



Local energy data innovation

Discovery findings

September 2020

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Local energy data innovation opportunities

Regen worked with UKRI and the Energy System Catapult to think about how data could play a greater role in solving local energy-related problems.

We explored the opportunities for using data for local energy systems and identified the challenges that stakeholders had, which could be met through data solutions. In doing so we hoped to support innovation for net zero and investment in the green recovery.

Why engage?

The project began with a desktop study of work done to date in this space. This process identified potential use cases for local energy data, but this needed to be sense checked with stakeholders. We also wanted to go out to a wide range of local energy system stakeholders to identify and capture additional user stories and needs.

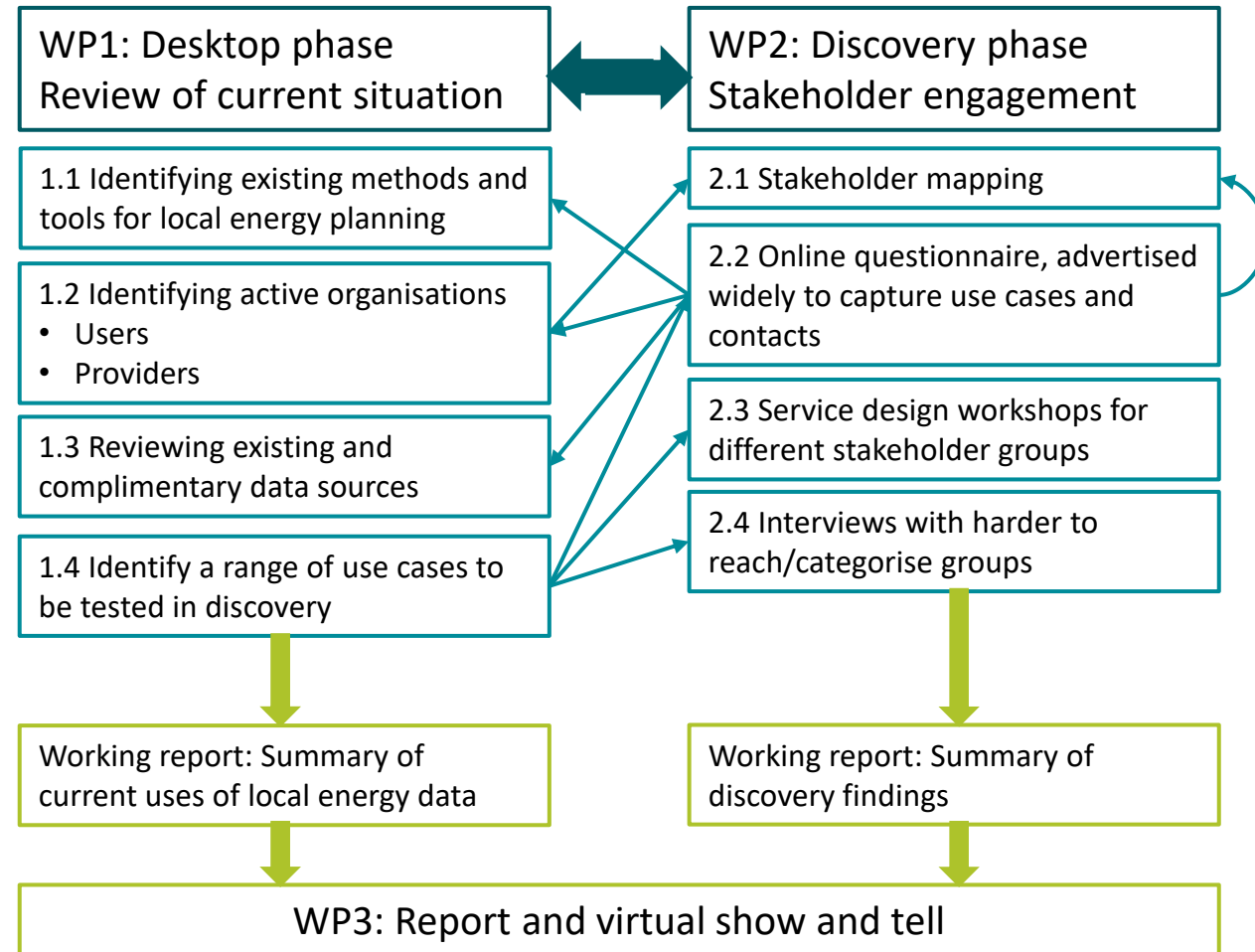
What did we do?

- Online survey ran from 24 August to 4 September and asked respondents to review some ideas of how we could use data to solve local problems and to add their own. It was promoted through Regen, ESC and UKRI networks, as well as through umbrella organisations such as Tech UK, Renewables UK, EIC and the Knowledge Transfer Network
- Two workshops were held to present the survey findings and ask participants to give their views on which use cases should be prioritised, which had the potential to create economic value, and what design principles should be considered.

The findings

This report summarises the findings of the discovery phase of this project.

Outline methodology



Desktop

Approx. 40 stakeholders identified
Identified 45 problem statements relevant to stakeholders
Problem statements categorised into 11 themes

Stakeholder engagement

Cross-checked survey respondents with stakeholder map to identify any missing ones
Tested 33 problem statements in the survey and asked for additional ones (+341 ideas)
Discussed further in workshops and interviews

Reporting

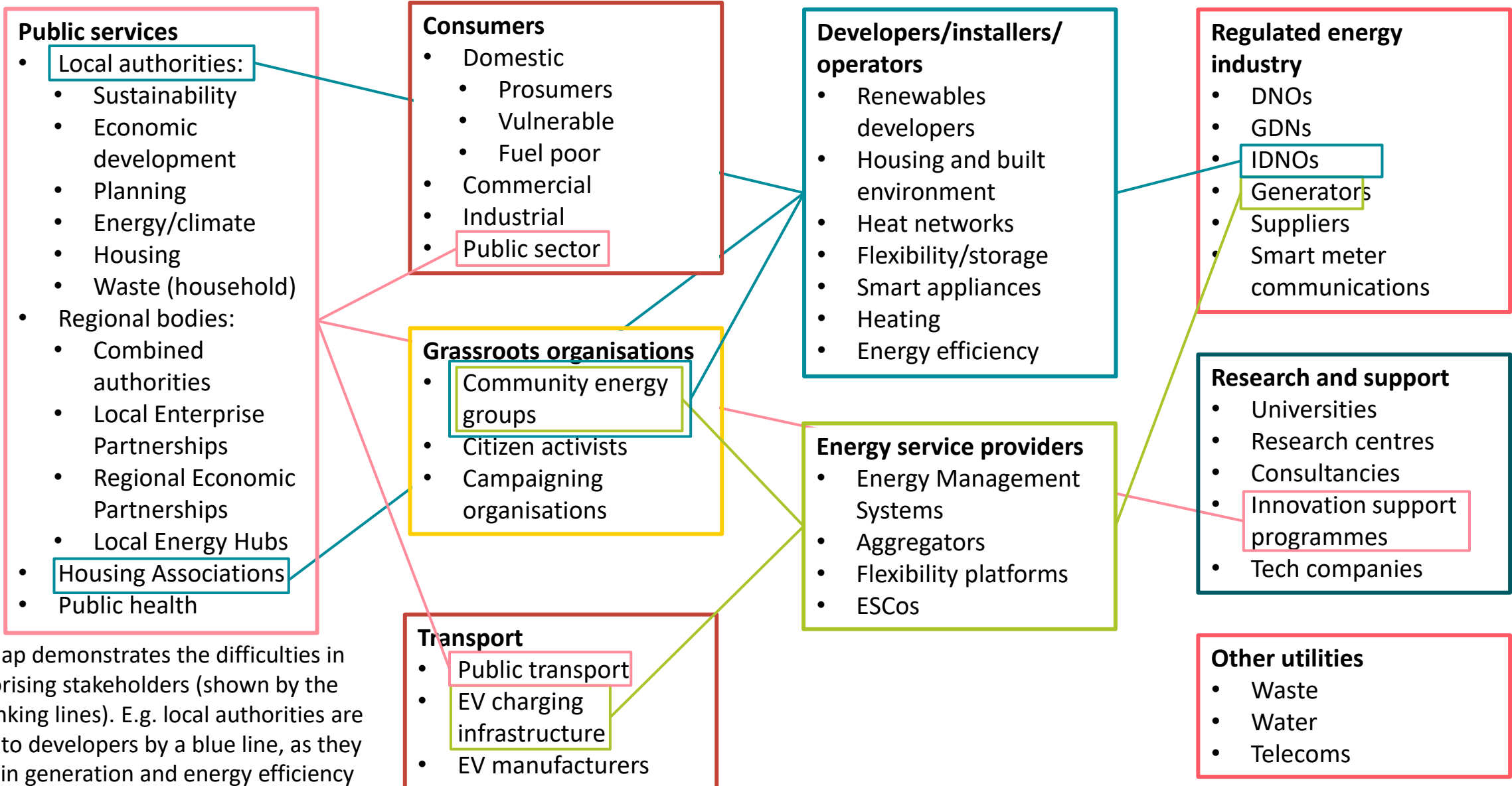
Landed on 13 user groups and 11 themes
Selected the top 5 problem statements per user group and per theme based on a combined quantitative and qualitative analysis of the engagement findings
Resulted in 70 problem statements in total, as there was cross-over between themes and users

- We engaged a wide range of organisations, but the greatest number of responses were from consultancies, community groups and local authorities
- The themes that received the most interest in the survey were: achieving net zero; electric vehicles; and energy generation
- The most popular themes identified in the workshops were: achieving net zero; energy network operation; and flexibility services
- The themes that received the highest number of additional problem statements in the survey were: achieving net zero; electric vehicles; joining up utilities; and domestic energy and bills. Responses in the workshop were similar, although energy network operation received the same number of suggestions as achieving net zero.

STAKEHOLDER MAPPING



Initial stakeholder mapping



This map demonstrates the difficulties in categorising stakeholders (shown by the interlinking lines). E.g. local authorities are linked to developers by a blue line, as they invest in generation and energy efficiency projects.

We cross-checked the stakeholder mapping with the survey findings to come up with the following list of 13 user groups:

Community or campaigning organisation

- Community energy groups
- Citizen activists
- Campaigning organisations

Consultancy

- Research and advice
- Financial
- Legal
- Engineering

Energy efficiency or heating provider

- Heat networks
- Energy efficiency installers
- Heating installers

Energy network operator

- DNOs
- GDNs
- IDNOs
- System operator

Energy supplier or service provider

- Suppliers
- Aggregators
- Flexibility platforms
- ESCos

EV or storage provider

- EV manufacturers and charge points
- Battery manufacturers, installers, operators

Generation developer

- Private
- Public
- Community

Healthcare provider

- NHS
- Social care

Housing provider

- Housing associations
- Built environment professionals

Large energy user

- Commercial
- Industrial
- Public sector

Local authority

- Upper-tier, district and unitary
- Combined
- Regional bodies

Non-energy utility

- Waste
- Water
- Telecoms

Researcher

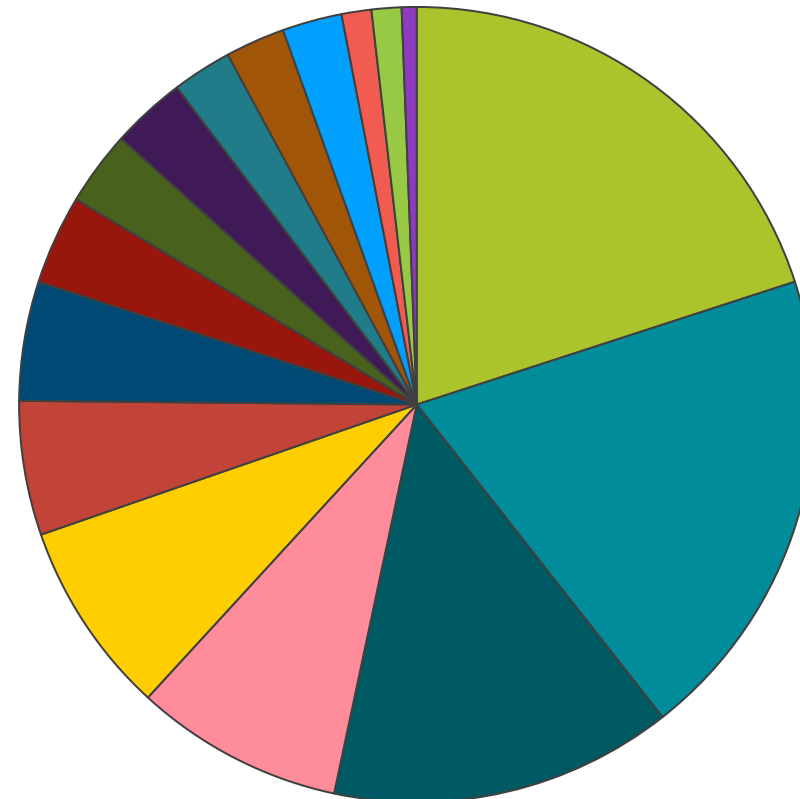
- Universities
- Research centres

ONLINE SURVEY



- There were 165 full responses to the survey with representation from all the sectors of interest
- The most responses were from consultancies (20%), community and campaigning organisations (19%) and local authorities (14%)
- The 'Other' category represented 4% of respondents and included two smallholdings, and several that fit into more than one category
- Full list of respondents is shown in Appendix 1

Respondents by organisation type

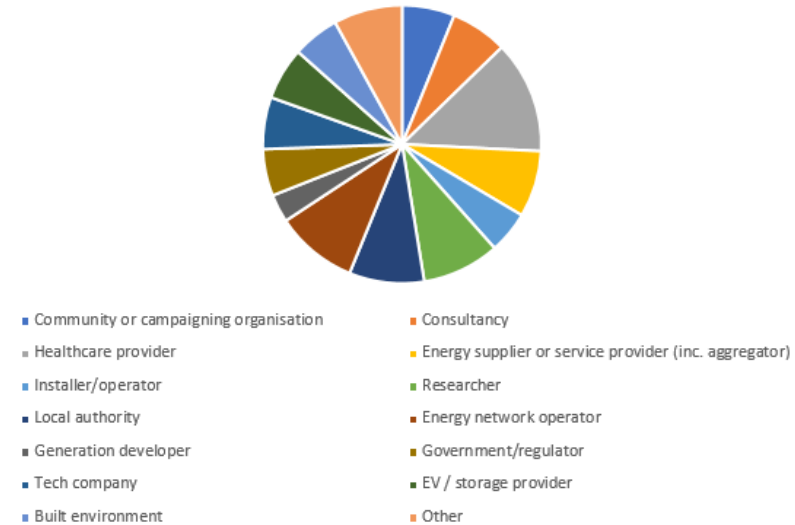


- Consultancy
- Community or campaigning organisation
- Local authority
- Researcher
- Tech company
- Energy supplier or service provider
- Installer/operator
- Other
- Energy network operator
- EV / storage provider
- Generation developer
- Government/regulator
- Built environment
- Large energy consumer
- Non-energy utility
- Healthcare provider

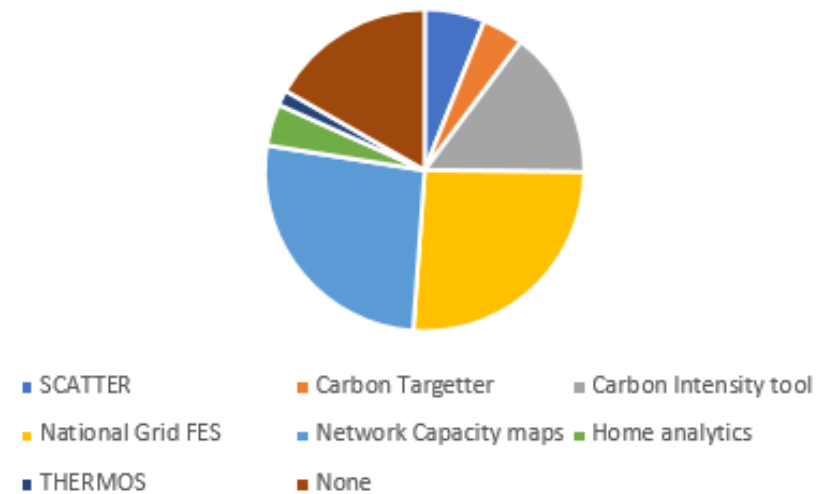
Findings

- Most respondents had used one or more of the suggested tools before – only 17% had not used any of them
- All user groups used data apps with no groups showing a significantly higher level of access. Most user groups had interaction with a similar number of tools each
- Of the data apps listed, network capacity maps and the National Grid FES were the most used, each accounting for about 26% of the selection. This was far higher than the next most popular Carbon Intensity Tool (15%)
- Respondents provided additional information on tools and approaches not included in the survey. These have been added to the Existing data applications report.

Proportional use of tools by respondent user group

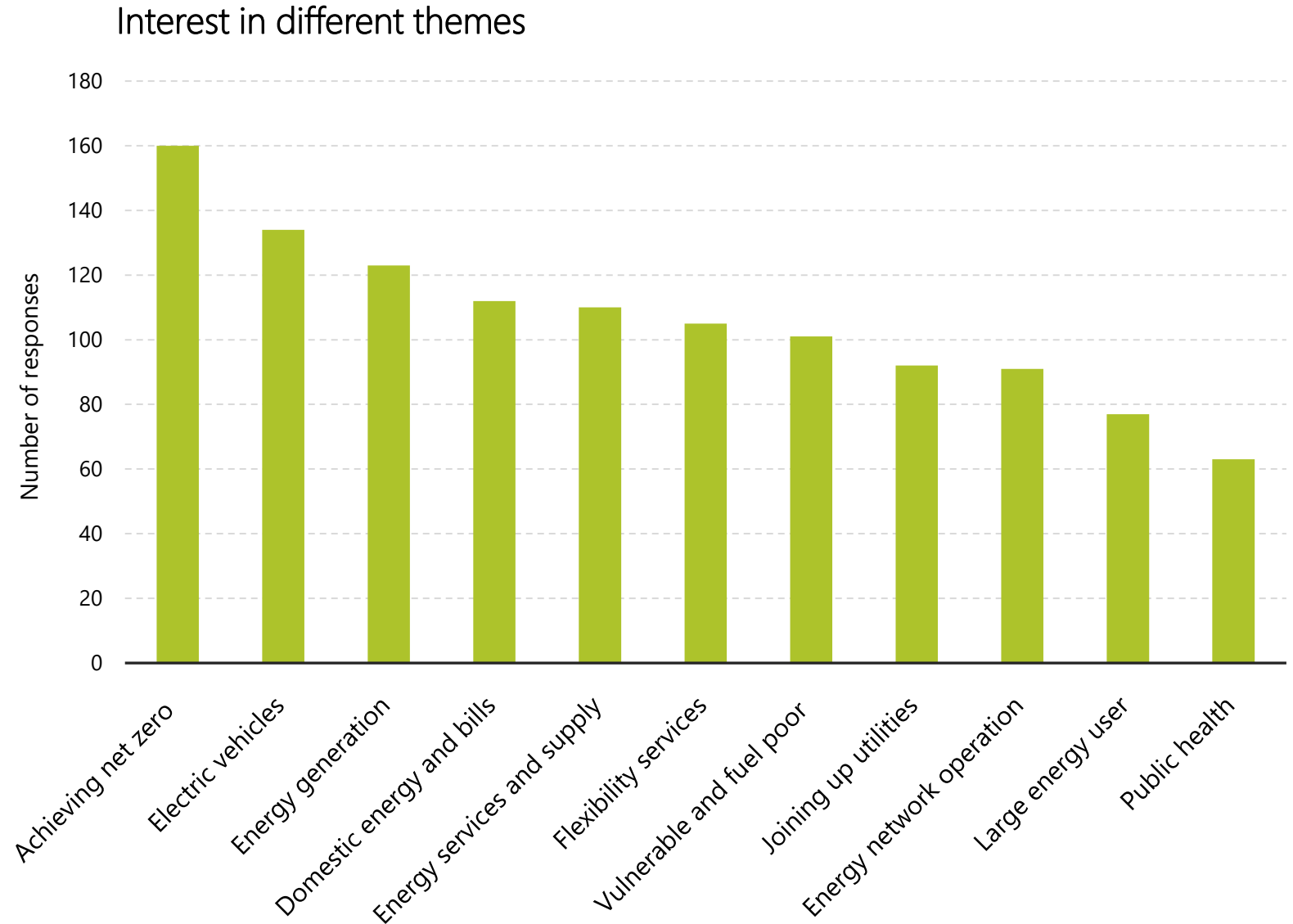


Tools used by respondents (pick list)



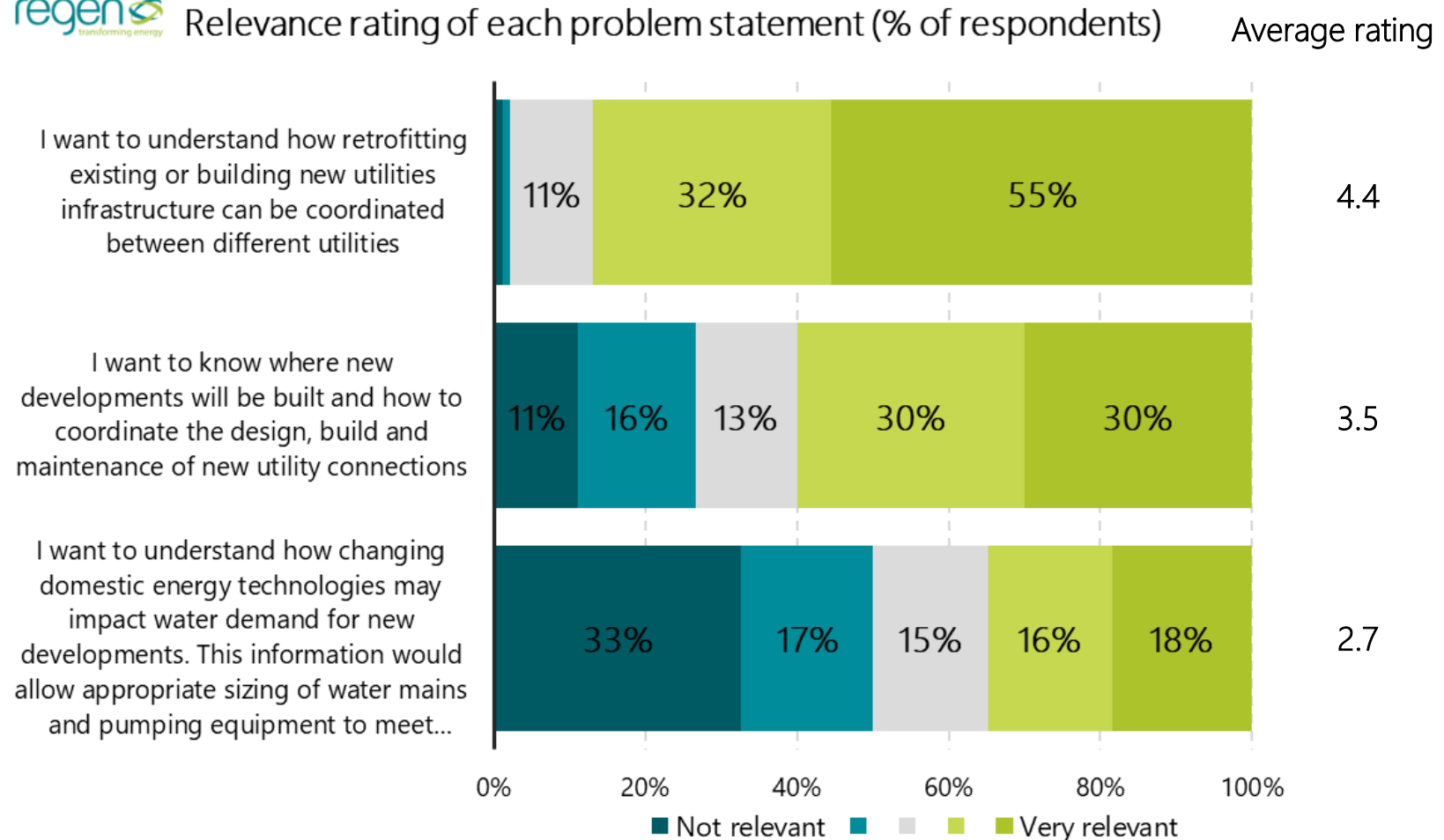
Findings

- Nearly all (97%) of respondents were interested in 'achieving net zero and local decarbonisation'.
- Only two themes had responses from less than half of respondents: 'large energy users' (47% were interested) and 'public health' (38% were interested)
- Some caution should be taken in comparing levels of interest as it reflects the types of organisations that responded to the survey and not the full spectrum of stakeholders.



Findings

- 92 respondents (56%) were interested in this theme, with the majority of those interested represented by consultants, local authorities, and researchers. However respondents were not unanimous within categories – i.e. not all local authority or consultancy respondents were interested in this theme.
- The statement deemed to be most relevant to respondents was “I want to understand how retrofitting existing or building new utilities infrastructure can be coordinated between utilities”, 87% of respondents rated this as relevant or very relevant.
- A broader spread of interest was shown in the two other example problem statements with 60% and 34% of respondents rating them as relevant and very relevant.
- 46 respondents offered additional problem statements which were grouped into themes on the next slide.



Joining up utilities: Additional use cases

Cross-cutting issues running through the problem statement themes:

- Net zero
- Decarbonisation of heat
- Utilisation of waste heat and heat networks
- Flexibility and integrating multiple technologies

“Shared data, and joining up utilities is a key enabler to transforming the utilities market, allowing retailers to offer "packaged utility bundles" to cover water, waste, broadband, gas, electricity etc.”

“How energy systems can operate together to deliver a low or zero carbon supply”

Themes within additional problem statements identified

Whole system approach to energy (and infrastructure) planning and use, 15	Household efficiency or consumer offer improvement, 7		Optimising infrastructure capacity, 6	
	Stakeholder inclusion, 3	Low carbon resource identification	Data integration	Variance across regional boundaries (LA, DNO etc)
				Commercial cost management

“Capacity restrictions lead to delays in new distributed and demand centres being deployed - improved data sharing will lead to better planning outcomes”

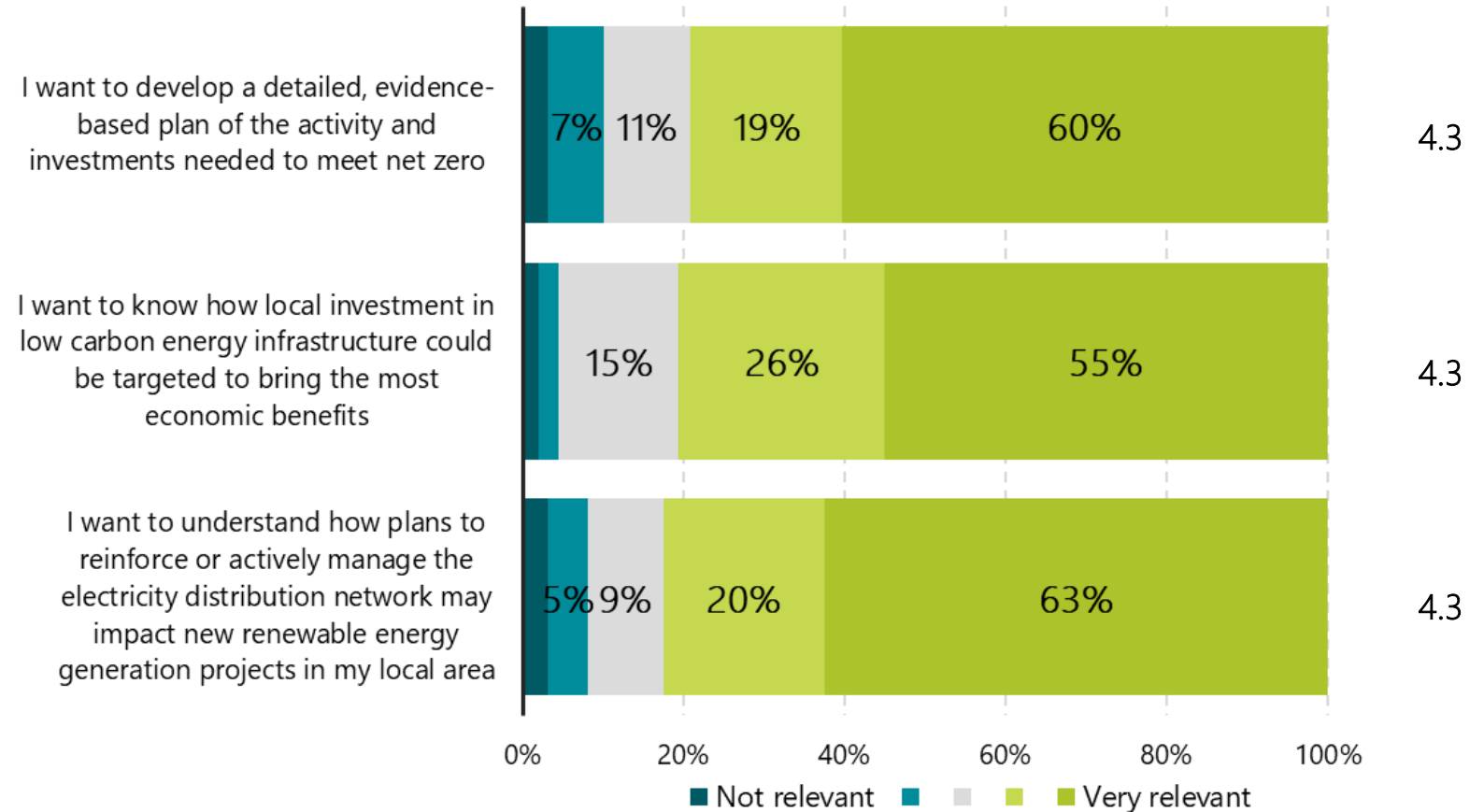
Findings

- 160 respondents (97%) were interested in this theme, with interest from all user groups.
- The statement deemed to be most relevant to respondents was “I want to understand how plans to reinforce or actively manage the electricity distribution network...”, 83% of respondents rated this as relevant or very relevant.
- A similar level of interest was shown in the two other example problem statements with 81% and 79% of respondents rating them as relevant and very relevant.
- 64 respondents offered additional problem statements which were grouped into themes on the next slide.



Relevance rating of each problem statement (% of respondents)

Average rating

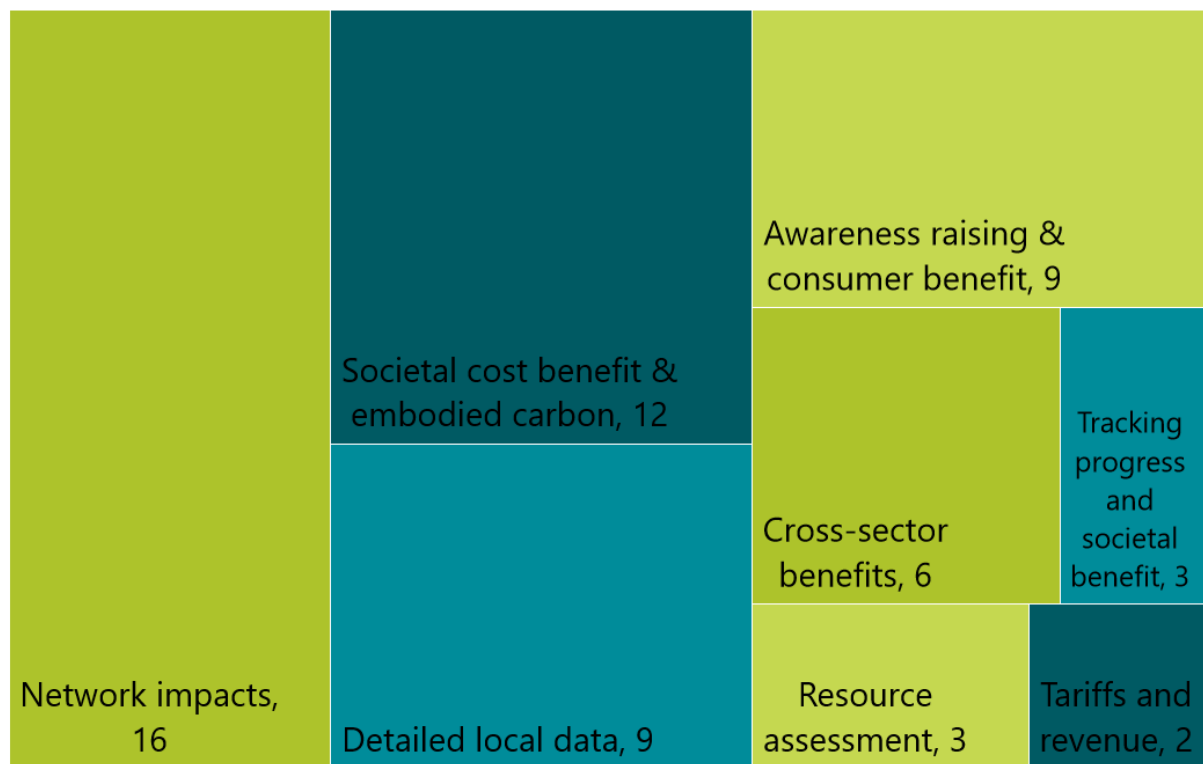


Achieving net zero: Additional use cases

"I want to be able to understand capacity constraints in my area to plan for electrified heat and transport"

"Low visibility of low-voltage networks and lack of network topology"

Themes within additional problem statements identified



"As a consumer, I want to understand how my energy behaviours can help to achieve net zero"

"How can the benefits/value from local decarbonisation be shared with local communities and businesses"

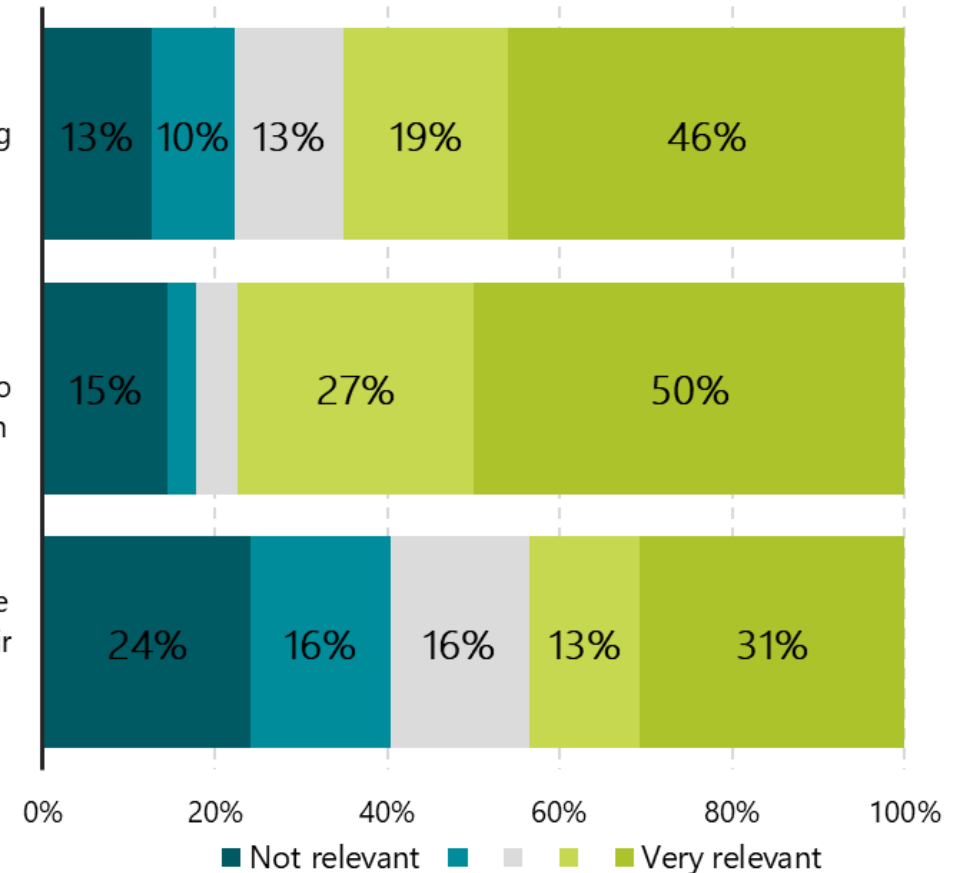
Findings

- 63 respondents (38%) were interested in this theme, with two thirds of those responding representing community organisations, local authorities or consultancies
- The statement deemed to be most relevant to respondents was “I want to make targeted transport infrastructure investment decisions...”, 77% of respondents rated this as relevant or very relevant.
- A lower level of interest was shown in the two other example problem statements with 65% and 44% of respondents rating them as relevant and very relevant.
- 24 respondents offered additional problem statements which were grouped into themes on the next slide.



Relevance rating of each problem statement (% of respondents)

Average rating



Public health: Additional use cases

"I'd like to know how the value compares of generally increasing warmth and internal air quality in different regions across the UK and be able to quantify the costs to the NHS."

"I want energy activities to dovetail with public health winter planning to ensure that everyone can keep warm over winter (e.g. short-term actions like the warm home discount, not just energy efficiency measures)."

Themes within additional problem statements identified

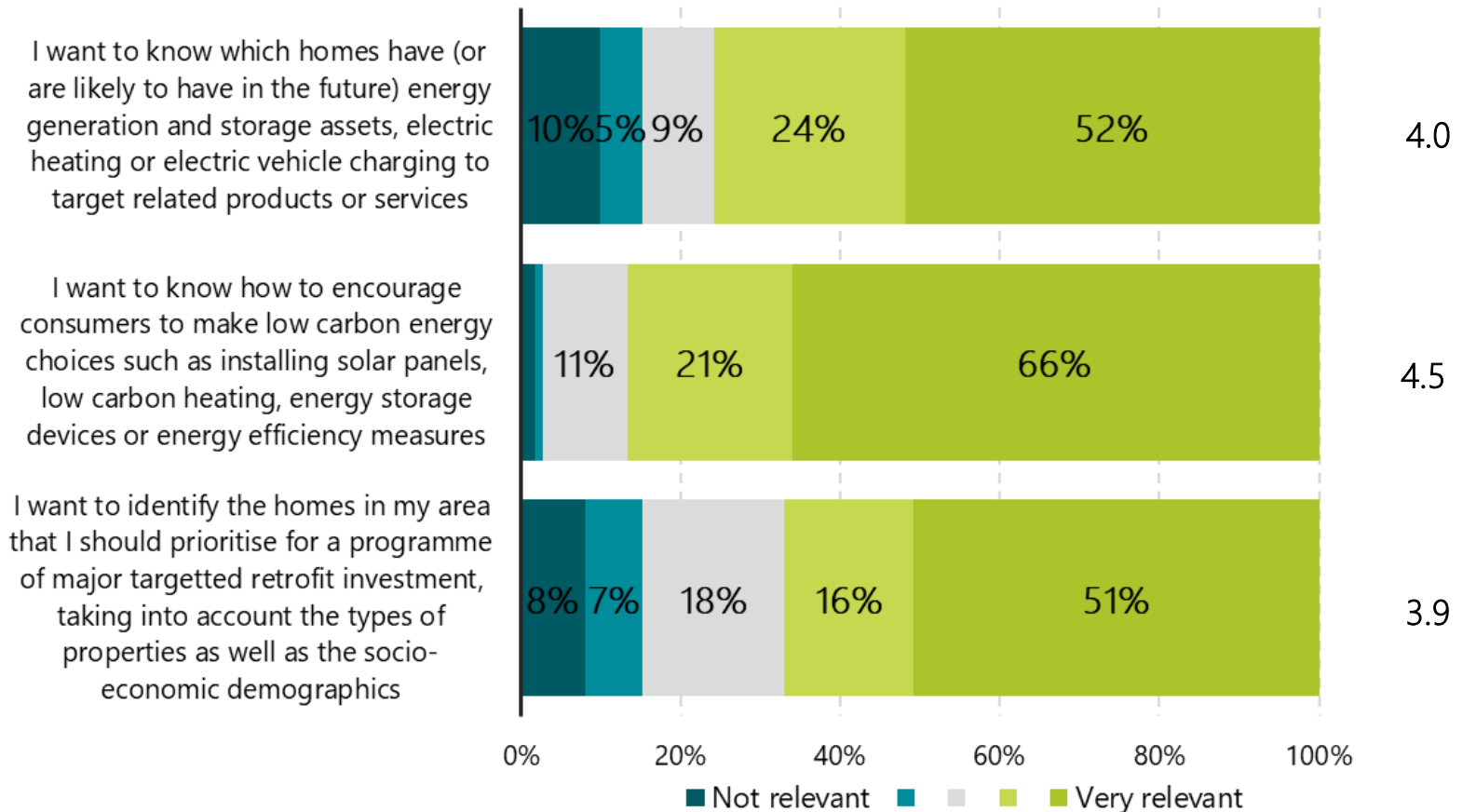
Quantification of links between health and home energy / transport options, 9	Air quality impacts from net zero carbon interventions, 5	Fuel poverty and comfort impacts from low carbon interventions, 2	Impact of low carbon interventions on mental health, 2
	Improving access to target audiences and raising awareness, 3	links between multi-vector approaches and health, 2	Impact of retrofitting energy measures on health outcomes, 1

Findings

- 112 respondents (68%) were interested in this theme, with the majority of those interested represented by community or campaigning organisations, consultants, local authorities, and researchers. Almost all user groups were represented by those interested in this theme.
- The statement deemed to be most representative to respondents interested in this theme was “I want to know how to encourage consumers to make low carbon energy choices...”, 86% of respondents rated this as relevant or very relevant.
- A similar level of interest was shown in the two other example problem statements with 76% and 67% of respondents rating them as relevant and very relevant.
- 38 respondents offered additional problem statements which were grouped into themes on the next slide.

Relevance rating of each problem statement (% of respondents)

Average rating

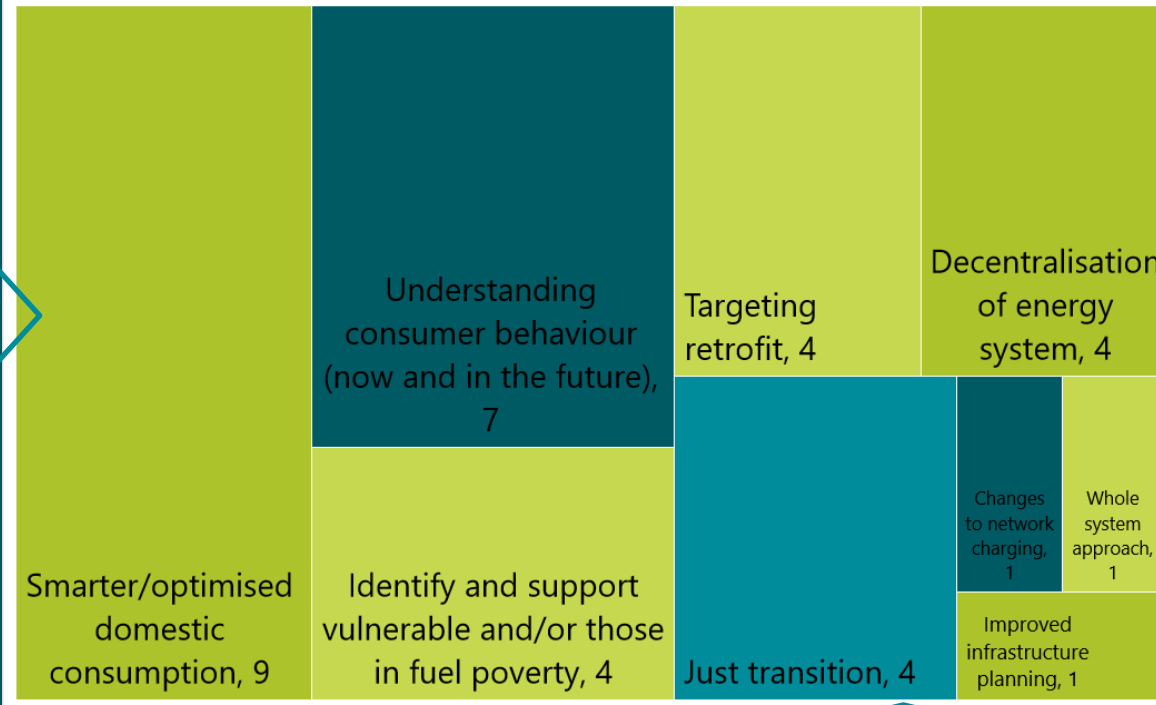


Domestic energy and bills: Additional use cases

“Anonymised smart meter data is paramount for our research on better understanding how LV networks will be impacted by low-carbon technologies”

“Applications to easily model (and explain) the benefits of different measures to households in terms of cost savings.”

Themes within additional problem statements identified



“Demand for energy by end users is key and the roles they may have in delivering system flexibility. Requires innovative system design, operation, commercial models and user engagement.”

“I want to be able to illustrate, through statistics, the financial benefit of Community Energy sharing”

Cross-cutting issues running through the problem statement themes:

- Social inclusion and just transition
- Community access to data and systems

“How to identify fuel poverty households and how to improve their energy efficiency to reduce costs and increase welfare.”

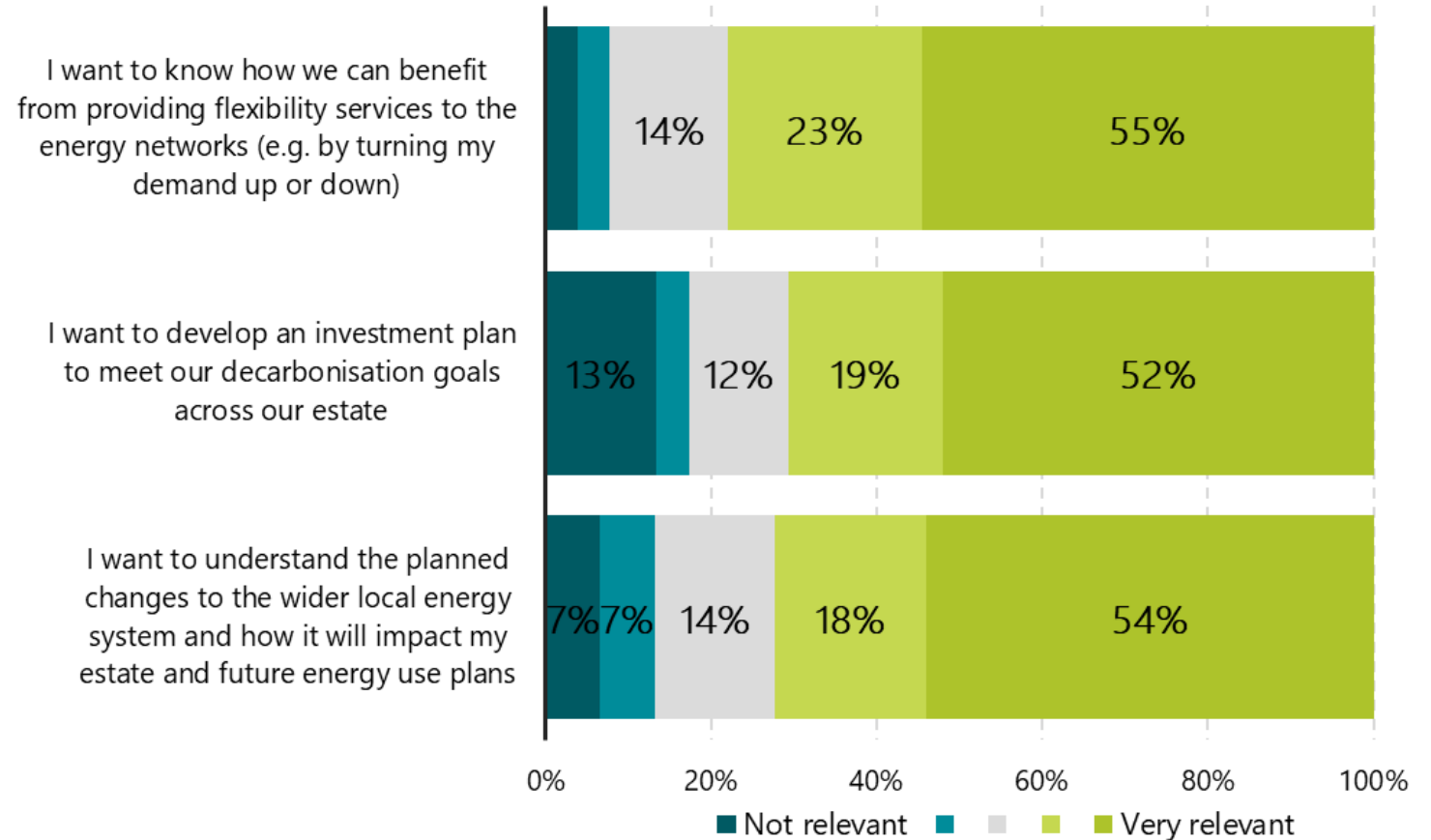
“Understand equity issues in uptake of new technologies and effects for sharing energy system costs”

Findings

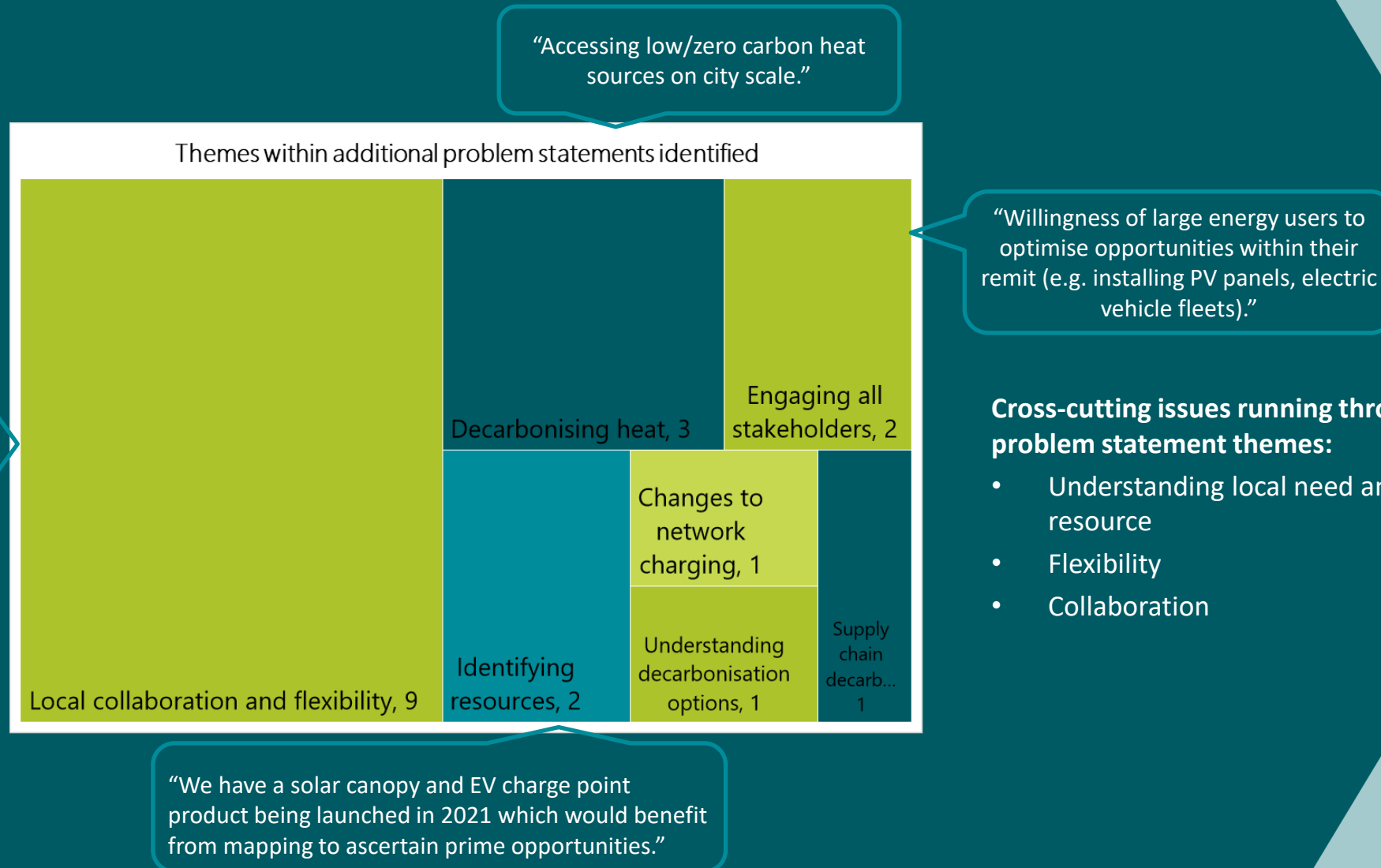
- 77 respondents (47%) were interested in this theme, with the majority of those interested represented by consultants, local authorities, and tech companies. Almost all user groups were represented by those interested in this theme with a near neutral balance of interest/disinterest within most groups.
- The statement deemed to be most representative to respondents interested in this theme was “I want to know how we can benefit from providing flexibility services...”, 78% of respondents rated this as relevant or very relevant.
- A similar level of interest was shown in the two other example problem statements with 71% and 72% of respondents rating them as relevant and very relevant.
- 21 respondents offered additional problem statements which were grouped into themes.

Relevance rating of each problem statement (% of respondents)

Average rating



Large energy users: Additional use cases



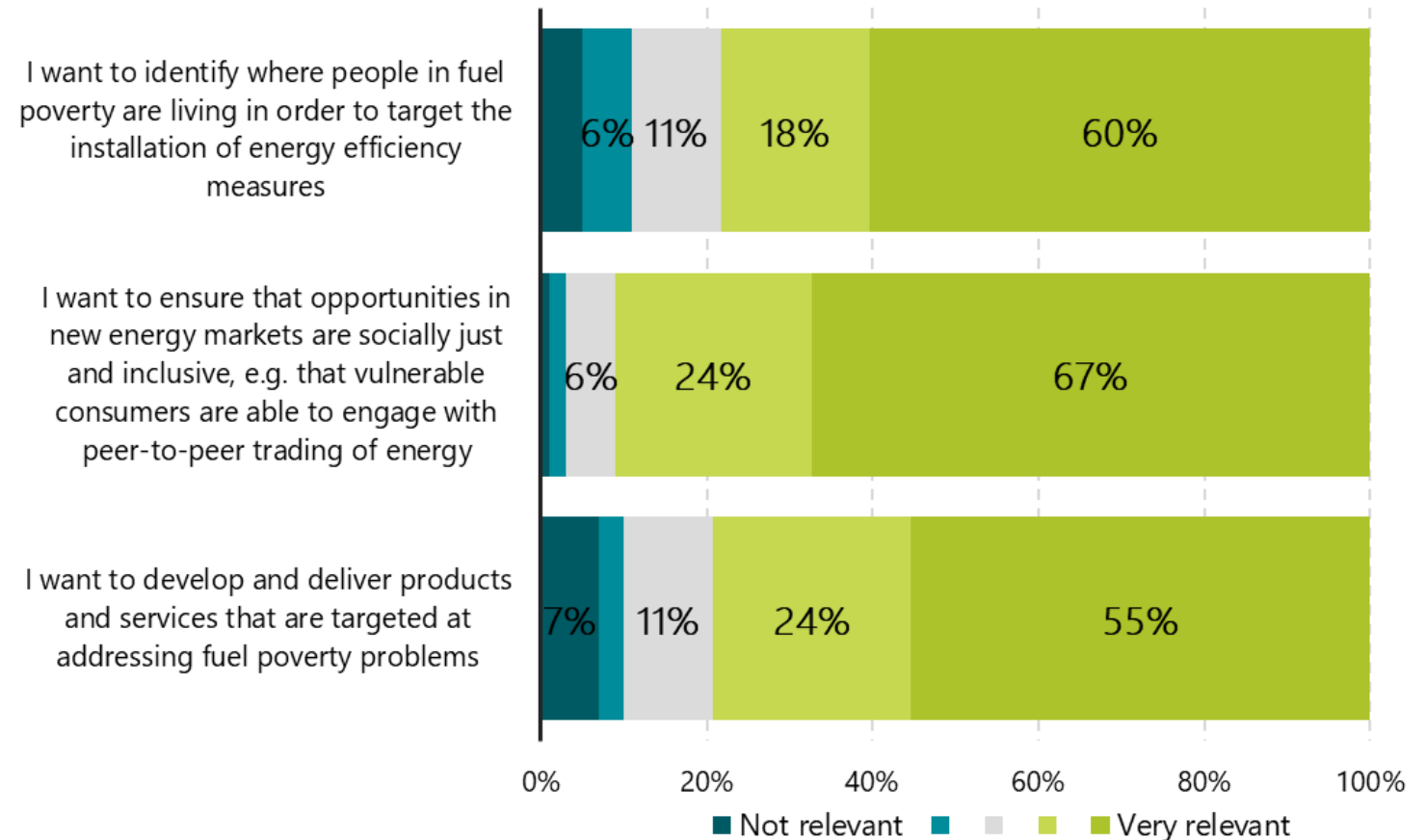
Findings

- 101 respondents (61%) were interested in this theme, with the majority of those interested represented by community or campaigning organisations, local authorities, and consultants.
- The statement deemed to be most representative to respondents interested in this theme was “I want to ensure that opportunities in new energy markets are socially just and inclusive...”, 91% of respondents rated this as relevant or very relevant.
- A slightly lower level of interest was shown in the two other example problem statements with 79% and 78% of respondents rating them as relevant and very relevant
- 32 respondents offered additional problem statements which were grouped into themes...



Relevance rating of each problem statement (% of respondents)

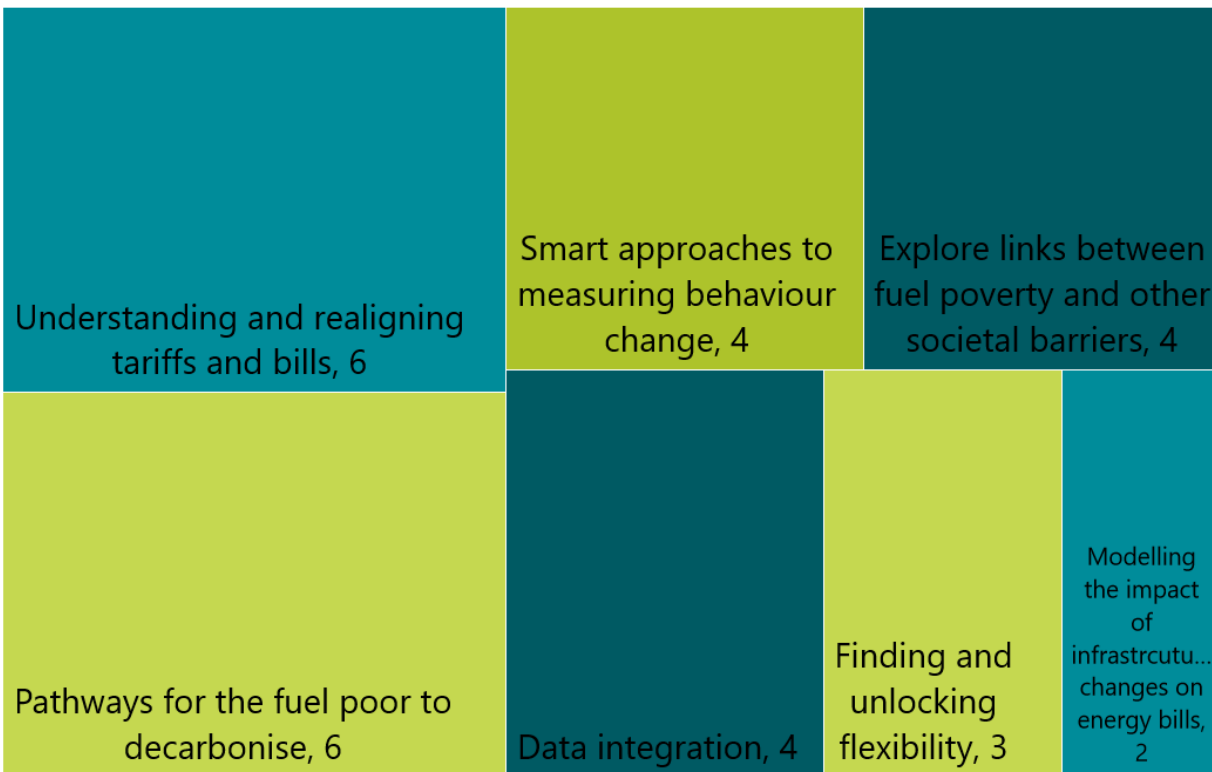
Average rating



Vulnerable and fuel poor consumers: Additional use cases

"I want to understand the pathways to reducing energy bills for vulnerable and fuel poor customers (not just insulation, energy storage, generation, heating, but also community schemes, shared infrastructure, etc.)"

Themes within additional problem statements identified



"I'd like to be able access research on segregating fuel poverty from general poverty issues."

"What are links between fuel poverty households and poor health and educational achievements? How to access resources to retrofit their homes? How to support/motivate them to access resources?"

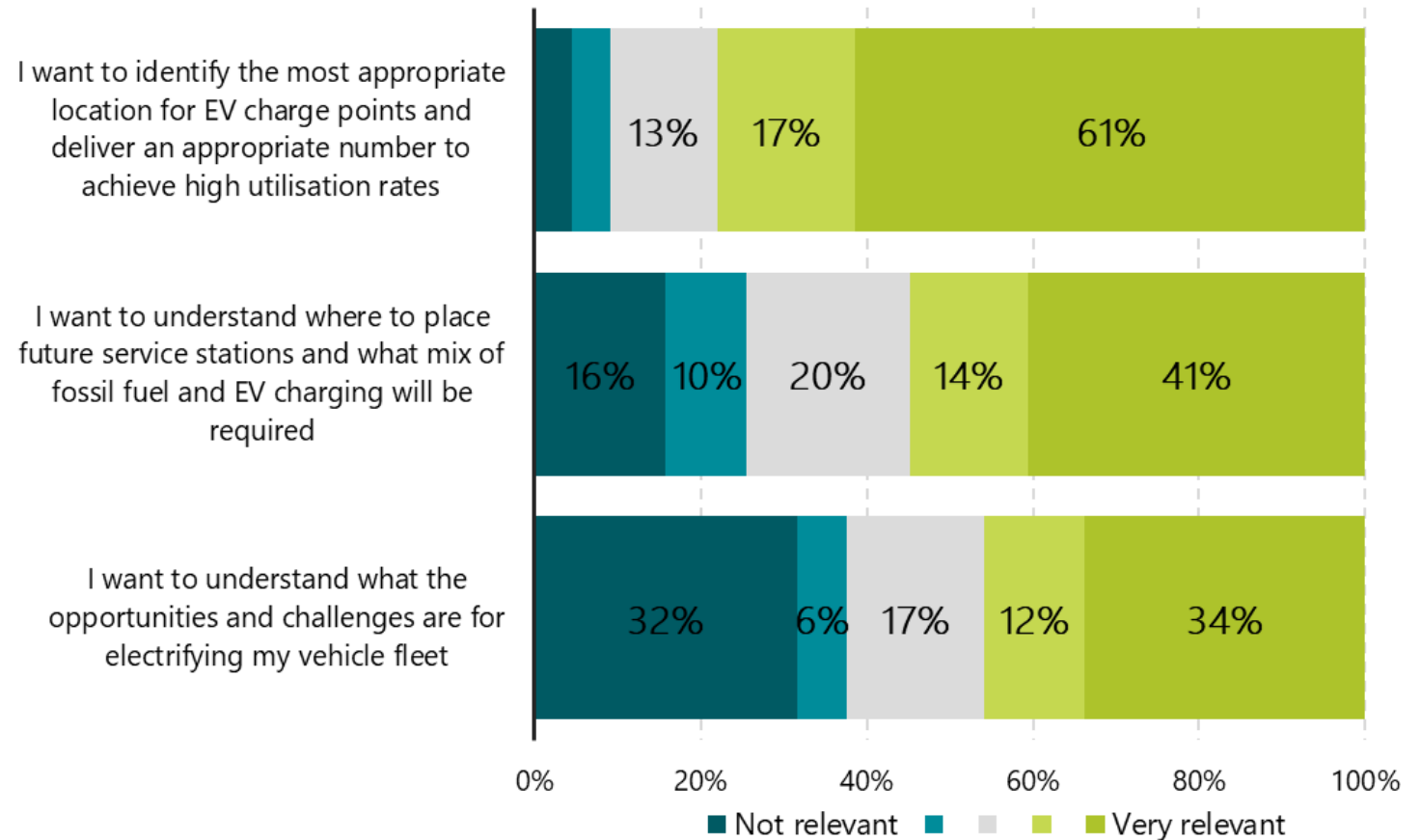
Findings

- 134 respondents (83%) were interested in this theme with the majority represented by community or campaigning organisations, consultants, and local authorities.
- The statement deemed to be most representative to respondents interested in this theme was “I want to identify the most appropriate location for EV charge points and deliver an appropriate number to achieve high utilisation rates”, 78% of respondents rated this as relevant or very relevant.
- A notably lower level of interest was shown in the two other example problem statements with 54% and 46% of respondents rating them as relevant and very relevant.
- 45 respondents offered additional problem statements which were grouped into themes...



Relevance rating of each problem statement (% of respondents)

Average rating



Electric vehicles: Additional use cases

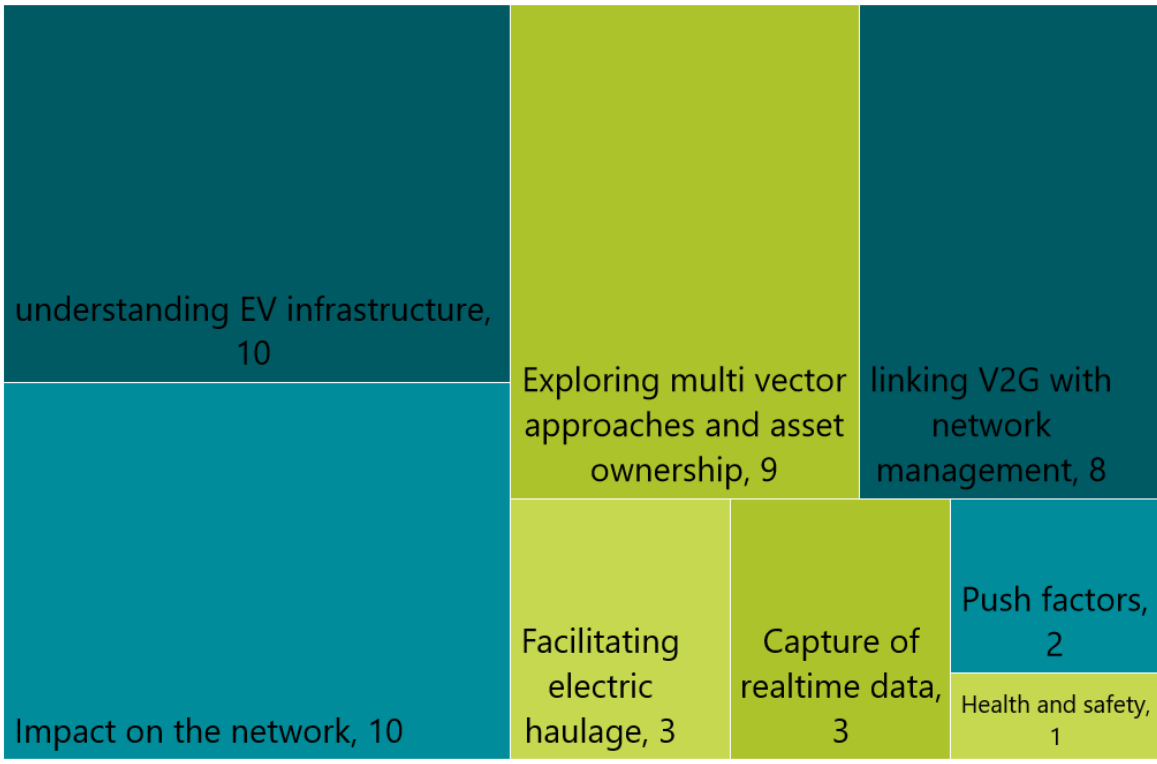
"I want to know in real time which are good and bad times to charge vehicles and to automate charging"

"How to use data to identify V2G locations that would be particularly helpful to local networks"

"How to encourage Local Authorities and businesses to partner with community energy groups to provide low carbon electricity+EV charging."

"Impact of smart charging on chargepoints at specific locations."

Themes within additional problem statements identified



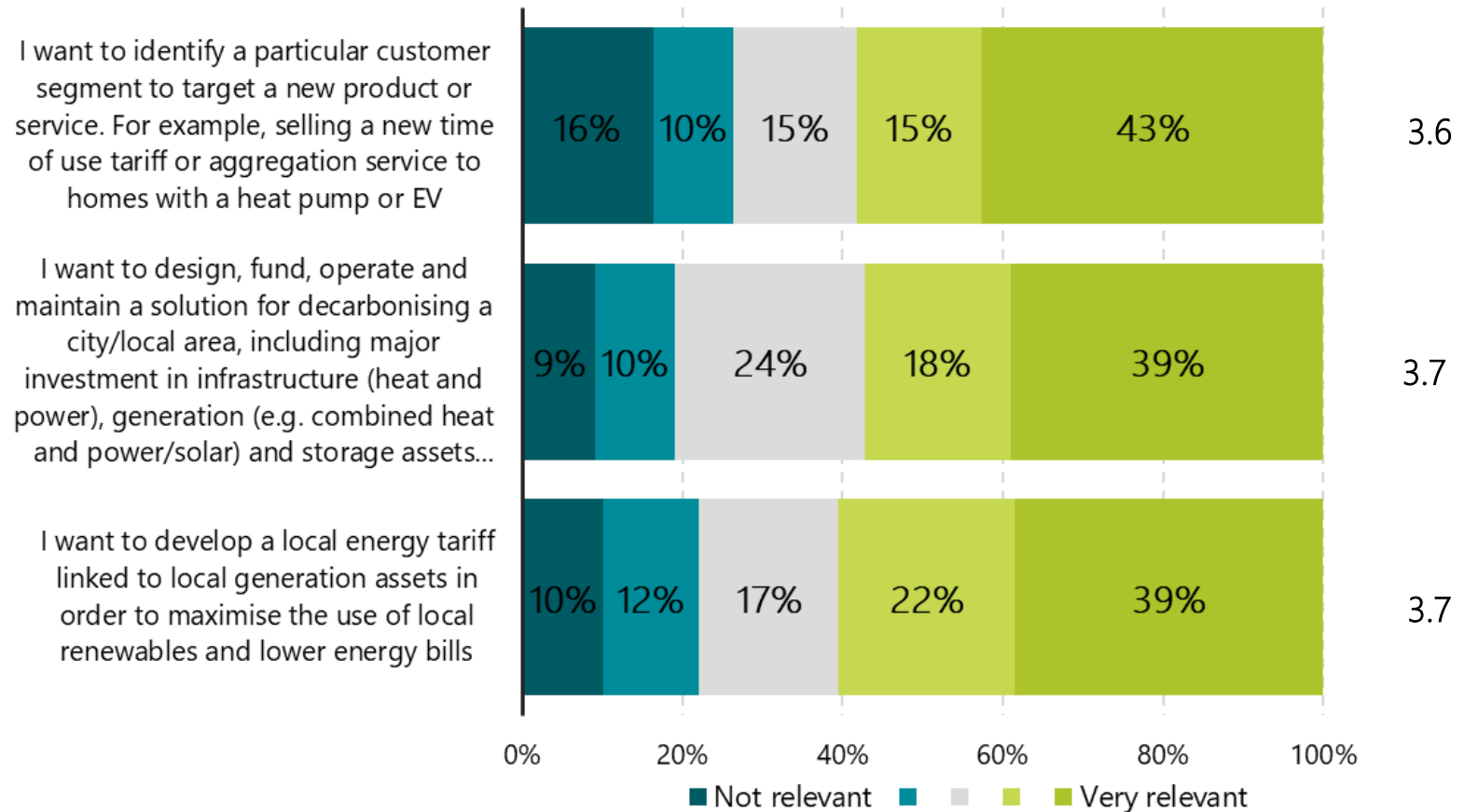
Findings

- 110 respondents (67%) were interested in this theme with the majority represented by community or campaigning organisations, consultants, and local authorities.
- The statement deemed to be most representative to respondents interested in this theme was “I want to develop a local energy tariff linked to local generation assets...”, 61% of respondents rated this as relevant or very relevant.
- A similar level of interest was shown in the two other example problem statements with 58% and 57% of respondents rating them as relevant and very relevant.
- 26 respondents offered additional problem statements which were grouped into themes...



Relevance rating of each problem statement (% of respondents)

Average rating

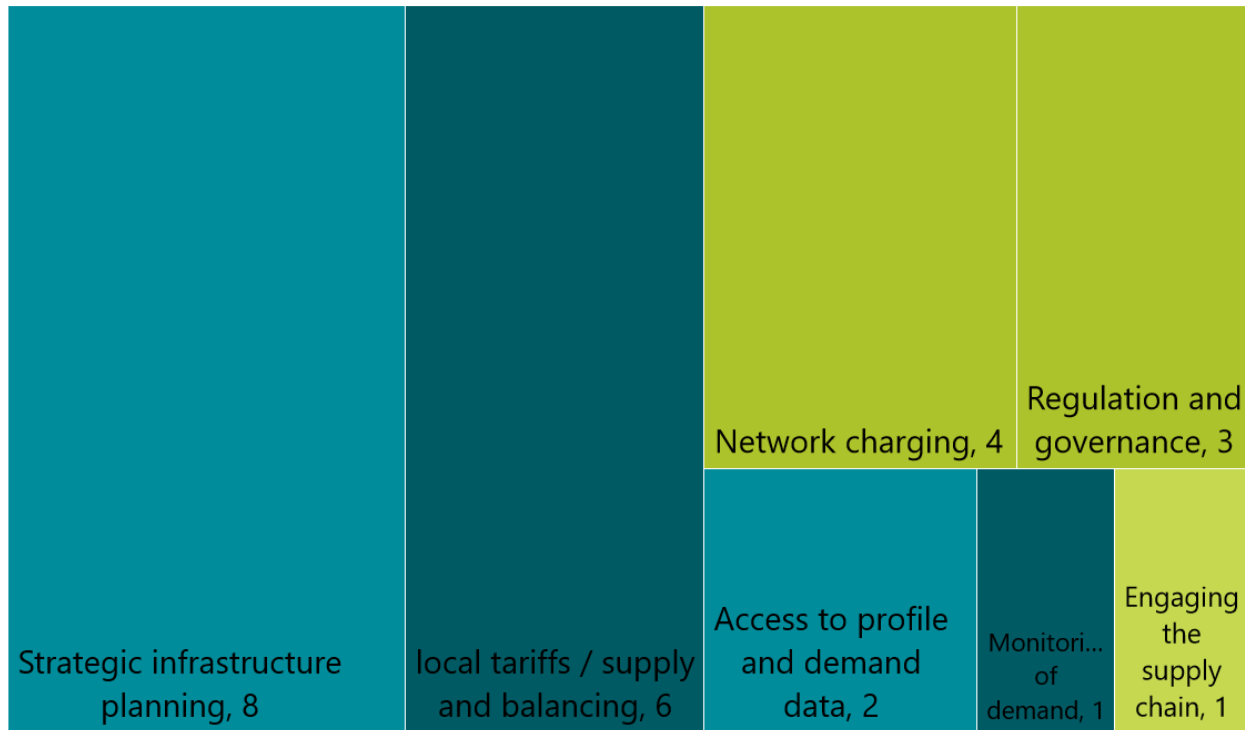


Energy supply arrangements: Additional use cases

"I want to understand how new energy services and supply arrangements will impact on energy infrastructure (and vice-versa)"

"I want to know the expected daily and seasonal pattern of energy consumption for a particular property type"

Themes within additional problem statements identified



"Gathering processed data from distributed sources and sites and securely storing and using this data to benefit operators and consumers"

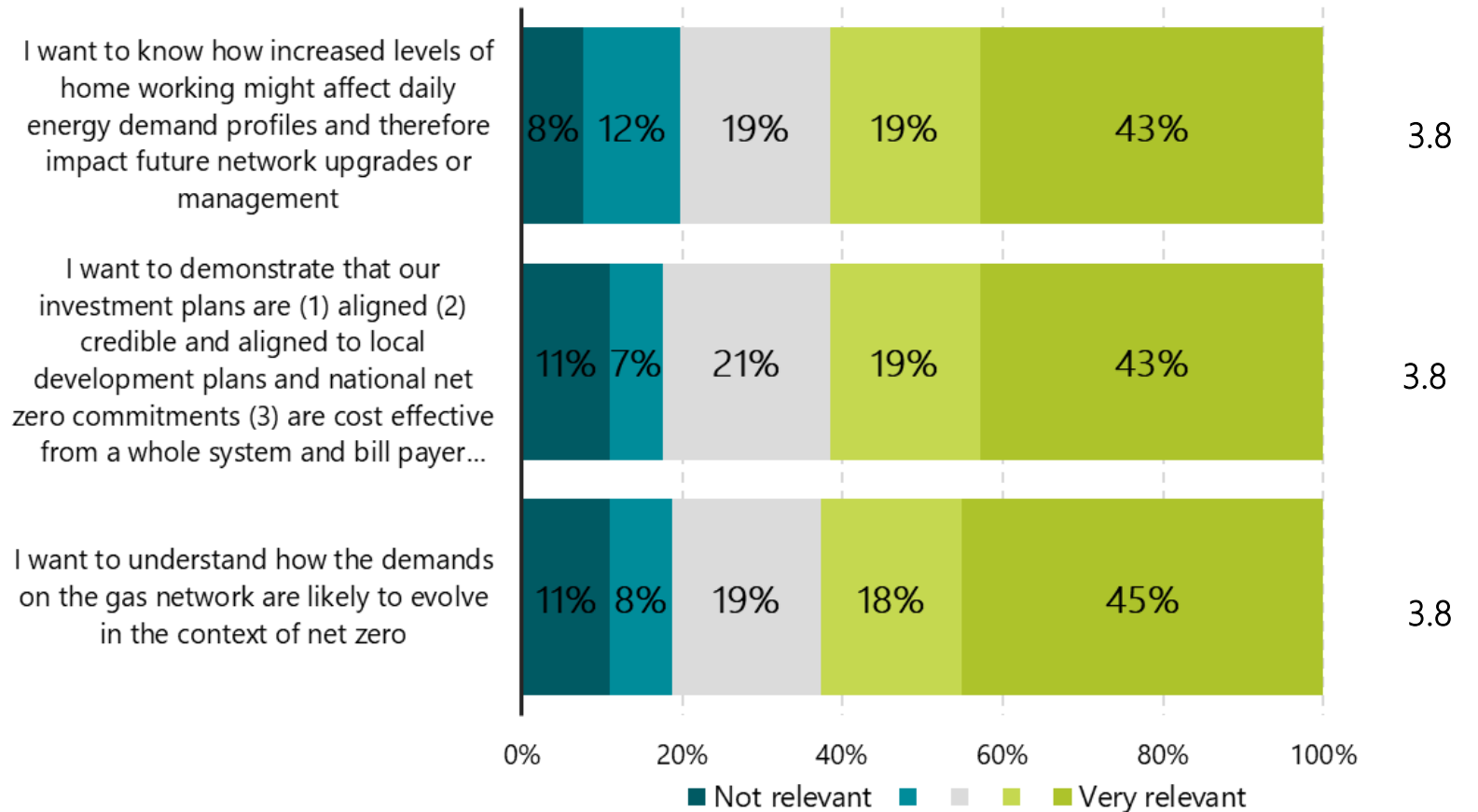
Findings

- 91 respondents (55%) were interested in this theme with the majority represented by community or campaigning organisations, consultants, and local authorities.
- The statement deemed to be most representative to respondents interested in this theme was “I want to understand how the demands on the gas network are likely to evolve in the context of net zero”, 63% of respondents rated this as relevant or very relevant.
- A similar level of interest was shown in the two other example problem statements with 62% of respondents rating both as relevant and very relevant.
- 24 respondents offered additional problem statements which were grouped into themes



Relevance rating of each problem statement (% of respondents)

Average rating



Energy network operation: Additional use cases

"I want to benefit from local energy resources and/or microgrids"

Themes within additional problem statements identified

Local supply, 8	Impact of disruptive technologies / rapid scale up on the network, 6	Future of the strategic energy system assets, 3	
		Access to data for enhanced planning assessments, 2	Punitive measures for heavy use, 2
	Network investment controls, 5	Local flexibility revenue, 1	Forecasti..., 1

"The play off between different future system options and the impacts these have on energy supply networks as the solutions are adopted and the impact network capacity has on the potential and take-up of these options"

"We need to understand how future growth in our district will impact on local energy networks, and how capacity, and longer-term resilience can be addressed in a future energy scenario aiming to achieve net zero carbon by 2050."

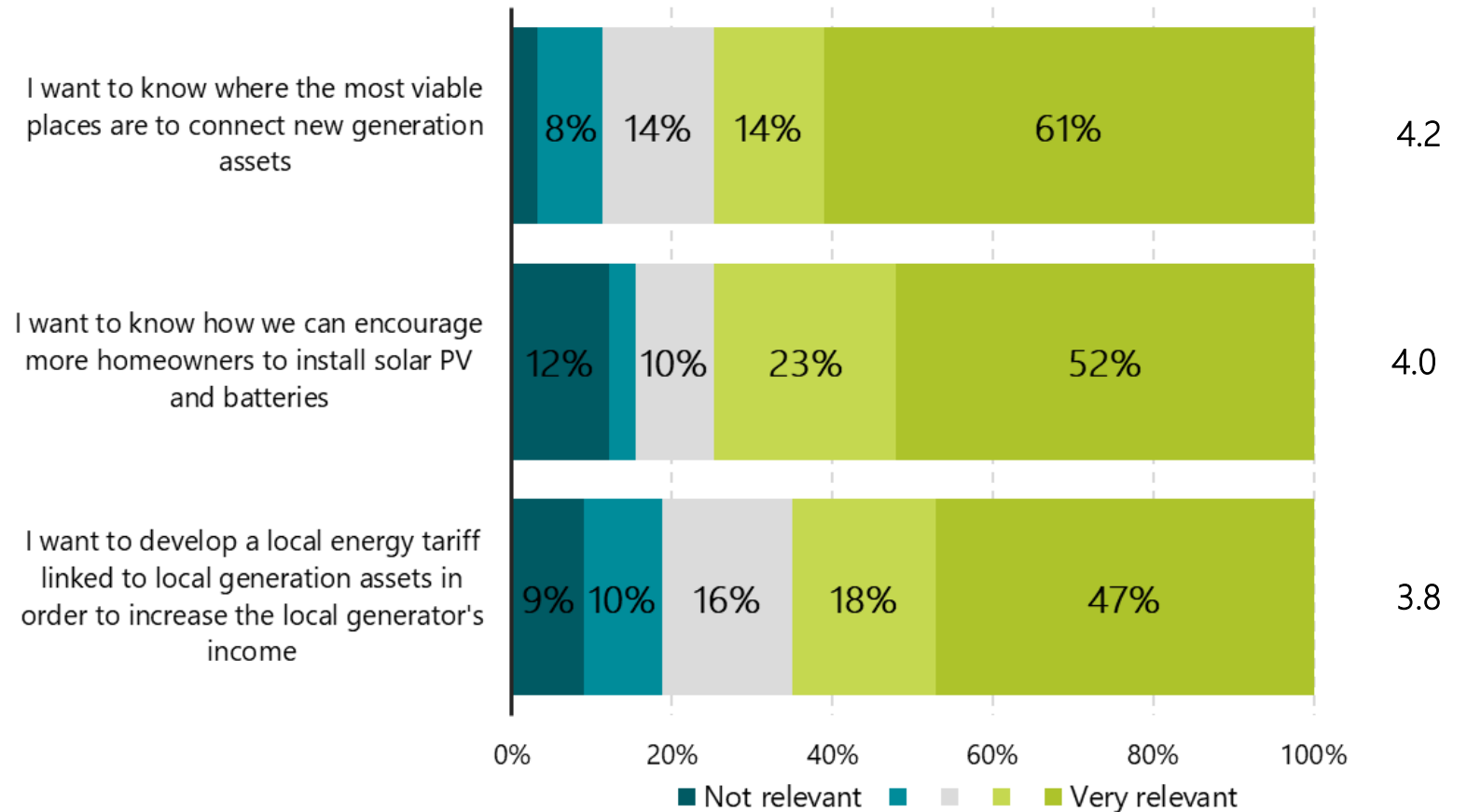
Findings

- 123 respondents (75%) were interested in this theme, with the majority of those interested represented by community or campaigning organisations, local authorities, and consultants. All user groups were represented by those interested in this theme.
- The statement deemed to be most relevant to respondents was “I want to know where the most viable places are to connect new generation assets”, 75% of respondents rated this as relevant or very relevant.
- Encouraging homeowners to install PV and storage was rated very closely in second place, at 75%. Development of a local energy tariff was rated as relevant or very relevant by 65% of respondents.
- 25 respondents offered additional problem statements which were grouped into themes on the next slide.



Relevance rating of each problem statement (% of respondents)

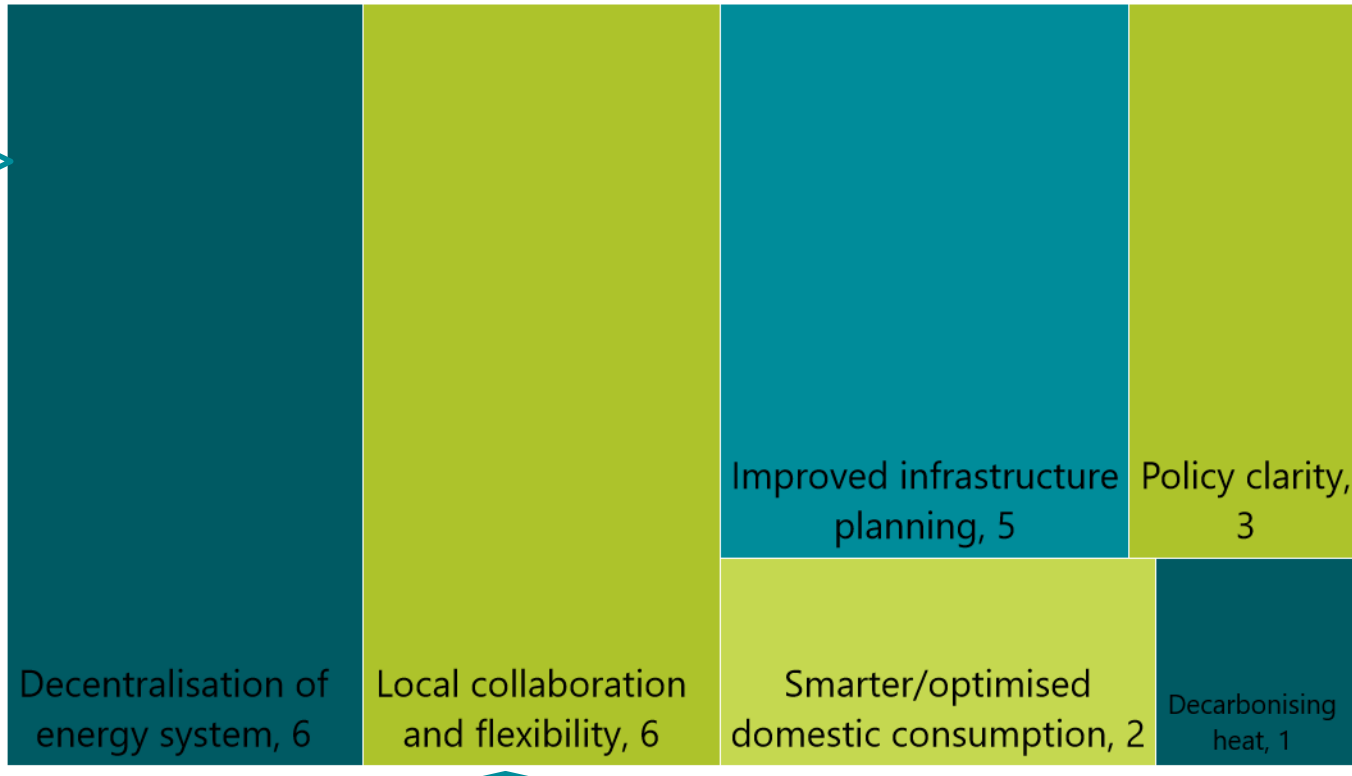
Average rating



Energy generation: Additional use cases

"Good to have continuously updated resource to see how much export capacity there would be at our various points on the grid."

Themes within additional problem statements identified



"Localised investment in reliable green energy supplies is critical"

"Store-and-forward strategies to allow areas with excess renewable generation to assist those in Constraint Management Zones"

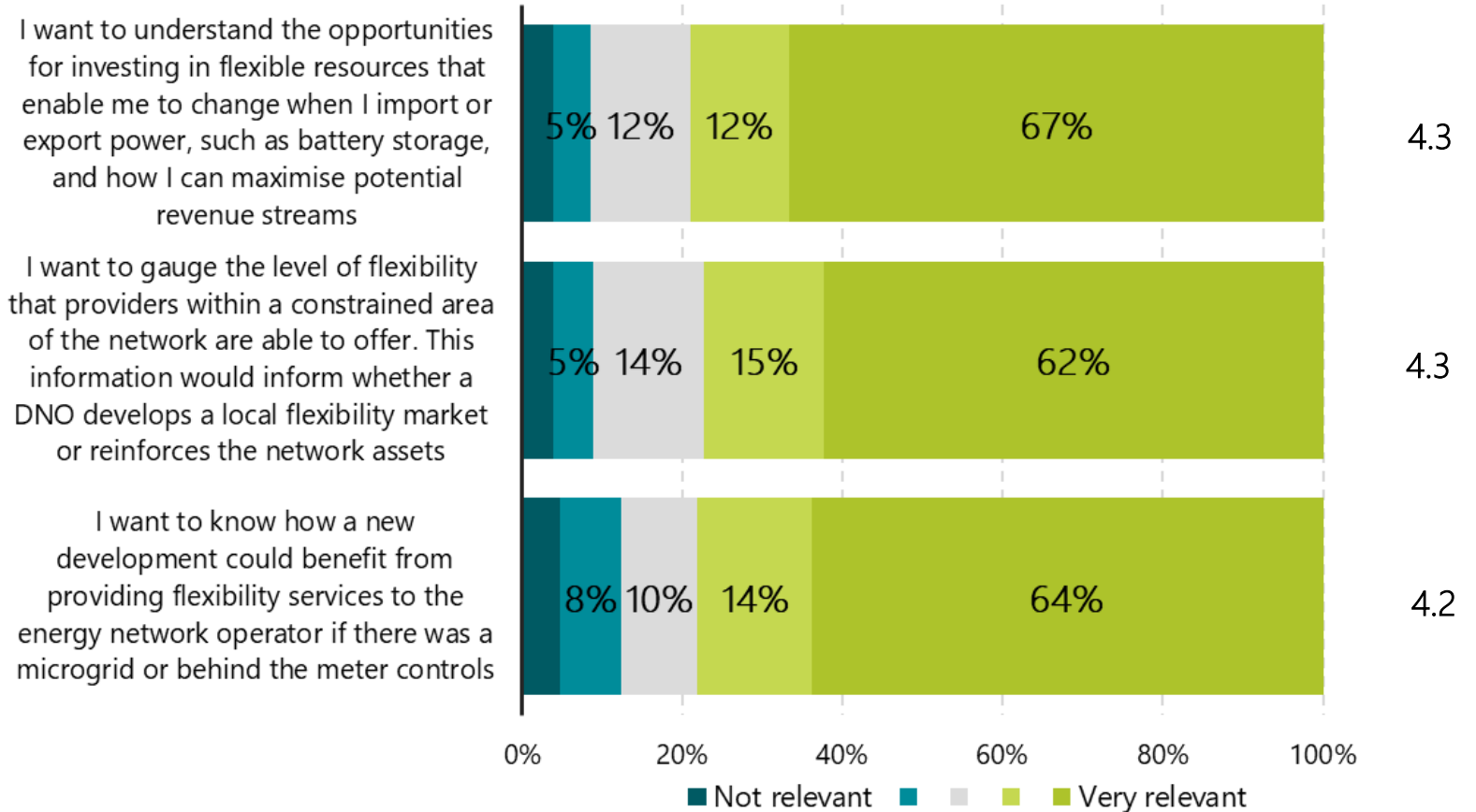
Findings

- 105 respondents (64%) were interested in this theme, with the majority of those interested represented by consultants, community or campaigning organisations, local authorities and tech companies. All user groups were represented by those interested in this theme.
- The statement deemed to be most relevant to respondents was “I want to understand the opportunities for investing in flexible resources...”, 79% of respondents rated this as relevant or very relevant.
- Very similar levels of interest were shown in the two other example problem statements with 77% and 78% of respondents rating them as relevant and very relevant.
- 25 respondents offered additional problem statements which were grouped into themes on the next slide.



Relevance rating of each problem statement (% of respondents)

Average rating



Flexibility services: Additional use cases

Themes within additional problem statements identified

"I want to understand how the introduction of new flexibility in an asset in a local area could be used to enable a new grid connection for a renewable energy generator."

Improved modelling of flexibility services and contracting, 9

Whole system approach, 7

Decentralisation of the energy system, 3

Improved infrastructure planning, 2

Local collaboration and flexibility, 2

Optimal site identification, 1

"Providing flexibility services that meet the requirements of individual customers or local communities"

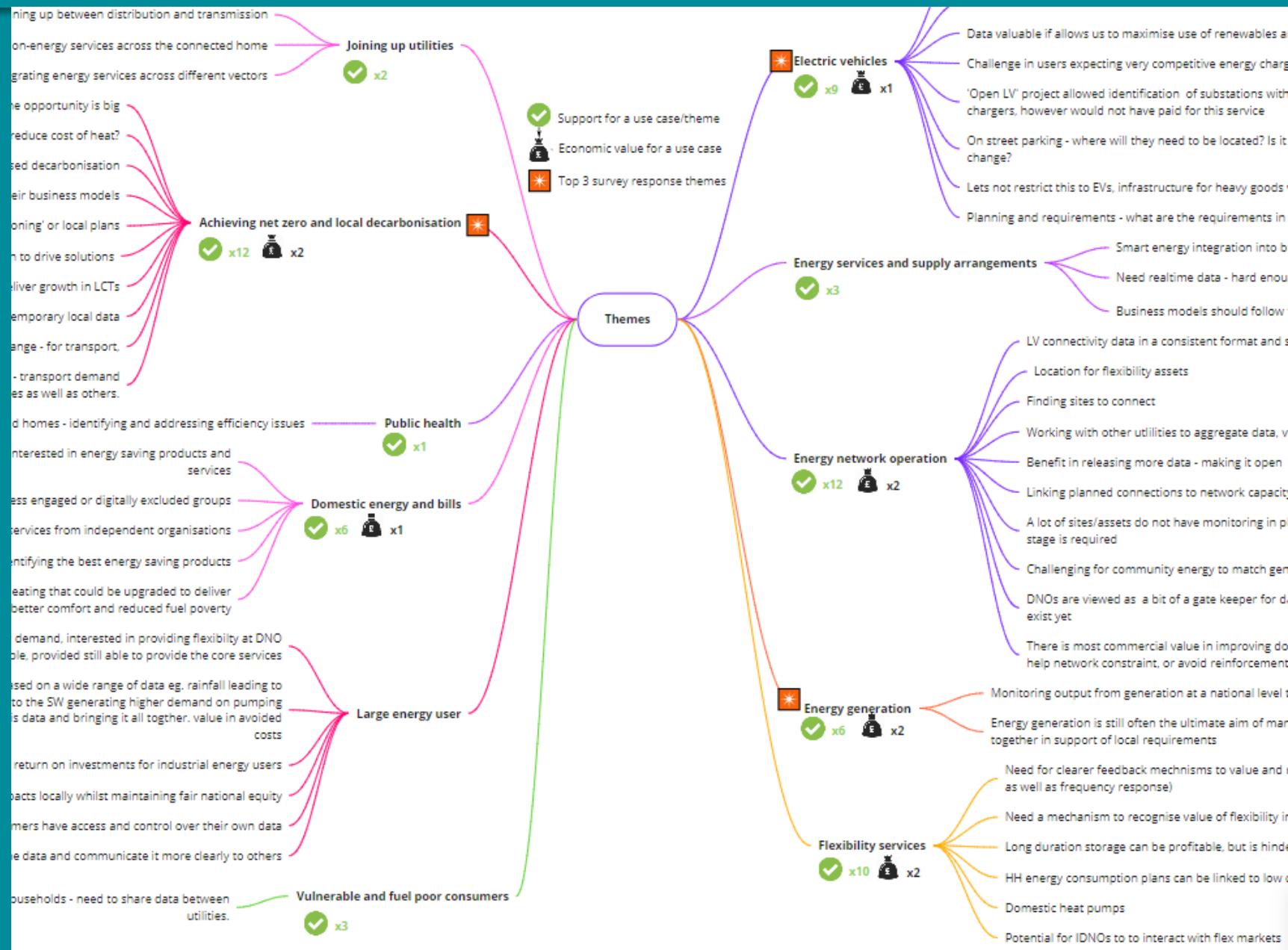
"Flexibility can be delivered by both electrical and thermal storage. Both need to be considered in parallel."

WORKSHOPS



Workshops overview

- Two workshops were attended by 70 stakeholders
- The questions for discussion were:
 - What are your key areas of interest?
 - Which use cases have the potential to create economic value from the use of data?
 - What should innovators take into account when designing new applications?
- Responses were captured on an interactive whiteboard, a snapshot of which is shown here
- The green ticks represent participants' key area of interest. The most popular were: Achieving net zero (x12); energy network operation (x12); flexibility services (x10); and electric vehicles (x9)



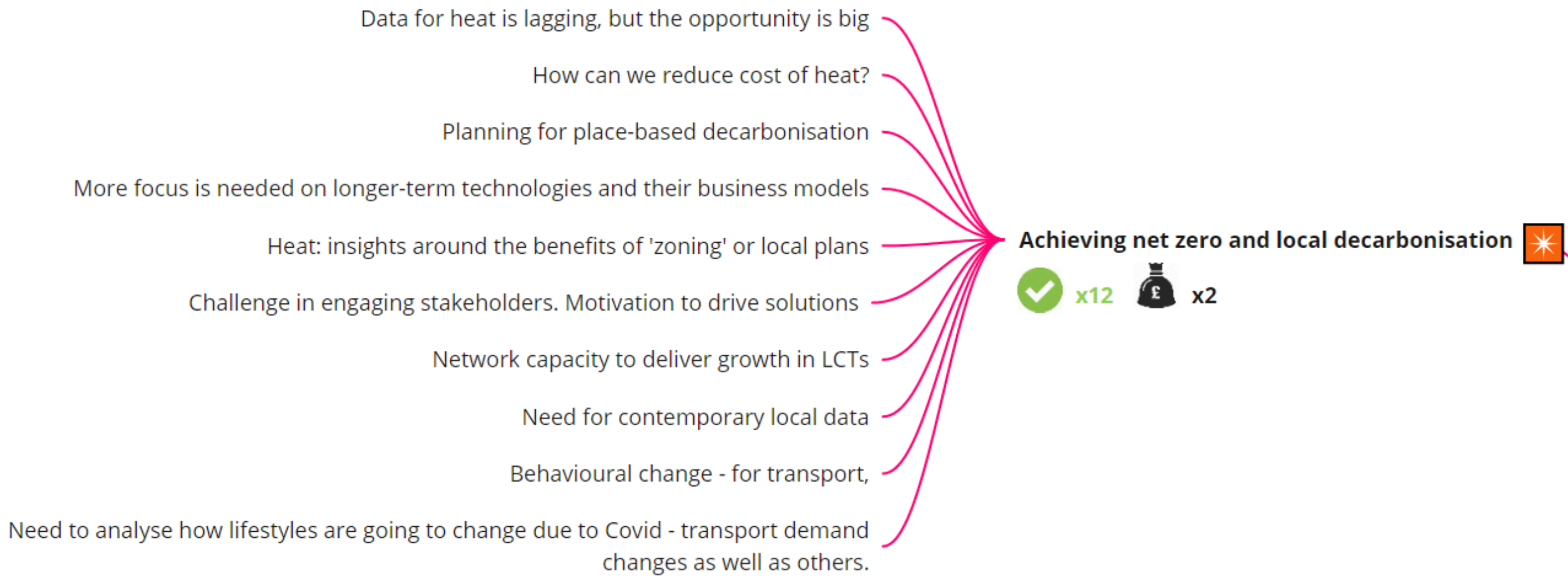
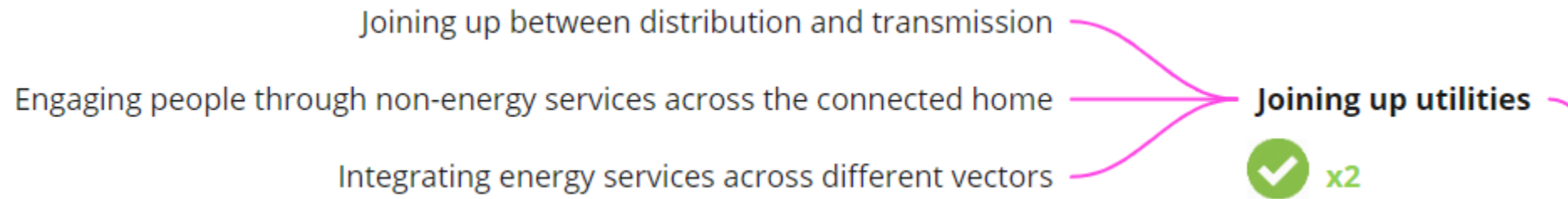
- We captured comments and additional problem statements by theme during the workshops.
- The following pages set out the comments received in their raw form.

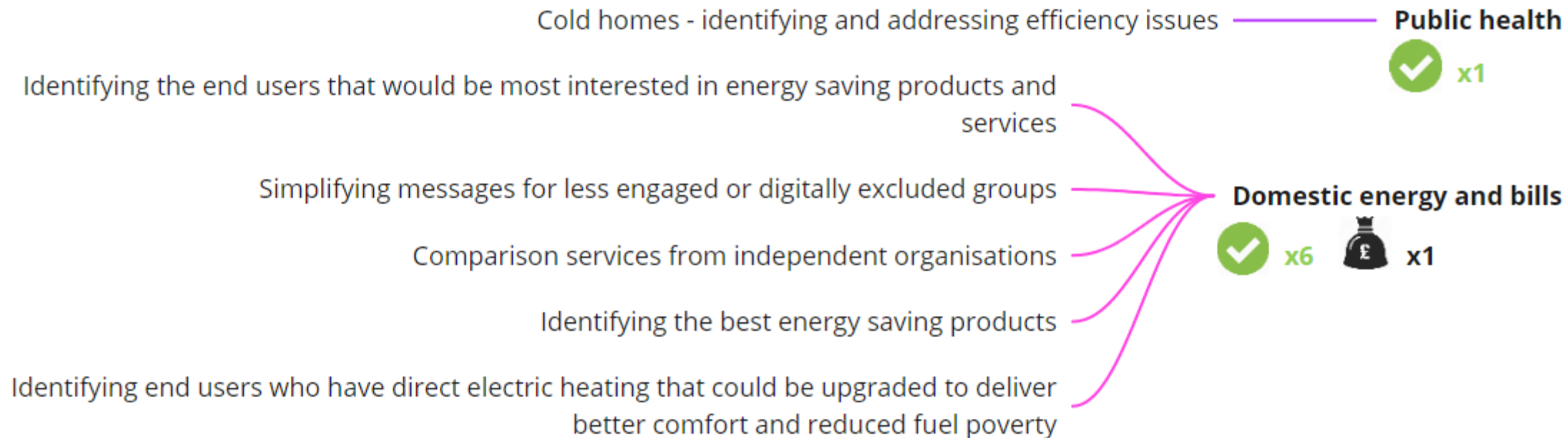
Stakeholder engagement

Workshop participants were asked about their main area of interest
In addition to using the green ticks to indicate interest areas, we captured comments and additional problem statements on the white board

Reporting

We are reporting the level of interest in themes here to inform innovators
The additional problem statements were included in the selection process for the final output





Managing multiple sites of high energy demand, interested in providing flexibility at DNO request if possible, provided still able to provide the core services

Data forecasting energy consumption based on a wide range of data eg. rainfall leading to fresh water supplies, influx of tourists into the SW generating higher demand on pumping stations, challenge in identifying all this data and bringing it all together. value in avoided costs

Understanding options and return on investments for industrial energy users

How to drive positive impacts locally whilst maintaining fair national equity

Ensuring consumers have access and control over their own data

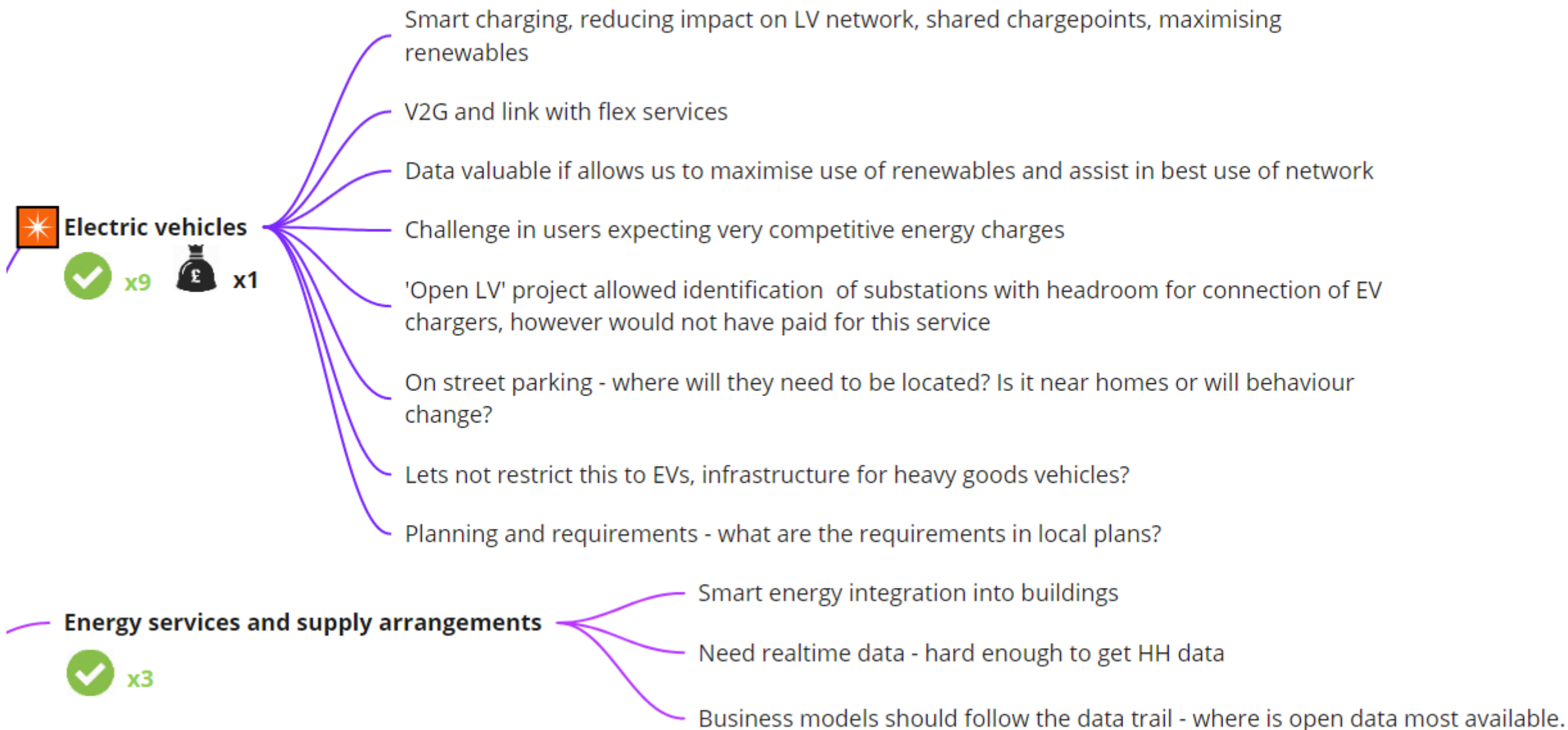
We need intermediaries to mine data and communicate it more clearly to others

Large energy user

Identifying the vulnerable and fuel poor. Indebted households - need to share data between utilities.

Vulnerable and fuel poor consumers





Energy network operation



x12



x2

LV connectivity data in a consistent format and some idea of loading in the future

Location for flexibility assets

Finding sites to connect

Working with other utilities to aggregate data, verifying correct billing against consumption

Benefit in releasing more data - making it open ————— potential to link with smart meter data

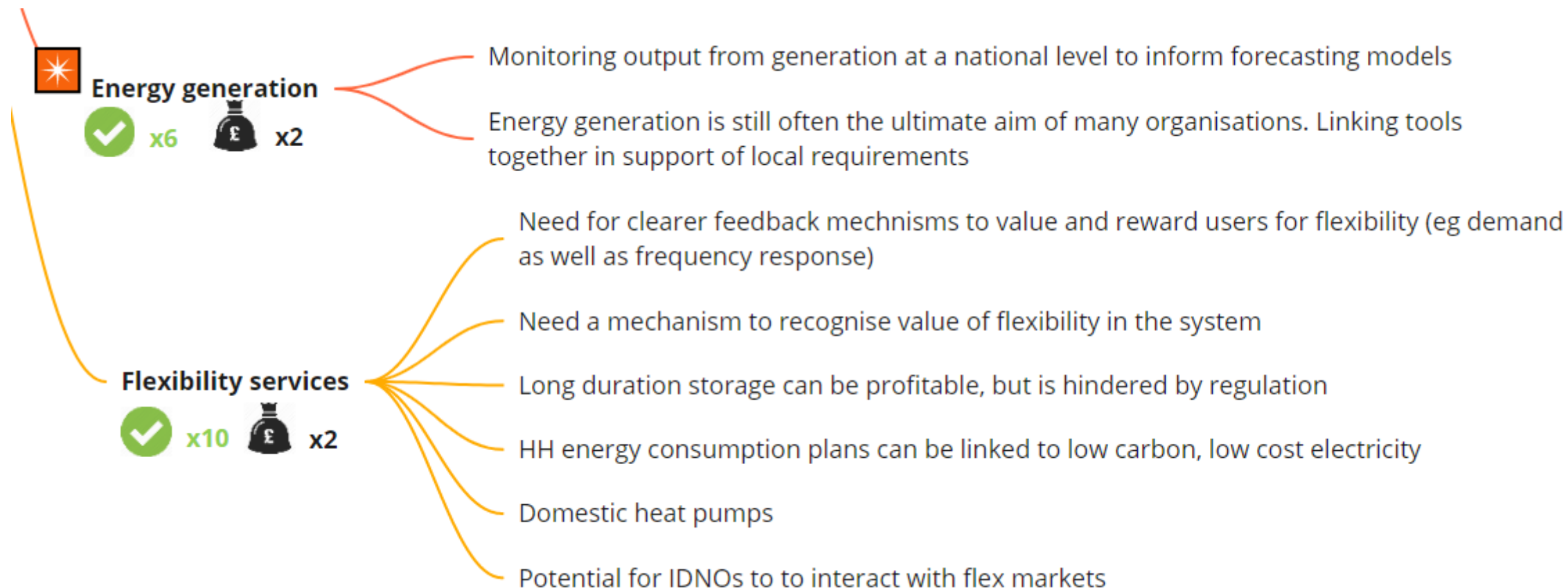
Linking planned connections to network capacity maps

A lot of sites/assets do not have monitoring in place, identifying the priority sites at this stage is required

Challenging for community energy to match generation with our local community

DNOs are viewed as a bit of a gate keeper for data, although the data people want may not exist yet

There is most commercial value in improving domestic and non-domestic retrofit services to help network constraint, or avoid reinforcement.



Potential to create economic value

- Workshop participants were asked which themes or use cases had the potential to create economic value
- The themes highlighted as having the most value were (see pound signs on above slides):
 - Achieving net zero
 - Energy network operation
 - Energy generation
 - Flexibility services
- Questions were raised about the ability of some users to pay for data apps, particularly local authorities and vulnerable customers
- The point was made that many apps may not be viable now but will be in the future when markets open up and evolve.

Data is typically not provided in real time, and is so changeable that 6 month year old data might not be useful.

DNO data is variable, but could have economic value for new connections

Links between energy and other sectors are either very locationally specific or of national significance. Makes it challenging to create a solution unless it is replicable

Limited opportunities to fund innovations related to vulnerable customers (need regulations to avoid compliance costs)

Believe data services should be free at point of use for flexibility to open up that market

Tools like SCATTER and carbon budgets are free and a good start

Don't limit scope of innovations with commercial requirements - may become viable in the future

LAEP - has whole system value - is it publicly funded? Questions of fairness and postcode lotteries

Climate change response is not a statutory requirement, so no real budget or consensus on approach for local authorities

Might not be obvious income stream - could be savings e.g self generating

A lot hangs on DNO data - still early days

Value of flexibility is limited

- Workshop participants were asked for their views on app design, specifically on preferred user interfaces, the types of outputs and whether they wanted bespoke apps
- There is a need for data to be:
 - Standardised
 - Transparent
 - Of a consistent quality
 - Interoperable
 - Realtime
 - High levels of granularity
- User interfaces need to be:
 - Digitally inclusive
 - Accessible
 - Interactive
 - Appropriate to the user needs
- There was a general sense from participants that they didn't know what was available or how to find it. They asked for better publicity.

Much data is available in report format. Interactivity with a model would be more useful, rather than fixed outputs based on fixed assumptions

Vast amount of data available, hard to understand the problem, data often in vast resources

User focused design is essential to deliver a usable and attractive product, rather than overly focusing on the technical solution

Must be clear, in the data processing and local options

Want to see data specs being published in standardised way - a national approach

Not one size fits all - some organisations want raw data, some want simple outputs

Readability and common format via APIs - a common language across DNOs

Move quickly to deliver progress towards net zero with good UX/UI, doesn't need to be perfect initially

Need openness around metadata - quality, source etc.

Enable both machine to machine as well as visual interfaces

Access and interoperability of the data across heat and transport sectors is vital

Services must be designed to be digitally inclusive

Start with the API, then the visual interface will follow

Remember there is a carbon cost of using these tools!

Realtime data is increasingly important as margin calls are made on projects / revenues. But there are clear issues around data protection and consumer confidence

Need high levels of granularity

Transparency is valuable

Need good publicity - it's hard to know what's out there

Need to know where to find data, and it needs to be of a consistent quality

Accessible user interface

High level of granularity e.g. better than sub-postcode

Making it searchable

APPENDIX



Appendix 1: Full list of respondents' organisations

Acocks Greener	Connected Response Ltd	IBM	Severn Trent Water	URBED
Advance Further Energy	Corrie Energy Partners	ICCL	Sharenergy	Utilidex
All Wind UK Ltd	Costain Ltd	Imperial College	Sheffield Renewables Ltd	VEST Energy
Argo Environmental Engineering Limited	CPRE, the countryside charity	Imperial College London	Smart Community Projects	Vision 2030
Arlington Energy	Cultivate Innovation Ltd	Innovate UK	Solesco Co-Operative Ltd	Wales & West Utilities
Awel Aman Tawe	D&G Electrical services (UK) Ltd	Invinity Energy Systems	South Derbyshire District Council	Wates Group
Barnsley MBC	Devon County Council	Kiwa	South Hams, West Devon and Plymouth Councils	Watts-ON Consultants
Bath & North East Somerset Council	E.ON	KWTN Solar Limited	South Hill Association for Renewable Energy	Welsh Government
Bright Photon Ltd	E3G	Lagoni Engineering	South Somerset District Council	WRc
Bristol Energy	EA Technology	Leeds City Council	Spire Group Ltd	WWA
Bristol Energy Cooperative	East Devon District Council	Lincolnshire County Council	Stephens Scown/Bristol City Council	YCE
Bruntwood	Ecodyn Ltd and Highlands and Islands Enterprise	Loughborough University	Storelectric	Zero Carbon Marine Ltd
Burohappold	ElectraLink	Low Carbon Estates Ltd	Sunamp	ZX Lidars
Business Navigators Ltd	Electricity North West Limited	Manchester Metropolitan University	Surple	
Calderdale MBC	Electron	Marine Energy Wales	Surveying firm	
Cambridgeshire county council	Energiesprong UK	Nadder Community Energy	Sustainability Coordinator	
CamProf	Energise Sussex Coast	National Energy Action	Taylor Lewis	
Carbon Co-op	Energy Systems Catapult	National Grid ESO	Teign Energy Communities Ltd.	
Carmarthenshire Energy Ltd	Environment Plymouth	Newcastle University	TfL	
Centre for Sustainable Energy	ESB Innovations SES	North Somerset Council	The Department for Business, Energy & Industrial Strategy (BEIS)	
Charge my Street	Estate Eye	Northern Ireland Housing Executive	The Energy Action Project	
Charlbury Town Council	Evans Engineering	Nottingham City Council	UCL	
Cherwell District Council	Evergreen Smart Power	Orsted UK Limited	UK Power Networks	
Chew Magna Climate and Nature Emergency Group	Gommyr Power Networks Ltd	OVO Energy	University Hospitals Bristol and Weston NHS FT	
Chordant	Grand Union Community Energy Ltd.	Pell Frischmann	University of Bristol	
Citizens Advice	Greener Energy Futures Ltd	Plymouth City Council	University of Exeter	
CoGen	GridDuck	Plymouth Energy Community	University of Plymouth	
Coimhearsnachd Bharraidh agus Bhatarsaidh (Barra & Vatersay Community) Ltd	Grimsey Marine Technology Ltd	Polarwall	University of Reading	
Comms365	gwent energy cic	Pure Leapfrog	University of Sheffield	
Community Energy Birmingham	Heat Pump Federation	Q-Bot	University of Strathclyde	
	Hitachi Europe Ltd	Regen		
	Hlps.me	Renewable energy consultancy		
	Hydrogen East	Renewable exchange		
		Scene Connect Ltd.		



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