



WINNING HEARTS AND MINDS

**Scenario-driven stakeholder analysis
on how to make District Heating
successful in the UK**

**COMMUNICATION
WORKS**



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EXECUTIVE SUMMARY

Is it “a hot idea whose time has come”¹, or does it leave “energy customers locked into a costly scheme” with “no right to switch”²? – These “Guardian” headlines describe a new challenge facing District Heating in the UK.

The UK government wants to promote District Heating as a means to reach the country’s climate targets. An ambitious growth plan has been announced. Although district heating currently provides a number of benefits for UK consumers, there have been some complaints in news stories about perceived high costs, intransparent pricing and poor customer service. Earlier reports³ confirmed that while many schemes are designed well, some schemes were poorly designed, posing additional obstacles for the acceptance of new District Heating networks.

The Association for Decentralised Energy in the UK (ADE) wanted to better understand how consumers understood the benefits of district heating and where they had reservations, and engaged with Communication Works to find ways to mitigate the perceived lack of choice and influence.

Basis for the research which is presented in this report was a combination of scenario work and online surveys developed by Communication Works together with the Stockholm School of Economics. This method, which is an essential component of a more comprehensive “Community Scouting” approach, served to identify themes and actions which would make District Heating more popular in the UK.

Worth the effort: The British Government sees heat networks as “one of the most cost-effective ways of reducing carbon emissions” and believes they can increase the energy efficiency of British homes and fight fuel poverty. The number of households connected to a District Heating scheme shall be increased from approximately 220,000 today to 8 million (of 27 million households in UK) by 2030. The UK Government wants to invest 320 million Pound for this expansion.⁴

1 “A hot idea whose time has come” (Guardian, 18 November 2014) <https://www.theguardian.com/cities/2014/nov/18/district-heating-a-hot-idea-whose-time-has-come>

2 Energy customers locked into a costly scheme who have no right to switch” (Guardian, 5 February 2017) <https://www.theguardian.com/money/2017/feb/05/district-heating-fuel-bill-regulation>

3 “Identifying the Fair Share: Billing for District Heating”, October 2015; http://www.changeworks.org.uk/sites/default/files/Identifying_the_Fair_Share_REPORT_Final_Nov15.pdf

Which? Report “Turning up the Heat: Getting a Fair Deal for District Heating Users”, March 2015 <http://www.staticwhich.co.uk/documents/pdf/turning-up-the-heat-getting-a-fair-deal-for-district-heating-users---which-report-399546.pdf>

4 Heat Networks Investment ,Government Response, October 2016

It's the Economy, Stupid!" – Yes, but there is More.

Our research shows: it is true that cost is a major concern for all energy consumers. The perspectives of being tied up to one system and thus not having influence on the price provoke very negative reactions and seem to be real showstoppers.

Community Scouting is an approach for stakeholder participation in business development. It uses a scenario-based survey to evaluate the public acceptance of different options. The methodology has been developed together with the Stockholm School of Economics which is responsible for the quality control of the questions.

Community Scouting creates a laboratory situation for the testing of different options and provides clear indications about perceptions and expectations of customers and other stakeholders so that the business offer can be designed accordingly.

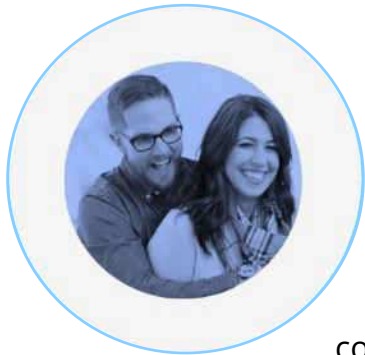
But we've also found: there are other aspects that are evenly important and have the potential to turn perceptions around and create positive expectations.

- People in the UK care a lot about environmental and social aspects as well as about community impact and value offers which take this into consideration.
- New commercial proposals, i.e. additional services for energy saving or electric cars, have a positive impact on the image of District Heating.
- Inviting people to connect and giving them the possibility to terminate contracts when not satisfied appears to better secure long term loyalty than obligatory schemes and long term contracts.
- Communicating environmental and social benefits can help a lot to promote District Heating and to fight misconceptions.

Missing out on customer expectations bears a high risk for developers and municipalities to face strong opposition.

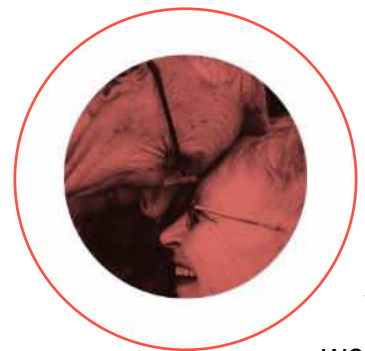
Using customers as a community, on the other hand, comes with a good chance to create a sustainable base for business. If developers, operators and municipalities involve and treat future customers as their main stakeholders, District Heating could very well be "a hot idea whose time has come" in the UK.

Different Customers, Different Expectations



Chloe and Ryan, Millennials:

“We like District Heating, even if we can't choose the supplier. Still, we need to be able to afford it. And we care about social issues: It would be cool to have a say where a part of the profits go – especially if they go to projects which improve the quality of life in our community.”



Mary and Pete, close to retirement, earning less than £ 3,000 per month:

“We don't really have an opinion on what is the best heating system. Still we think price matters, and we absolutely must have full control of the temperature at home. We'd also like it to be good for our community both when it comes to CO2 emissions and social aspects.”

David, Generation L (for Liberalisation):

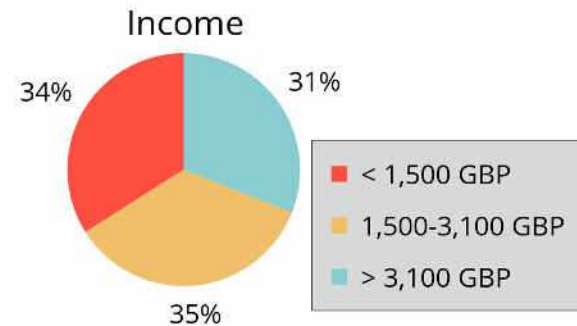
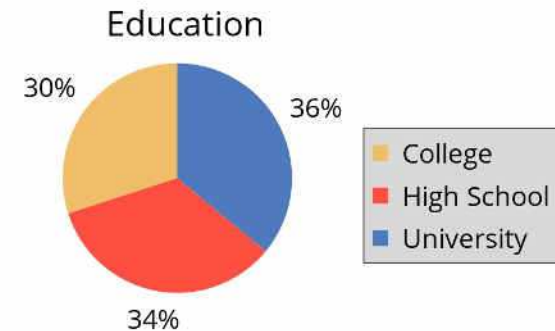
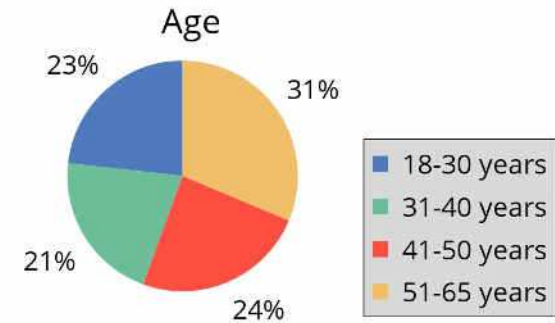
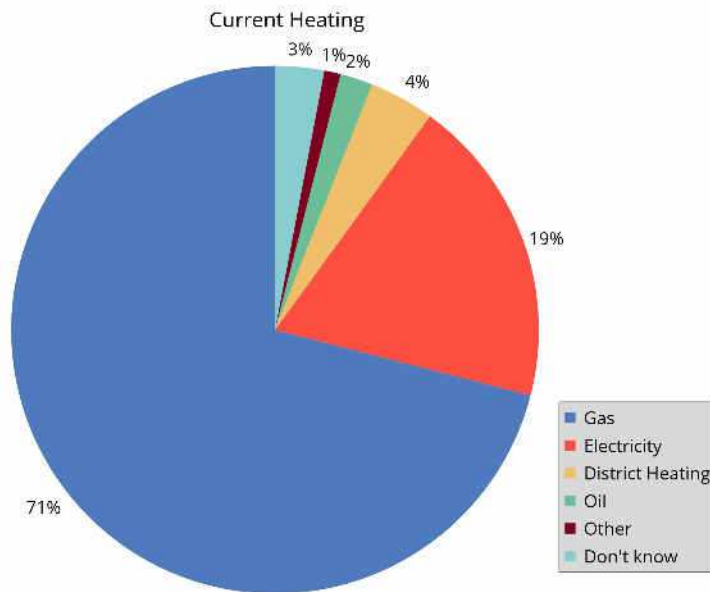
“I just hate the idea of being tied up to one company. The only thing that could make me change my mind is if the system were really good in reducing CO2. And the money should be reinvested here in our city's energy supply. But the best would be if I simply could opt out if I am not happy with it.”



Chloe, Ryan, David, Pete and Mary are avatars who represent their age, gender and income groups. We will take a closer look at the opinion of these different groups on the coming pages of this report.

THE SURVEY

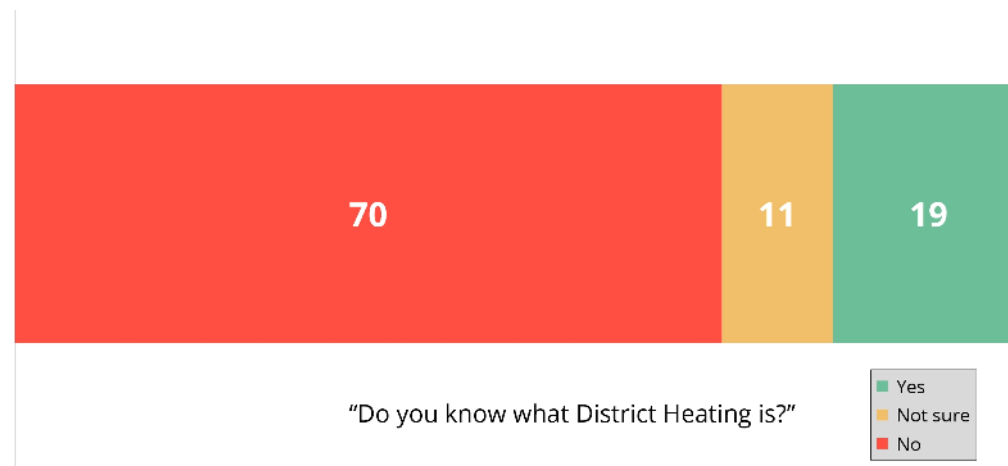
In a workshop facilitated by Communication Works, District Heating experts from the Association for Decentralised Energy (ADE) in the UK developed scenarios which were submitted to web panels that are representative for the UK in terms of age, gender and income. Each scenario has been evaluated independently from other scenarios to avoid bias.



The Starting Point: District What?

Given that district energy has a very low market share of about 2% today, the technology is only known by a small minority of UK citizens. Asked whether they know what district heating is, only 19% of the respondents answered with yes, while 11% were unsure and a striking 70% said no.

This means that own experience has little influence on people's perception, whereas what other people say – be it journalists in traditional media, or first users in social media – is likely to have large impact on the opinion of the majority of citizens. This is both a large opportunity and a potential threat, and it underlines how important it is for new district energy schemes in the UK to give early consideration to how to design and communicate schemes and commercial conditions with a view to secure support from the very beginning.



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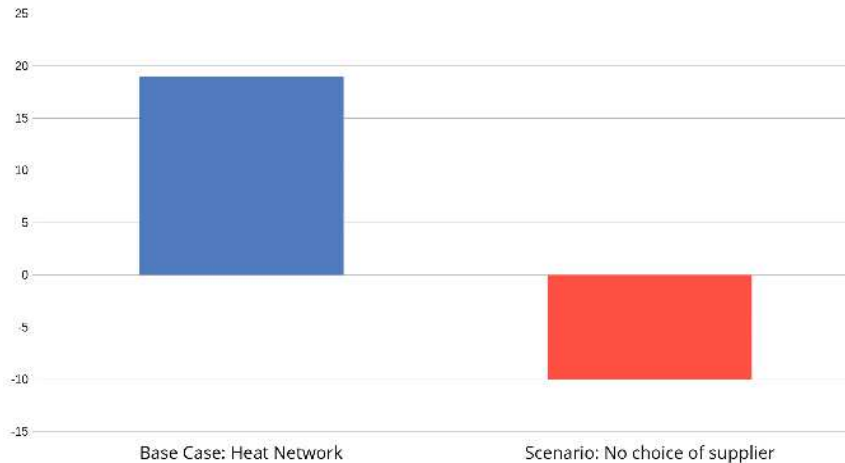
For the purpose of the survey, respondents, who did not have knowledge of district energy beforehand, were given the

following information:

“District Heating, also referred to as heat networks or community heating, provides heat through a network of insulated pipes from one or several points of generation to the end user. Apart from a connection to the

network (substation) it does not require any additional equipment in the building (no boiler). It can serve both heating and hot water preparation.”

How to Read the Results



The base case was: “Your energy company establishes a District Heating network to which you are connected – how OK do you think this is?” Possible answers reached from – 5 (definitely not OK) to + 5 (definitely OK). The average result was positive (*figure*): +19 (in order to make them easier to read, results have been multiplied by ten).

Then different variations were added to the base case, such as: “Your energy company establishes a District Heating network to which you are connected. This means that you cannot choose another heat supplier.”

For this scenario, the average result was negative (*figure*): – 10. This negative scenarios was then used as a reference to test mitigating options.

Identifying Options

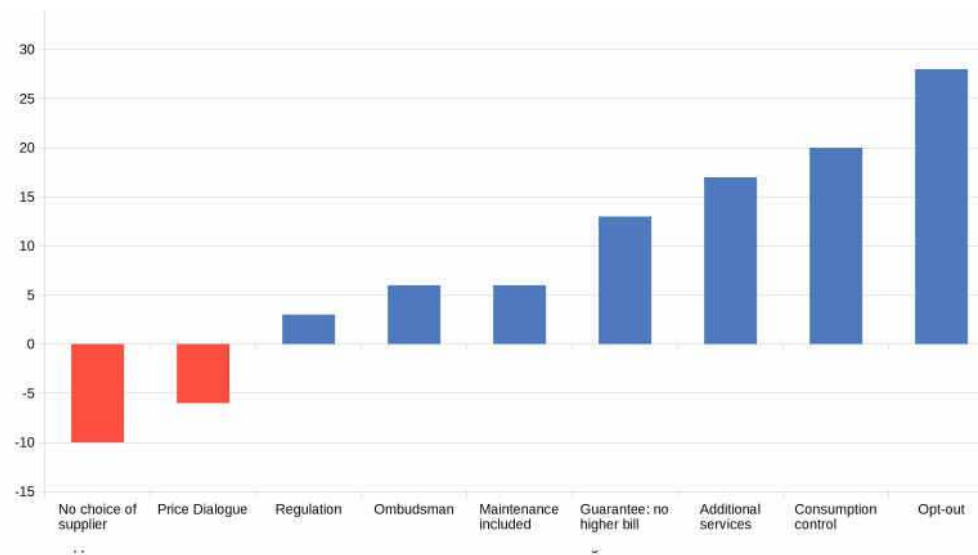
Based on earlier reports on the perception of District Heating in the UK, three areas of possible action to mitigate negative views have been identified for the survey:

- Price and tariff options
- Participation options
- Environmental & social options

For each area, different scenarios have been tested with web panels representing the UK population in terms of age, gender, income and housing situation. The results are in this report presented on an average level for all groups as well as under a magnifying glass, where significant differences between age or income groups have been found. The gender split was evaluated but provided no significant findings in the questions surveyed.

Price & Tariff Options

- Typical offers for customer protection and tariff regulation, as they are well established in other countries, do not seem to appeal to the British citizens: Both regulation by the authorities and the installation of an independent ombudsman score low and have on average very limited mitigating effects on the negative perception.
- The instrument of price dialogues, successfully practised for example in Sweden, completely flunks in Britain – people obviously do not believe their voice would have any influence.
- Where institutional solutions fail, the right design of the commercial offer can help. Best scores the possibility to opt

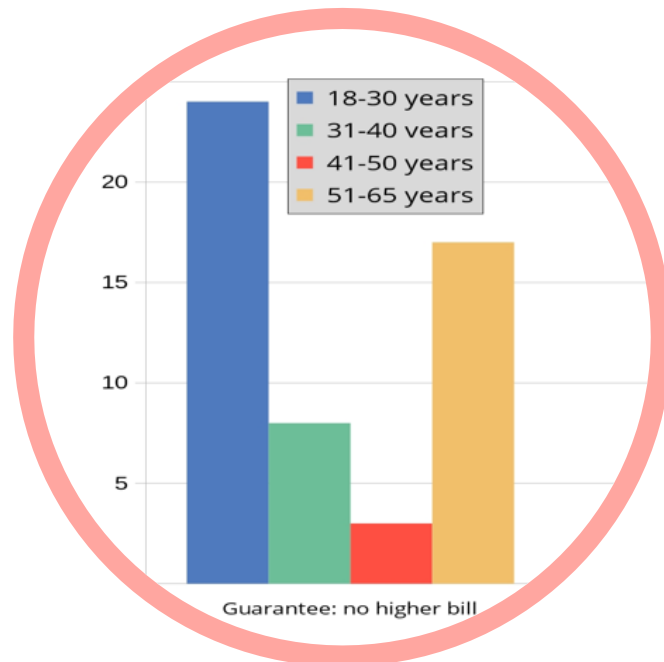


out and choose another heating system – not much surprising, when being locked is seen as the problem, this option is a game-changer and creates high acceptance for District Heating.

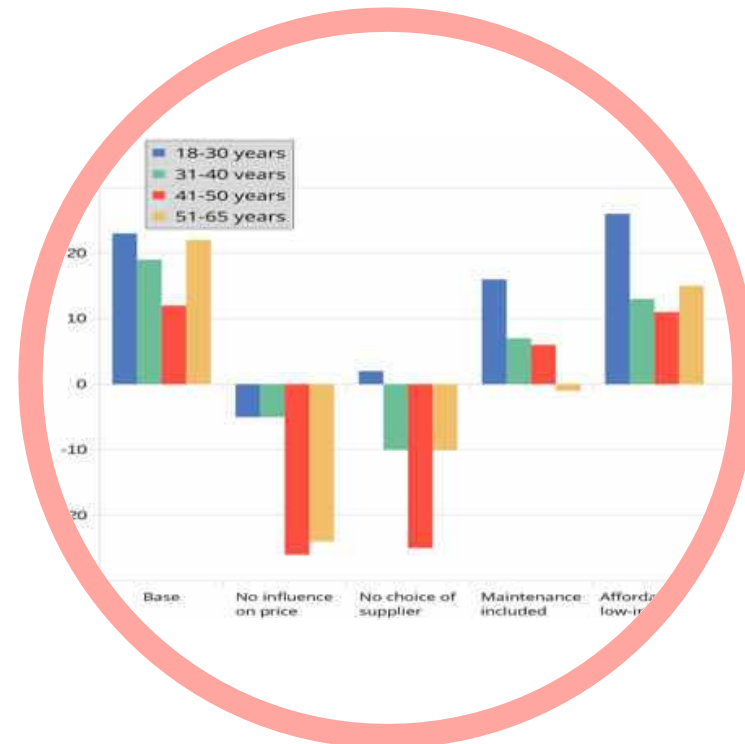
- Also, communication opportunities can have a high impact: to make clear that customers have “full control over their heat consumption” significantly improves the perception of the technology. Even the information that maintenance and equipment are included in the fee has a slightly positive effect.
- Customers would like to see special services like charging stations for electric cars, energy saving devices or insulation. Tariff options with different commercial proposals would make District Heating more attractive.

Price and Tariff Options - Magnifying Glass

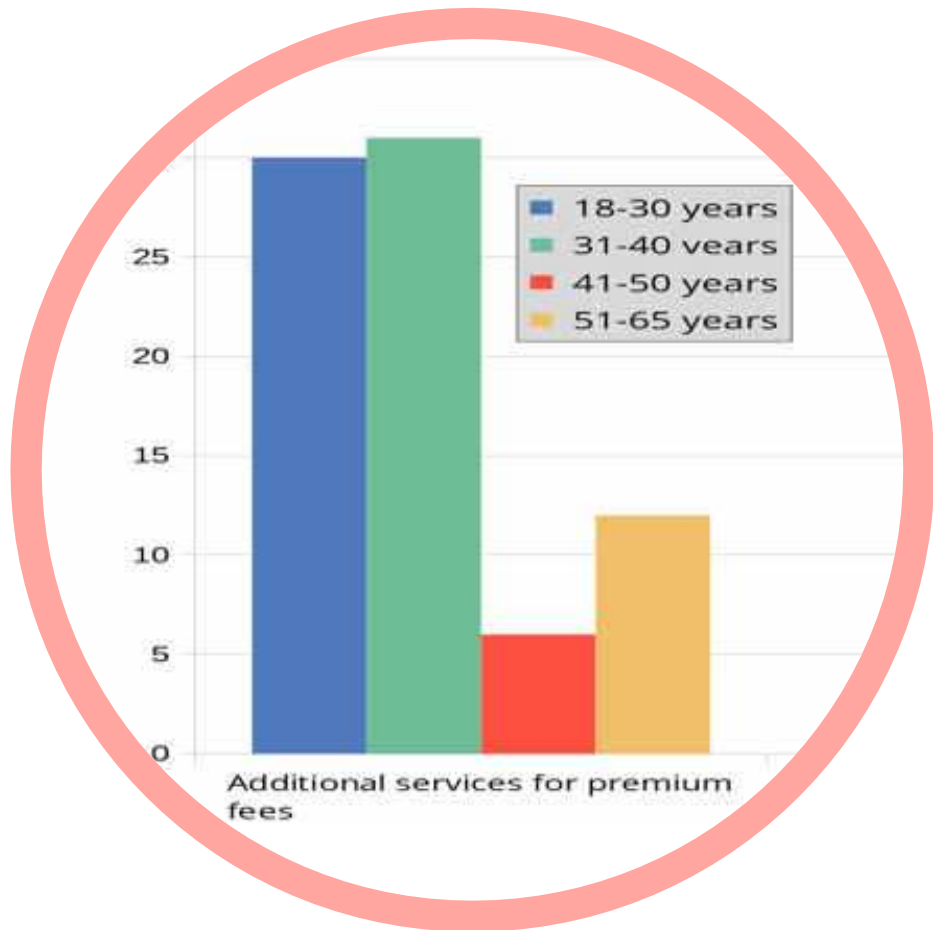
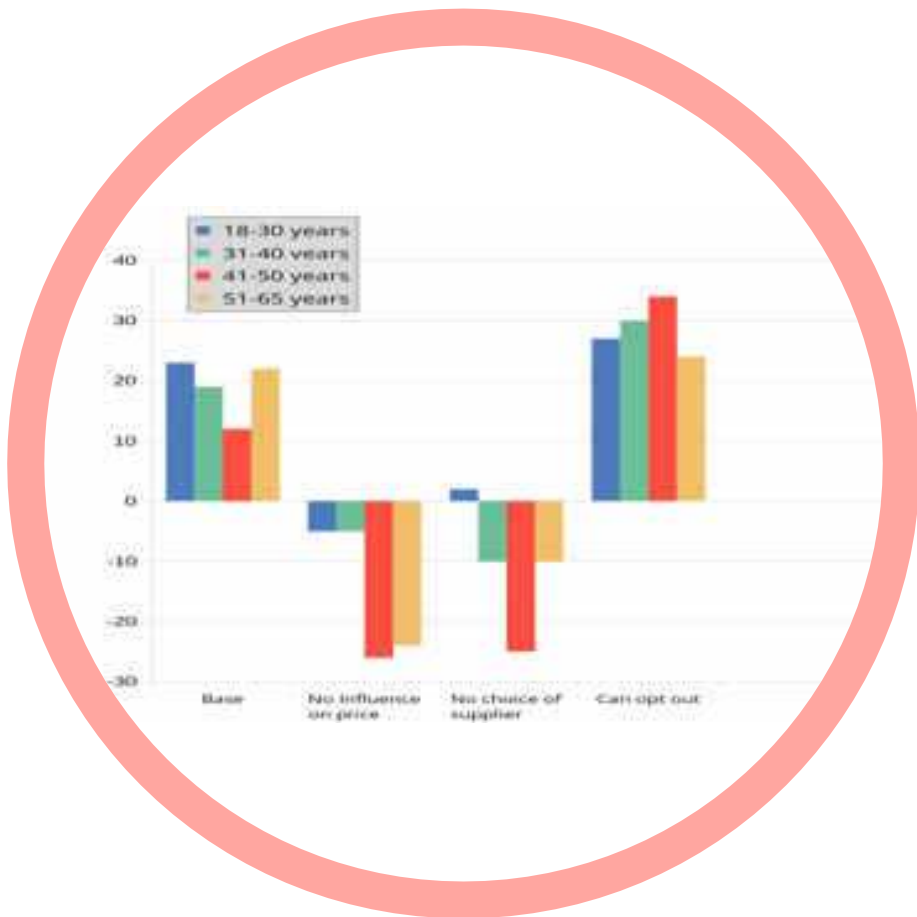
- If the energy company guarantees that the annual bill for the customer will not be higher as with the current heating system, scores are well in the positive range (+13 on average). Especially young people of 18-30 years react positively: In this age group, conscious of costs, the price guarantee scores +24.



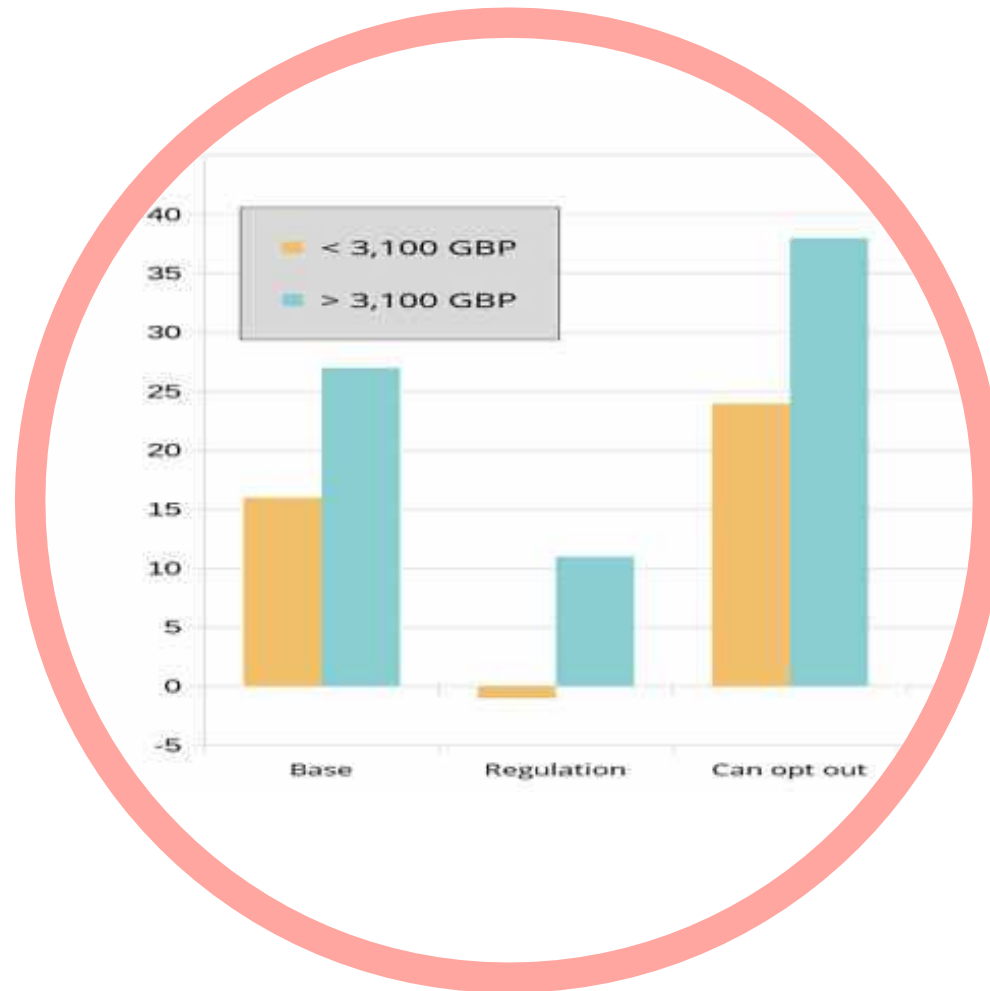
- Young people also have a more positive view on District Heating in general (+23, compared to the average of +19) and react less negatively to the lack of choice (+2 against -10 on average) and to the lack of influence on the price (-5 against -15 on average). At the same time, affordability and predictable prices (maintenance included) are high on the agenda for this group.



- The age group 41-50 years is most sensitive to the lack of choice or influence on the price. This generation has been growing up with the liberalisation of the energy market and its promises. Consequently, in this group the opt out possibility scores highest: +34.
- People below 40 years are much more enthusiastic about additional offers and premium fees (+30 compared to +18 on average) – a clear indication where the future lies.



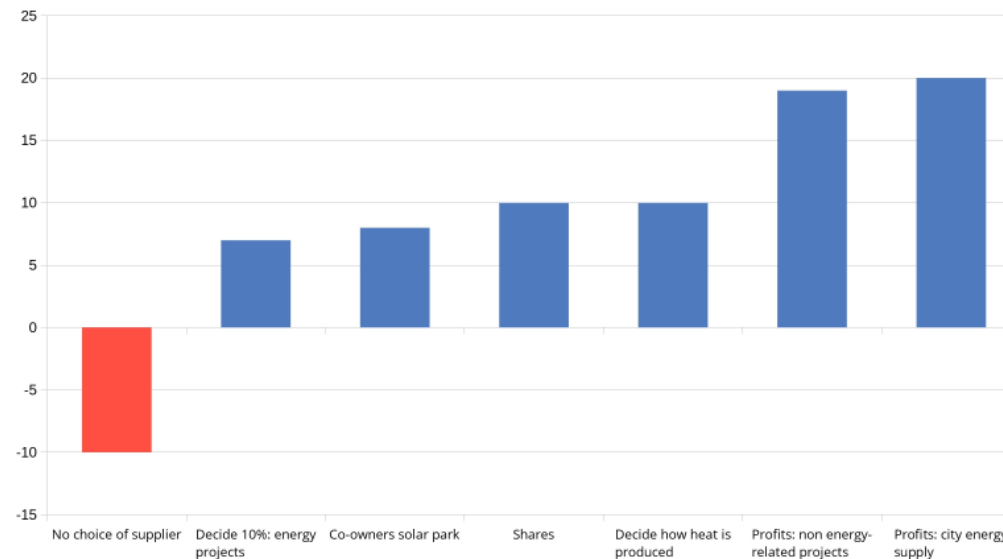
- Respondents with high income have generally a more positive attitude towards District Heating and higher trust in regulation than the lower income group. The most favorite scenario also for the high income group, though, is the possibility to opt out.



Participation Options

- Community and social aspects play an important role in how people perceive District Heating. Commercial proposals which take up these aspects are highly valued and largely compensate for the perceived lack of choice.
- Offering customers to become co-owners of either the District Heating system itself or a near-by solar park are perceived very favourably with average values around +10.
- Yet, being able to participate in decisions is significantly more relevant to citizens and customers than co-ownership.
- The most important aspect is how profits will be used. With a rating of +20 on average, the most popular scenarios are

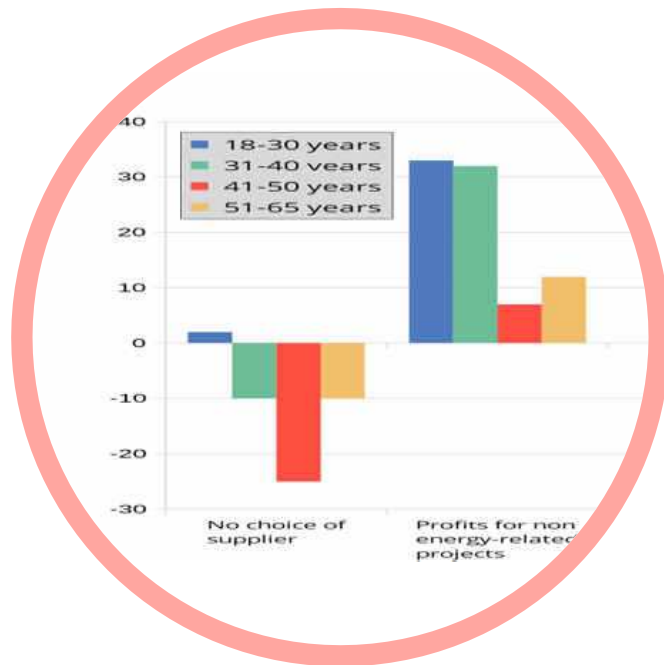
those where either customers are reassured that profits will be reinvested in the city's energy supply or have the possibility to decide on how 10% of the profits will be used for non-energy related projects in the community (i.e. cycle stations, playgrounds).



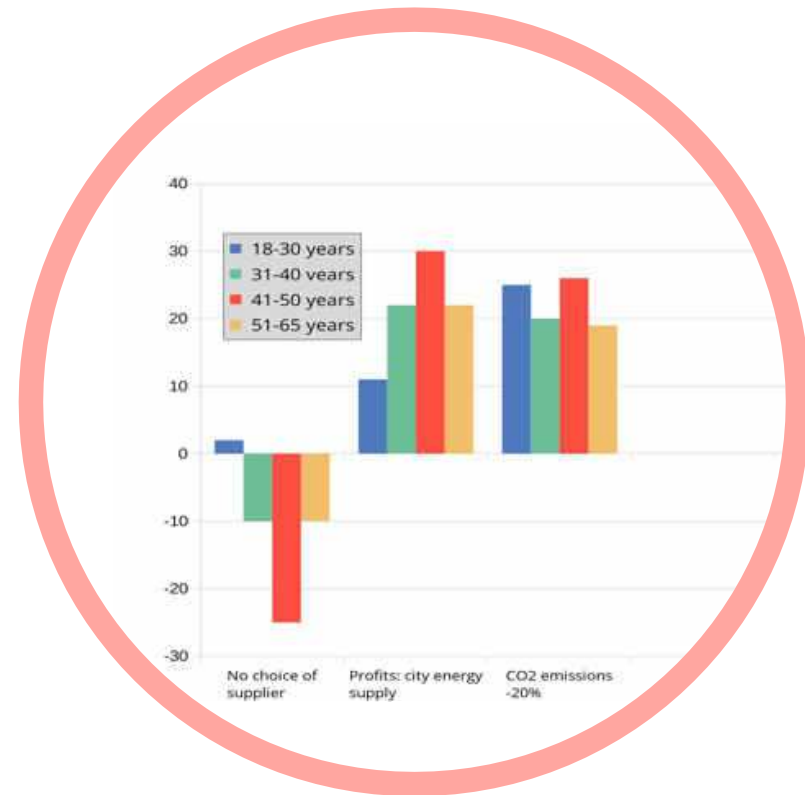
Participation Options

– Magnifying Glass

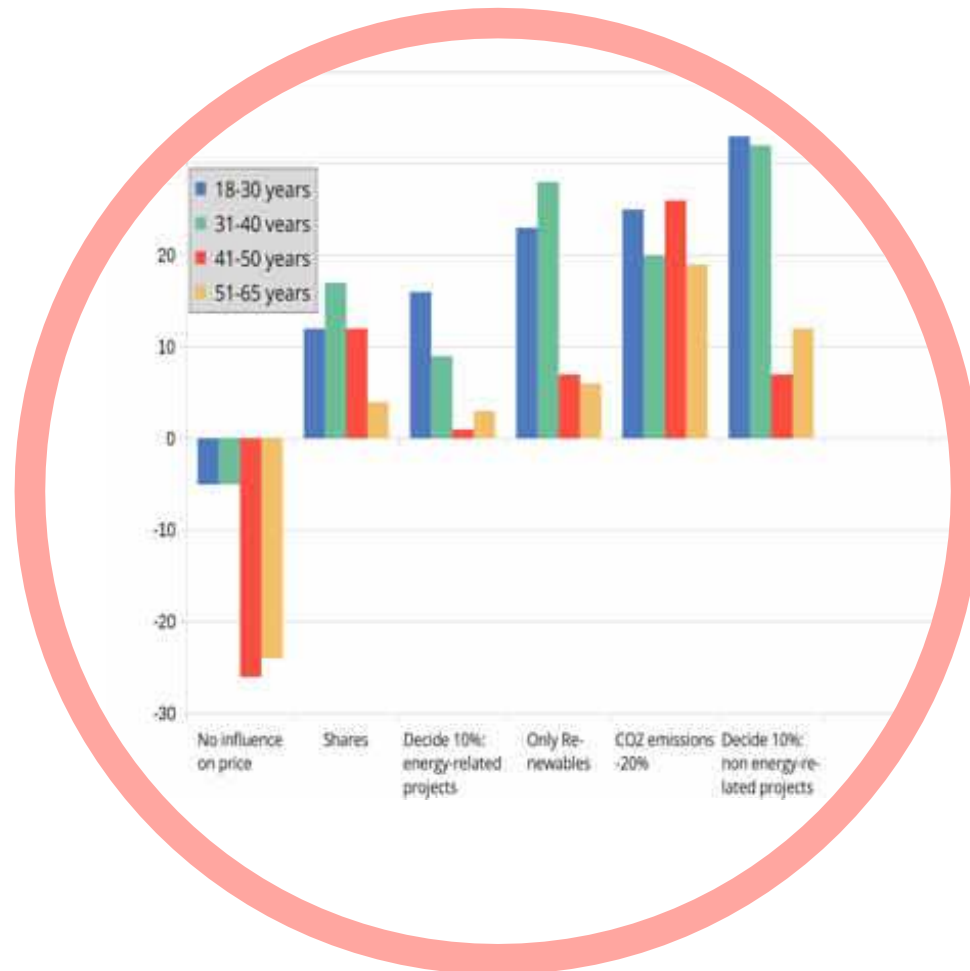
- This is particularly true for the young generation. The millennials (18 to 30 years) do not attribute much importance to the monopoly aspect (+2 against -10 on average) but highly value community aspects such as the possibility of reinvesting profits into community projects (i.e. bicycle stations). This scenario comes out as the one with the highest support rate from this particular age group.



- For the middle-agers (41-50 years), generally the most critical group, reinvestment of the profits in the city’s energy supply comes out as the most popular among participation options, probably because they associate economic benefits (job and value creation) as well as environmental benefits with it. This correlates with the high value they attribute to CO2 reduction.

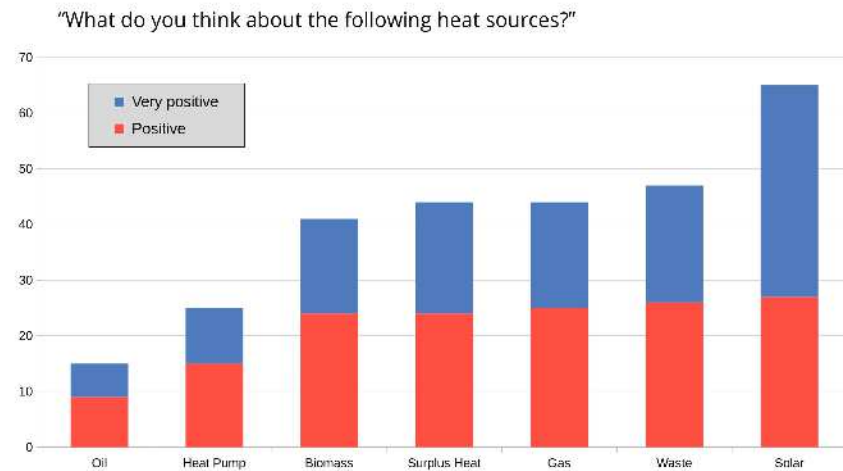
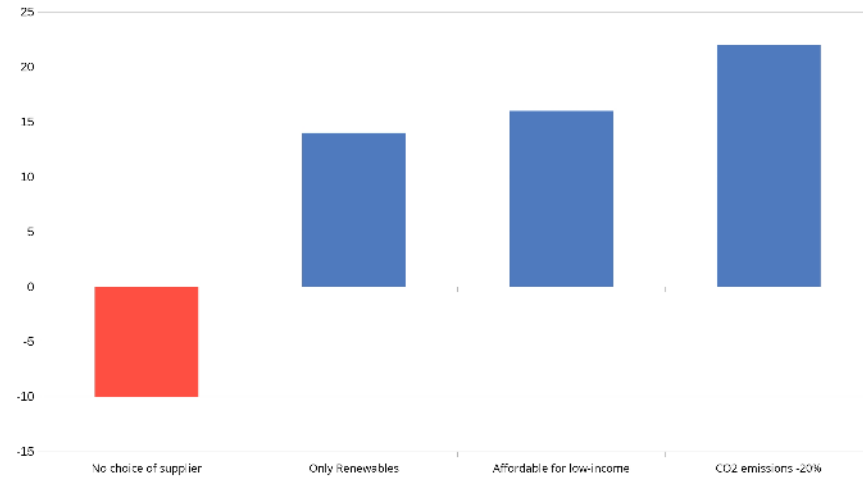


- Generally, younger age groups tend towards higher sensitivity for participation and climate aspects and less to the lack of influence on pricing. Thus, an increasing importance of these aspects can be expected for the entire population.



Environmental & Social Options

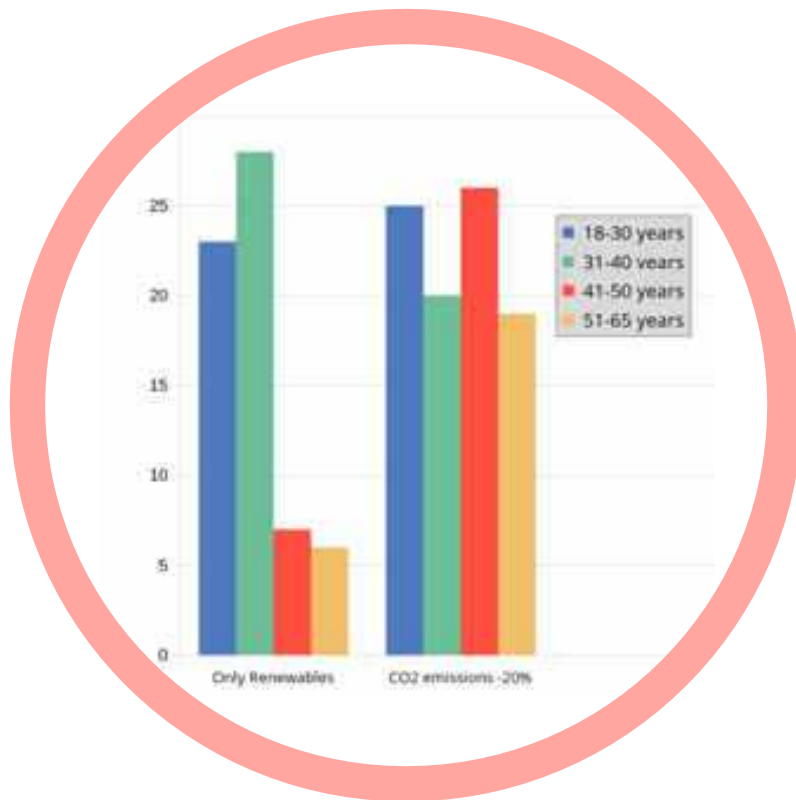
- Environmental and social aspects score high and hence allow to mitigate the lack of choice of supplier. Especially reducing CO2 emissions is a priority (+22), but also production by renewable energy only and affordability for lower income groups are largely viewed positively.
- The UK is no exception to the rule: People love solar energy. Defying perceptions of the UK climate, solar energy is by far the most popular heat source for UK citizens. Popularity of this heat source sky-rockets with 65 % of the survey participants having a positive or very positive view on it. This result correlates with the findings of similar surveys in Sweden and Germany.
- The popularity of solar coincides with the high share of citizens interested or very interested in decentralized energy production. Only a small minority of 11% says they would not be interested in producing their own electricity if it were not more difficult or costly.



Environmental & Social Options

– Magnifying Glass

- While the use of renewables only scores particularly high with the younger age groups up to 40 years, CO2 reduction is rated slightly more positive by the 41 to 50 years old.



- Interestingly, both lower and higher income groups attribute almost the same positive value to affordability for lower income groups.

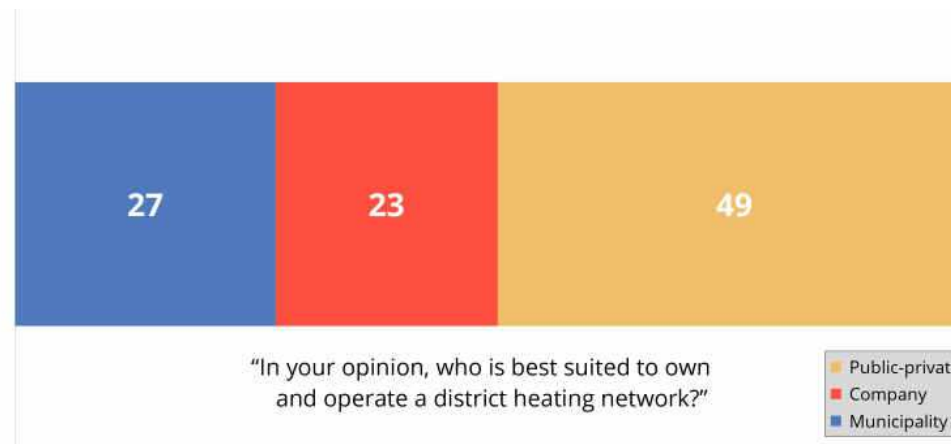


Ownership

Who is best suited to own and operate a District Heating scheme? In the UK, the view on ownership differs significantly from other countries: While Germany, for example, experiences a strong movement of re-municipalisation of energy grids, people in the UK apparently do not have the same trust in their authorities to run a District Heating network efficiently.

At the same time, the home country of capitalism seems to be suspicious whether the free market and its players, private companies, will provide a fair pricing and handling.

So, the clear vote of the British customers-to-be of District Heating is the best of both worlds: the efficiency of enterprises and the protection by authorities in a public-private partnership.



CONCLUSIONS

Opt-out: a Win-Win Option

The most obvious finding is that an opt-out opportunity almost solves the problem by itself. When presented with this, though, British industry experts were not too enthusiastic. And who can blame them? Operators must ensure their Return on Investment, as District Heating is a capital-intense infrastructure. A contrasting approach is in Sweden, where new tenants who move into an apartment or house with District Heating, can opt out after three months and choose another technology, for example a heat pump, but most of them choose to stay due to attractive offerings, good products and services.

There are interesting challenges and opportunities in either approach, and they will be highly dependent on the individual heat network owner's specific investment case and financial position. A company that gives customers freedom of choice sends a signal of confidence in the quality of its offer, but such an approach may also make it more challenging to secure the initial capital investment or may put the network's long-term viability at risk. The differences between Sweden's well-established heat network sector and the UK's more nascent heat market and well-connected gas network, may need further consideration when determining the appropriate approach.

In any case, our survey shows that the opt-out option increases acceptance beyond the initial score for District Heating – you earn some extra points for attitude.



Attitude and Customised Offerings

Speaking about attitude: Customers like it when their supplier shares their values and reflects this in word and deed.

Responding to environmental and social demands of people is therefore important.

If you look at the average survey results, you may well be tempted to translate them into something like "the perfect District Heating system for the UK", with the supposed highest acceptance of the public.

One Size Does not Fit All

Would implementing such a system guarantee success? – Unfortunately, it's not that easy. This survey has been conducted on a national level in the UK, but every project is local – and every community is different. And, as we have seen under the magnifying glass, different groups have different expectations. One size does not fit

all. Your communication and offers need to be differentiated and meet them all.

The good news is: You don't need to start from scratch. The results of the national survey give a clear indication what matters to people, what they expect and what the interests of different age and income groups are. This is a perfect starting point for a participatory process around a specific project.

*According to our research,
District Heating systems in the UK ideally would
promote CO2 reduction,
integrate solar components,
make it voluntary to connect and use,
be run in public-private partnership,
be affordable for low-income households.
And the profits would be reinvested in the community.*

Listen and Engage – Customers as Community

But – why bother at all? Why not just rely on your technical expertise and design network and offer according to what you know is best for everybody? After all, why should other people have a say?

District Heating, of all businesses, offers the ideal background for this kind of engagement: As a network technology, it connects people even physically. If you make this network a community, listen to your customers and engage with them, you will co-create the success of your business – and of District Heating

Because times have changed. In the digital age, everybody can be a publisher, articulate his or her opinion and form coalitions with others quickly. What used to be some unsatisfied individual customers can nowadays turn into a forceful protest movement by a few clicks - and gain great publicity and strong impact on politics.

There is much to gain from customer participation. With their early input you can avoid mistakes. Sometimes there will be a quick fix to solve things – like explicitly addressing a concern or misconception that you have not been aware of before. Sometimes the insights will call for changes of your plan – which helps to make your business model future proof. Involvement creates relations. Customers who feel that their voice is heard will be loyal to a company they perceive as a partner.

WHO WE ARE

Communication Works

Communication Works is an agency for strategic Communication. We support companies and other organisations in winning trust and legitimacy with authentic and relevant communication. Our approach of integrated communication helps you to develop an engagement strategy with your audiences and to establish a meaningful dialogue with the public.



WHO WE ARE

Association for Decentralised Energy (ADE)

The ADE is the voice for a cost effective, efficient, low carbon, user-led energy system; a market in which decentralised energy can flourish. With over 100 members we bring together interested parties from across the sector to develop a strong, dynamic and sustainable environment for a range of technologies including combined heat and power, district heating networks and demand side energy services, including demand response.



Interview with Sabine Froning, Communication Works



What makes District Heating in the UK a hot topic for Communication Works?

In the UK, District Heating is fairly unknown and only has a share of about two percent of heating systems. The British government wants to promote heat networks as a means for climate protection. To get there, you need to convince many people of the benefits of this technology: city councillors, house owners, tenants – a fantastic communicative challenge!

Why would District Heating be a good solution for the UK?

Heating is the largest final energy use and still largely based

on fossil fuels. But oil and gas boilers will need to totally disappear pretty fast, if we want to keep climate change in check. This is an enormous opportunity for District Heating, in particular when it comes to densely populated areas. It allows to harness all kinds of waste heat which otherwise would remain unused and to scale up renewable solutions.

District Heating seems to be well established on the continent. Why not in the UK?

In many countries on the continent District Heating is a well-known solution to heat homes. Especially with the oil crisis in the 70s and 80s it has gained recognition as an energy-efficient alternative to oil and gas boilers and attained double-digit market shares. In the UK, which unlike most countries has own gas resources, District Heating has never really taken off.

So what is the recipe to change this and make the Brits go for District Heating in the future?

You need to win the hearts and minds of the people. Otherwise you won't get very far – despite the political will. Utilities and municipalities can no longer make decisions on people's behalf, they must involve them. Citizens and customers are not just a homogeneous mass. The very first step is to listen carefully and to find out what is relevant for each group.

Why not simply tell them the advantages, as you just described them?

In a liberalised and decentral energy world where people become more and more interested in generating their own energy, all larger scale solutions are struggling for acceptance. The fact that in a District Heating network you depend on a single supplier and have little influence on price or on how the energy is produced, is a show stopper in the opinion of many people. And before telling anyone anything, it's good to understand what the recipient's interests actually are.

So, what did you do?

Communication Works has conducted two workshops with the Association for Decentralised Energy, which represents the District Energy sector in the UK, to explore possible actions to mitigate negative views: What can District Heating operators offer, how can they reach out to future customers and what can they say? The scenarios that we have developed together with their experts have been surveyed with a representative sample of the UK population, based on a scientific method that Communication Works has developed with the Stockholm School of Economics.

What were the results?

We found interesting options for each age group in the areas of pricing, participation and sustainability. What surprised us most was that although people really care a lot about the price, it's not customer protection measures and regulation that would make them change their view. More effective are other benefits for the community which improve the social and environmental quality of life.

How can companies use your model for business planning and participation?

Energy companies are used to make decisions from an energy system point of view and often are afraid to let non-experts in. Our method allows them to challenge their own beliefs, to discover what expectations are out there and to understand how they can use these to improve their business models to everybody's advantage. But the analysis is only the first step in what we call "Community Scouting". The next steps are to develop a communication and engagement strategy from there, and that's what Communication Works thrives most at.

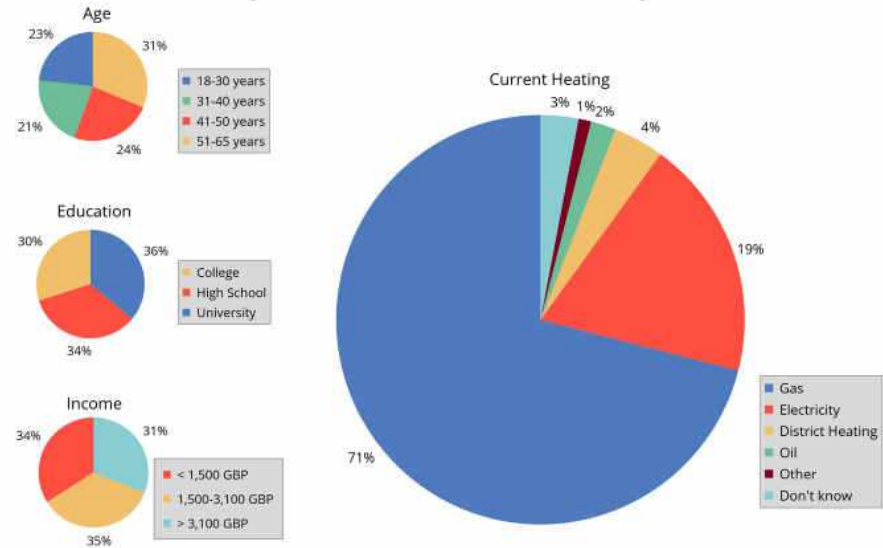
APPENDIX

The online survey was conducted in April 2017 with a representative sample of the British population.

Background Questions:

- *How old are you?*
- *What is your highest educational level?*
 - *High school*
 - *College*
 - *University*
- *What is your household's total monthly income (before taxes)?*
- *Which heating system does your building have today?*
 - *District Heating*
 - *Gas*
 - *Electricity*
 - *Oil*
 - *Other - please indicate:*
 - *Don't know*

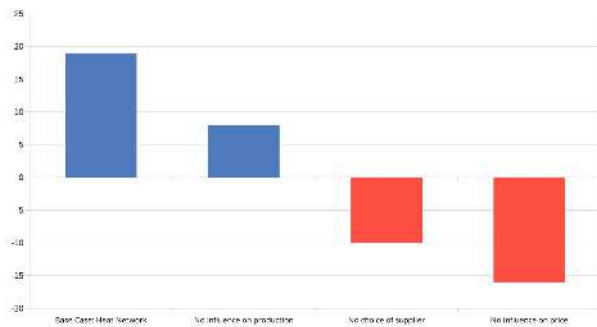
Representative Sample



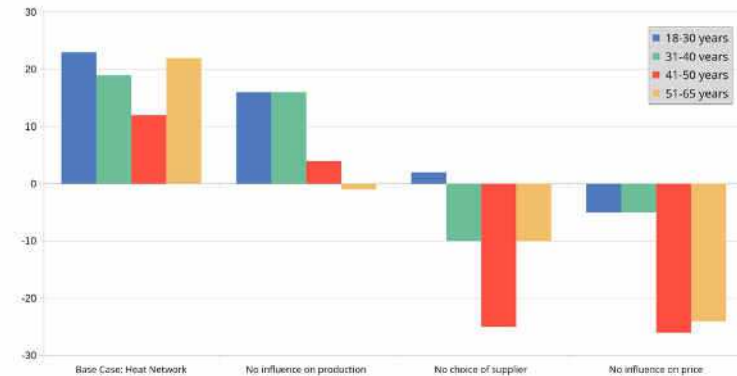
Scenarios Choice

- "Your energy company establishes a District Heating network to which you are connected"
- "Your energy company establishes a District Heating network to which you are connected. This means that you have no influence on how the heat is produced."
- "Your energy company establishes a District Heating network to which you are connected. This means that you cannot choose another heat supplier."
- "Your energy company establishes a District Heating network to which you are connected. This means that you have no influence on the price"

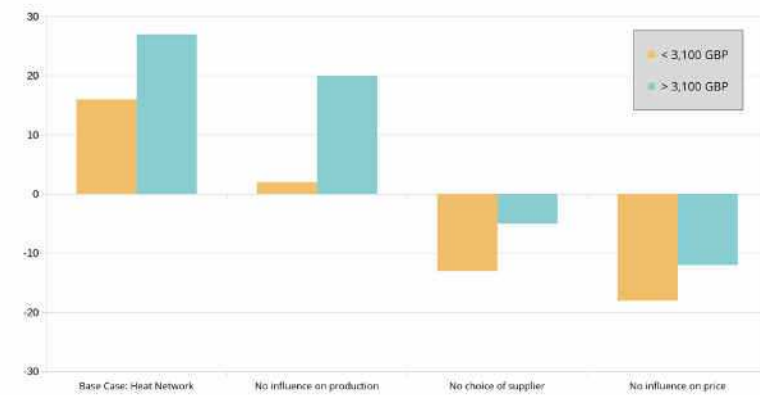
The Importance of Choice



Age Split Choice



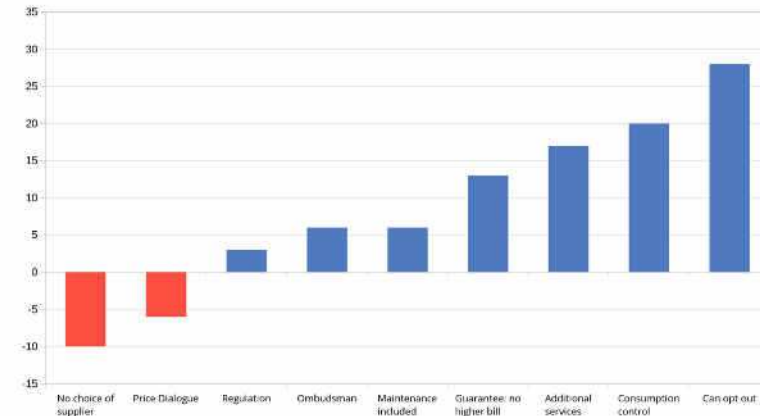
Income split Choice



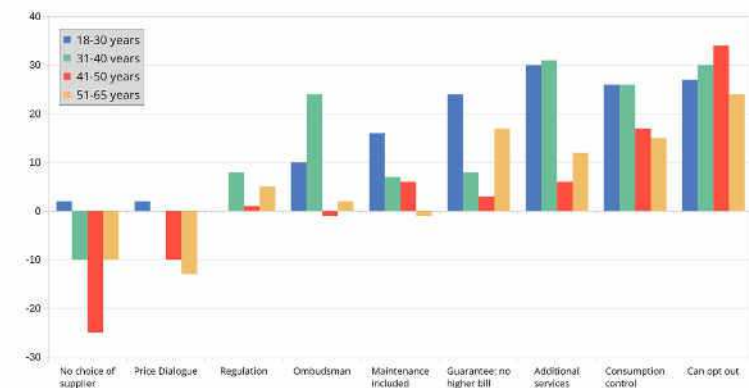
Scenarios Price & Tariff Options

- "Your energy company establishes a District Heating network to which you are connected. This means that you cannot choose another heat supplier."
- "The energy company regularly invites all customers to a price dialogue"
- "The authorities ensure that prices are fair and transparent"
- "An independent ombudsman has the power to decide in case of conflicts about the price."
- "The district heating tariff covers all maintenance and equipment."
- "The energy company guarantees that your annual heating bill will not be higher than with your current heating system"
- „You can choose between different tariffs, e.g. a base fee for the heat and a premium fee which includes additional services (EV charger, energy-saving devices, insulation)"
- "Customers will have full control over their heat consumption (temperature control)"
- "The heat company makes it possible for customers to opt out and choose another heating system."

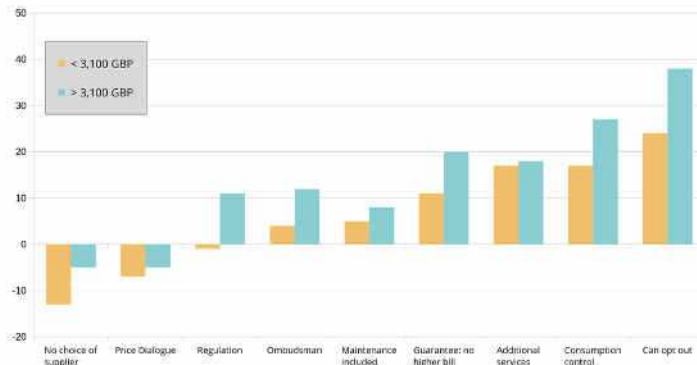
Price and Tariff Options



Age split Price & Tariff Options



Income split Price & Tariff Options

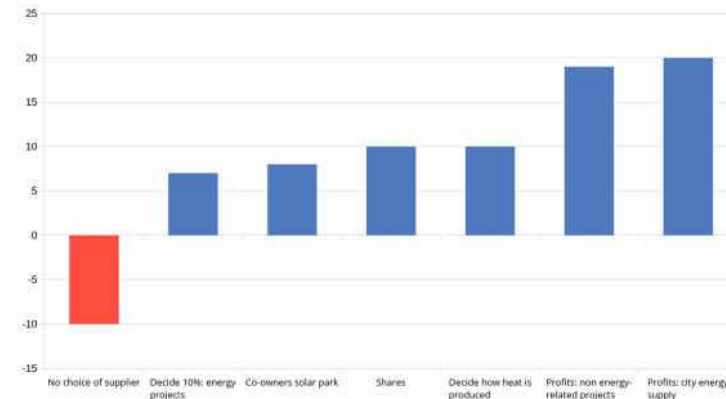


- "The heat company gives company shares to every customer corresponding to 10% of their yearly heating bill."
- "The energy company invites all customers to take part in decisions about how the heat is produced (fuel supply and generation assets)."
- "The energy company offers customers the possibility to decide on the investment of 10% of the profits in non-energy related community projects (playgrounds, bicycle stations...)."
 - "The heat company reinvests all profits in improving the city's own energy supply"

Scenarios – Participation Options

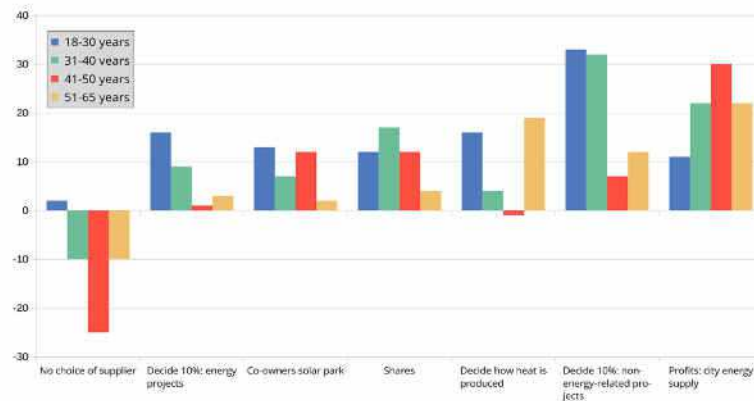
- "Your energy company establishes a District Heating network to which you are connected. This means that you cannot choose another heat supplier."
- "The energy company offers all customers the possibility to decide on the investments of 10% of the profits in energy projects for the community (PV on the roof, EV chargers...)."
 - "The heat company offers a premium tariff which allows customers to become co-owners of a crowd-funded solar park nearby."

Participation Options



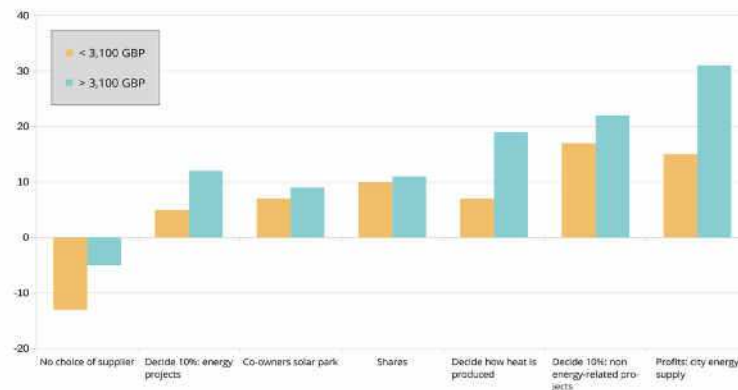
Scenarios Environmental & Social Options

Age split Participation Options

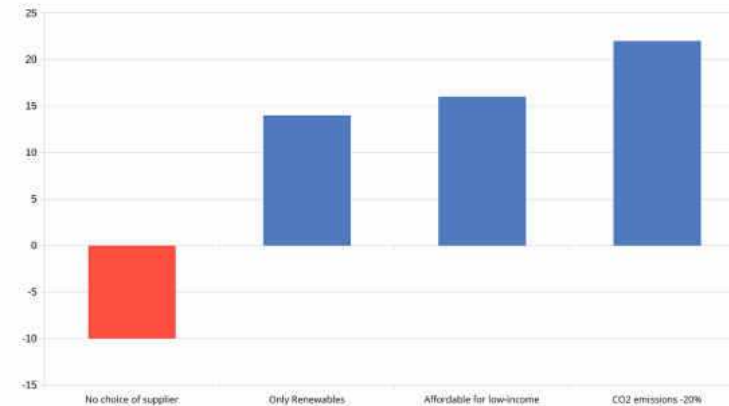


- "Your energy company establishes a District Heating network to which you are connected. This means that you cannot choose another heat supplier"
- "Heat supply will entirely be from renewable energy."
- "Heating becomes more affordable for low-income groups."
- "CO2 emissions of the city will be reduced by at least 20%."

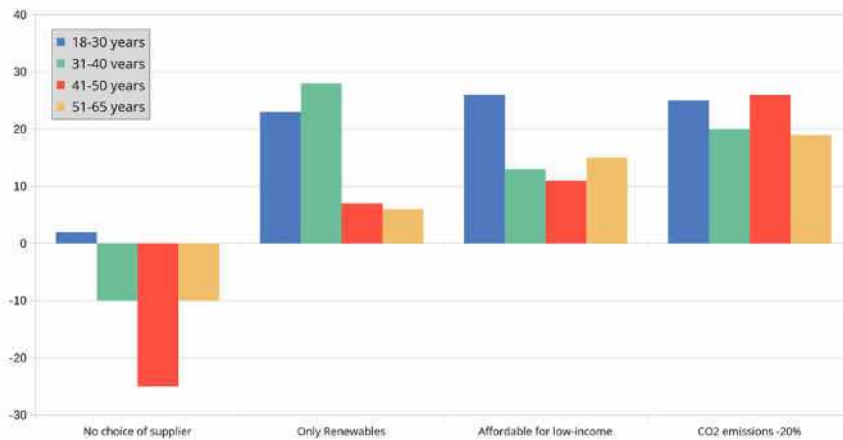
Income split Participation Options



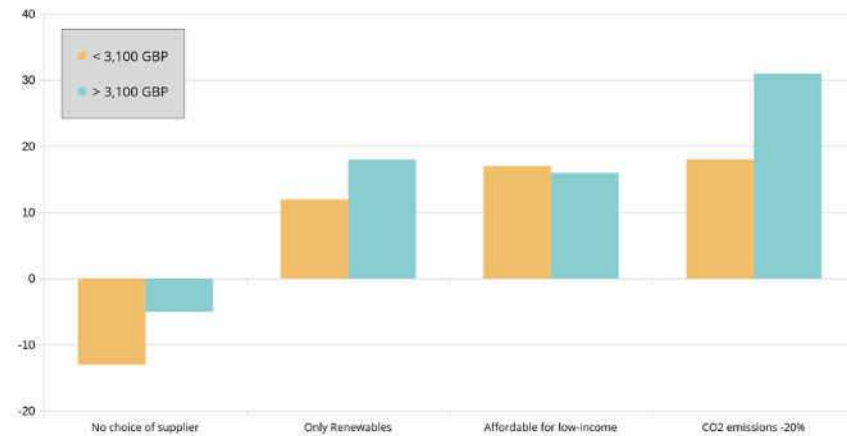
Environmental and Social Options



Age split Environmental Options



Income split Environmental Options



Communication Works – Banek Froning Reise GmbH

Jarrestraße 70c

22303 Hamburg

www.communicationworks.eu

info@communicationworks.eu

Managing Partners:

Ivo Banek, Sabine Froning, Niels Reise

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