more respondents see district heating positively than negatively in terms of house purchase decision-making, a large percentage are uncertain. Cost, supplier reputation and reliability, contract flexibility and the environmental performance of heating systems are all cited as important by most respondents. The prospect of using waste industrial waste heat elicited a clearer favourable majority than the hypothetical use of waste heat from coal, gas, biomass and, in particular, nuclear power.

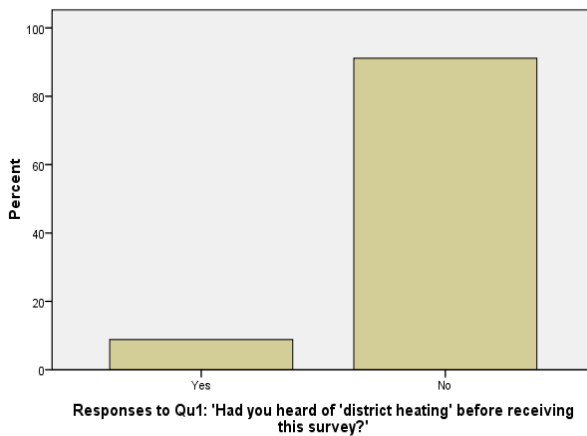
# Results summary

## Demographics

Of the 312 participants, 151 were male (49.7%) and 153 were female (50.3%), giving a near-even gender split. The percentage of participants in each age group was as follows: 15-24 (1.5%); 25-34 (6.8%); 35-44 (13.2%); 45-54 (17.7%); 55-64 (27.8%); 65-74 (22.9%); and 75+ (10.2%).

### Qu1: 'Had you heard of 'district heating' before receiving this survey?'

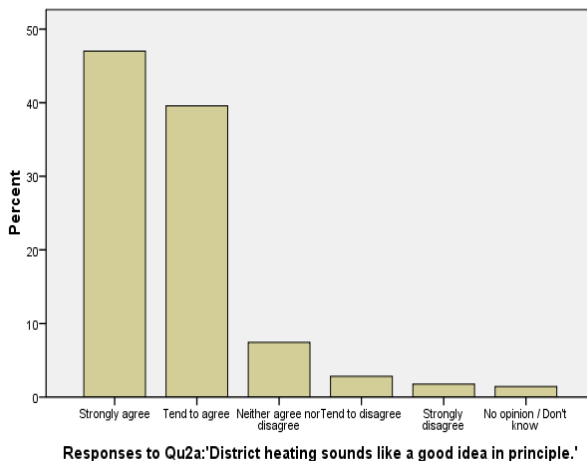
Responses to Qu1: 'Had you heard of 'district heating' before receiving this survey?'



8.9% of participants had previously heard of district heating before receiving the survey and 91.1% of participants had not heard of it.

### Qu2a: 'District heating sounds like a good idea in principle.'

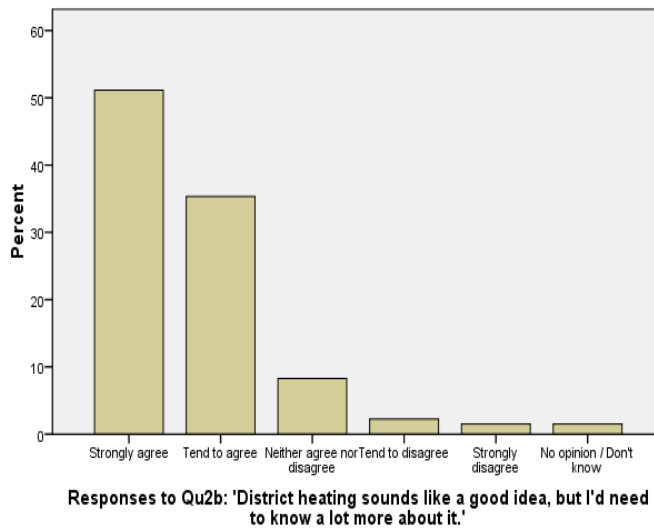
Responses to Qu2a: 'District heating sounds like a good idea in principle.'



47% of participants strongly agreed and 39.6% of participants tended to agree with the statement 'District heating sounds like a good idea in principle.' 7.4% of participants neither agreed nor disagreed. 2.8% of participants tended to disagree and 1.8% of participants strongly disagreed. 1.4% of participants responded with 'No opinion/Don't know.'

**Qu2b: 'District heating sounds like a good idea but I'd need to know a lot more about it.'**

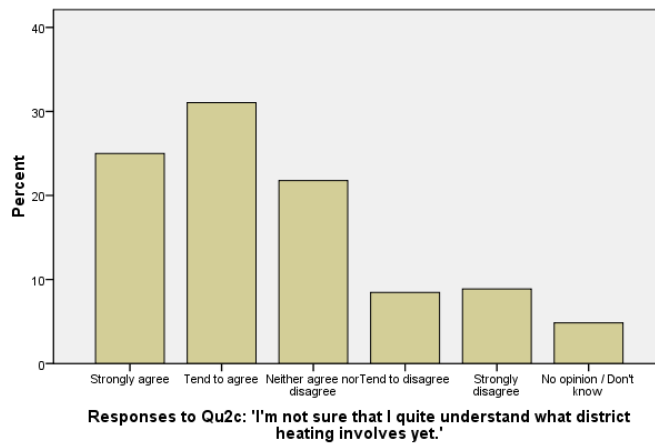
Responses to Qu2b: 'District heating sounds like a good idea, but I'd need to know a lot more about it.'



51.1% of participants strongly agreed and 35.3% of participants tended to agree with the statement 'District heating sounds like a good idea, but I'd need to know a lot more about it.' 8.3% of participants neither agreed nor disagreed. 2.3% of participants tended to disagree and 1.5% of participants strongly disagreed. 1.5% of participants responded with 'No opinion/Don't know.'

### Qu 2c: 'I'm not sure that I quite understand what district heating involves yet.'

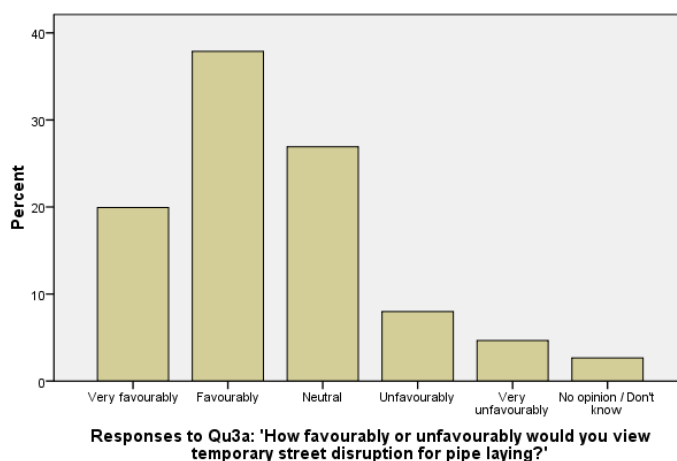
Responses to Qu2c: 'I'm not sure that I quite understand what district heating involves yet.'



25% of participants strongly agreed and 31% of participants tended to agree with the statement 'I'm not sure that I quite understand what district heating involves yet.' 21.8% of participants neither agreed nor disagreed. 8.5% tended to disagree and 8.9% strongly disagreed. 4.8% of participants responded with 'No opinion/Don't know.'

### Qu 3a: 'How favourably or unfavourably would you view temporary street disruption for pipe laying?'

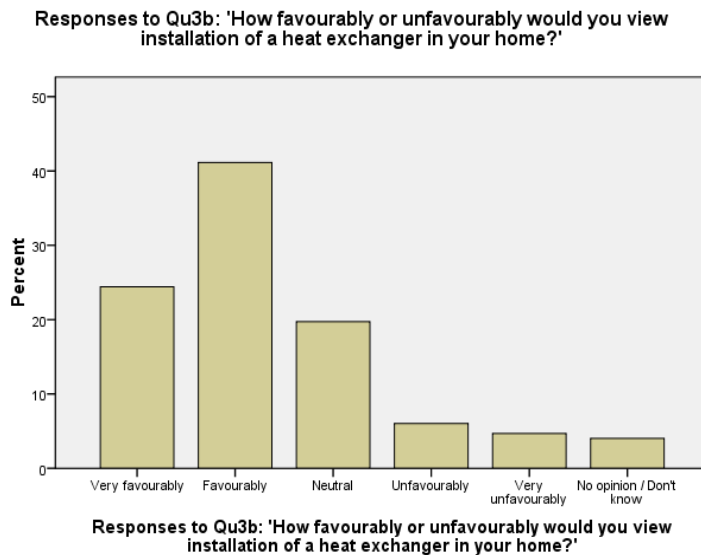
Responses to Qu3a: 'How favourably or unfavourably would you view temporary street disruption for pipe laying?'



Temporary street disruption for pipe laying was viewed very favourably by 19.9% of participants and favourably by 37.9% of participants. 26.9% of participants viewed it neutrally. 8% of participants viewed it unfavourably and

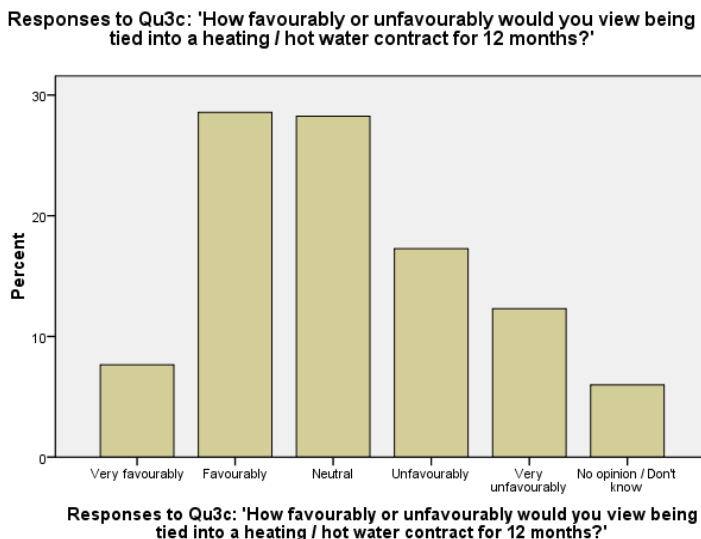
4.7% of participants viewed it very unfavourably. 2.7% of participants responded with 'No opinion/Don't know.'

**Qu 3b: 'How favourably or unfavourably would you view installation of a heat exchanger in your home?'**



Installation of a heat exchanger in the home was viewed very favourably by 24.4% of participants and favourably by 41.1% of participants. It was viewed neutrally by 19.7% of participants, unfavourably by 6% of participants and very unfavourably by 4.7% of participants. 4% of participants responded with 'No opinion/Don't know.'

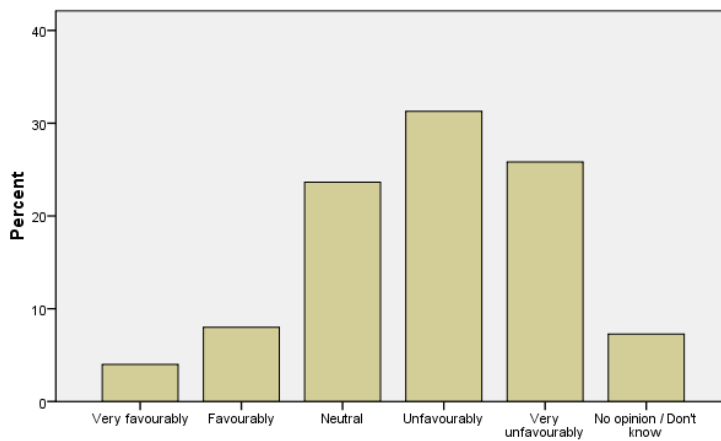
**Qu 3c: 'How favourably or unfavourably would you view being tied into a heating/hot water contract for 12 months?'**



Being tied into a heating/hot water contract for 12 months was viewed very favourably by 7.6% of participants and favourably by 28.6% of participants. It was viewed neutrally by 28.2% of participants, unfavourably by 17.3% of participants and very unfavourably by 12.3% of participants. 6% of participants responded with 'No opinion/Don't know.'

**Qu 3d: 'How favourably or unfavourably would you view being tied into a heating/hot water contract for 24 months?'**

Responses to Qu3d: 'How favourably or unfavourably would you view being tied into a heating / hot water contract for 24 months?'

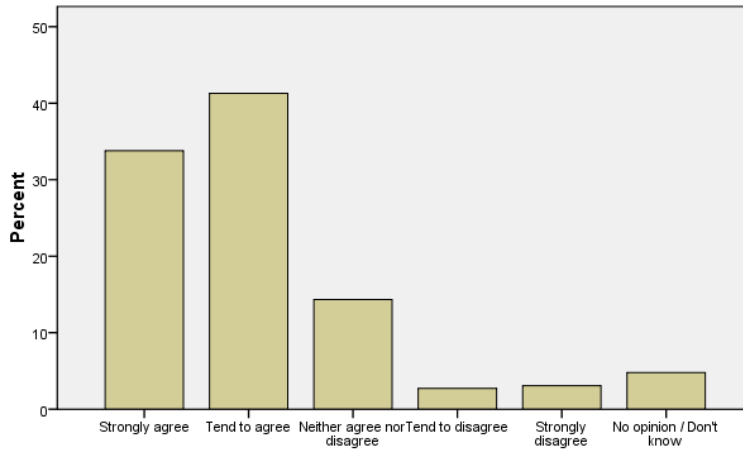


Responses to Qu3d: 'How favourably or unfavourably would you view being tied into a heating / hot water contract for 24 months?'

Being tied into a heating/hot water contract was viewed very favourably by 4% of participants and favourably by 8% of participants. It was viewed neutrally by 23.6% of participants, unfavourably by 31.3% of participants and very unfavourably by 25.8% of participants. 7.3% of participants responded with 'No opinion/Don't know.'

**Qu 4a: 'I'd be willing to accept district heating in return for a 10-20% cut in my heating bill?'**

**Responses to Qu4a: 'I'd be willing to accept district heating in return for a 10-20% cut in my heating bill.'**

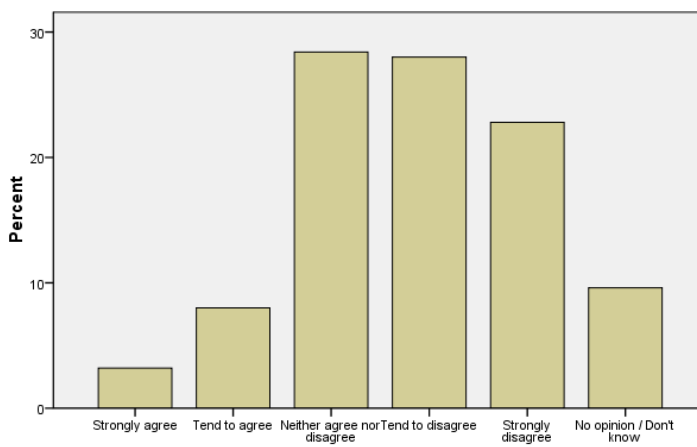


**Responses to Qu4a: 'I'd be willing to accept district heating in return for a 10-20% cut in my heating bill.'**

33.8% of participants strongly agreed and 41.3% of participants tended to agree with the statement 'I'd be willing to accept district heating in return for a 10-20% cut in my heating bill.' 14.3% of participants neither agreed nor disagreed. 2.7% of participants tended to disagree and 3.1% of participants strongly disagreed. 4.8% of participants responded with 'No opinion/Don't know.'

**Qu 4b: 'I would not be willing to accept district heating.'**

**Responses to Qu4b: 'I would not be willing to accept district heating.'**

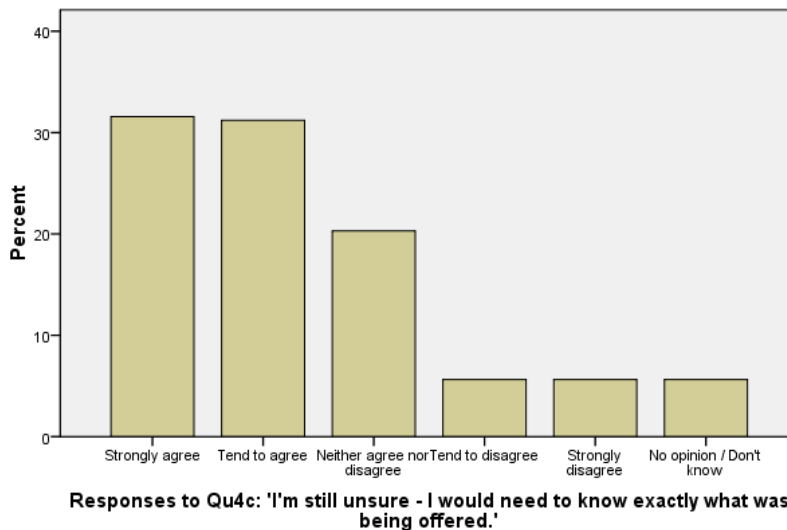


**Responses to Qu4b: 'I would not be willing to accept district heating.'**

3.2% of participants strongly agreed and 8% of participants tended to agree with the statement 'I would not be willing to accept district heating.' 28.4% of participants neither agreed nor disagreed, 28% of participants tended to disagree and 22.8% of participants strongly disagreed. 9.6% of participants responded with 'No opinion/Don't know.'

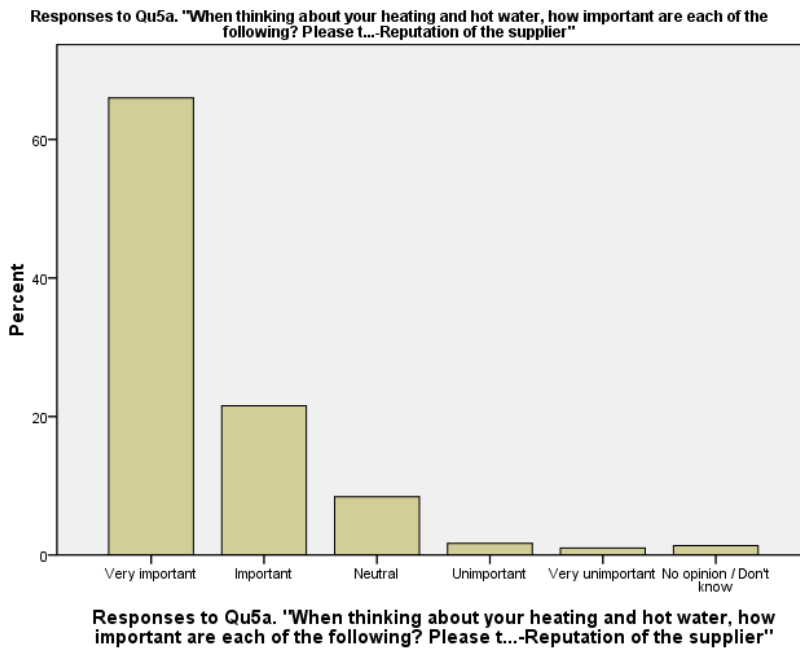
**Qu 4c: 'I'm still unsure – I would need to know exactly what was being offered.'**

**Responses to Qu4c: 'I'm still unsure - I would need to know exactly what was being offered.'**



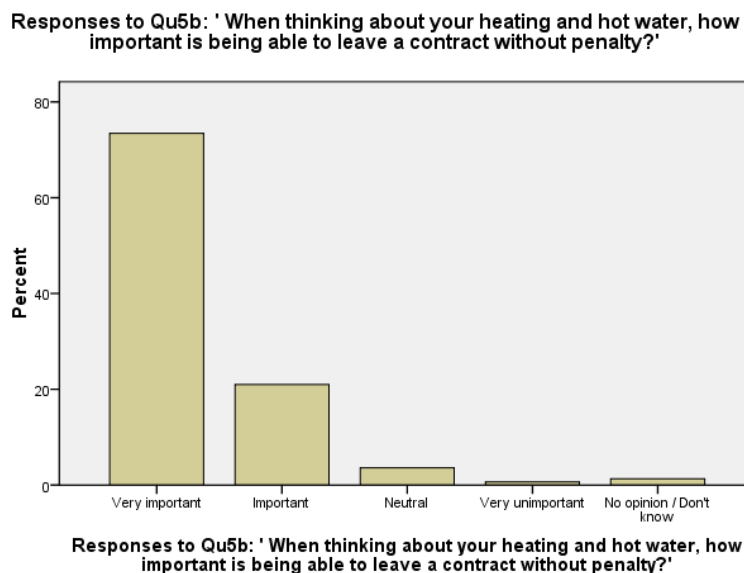
31.6% of participants strongly agreed and 31.2% of participants tended to agree with the statement 'I'm still unsure – I would need to know exactly what was being offered.' 20.3% of participants neither agreed nor disagreed, 5.6% of participants tended to disagree and 5.6% of participants strongly disagreed. 5.6% of participants responded with 'No opinion/Don't know.'

**Qu 5a: ‘When thinking about your heating and hot water, how important is the reputation of the supplier?’**



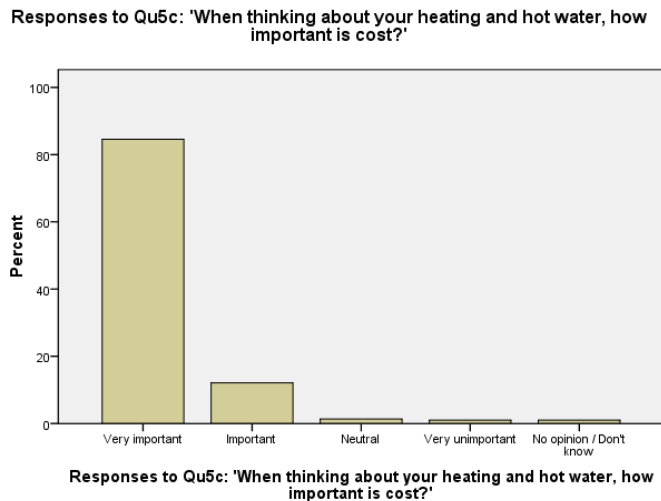
Supplier reputation was rated as very important by 66% of participants and as important by 21.5% of participants. It was rated neutrally by 8.4% of participants. 1.7% of participants considered it to be unimportant and 1% of participants considered it to be very unimportant. 1.3% of participants responded with ‘No opinion/Don’t know.’

**Qu 5b: ‘When thinking about your heating and hot water, how important is being able to leave a contract without penalty?’**



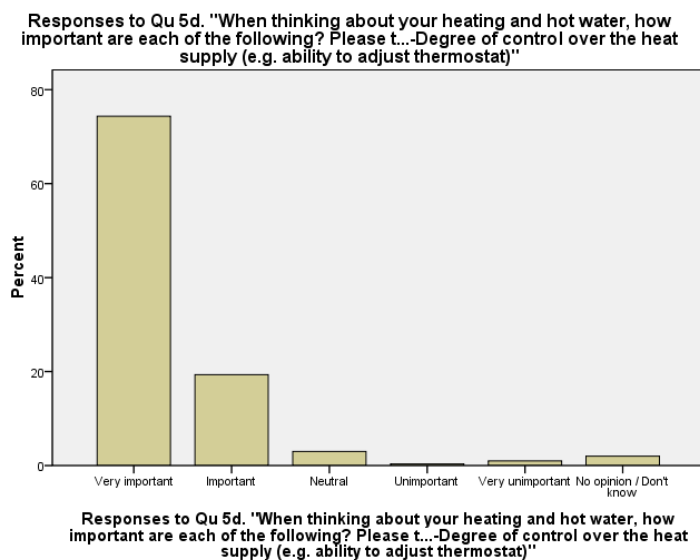
Being able to leave a contract without penalty was considered to be very important by 73.4% of participants and important by 21% of participants. 3.6% of participants considered it neutrally and 0.7% of participants considered it to be very unimportant. 1.3% of participants responded with 'No opinion/Don't know.'

**Qu 5c: 'When thinking about heating and hot water, how important is cost?'**



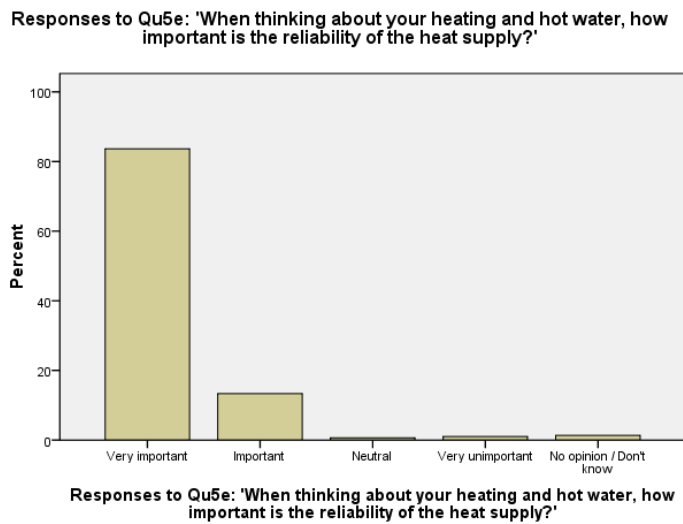
Cost was considered to be very important by 84.6% of participants and important by 12.1% of participants. 1.3% of participants considered it neutrally and 1% of participants considered it to be very unimportant. 1% of participants responded with 'No opinion/Don't know.'

**Qu 5d: 'When thinking about heating and hot water, how important is the degree of control over the heat supply?'**



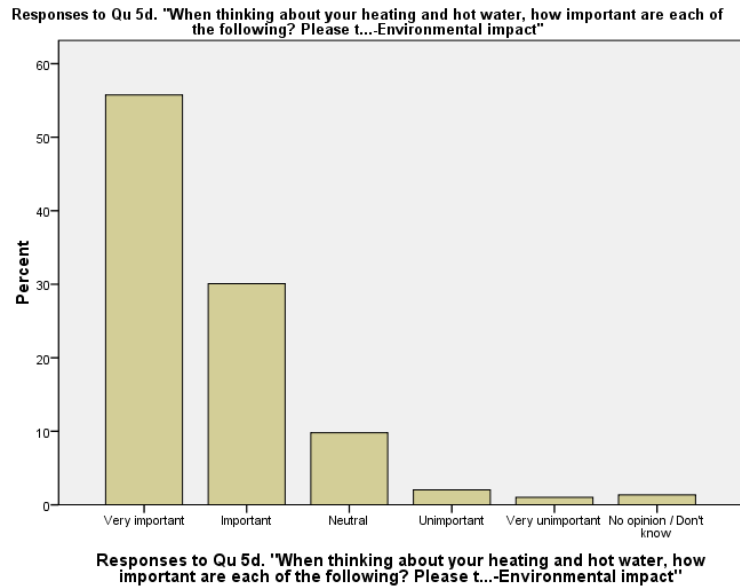
The degree of control over the heat supply was rated as very important by 74.3% of participants and as important by 19.3% of participants. 3% of participants considered it neutrally, 0.3% of participants considered it to be unimportant and 1% of participants considered it to be very unimportant. 2% of participants responded with 'No opinion/Don't know.'

**Qu 5e: 'When thinking about your heating and hot water, how important is the reliability of the heat supply?'**



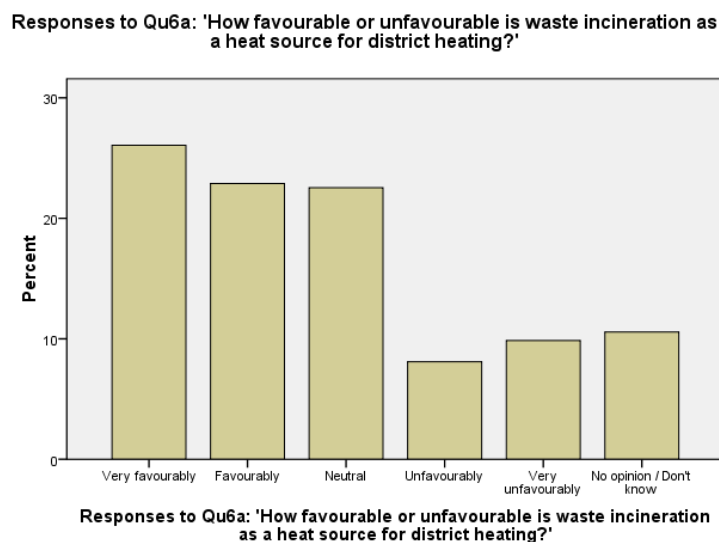
Reliability of the heat supply was rated as very important by 83.7% of participants and as important by 13.3% of participants. It was considered neutrally by 0.7% of participants and as very unimportant by 1% of participants. 1.3% of participants responded with 'No opinion/Don't know.'

**Qu 5f: ‘When thinking about heating and hot water, how important is the environmental impact?’**



Environmental impact was considered to be very important by 55.7% of participants and important by 30.1% of participants. It was considered neutrally by 9.8% of participants, unimportant by 2% of participants and very unimportant by 1% of participants. 1.4% of participants responded with ‘No opinion/Don’t know.’

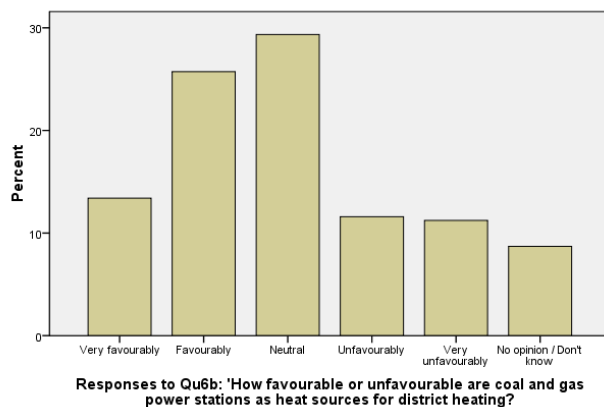
**Qu 6a: ‘How favourable or unfavourable is waste incineration as a heat source for district heating?’**



Waste incineration as a heat source was considered very favourably by 26.1% of participants and favourably by 22.9% of participants. It was considered neutrally by 22.5% of participants, unfavourably by 8.1% of participants and very unfavourably by 9.9% of participants. 10.6% of participants responded with 'No opinion/Don't know.'

**Qu 6b: 'How favourable or unfavourable are coal and gas power stations as heat sources for district heating?'**

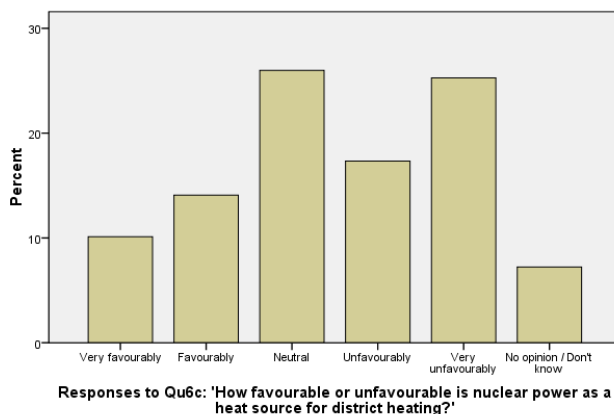
Responses to Qu6b: 'How favourable or unfavourable are coal and gas power stations as heat sources for district heating?'



Coal and gas power stations as heat sources were considered very favourably by 13.4% of participants and favourably by 25.7% of participants. 29.3% of participants considered coal and gas neutrally, 11.6% of participants considered them unfavourably and 11.2% of participants considered them very unfavourably. 8.7% of participants responded with 'No opinion/Don't know.'

**Qu 6c: 'How favourably or unfavourable or unfavourable is nuclear power as a heat source for district heating?'**

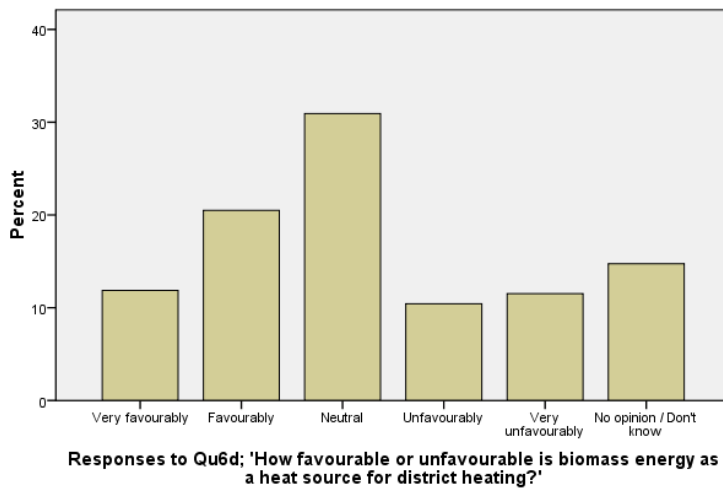
Responses to Qu6c: 'How favourable or unfavourable is nuclear power as a heat source for district heating?'



Nuclear power as a heat source was considered very favourably by 10.1% of participants and favourably by 14.1% of participants. It was considered neutrally by 26% of participants, unfavourably by 17.3% of participants and very unfavourably by 25.3% of participants. 7.2% of participants responded with 'No opinion/Don't know.'

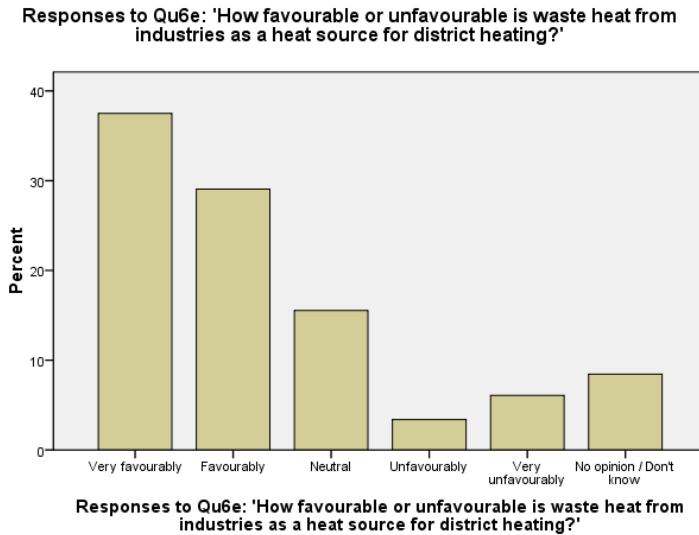
**Qu 6d: 'How favourable or unfavourable is biomass energy as a heat source for district heating?'**

Responses to Qu6d; 'How favourable or unfavourable is biomass energy as a heat source for district heating?'



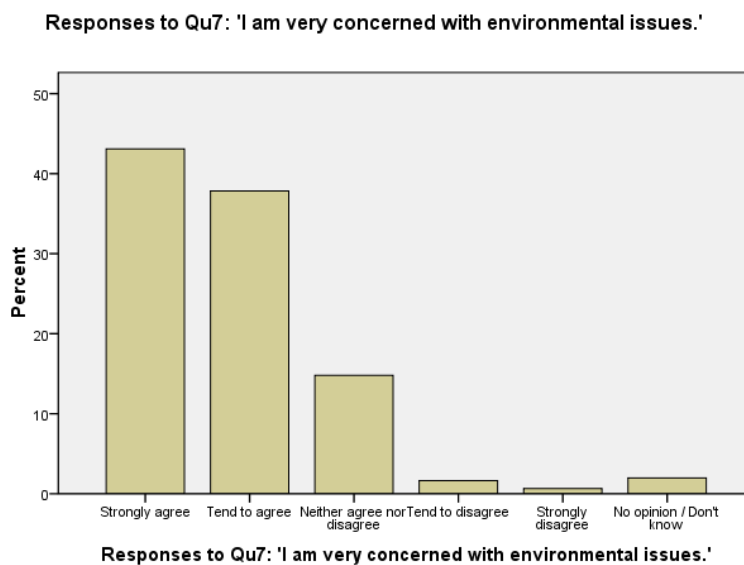
Biomass energy as a heat source was considered very favourably by 11.9% of participants and favourably by 20.5% of participants. It was considered neutrally by 30.9% of participants, unfavourably by 10.4% of participants and very unfavourably by 11.5% of participants. 14.7% of participants responded with 'No opinion/Don't know.'

**Qu 6e: 'How favourable or unfavourable is waste heat from industries as a heat source for district heating?'**



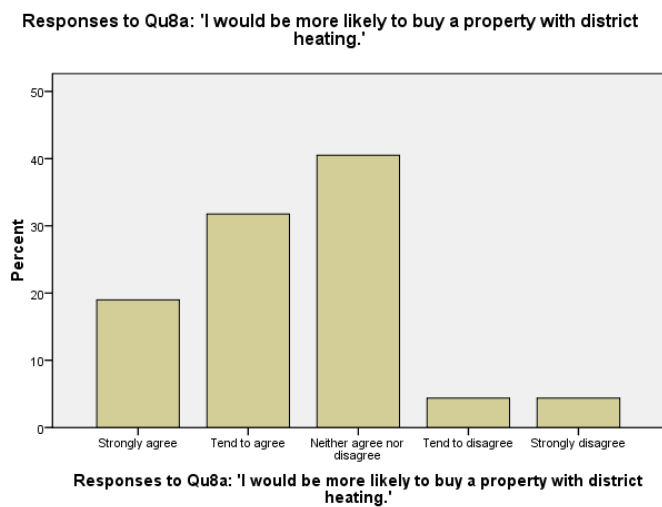
Waste heat from industries was considered very favourably by 37.5% of participants and favourably by 29.1% of participants. It was considered neutrally by 15.5% of participants, unfavourably by 3.4% of participants and very unfavourably by 6.1% of participants. 8.4% of participants responded with 'No opinion/Don't know.'

**Qu 7: 'I am very concerned with environmental issues.'**



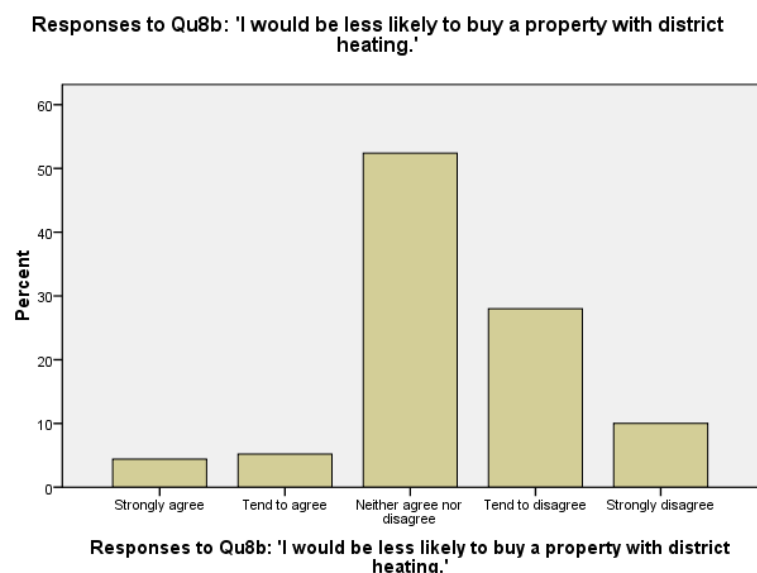
43.1% of participants strongly agreed and 37.8% of participants tended to agree with the statement 'I am very concerned with environmental issues.' 14.8% of participants neither agreed nor disagreed, 1.6% of participants tended to disagree and 0.7% of participants strongly disagreed. 2% of participants responded with 'No opinion/Don't know.'

**Qu 8a: 'I would be more likely to buy a property with district heating.'**



19% of participants strongly agreed and 31.8% of participants tended to agree with the statement 'I would be more likely to buy a property with district heating.' 40.5% of participants neither agreed nor disagreed, 4.4% tended to disagree and 4.4% strongly disagreed.

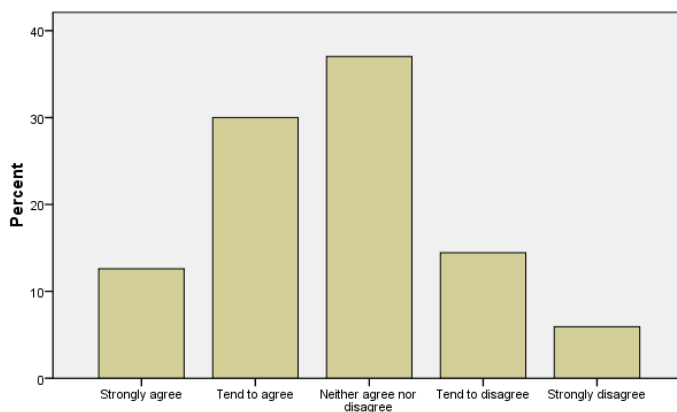
**Qu 8b: 'I would be less likely to buy a property with district heating.'**



4.4% of participants strongly agreed and 5.2% of participants tended to agree with the statement 'I would be less likely to buy a property with district heating.' 52.4% of participants neither agreed nor disagreed, 28% of participants tended to disagree and 10% of participants strongly disagreed.

**Qu 8c: 'District heating would have no impact on my decision to buy a property.'**

Responses to Qu8c: 'District heating would have no impact on my decision to buy a property.'

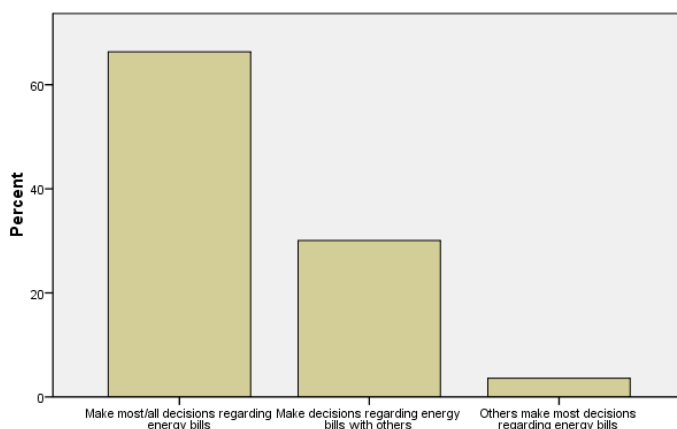


Responses to Qu8c: 'District heating would have no impact on my decision to buy a property.'

12.6% of participants strongly agreed and 30% of participants tended to agree with the statement 'District heating would have no impact on my decision to buy a property.' 37% of participants neither agreed nor disagreed, 14.4% of participants tended to disagree and 5.9% of participants strongly disagreed.

**Qu 9: 'Which of the following statements best describes you?'**

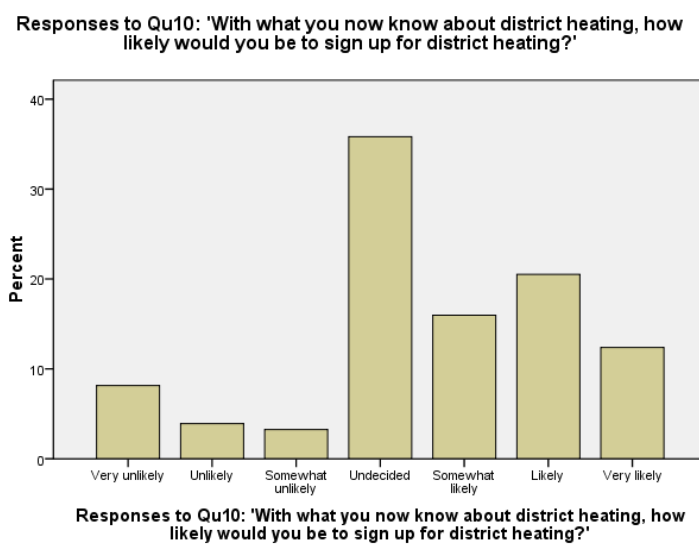
Responses to Qu9: 'Which of the following best describes you?'



Responses to Qu9: 'Which of the following best describes you?'

66.3% of participants claimed to make most or all of the decisions in their household or business regarding energy bills. 30.1% of participants claimed to make decisions regarding energy bills with other members of their household or business. 3.6% of participants claimed that other members of their household or business make most of the decisions regarding energy bills.

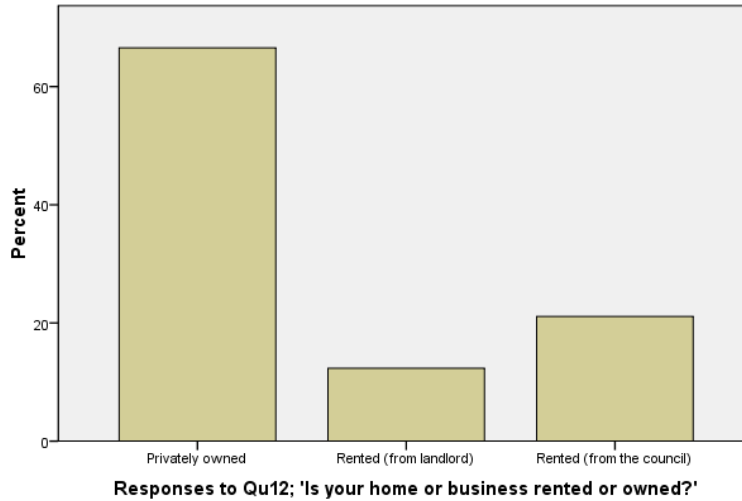
**Qu 10: 'With what you now know about district heating, how likely would you be to sign up for district heating?'**



8.1% of participants would be very unlikely, 3.9% of participants would be unlikely and 3.3% of participants would be somewhat unlikely to sign up for district heating. 16% of participants would be somewhat likely, 20.5% of participants would be likely and 12.4% of participants would be very likely to sign up for district heating. 35.8% of participants were undecided.

### Qu 12: 'Is your home or business rented or owned?'

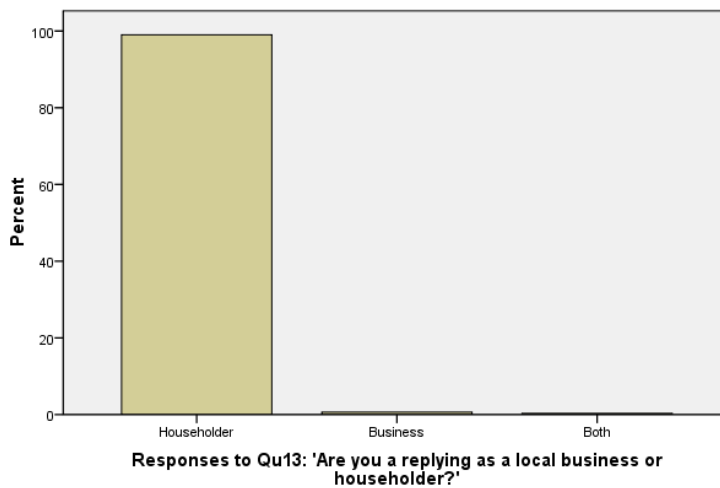
Responses to Qu12; 'Is your home or business rented or owned?'



66.6% of participants owned their home (or business). 12.3% of participants rented their home or business from a landlord and 21.1% of participants rented their home or business from the council.

### Qu 13: 'Are you replying as a local business or householder?'

Responses to Qu13: 'Are you a replying as a local business or householder?'



99% of participants replied as householders, 0.7% of participants replied as businesses and 0.3% of participants replied as both.