

Barriers to adoption of solar PV and EV charging infrastructure by industrial and commercial customers

Prepared for Electricity North West

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All projects are carried out in compliance with the ISO 20252 international standard for market, opinion and social research and GDPR.

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Glossary

Abbreviation	Term
DFES	Distribution Future Energy Scenarios
DNO	Distribution Network Operator
ESOS	Energy Savings Opportunity Scheme
EV	Electric Vehicle
FIT	Feed-in tariff
GMCE	Greater Manchester Combined Authority
LCT	Low carbon technology
PPA	Power Purchase Agreement
PV	Photo-voltaic
ULEV	Ultra-low emissions vehicle

1 Executive Summary

In Electricity North West's region, industrial and commercial customers account 62% of carbon dioxide emissions from electricity. Reducing this is therefore a target area if national and local net zero targets are to be met. Two big opportunities for larger businesses to reduce their carbon dioxide emissions from electricity usage and transport are the installation of photovoltaic (PV) panels and installation of workplace electric vehicle (EV) charging to facilitate the take up of EVs among employees and customers.

This study sought to understand the barriers that large organisations face in adopting these technologies, and the role that Electricity North West could play in encouraging their installation. 19 qualitative interviews were conducted with relevant representatives of a range of these companies, while a quantitative survey gathered the views of 411 employees about the importance they place on the two technologies as well as other sustainability schemes.

For both PV panels and EV charge points, around a quarter of the organisations interviewed had installed the technologies, half had investigated them but had not (yet) installed them, and the final quarter had not looked into them. Companies which had installed them found that both technologies provided financial, environmental and reputational benefits.

Barriers to installing PV panels were:

- A low awareness of solar PV feasibility overall (and individuals within the company susceptible to myths around the amount of light needed)
- The roof not being able to bear the weight of the panels, especially if it snowed
- The high initial cost of solar panels, and uncertainty around return on investment and financing options available
- A lack of easily available information
- The need for planning or landlord consent
- Increases in business rates from making capital investment to buildings.

Barriers to EV chargepoint installation were:

- Lack of incentive for businesses to install EV chargers
- Lack of demand as EVs are not currently widespread and consumers perceive that they have range issues
- Understanding the infrastructure and charger types available is time-consuming
- Fear of equipment redundancy in this rapidly evolving area
- Perception that it is unfair to give free 'fuel' to EV users but not compensate employees or visitors using other transport methods.

Electricity North West is well respected and most respondents felt the company would be a valued impartial provider of much-needed, clear information, particularly:

- Awareness of solar PV and EV charging benefits and myths
- Case studies of installations in other similar and businesses in the region
- Impartial information on all of the financing options available
- Explanation of how solar PV/EV chargers can contribute towards corporate social responsibility and regional net zero carbon targets
- Education on how to use generation/usage data can benefit the business.

Respondents also see a clear role for electricity suppliers in both of these activities.

2 Background

The Government has enshrined its commitment reaching to net zero carbon emissions by 2050 into law via an amendment to the Climate Change Act, and the Greater Manchester Combined Authority (GMCA) has committed to becoming carbon neutral by 2038. GMCA and numerous other local councils in the Electricity North West region have declared climate emergencies.

At a national level, considerable decarbonisation has already been achieved by changing the energy mix used for electricity generation in the UK as coal-fired power stations have been phased out and renewables brought on line. However, this has meant that the relative contribution of other sources of carbon dioxide emissions has increased, and this means that there is an urgent need to adopt available technologies to decarbonise heating, lighting and transport now and not wait for potential longer-term, higher quality solutions.

In Electricity North West's region, industrial and commercial customers account for two thirds of electricity demand (the remainder being domestic), and are responsible for 62% of carbon dioxide emissions from electricity. 12% of these emissions come from industrial and commercial electricity usage¹ and a further 35% is from transport, both of which are slightly higher than the average for England as a whole². In Manchester, the largest city in the region, 22% of the total electricity emissions are from industrial and commercial electricity usage, with transport contributing 32%.

Two big opportunities for larger businesses to reduce their carbon dioxide emissions from electricity usage and transport are the installation of photovoltaic (PV) panels and installation of workplace electric vehicle (EV) charging to facilitate the take up of EVs among employees and customers. EV adoption and the increase of distributed renewable generation capacity (4GW need to be added by 2050, with half of this by 2030) are key elements in Electricity North West's Distribution Future Energy Scenarios (DFES).

Although workplace solar panel and EV chargepoint take up are progressing, they face various barriers – some which they share, some specific to each – which are limiting the extent of adoption. It should be possible to overcome at least some of these with suitable initiatives and engagement.

For organisations occupying suitable buildings with private parking spaces, the capital cost of installation is one common challenge, but commercial models and funding mechanisms exist which can mitigate these. These options may not be widely known about or understood, though. Also in the financial sphere, but specific to PV panels, the government's ending of access to Feed-In Tariffs (FITs) to new entrants from March 2019 – a move which many commentators have found hard to fathom – may have led to a widespread perception that the upfront cost of PV panels may never be recouped. However, the new Smart Export Guarantee scheme introduced in January 2020 will restore at least some payback for solar panel installations. In addition, there is a lack of awareness that not all EV chargers would need to be fast chargers; installation of outdoor 13amp plugs would support employee EV charging at a lower initial investment.

Another considerable barrier for many organisations is the tenure of their premises; if properties are leased, as many commercial properties are, should the tenant or the landlord be responsible for the cost? Tenants may be particularly reluctant to invest if they are unsure how long they will occupy a building.

Ways to overcome these barriers are being showcased by the members of RE100, a global corporate leadership initiative bringing together influential businesses committed to 100% renewable electricity. Companies involved

¹ Electricity, gas, large industrial installations, other fuels, and agriculture.

² <https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2017>

which have significant UK operations include IKEA, Accenture, AstraZeneca, Aviva, Barclays, Burberry, Canary Wharf, Coca-Cola, The Crown Estate, Diageo, Heathrow, Lloyds Banking Group, M&S, Next and many more.

While the benefits of cheap, low-carbon electricity from PV panels are clear, the need for workplace EV charging installations is uncertain because EVs remain far from common currently. However, over 54,000 new plug-in electric vehicles have been registered in the UK in the first 10 months of 2019³, and the Government's *Road to Zero strategy* for vehicle emissions reduction proposes that all new cars and vans be "effectively zero emission by 2040" (meaning some plug-in hybrids at that stage might still be allowed) – the Committee for Climate Change is even pressing for this to be brought forward to 2035. All vehicles should be low carbon by 2050 in Electricity North West's DFES. In addition, since 2017, ultra-low emissions vehicles (ULEVs) are exempt from reductions being made to the tax benefits of cars leased through workplace Salary Sacrifice schemes.

Within 15 years, workplace charging will need to have become a norm. If this is achieved, it will in turn make EV ownership much more practical for those who do not have off-street parking and so would rely on access to a public chargepoint to charge their vehicle at home.

The UK Government is an International Ambassador for EV100, which is under the same umbrella organisation as RE100, and bringing together forward-looking companies committed to accelerating the transition to EVs, including several which have significant operations in the UK: Apcoa Parkin, AstraZeneca, BT, Centrica, Foxtons, Heathrow, hp, IKEA, Mitie, RBS, and Unilever.

As part of their planning for RII0-ED2, Electricity North West wants to understand what the barriers to uptake of solar PV and EV charge points are for organisations, and if businesses think Electricity North West, as the regional electricity Distribution Network Operator (DNO), could play a role in helping to removing them.

3 Objectives

As part of the planning for RII0-ED2, Electricity North West would like to investigate the role of the DNO/DSO in facilitating large businesses to take up low carbon technologies in the move towards the goal of net zero.

Particularly, they would like to understand how they can be involved in educating these organisations on what is required, identifying suitable partners to approach, and encouraging businesses to install solar PV panels and encourage adoption of EVs (for example, by installing chargers, and providing EV options in their fleet).

To enable the transition to a lower carbon network, in the move towards the goal of net zero, it is recognised there is a need to generate more renewable energy, especially in areas where current generation is minimal. As such, there is a need for an increase in the role out of solar PV panels, as they are a clear way to help achieve this. In addition, Electricity North West recognise an increase in acceleration in the use of electric vehicles will help move towards a cleaner transport system.

The primary objective is to understand what barriers exist for large business to adopt solar PV panels and chargers for electric vehicles, what measures could be put in place to help overcome these barriers and what part Electricity North West could have in helping to remove them.

3.1 Research objectives

This primary business objective will be achieved by answering the following research questions:

³ <https://www.smmmt.co.uk/vehicle-data/evs-and-afvs-registrations/>

- What support are industrial and commercial customers looking for from Electricity North West to help them install PV solar panels and chargers for electric vehicles?
- What are the barriers businesses are currently facing to installing PV solar panels and chargers for electric vehicles?
- Are the barriers different for different business?
 - How are they different?
- Do industrial and commercial customers think Electricity North West could play a role in helping them to overcome or remove these barriers?
- Do employees see the installation of solar panels and EV chargers as important?

4 Method

This project was carried out in compliance with the ISO 20252 international standard for market, opinion, and social research, and with GDPR. Impact conducted a multi-stage programme of research to meet the research objectives:



4.1 Immersion phase

Impact led a stakeholder workshop with the EV and PV subcommittee of the Electricity North West Sustainability Stakeholder Group on Tuesday 26th November 2019. The workshop was an opportunity to finalise details of the project, ensuring it was stakeholder led. Impact provided an overview on the project and sought feedback on the planned approach, which types of organisations should be included in the research, and the key topics for discussion in the subsequent engagement phases.

Impact then conducted a literature review on how businesses are installing Solar PV panels and encouraging EV adoption, supplied separately.

4.2 Depth interviews with industrial and commercial customers in the Electricity North West region

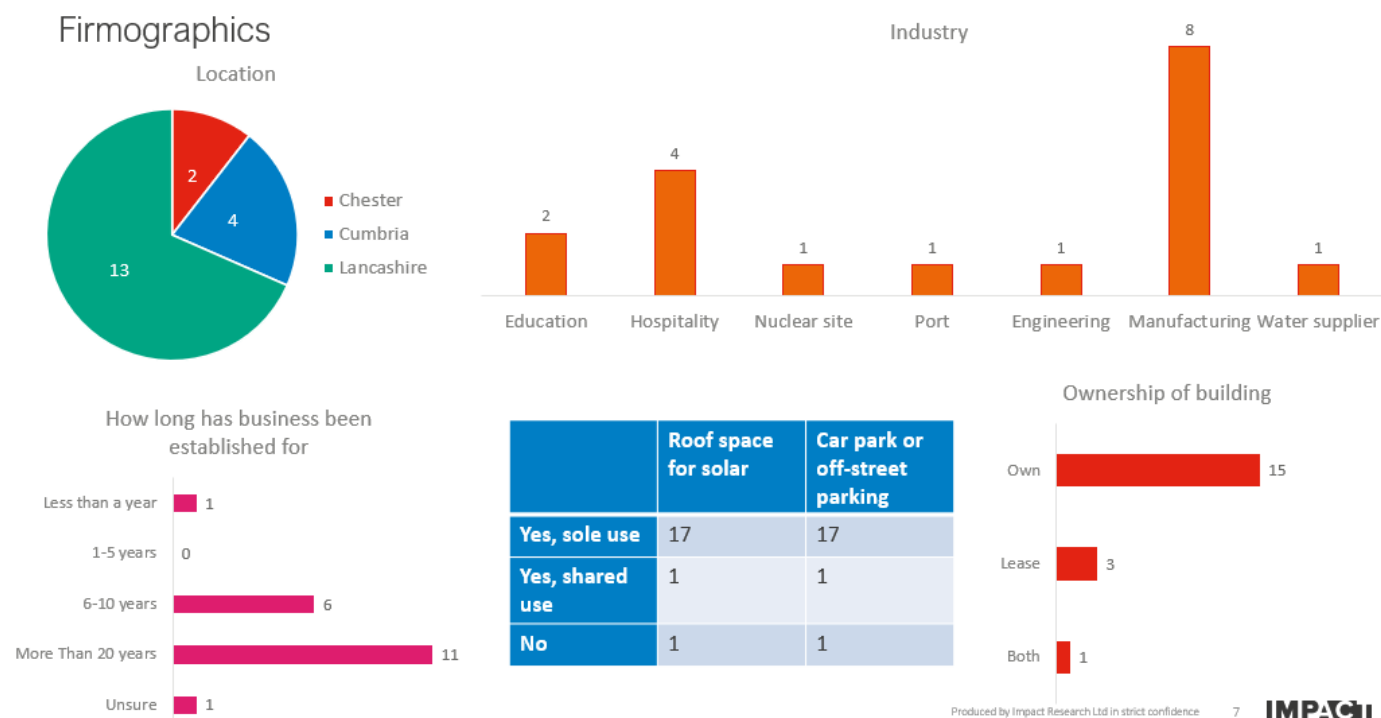
19 Semi-structured qualitative⁴ interviews were conducted with key decision makers in large business that operate and have sites within Electricity North West's region.

A recruitment screener was developed to ensure that the participants represented industrial and commercial organisations with a minimum of 200 employees or other workers on site regularly, and were of sufficient knowledge and seniority to influence their company's decarbonisation strategies. These individuals had various job titles including Energy System Operations Manager, Facilities Manager, and CEO. There was representation from a wide range of industry segments from across Electricity North West's operating region varying by industry sector,

⁴ The results of qualitative research cannot be projected onto the overall population, due to sample selection, interviewing methods and sample size

length of operation, sustainable early adopters versus laggards, rural/urban, and property tenure, as highlighted in Figure 1 below.

Figure 1: Profile of participating businesses



An incentive of £80 was provided for participating, in the form of cash or a charitable donation.

Around one third of interviews were conducted with respondents referred to Impact via members of Electricity North West's EV and PV Stakeholder Group and two thirds free found by Impact. Interviews were conducted between February 2020 and June 2020. Interviewing rates were severely impacted by COVID-19 lockdown restrictions, announced on 23rd March 2020 which necessitated home working. This meant it was difficult to contact potential research participants, particularly when only landline office numbers were available. In addition, many industry sectors understandably had their attentions diverted elsewhere.

All participants were asked to respond to the discussion assuming 'normal' circumstances (i.e. without the changes in business practices necessitated by COVID-19). However, it was inevitable that many participants raised this as concern, and many questioned how this may divert attention away from decarbonisation goals, both within their organisation and at a national level.

On average, interviews lasted 30-40 minutes. A discussion guide (see [Appendix 1](#)) was followed to ensure coverage of all key topics, with questions on the following topics:

- Organisation's current sustainability strategy
- Experience of looking into and/or installation of solar PV panels and EV chargers
- Likelihood of installing solar PV panels and EV chargers in the future
- Barriers to adoption
- Sources of information on installing solar PV panels or EV chargers. Who could provide advice?

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- Reputational impact of installing solar panels or EV chargers.

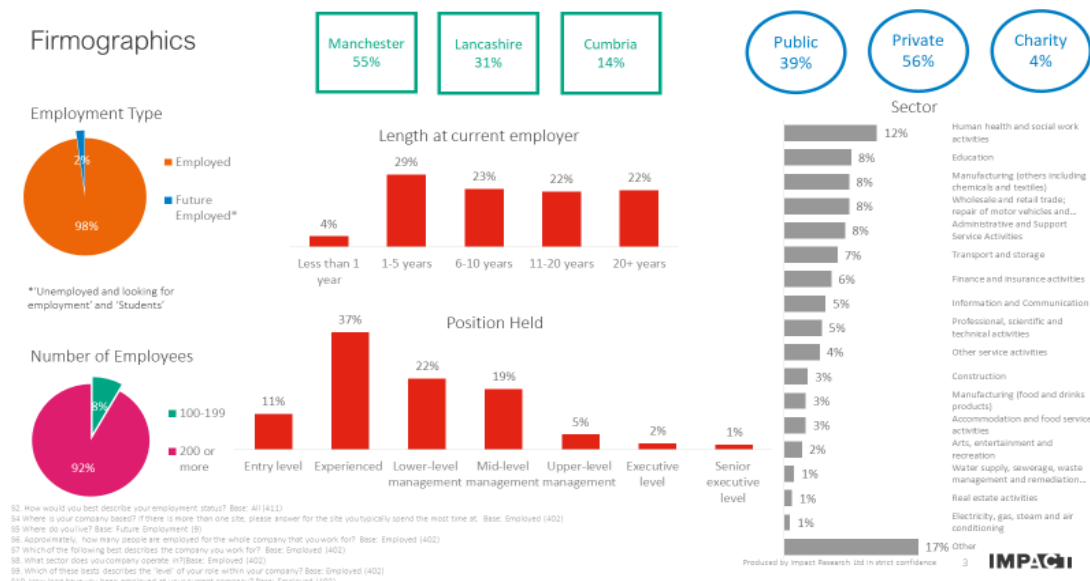
4.3 Quantitative employee interviews

Interviews with employees across Electricity North West's region were conducted to explore:

- How much of a priority working for a sustainable business is?
- What impact it has on prospective employees?

Impact worked with fieldwork partners Dynata⁵ to conduct a 15-minute, quantitative online survey (see [Appendix 1](#) for the full questionnaire) to explore these objectives. The survey was completed by 411 employees from a range of different businesses within Electricity North West's region as shown in Figure 2.

Figure 2: Employee participant profiles



⁵ <https://www.dynata.com/>

5 Key findings

5.1 Snapshot of uptake (depth interviews)

Solar PV	Number of respondents
Have installed	6*
Considered but not installed	11
Have not looked into installing	2

*one is in the process of installing them

Chargers for EV	Number of respondents
Have installed	5**
Considered but not installed	10
Have not looked into installing	4

**in most instances only a few have been installed

5.1.1 Benefits of and barriers to solar PV

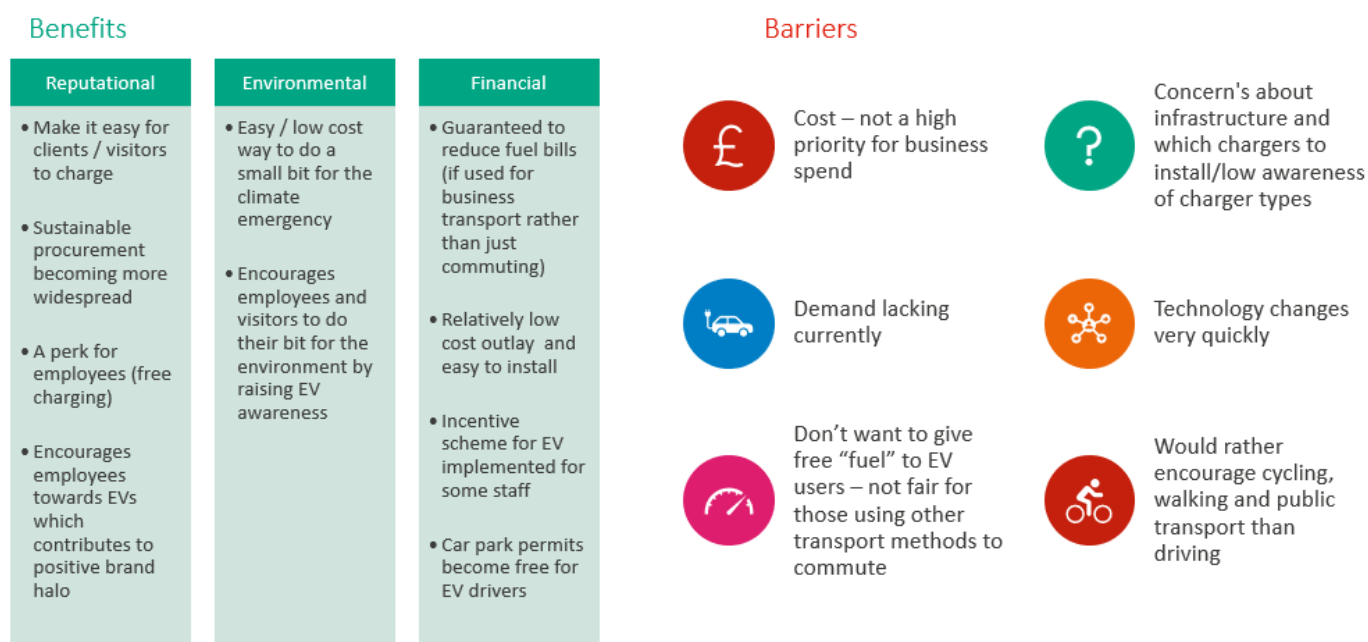
Benefits

Financial	Environmental	Reputational
- Guaranteed to reduce energy costs - ROI available (expectations vary but typically within 5-7 year payback) - Makes sense to do now as energy costs are increasing	- Helps to tackle the climate emergency - Compliance with e.g. ESOS, CCA, PLC - Efficient use of roof space/ unused land - Fits in with carbon reduction strategy in place	- Publicise in marketing / CSR report - Sustainable procurement becoming more widespread - Can help with supplier / client negotiation

Barriers

	Weight of panels / roof strength		Cost / ROI & unsure of financing options available
	Is network reinforcement needed?		Low awareness of solar PV feasibility overall – myths around amount of light etc.
	Still lacking some information – not sure where to look for it		Planning and landlord consent

5.1.2 Benefits and barriers of EV chargers



5.2 Intention to become more sustainable

Of the 19 companies interviewed during the research, the majority displayed positive intentions towards sustainability. They recognised that working towards decarbonisation goals could also have the 'side effect' of reducing their outgoing costs and serving as a differentiating point for their company in their sales and marketing. One respondent recognised the need for them to become a sustainable business and suggests consumers will begin to expect it more and more in future "the awareness around sustainability both within our business as users of energy but also we're conscious that we want to improve our brand because we recognise that our consumers will be asking these questions more and more in years to come".

The majority of businesses were aware of local and national targets for net zero, but there were mixed opinions on how achievable they are. Some felt the targets are too ambitious, arguing that there is low awareness in the community, and that businesses need more support with and guidance on what they should be doing if they are to meet the targets. Those who were sceptical about the feasibility of local and national targets were typically not deterred from acting, however, and were still keen to make their contribution even if they knew this would not be enough.

Those who felt that the targets are achievable tended to see increased sustainability as an urgent and necessary shift that society has to make now. They felt that companies need to start working towards sustainable goals sooner rather than later, and that consumers should, and will, start to demand proof of sustainability from the organisations that serve them.

Despite the majority of businesses being keen to 'do their bit' for the environment, some companies do not see this as a priority, and there is push back from senior management who do not want to spend money in this area. Typically, this happens with more 'traditional' and long-established companies. There is consensus that increasing sustainability must be driven by senior management. Without guidance from the top, many doubt that adequate time and resources will be allocated.

In contrast with the scepticism found among some companies, the vast majority of employees believe that sustainability should be of paramount importance. Almost all – 89% – of the employees interviewed in the quantitative survey believed it is important for companies make an effort to be more environmentally friendly and sustainable; the same proportion agree that it is very important that companies take steps to reduce their carbon footprint. However, only 40% believe their current company is doing enough to reduce their carbon emissions showing there is work still to be done.

The participating companies varied in terms of where they are currently on their ‘sustainability journey’. Some have tentative steps, such as appointing a ‘consultant’ or creating a sustainability stakeholder group. Others have a well-defined culture of sustainability (for example, ‘Dragons Den’-style pitches) and have clear targets in place; some even referenced having ISO accreditations 14001 or 50001 to ensure these targets are met.

Those with a well-defined culture of sustainability typically create distinct roles/teams within their organisation e.g. Quality, Environment and Compliance Manager, Sustainability Stakeholder Group, or Environmental Manager. These were typically the larger companies (e.g. United Utilities, Associated British Ports) interviewed, who were able to invest in this area. Resourcing for sustainability typically comes under the remit of roles such as Facilities Manager, COO, Procurement Manager, CAPEX Project Manager, or Head of Safety and Compliance.

Strategy development often starts with an Energy Savings Opportunity Scheme (ESOS) survey or using a specialist consultant as there is a belief that these routes offer the most return on investment in the long term. One respondent explained how a change in senior management had triggered this, “We’ve had a change of senior management, senior management is very much more on board, it’s very much driving for that. I think their driver is an economic one rather than an environmental one, but yes, there’s much more”. It is at this starting point in the journey that Electricity North West would be best placed to offer support.

Only 15% of employees were aware of a current sustainability budget in their company has with a further 19% being certain that their company does not have one, and the remaining 61% unsure. Having a sustainability budget was seen as important to 55% of the employees surveyed, with only 7% saying they did not think it was.

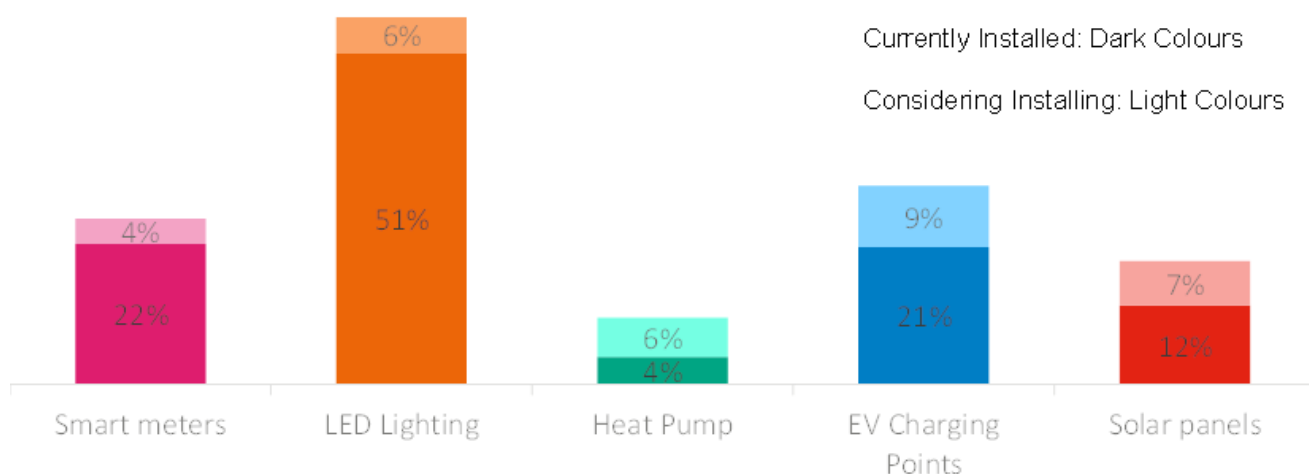
29% of employees knew that were able to have an input into their company’s decisions on sustainability, but 59% stated they were not able to do this; the remaining 11% did not know. Employees were also asked if a business that is sustainable appealed to prospective recruits and 61% said they think it does. The reasons given included, “They demonstrate their social accountability,” and “It would be a visible demonstration of our commitment to the future”.

5.3 Sustainability actions companies have taken to date

When asked what sustainability schemes their companies offer, 68% of employees stated their companies recycle, 60% can participate in a cycle to work scheme, and 29% have a paperless office. The most common type of low carbon technology (LCT) installed was LED lights, with 51% having these and an additional 6% believing they are being considered. 85% of these employees were pleased that their company had installed LEDs with the remaining customers being indifferent towards them. There were fewer companies that installed smart meters, 22%, and heat pumps, 4%, but these followed the same patterns as LEDs with the majority of employees being pleased their company had done so. The main reason for companies not having installed either LEDs, smart meters or heat pumps was cost, with around half citing this. Not owning the building was the next biggest factor, with approximately a third giving this as the reason for each technology why their companies had not installed each technology.

The full breakdown of LCTs installed is given in Figure 3 below.

Figure 3: LCTs installed



5.3.1 Solar PV panels

Of the 19 businesses interviewed, three had already installed solar panels, and a further eight had considered installation or are in the process of considering it, but have yet to install.

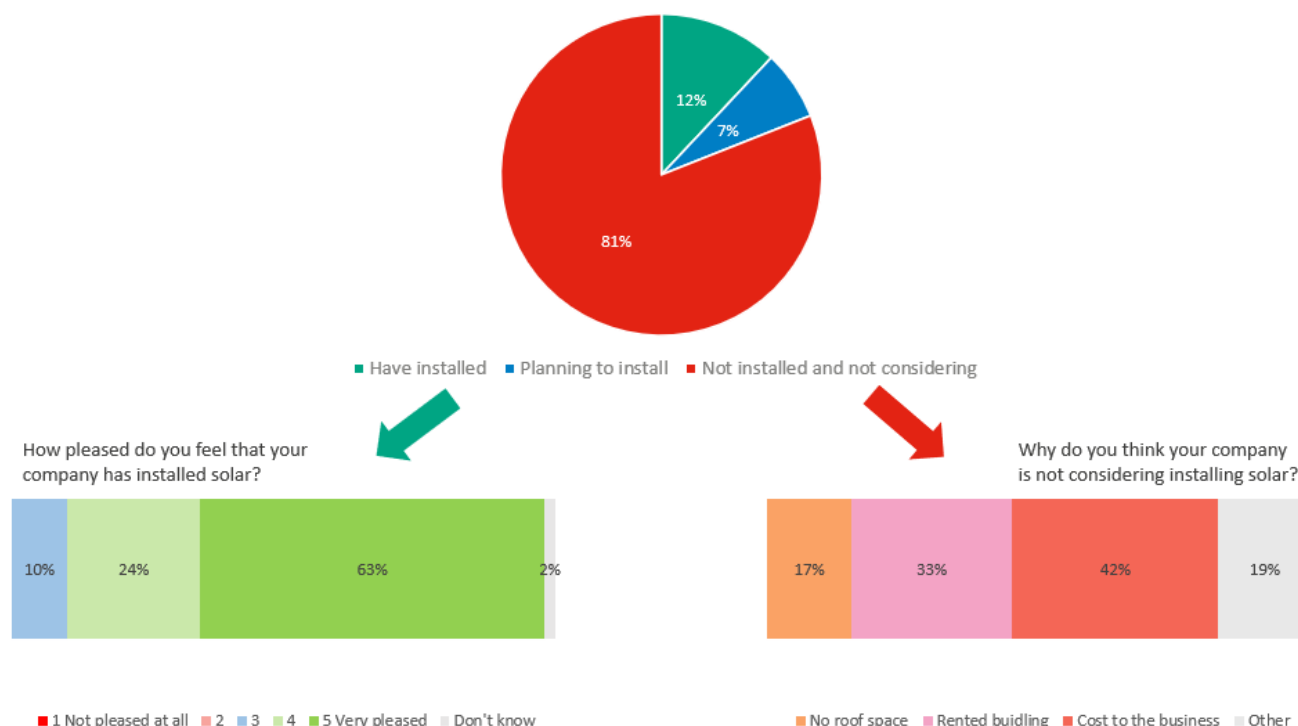
The number of solar panels each company had installed varied depending on their requirement and the space and funds they have available, but ranged from just a few to enough to generate 70MwH of electricity.

Of those which had installed PV panels it was clear that doing so was considered a business priority; as one respondent explained, “It’s our company motto to improve energy efficiency throughout our 21 ports. At almost every port we have got the facility of a solar panel system in the roof, and also solar farms where we have land available.” Of those which had considered installation of solar panels but were yet to install them, it was clear that a lot of planning was still needed. One respondent explained, “We’re currently considering installing them on one of our buildings and we have done a site-wide study to look at the feasibility of installing them, so looking at where we are based in the UK and what sort of sunlight hours and iridescence we get with where we’re located, sort of building a business case basically.”

12% of employees engaged with in the quantitative survey stated that their companies had installed solar panels, with a further 7% suggesting their company is planning to install them. As shown in Figure 4, at businesses which have installed PV panels, the majority of employees, 87%, were pleased that their company had done so, with the remainder being indifferent.

Among employees at companies without solar panels, the main reason given for their not having been installed was cost, followed again by the business not owning the building. Many businesses are unaware of the costs involved in planning, installing and running a PV system and don’t know where to look for trustworthy and clear information. When businesses do get quotes, additional cost implications - such as a potential increase in business rates - are rarely mentioned by PV companies. This creates an additional barrier that is often not brought to light until some way down the decision making process. Some respondents also gave lack of roof space as the reason, with the remainder giving ‘other’ responses including “We need further prompting but are also limited by a listed building,” and “We are moving to a brand new office soon.”

Figure 4: Reasons for installing/not installing PV panels



Employees were fairly evenly split on whether it is important, as an employee, for their company to have solar panels installed with 32% stating it was important but 28% thinking it was less so. Only 24% thought solar panel would be appealing to prospective employees, but the remaining employees were largely indifferent or unsure of the impact.

5.3.2 EV chargers

To date, attitudes towards EV charging points has been driven by demand, which is typically low. Of the 19 businesses interviewed, five already had EV chargers. The number of EV chargers installed was entirely business-need dependent, and ranged from four to 40. All businesses said that the EV chargers were regularly used, with some even reporting that a rota system, or similar, has been put in place to meet demand. The level of demand varied but all companies used the chargers for both business vehicles and employee personal vehicles. One respondent explained that EV chargers were used daily and that demand was growing, “Yes, so I know we have about thirty or forty charging points across the campus and I think in fairly sort of regular use during the working week, during working hours. And so, there’s definitely a growing number of vehicles.”

Customer-facing companies also offered their EV chargers for customer use. The majority of the companies interviewed expect installations to increase over the coming years as demand increases due to more urgent decarbonisation action globally.

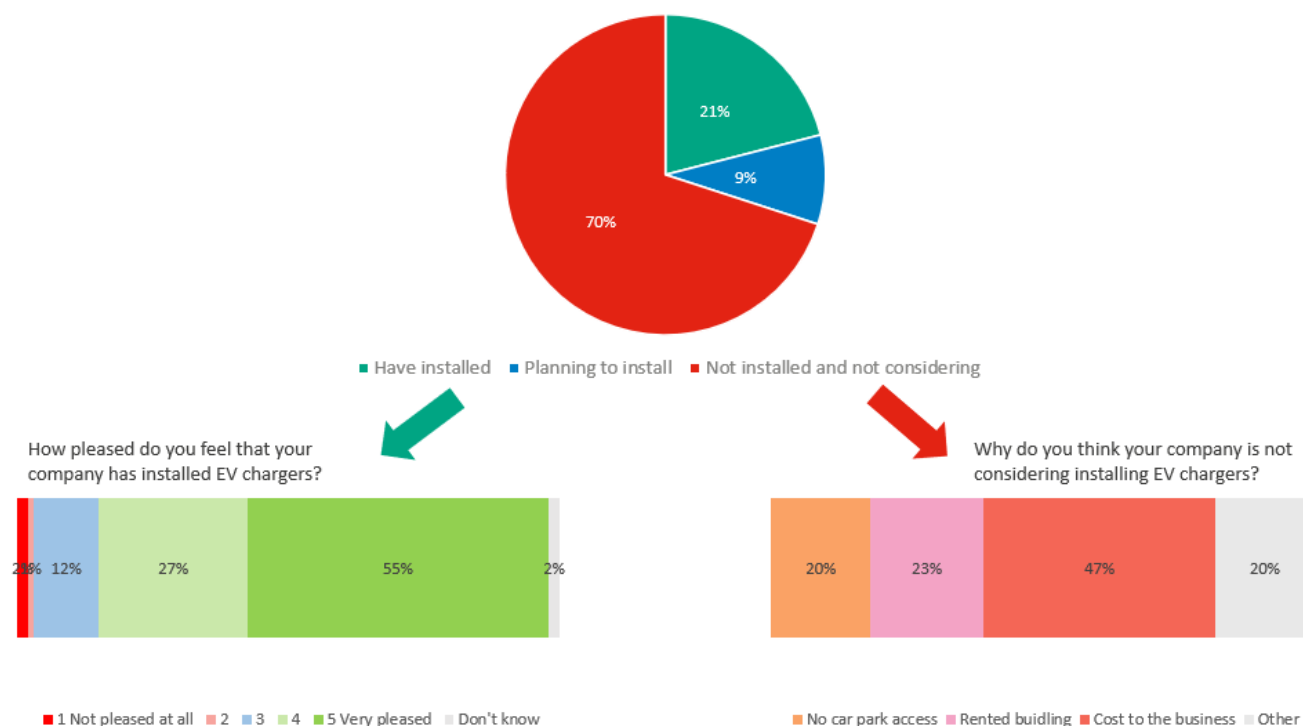
Five businesses had considered, but not yet installed EV chargers. The reasons for inaction varied. One respondent stated that they would install EV chargers as part of an extension project to the building as it is easier to obtain approval for sustainability improvements if they are part of another project. Another explained that their company had done all the research and were planning to install EV chargers as soon as COVID-19 restrictions were lifted enough to allow this.

21% of employees reported their company have installed EV chargers and a further 9% believe that installations are planned. Again, among those that have EV chargers installed, the majority, 82%, are pleased they have them, but a small percentage, 3%, said they were not.

Cost was, again, the biggest reason why employees believed their business had not installed chargers for EVs at 47%, followed by the business not owning the building, but this was given as the reason by fewer employees than for solar, at 23%. Employees were also given 'a lack of car parking' as an option for why EV chargers had not been installed, which was selected by 20%. Other reasons cited included, "I don't think anyone owns an electric vehicle," and "'Free' electricity could be seen as unfair by petrol car users".

A full breakdown of responses is given in Figure 5.

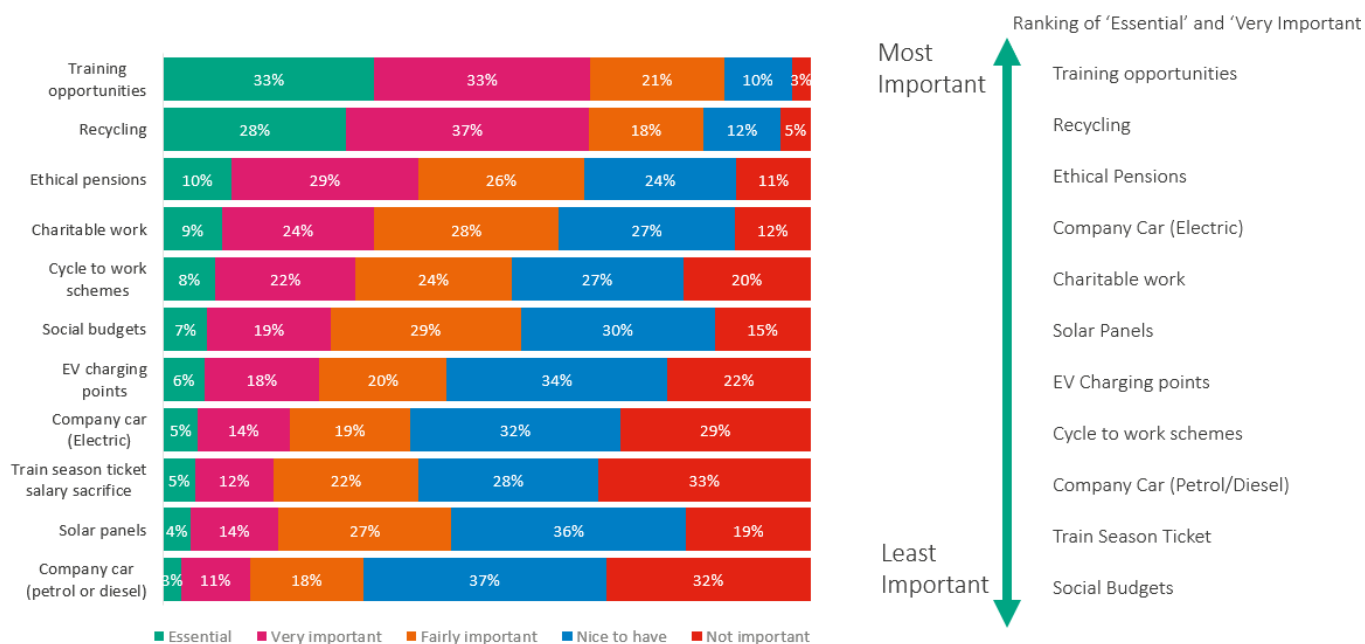
Figure 5: Reasons for installing/not installing EV charge points



As with their attitude to solar panels, employees were fairly split on the importance, as an employee, of having EV chargers installed at their workplace, but in this instance the results are more polarised. A greater percentage, 37%, thought they were important but more respondents, 35%, also thought they were not important. This suggests that EV chargers take on a greater importance to those that like the idea of them, however, there is still a lot of scepticism about their long-term future. The potential appeal to prospective employees was higher than for solar panels, however, with 44% saying they would find it appealing for a company to have them installed, though 10% said they would not.

Employees in the quantitative survey were also asked to state how important they found a range of different sustainability schemes, and then rank the ones that they graded as being either 'essential' or 'very important'. The full breakdown of results is shown in Figure 6 below.

Figure 6: Employee evaluation of sustainability schemes



Training opportunities and recycling schemes were seen as the most important for employees, with around two thirds scoring them as either ‘essential’ or ‘very important’. EV charging points, Electric company cars and solar panels were lower down the list, but only around 20% of respondents in each case considered them as ‘not important’.

Interestingly, in the ranking, the order changed somewhat compared with the grading. The three statements relating to solar and EV all moved up, the biggest jump being for solar panels. If it’s possible to show the benefits of these to more employees, the relative importance will increase and then the demand for their installation will likely increase too.

5.4 Solar panels: drivers for action

There are three key drivers for the installation of solar panels:

- Financial benefits
- Environmental benefits
- Reputational benefits.

The installation of solar panels guarantees a reduction in energy costs, which is particularly appealing in the face of an upward trend in these. Companies expect a return on investment (ROI) of 4-7 years and craft their business plans accordingly. One respondent emphasised the importance of ROI, “The return on investment is crucial. If it had been a 20 -year return on investment, we wouldn’t be doing it. But because it’s under 10, it’s viable”.

The environmental benefits of solar panels are increasingly top of mind now that climate change is being brought into the limelight within the public sphere due to an increased sense of urgency. Solar panels allow businesses to use

existing roof space/land efficiently in order to reduce their carbon emissions. They also allow businesses to be ESOS⁶ or CCA⁷ compliant and reduce their spend on carbon buyouts/offsetting plans.

Companies can also gain reputational benefits from the installation of solar panels by being able to state that they act sustainably in their marketing and CSR reports. This is not only attractive to customers but has also been reported to help aid supplier/client negotiations. One respondent explained how installations will help their local reputation and hopefully encourage other local business to take action too, “It will set us on the right course and it’s probably one of the easiest or easier solutions to retro fill...we’re looking at what it can do for us locally in terms of reputation...this is something that’s clean, it’s green, it’s certainly what we feel is the right way to go and we hope that it can encourage others in the local area to do the same.”

Other than these benefits, PV installation was also reported to be driven by readily available funding and by word-of-mouth. Respondents have heard from other companies that their FITs allowed for fast pay-back, or that solar panels alone noticeably reduced a company’s carbon footprint. When these reports are combined with the positive feedback on installation experiences it is easy to understand the positive perceptions of solar panels.

5.5 Barriers to the solar PV transition

Barriers to installation cited by most responding organisations included:

- The roof not being able to bear the weight of the panels, especially if it snowed
- A low awareness of solar PV feasibility overall (and individuals within the company susceptible to myths around the amount of light needed)
- The high initial cost of solar panels, and uncertainty around return on investment and financing options available
- A lack of easily available information
- The need for planning or landlord consent
- A rise in business rates payable after making a capital investment in the building.

One respondent simply said it wasn’t feasible on their building and it wasn’t something they had even considered doing “Well it’s an old style hotel, with different style buildings, different heights of buildings and all that kind of stuff and I don’t know any hotel that’s actually done it. So, I’ve never been approached about doing it and it’s nothing something I’ve sort of fancied doing.”

With regards to cost, the majority of respondents were aware that certain grants or Power Purchase Agreements (PPAs) are available and had looked into applying for them. Even with these in place, in some instances the overall cost was still too high and there were some concerns that the business would not gain all the benefits if a third party had funded the installation. This is certainly a barrier that Electricity North West could break down by listing all available options for such installations and highlighting the most reliable and credible sources of information.

A potential increase in business rates was a further cost barrier to installing PV. Larger corporations are most likely to be aware of this. One said that they had built the increased rates into their business plan and decided to go ahead with their main PV project anyway, but other smaller projects would not be seen as being worth the additional business rates bill. Smaller organisations agreed that higher business rates would be a barrier, but it is not easy to find information on the impact this would have. PV installation / PPA companies do not tend to tell their prospective clients about a possible increase in rates. Electricity North West would be well placed to raise awareness of this “hidden cost” and could have a role to play in lobbying the Treasury to reduce such tax disincentives on decarbonisation measures.

⁶ <https://www.gov.uk/guidance/energy-savings-opportunity-scheme-esos>

⁷ <https://www.gov.uk/guidance/climate-change-agreements--2>

Negative word of mouth was also a barrier for some, and prevented further exploration of PV installation. For example, one company had researched solar panels 6 years earlier but had previous bad experience with additional weight in the roof so stopped investigating this option. This emphasises the importance of up to date and credible, positive case studies to overcome negative perceptions which were typically based on 'old' information.

Finally, there was also a concern by some around the impact on their local network and the thought that reinforcement could be needed. One respondent said, "I think equally as well, you've got capacity potential, capacity issues, putting new connections in. I think there's also the kind of the question of timing because there's quite a lot of technology change and things are moving quite fast, so when do you choose to invest is quite a key question I think". Another explained "We have to take that into account in terms of reinforcing our networks and we will come up against constraints for that. We're already aware of that some of our infrastructure is also quite old and just won't support significant growth in this area." Again, there would certainly be a benefit for customers if Electricity North West could show ways to access clear information about any potential impact on the network, in this instance around whether or not any reinforcement work would be required and additional connection costs incurred as a result.

5.6 EVs: drivers for action

There are numerous drivers for a company to install EV charging points. Respondents cited both environmental and conventional business reasons. Environmentally, they found EV chargers an easy to install way to do a small bit for the climate emergency, which also encouraged employees and visitors to do their bit. Financially, the installation of EV chargers is considered a relatively low-cost outlay which had the benefit of a guaranteed reduction in fuel costs if EVs are used commercially. It also allows for free car park permits for some EV drivers, where others may have to pay for them; as such some companies have started EV incentives scheme for their staff. One respondent mentioned they have employees who drive EVs and would like them to be able to charge them on site, "We have a number of people who drive electric vehicles. I would say, if I looked outside in the carpark in our head office at the moment, there would be, I don't know, maybe three out of probably thirty cars that would be electric. And another five would probably be hybrid. And we don't have any charging units in our business at the moment which again is something that I think as we evolve the business, we should definitely be promoting that a lot more."

EV chargers also have reputational benefits for a company, adding value to a business and potentially attracting and retaining staff and customers. There is also some expectation that EVs will become increasingly common and the installation of EV chargers will increase the number of visitors to their sites by offering an attractive consumer experience, which could ultimately boost market share. Having EV chargers installed also serves as an outward sign of the company's positive attitude towards decarbonisation which produces a halo effect, whereby the positive impressions of the company in this one area actually positively influence people's opinion or feelings in other areas.

5.7 Barriers to the EV transition

Respondent's mention that there is no incentive for business owners to install EV chargers, so for some it is not worth the cost, or certainly not a high priority. They also note that EVs are not currently widespread, or even top of mind for many, so there is a lack of demand. This lack of demand makes the work needed to understand the infrastructure and charger types available especially unappealing. Some respondents also raised concerns that technology changes very quickly and fear that investment in EV chargers could soon be outdated.

Range anxiety continues to be an issue for consumers considering driving EVs and this sentiment did seem to be echoed by businesses, "I think there needs to be a better range of electric cars before people move to them." Again, this is an area that Electricity North West can help alleviate concerns by ensuring the information available is correct and up-to-date, and working with manufacturers or suppliers to achieve this.

Some cited more ethical reasons in that they thought it would be unfair to give free ‘fuel’ to EV users but not compensate any of their employees or visitors using other transport methods. One respondent explained “putting charging points into company premises and the question of who pays for the infrastructure, who pays for the electricity, and how the consumer pays for that, I don’t understand how it’s going to work.” Some also didn’t want to encourage driving at all and would rather encourage cycling, walking or taking public transport to work.

5.8 The role of Electricity North West

For all of respondents, researching solar PV or EV charging points started online, at which point they can be overwhelmed by the wealth of information available. To help them wade through the information, companies often consult professional bodies such as trade bodies or IEMA, independent specialist consultants, or local suppliers and installers. They also seek word of mouth information from their existing suppliers and local business network.

Electricity North West is well respected and most feel they would be a valued impartial provider of information. The few who did not see a place for Electricity North West in this area were sceptical that, given their for-profit business set-up, their advice would not be perceived as impartial compared with professional bodies such as the Carbon Trust. One respondent suggested that Electricity North West could create a sub-division with a different name to avoid this association with biased advice, and another explained the specific advice they would like to receive. “Certainly receiving information direct from ENW for an EV point and solar. We are actively looking at solar now, so if there is anything that ENW can give us with regards to solar. Even advice, support and guidance in terms of those sorts of things, certainly from an EV point of view because we haven’t looked at that yet. I would be incredibly interested in receiving some information from them.”

Businesses do not always know what information they need, but stated that if Electricity North West were to start giving information and advice it should cover:

- Awareness of solar PV and EV charging benefits and myths
- Case studies of installations in other similar businesses
- Impartial information on all of the financing options available and other cost considerations such as an increase in business rates from the capital investment into PV
- Explanation of how solar PV/EV chargers can contribute towards the corporate social responsibility and net zero carbon targets
- Education on how to use generation / usage data can benefit the business.

When giving this advice, Electricity North West would need to keep their language simple and ‘jargon free’, and try to ‘chunk’ the information, and explain the process step-by-step as much as possible so that it is digestible. Ideally, the information would be given in a face-to-face meeting to allow for questions to be asked.

Since companies value local experiences and knowledge, it would also be helpful for Electricity North West to encourage similar businesses to share their experiences, and to ground their information in the facts and figures of what each region is aiming for, and what is needed to meet or exceed these expectations.

Respondents also see a clear role for the electricity suppliers to play in both of these activities. Their involvement has been at varying levels so far, with some not being involved at all, but in one case the supplier actually paid for the installation of EV chargers, “Well, actually our supplier offered to do it for us...Well we spend an awful lot of money on electricity, so a couple of chargers is like a drop in the ocean”. If Electricity North West are able to communicate clearly with suppliers and help define the roles that each can play in the planning and installation process, it could help drive up demand for each of these technologies.

6 Conclusions and recommendations

Most companies have positive sustainability intentions and recognise the benefits this has (including financial and reputational). Similarly, almost all employees (89%) think it is important for businesses to be more environmentally friendly, and almost 2/3 think a sustainable business is appealing to prospective employees.

However, there was a wide range in the levels of sustainability practices adopted across the businesses engaged with for this research, with some having well established schemes and processes and others just beginning this journey. It is clear that more can be done, and only 40% of employees feel their company is doing enough.

Businesses who place less importance on sustainability objectives tend to be longer established, traditional organisations. Gaining support from senior management at such organisations is critical, as without it there is unlikely to be sufficient time or resource allocated. Initiating conversations at a senior level will therefore be key to changing current established practices.

Businesses that have installed solar PV have had positive, problem-free experiences and plan to install more. Almost all employees (87%) working for companies who have installed PV panels were pleased that their company had done so. Cost and knowledge gaps remain the key barriers, with some businesses not prepared to pay for the initial investment.

Similarly, those that have installed EV chargers also had positive experiences and expect to install many more in the future, as current installations are on a small scale. Again, among those employees working for companies that have EV chargers installed, the majority, 82%, are pleased they have them. Key barriers include the upfront cost, lack of direct ROI, and limited current demand. In addition, companies are uncertain about what type of chargers to install.

Receiving impartial advice and guidance at an early stage in the process of PV or EV charger adoption will help maintain momentum. Many of those who had made tentative investigations were unsure where to look or became overwhelmed with the different options available. Many of those who had investigated but not installed PV were aware that grants or Power Purchase Agreements (PPAs) are available, however there were concerns that the initial cost was still too high and that the business would not gain all the benefits if a third party had funded the installation. There is also very low awareness of the potential of an increased business rates bill, so impartial advice to clarify all these cost considerations would be beneficial. There was also a lack of clarity over whether network reinforcement would be required.

Companies who had installed EV chargers or Solar PV were positive about the financial, environment and reputational benefits it had. Case studies of businesses from different industry sectors would be a valuable tool to encourage wider adoption. They could also help overcome negative perceptions caused by negative word of mouth or previous negative experiences, especially relating to PV.

All companies see a role for Electricity North West as a provider of impartial advice and information about installing both solar PV and EV chargers. It would be useful to have a range of information available, with top line information provided that is jargon free, and the ability to access more detailed information if required.

7 Appendix 1 – Research materials

7.1 Qualitative interview guide

1. Introduction (5 minutes):

- Introduce yourself
- Explain that the research is being conducted on behalf of ENWL (the company that owns and operates the electricity network distributing to homes and businesses in the North West).
- Explain purpose of discussion (that we are looking for their help to understand businesses experience of and attitudes towards fitting solar panels and installing electric vehicle charging points in the North West, and what barriers exist that may prevent businesses from doing so).
- No right/wrong answers, interested in your opinions, in as much detail as possible
- Request permission for audio recording and explain interview is confidential and bound by the MRS Code of Conduct. Also ask permission to use their name and quotes in analysis for internal ENWL use only.

2. Warm-up (5 minutes):

- What is the company / organisation you work for and what is your role?
- How long have you worked there?
- Does your business monitor energy use? How do you use any data available to you?
- Does your business currently have a carbon reduction strategy or is it taking any carbon reduction actions?
 - If yes, what actions / strategy?
 - If no, why not?

ALTERNATE WHETHER SOLAR PV OR EV CHARGING SECTIONS ARE DISCUSSED FIRST

3. Uptake of Solar PV (10 minutes):

- What energy needs does your business have?
 - Probe for whether business is a low, medium or high energy user
- Have you ever considered installing solar PV panels to generate renewable electricity for your company?
- If has installed or considered installing PV:
 - Why did you decide to look into PV? What do you see as the benefits?
 - Who (which role) in your organisation was driving it?
 - When did you first start to look into it?
 - Where did you / did you plan to put the panels (e.g. roof, unused ground, canopy parking etc)

- How many panels did you / did you plan to install?
- What sources did you use to research the best solution?
 - Who did you speak to? (installers / suppliers, local council, government, local business groups, environmental or low carbon organisations etc)
 - Which channel/s did you use? (events, phone, f2f meetings, emails, websites, Google search, leaflets, letters etc)
- What commercial agreement/s did you use or investigate? And what made you choose one over others? *Commercial agreements include PPAs: Power Purchase Agreements, more commonly known as PPAs, enable your business to benefit from cheap, green electricity without the upfront capex for the equipment. Typical lease terms are 15-30 years. The investor will own the asset and look after all operation and maintenance of the installed equipment, leaving you to enjoy your energy and carbon savings. PPA energy rates are lower than those offered by your traditional energy supplier and are affected by a lower rate of inflation, offering guaranteed long-term savings.*
 - Did you look into grants / incentives? Did you take any up?
- If has installed PV:
 - When was this?
 - How did you choose the supplier / installer?
 - How did the installation go?
 - Did you need to get permission? E.g. from landlord or council?
 - Have you achieved the energy / cost saving you were hoping to achieve?
 - Any problems along the way?
- If has investigated but not installed PV:
 - Why haven't you installed PV? (Haven't finished researching, too expensive, potential cost / energy savings aren't large enough, don't have the right space available, don't have permission from landlord etc)
 - Do you think you will install PV? When are you planning to install it?
- Ask all who are researched installing Solar PV

- How would you describe your experience in investigating/(and installing) Solar PV in a few words? (straightforward, confusing, easy, rewarding, positive, negative)
- If hasn't ever considered PV:
 - Why have you not considered solar PV for your business? (no space / roof access, not enough direct sunlight, storage issues, don't own building, too expensive, not sure what the benefits are, not environmentally minded, not aware of it, too busy running the business etc)
 - What, if anything, do you see as the benefits of solar PV?
 - Has anyone ever contacted you about solar PV?
 - If so, who? (installers / suppliers, local council, government, local business groups, environmental or low carbon organisations etc)
 - And by which channel/s? (events, phone, f2f meetings, emails, websites, Google search, leaflets, letters etc)
- Depending on level of understanding of solar PV, explain the technology and benefits:
 - Insert description of solar PV features and benefits (may need to dispel myths around the need for south facing aspect etc)
 - Explain different financing models available, i.e. PPA: *Power Purchase Agreements, more commonly known as PPAs, enable your business to benefit from cheap, green electricity without the upfront capex for the equipment. Typical lease terms are 15-30 years. The investor will own the asset and look after all operation and maintenance of the installed equipment, leaving you to enjoy your energy and carbon savings. PPA energy rates are lower than those offered by your traditional energy supplier and are affected by a lower rate of inflation, offering guaranteed long-term savings.*
- Is there anything else you would like to know about Solar PV? Any concerns or information you haven't been made aware of?
- Are you aware that the Greater Manchester region have committed to reaching net zero carbon by 2038? And the rest of the UK by 2050?
 - How do you feel about this? Does this encourage you to install solar PV?

- What are the benefits of solar PV for your business? Ask for any benefits not mentioned already
 - Probe on reputational benefits (in terms of marketing / tendering / brand image)
 - Who would you look to influence by greening your reputation? Staff? Suppliers? Investors? Customers too?
 - Probe on cost saving or other practical benefits
 - Probe on environmental benefits (is there much awareness of net zero 2038 / 2050 targets?)
- What are the barriers / issues that would prevent your business or similar businesses from installing solar PV?
 - Probe on behavioural / attitudinal barriers
 - Probe on logistics, cost or technology barriers
- What would help overcome these issues? (Probe to find out more than just financial related)
 - Probe on things the business can do
 - Probe on things solar PV manufacturers / suppliers / installers can do
 - Probe on things government / local council / business groups / low carbon organisations can do

4. Uptake of Electric Vehicles (10 minutes):

- How do your staff / customers etc currently travel to your business?
 - Public transport vs driving vs walking / cycling
- What day to day transport needs does your business have?
 - E.g. sales visits, deliveries, fleet transport, meetings etc
- Do any of your staff have an electric vehicle? How many?
- Have any of your staff or customers ever shown an interest in using electric vehicles to travel to your business?
 - Staff
 - Customers
- Have you installed or considered installing EV charging points at your business to make it easier for your staff to drive an electric vehicle?

- If has installed or considered installing EV charging points:
 - Why did you decide to look into electric vehicle charging points?
 - What do you see as the benefits? Who would benefit?
 - Who (which role) in your organisation was driving it?
 - When did you first start to look into it?
 - What type (i.e. voltage / speed) and how many charging points did you / would you install?
 - What sources of information did you use to research charging points?
 - Who did you speak to? (manufacturers, suppliers, local council, government, local business groups, environmental or low carbon organisations etc)
 - Which channel/s did you use? (events, phone, f2f meetings, emails, websites, Google search, leaflets, letters etc)
 - How useful was the information provided?
 - How would you / did you fund the charging points?
 - If has investigated but not installed charging points:
 - Why haven't you installed EV charging points? (Haven't finished researching, too expensive, unsure how to install, no suitable location, benefit doesn't justify the cost etc)
 - What timescale are you looking at for installing charging points?
 - Ask all who are researched installing EV chargers
 - How would you describe your experience in investigating / (and installing) EV charging infrastructure in a few words? (straightforward, confusing, easy, rewarding, positive, negative)
- If hasn't ever considered installing charging points for EVs:
 - Why haven't you installed EV charging points? (Haven't finished researching, too expensive, unsure how to install, no suitable location, benefit doesn't justify the cost etc)

- What do you see as the benefits? Who would benefit?
- Has anyone ever contacted you about installing EV charging points?
 - If so, who? (manufacturers / suppliers, local council, government, local business groups, environmental or low carbon organisations etc)
 - And by which channel/s? (events, phone, f2f meetings, emails, websites, Google search, leaflets, letters etc)
 - How useful was the information?
- Depending on level of understanding of EVs, explain the technology and benefits of installing charging points:
- Are you aware that the Greater Manchester region have committed to reaching net zero carbon by 2038? And the rest of the UK by 2050?
 - How do you feel about this? Does this encourage you install electric vehicle charging points?
- Is there anything else you would like to know about installing electric vehicle charging points? Any concerns or information you haven't been made aware of?
- What are the benefits of providing electric vehicle charging points for your business? Ask for any benefits not mentioned already
 - Probe on benefits to staff and visitors (would it encourage staff to buy EVs?)
 - Probe on reputational benefits (in terms of marketing / tendering / brand image)
 - Who would you look to influence by greening your reputation? Staff? Suppliers? Investors? Customers?
 - Probe on cost saving or other practical benefits
 - Probe on carbon benefits (is there much awareness of net zero 2038 / 2050 targets?)
- What are the barriers / issues that would prevent your business or similar businesses from installing EV charging points?
 - Probe on behavioural / attitudinal barriers
 - Probe on logistics, cost or technology barriers

- What would help overcome these issues? (Probe to find out more than just financial related)
 - Probe on things the business can do
 - Probe on things EV retailers / installers / electricity suppliers can do
 - Probe on things government / local council / business groups / low carbon organisations can do

5. Potential role for ENW (5 minutes):

Would you be interested in an **impartial organisation** that could provide you with factual information and advice on solar PV and / or electric vehicle charging infrastructure?

This could include information on the different options available for your business and the infrastructure required, so you could make an informed decision on the best option for your business?

For example, when it comes to EV chargers, there are different options available, which range from installation of fast chargers to simple additions such as an outdoor 13 amp plug.

- Would this type of information be useful?
- Any difference between PV and EV?

What type of organisation do you think would be good to provide impartial information to your business?

- Any difference between PV and EV?

Would Electricity North West be credible in this role as a provider of impartial factual information?

- If necessary, reiterate that ENWL is not an energy supplier and does not send electricity bills. ENWL is the regulated monopoly that owns and operates the electricity network distributing to homes and businesses in the North West. ENWL would provide factual information about EV charging infrastructure/PV Solar panels that you could then use to make informed decisions for your business

What type of information would you want to receive?

- Any difference between PV and EV?

7.2 Quantitative survey

SHOW ALL

First of all, we would like to ask you a few questions about yourself.

SC ASK ALL

IF CODE 1-5 CLOSE

S1 Do you, or anybody in your household, work in any of the following industries?

- 1) Advertising
- 2) Journalism
- 3) Electricity Distribution
- 4) Marketing
- 5) Market Research
- 6) None of the above **SINGLE**

SC ASK ALL

S2 How would you best describe your employment status?

1. Employed Full-Time
2. Employed Part-Time
3. Self Employed
4. Unemployed and looking for work **CHECK QUOTA**
5. Unemployed and not looking for work **CLOSE**
6. Student **CHECK QUOTA**
7. Retired **CLOSE**
8. Unable to work **CLOSE**
9. Other (Please Specify)

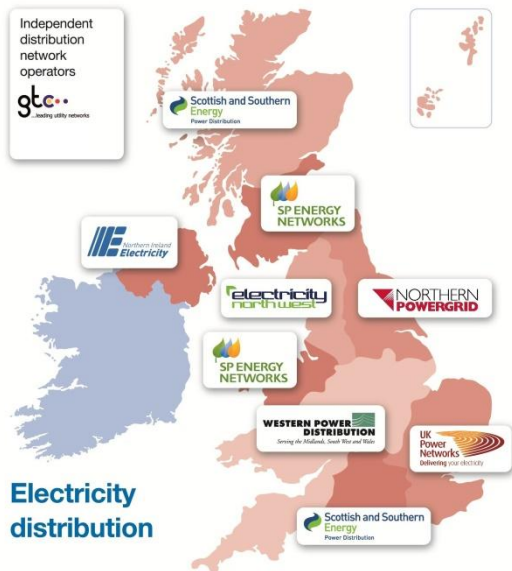
QHID EMPLOYMENT:

1. **EMPLOYED (CODE 1-3 AT S2)**
2. **FUTURE EMPLOYMENT (CODE 4 OR 56 AT S2)**

S

S3 Do you know which distribution company is responsible for maintaining the electricity network where you [live **FUTURE EMPLOYMENT**/work **EMPLOYED**]. This map may help if you are unsure.

Click on the image to zoom in



QHIDDNO:

- | | |
|---------------------------------|-------|
| 1. Scottish and Southern Energy | CLOSE |
| 2. SP Energy Networks | CLOSE |
| 3. Electricity North West | |
| 4. Northern Powergrid | CLOSE |
| 5. Western Power Distribution | CLOSE |
| 6. UK Power Networks | CLOSE |
| 7. Northern Ireland Electricity | CLOSE |
| 8. Don't Know | CLOSE |

SC ASK IF EMPLOYED

S4 Where is your company based? If there is more than one site, please answer for the site you typically spend the most time at.

1. Greater Manchester region [CHECK QUOTAS](#)
2. Lancashire region [CHECK QUOTAS](#)
3. Cumbria [CHECK QUOTAS](#)
4. Outside the North West of England [CLOSE](#)
5. Other international region [CLOSE](#)

SC ASK IF FUTURE EMPLOYMENT

S5 Where do you live?

1. Greater Manchester region **CHECK QUOTAS**
2. Lancashire region **CHECK QUOTAS**
3. Cumbria **CHECK QUOTAS**
4. Outside the North West of England **CLOSE**
5. Other international region **CLOSE**

SC ASK IF EMPLOYED

S6 Approximately, how many people are employed for the whole company that you work for?

1. 1-99 **CLOSE**
2. 100-199
3. 200 or more

SC ASK IF EMPLOYED

S7 Which of the following best describes the company you work for?

Please select one option from the list below.

1. Public sector
2. Private sector
3. Charity / third sector
4. Other

MC ASK IF EMPLOYED

S8 What sector does your company operate in?

DO NOT ROTATE

1. Agriculture, Forestry and Fishing
2. Mining and Quarrying
3. Manufacturing (food and drinks products)
4. Manufacturing (others including chemicals and textiles)
5. Electricity, gas, steam and air conditioning
6. Water supply, sewerage, waste management and remediation activities
7. Construction
8. Wholesale and retail trade; repair of motor vehicles and motorcycles
9. Transport and storage
10. Accommodation and food service activities
11. Information and Communication
12. Finance and insurance activities
13. Real estate activities
14. Arts, entertainment and recreation
15. Professional, scientific and technical activities
16. Education

17. Human health and social work activities
18. Administrative and Support Service Activities
19. Other service activities
20. Activities of households as employers; undifferentiated goods- and services- producing activities of households for own use
21. Activities of extraterritorial organisations and bodies
22. Other

SC ASK IF EMPLOYED

S9 Which of these best describes the 'level' of your role within your company?

1. Senior executive level (CEO, Owner, Founder, Finance Director etc.)
2. Executive level (General Manager, Executive Vice President, Executive Director, etc.)
3. Upper-level management (Senior Vice President, Vice President, Senior Director, etc.)
4. Mid-level management (Director, Senior Manager, etc.)
5. Lower-level management (Supervisor, Associate Manager, etc.)
6. Experienced (Non-manager)
7. Entry level
8. Other (Please Specify)
9. Don't know/ Prefer not to say

SC ASK IF EMPLOYED

S10 How long have you been employed at your current company?

1. Less than 1 year
2. 1-5 years
3. 6-10 years
4. 11-20 years
5. 20+ years

Main Survey

In this survey we will ask your views on the company you [work for **EMPLOYED** /may work for in the future **FUTURE EMPLOYMENT**], and how environmentally friendly they are. Please can you complete this survey by focussing on your normal working situation, in other words when social distancing measures due to COVID 19 are not in place.

A number of companies have taken steps in recent years to become more environmentally friendly, for example reducing the amount of energy they use, or changing work practices such as becoming a paperless office, or encouraging recycling

SC ASK IF EMPLOYED

Q1 How important do you think it is that companies like yours make an effort to be more environmentally friendly and sustainable?

Sustainability means meeting the needs of the present without compromising the ability of future generations to meet their own needs

Please answer on a scale of 1 to 5, where 1 is "Not at all important" and 5 is "Extremely important".

1. Not at all important

- 2.
- 3.
- 4.
5. Extremely important
6. Don't know

OE **ASK IF EMPLOYED**

Q2 Why do you say this?

SC **ASK ALL**

Q3 How much do you agree with the following statement 'it is very important that companies take steps to reduce their carbon footprint'

Please answer on a scale of 1 to 5, where 1 is "Strongly disagree" and 5 is "Strongly agree"

1. Strongly Disagree
- 2.
- 3.
- 4.
5. Strongly Agree
6. Don't know

MC **ASK IF EMPLOYED**

Q4 Does your company offer any schemes to encourage sustainable behaviours in their employees? Select all that apply.

RADOMISE EXCEPT CODE 11 and 12

1. Cycling to work
2. Recycling
3. Car sharing
4. Paperless office
5. Train season ticket salary sacrifice
6. Ethical Pensions
7. Vegetarian/Vegan food in canteen
8. Sustainability training
9. ~~EV~~ Electric Vehicle Chargers
10. Bike Racks
11. Other (Please Specify)
12. None of the above **[EXCLUSIVE]**

Most scientists now agree that we're in a midst of a climate emergency and need to reduce carbon emissions quickly. The UK has committed to achieving net zero carbon emissions by 2050. To get there, the way we all use energy will have to change, including energy used by businesses.

SC ASK IF EMPLOYED

Q5 Do you think your company is currently doing enough to reduce their carbon emissions

Please answer on a scale of 1 to 5, where 1 is “Not doing nearly enough” and 5 is “Doing everything we can”.

1. Not doing nearly enough
- 2.
- 3.
- 4.
5. Doing everything they can
6. Don't know

OE ASK IF EMPLOYED

Q6 Why do you say this?

S ASK IF CODE 1-11 AT Q4

Q7 Did your company's environmental and sustainability credentials have any influence on your decision to work for them?

Please answer on a scale of 1 to 5, where 1 is 'No Influence at all' and 5 is 'A lot of influence'

1. No Influence at all
- 2.
- 3.
- 4.
5. A lot of influence

SHOW TO EMPLOYED ONLY Please answer the next questions thinking about the site where you mainly work. If you are typically based at home please think about your company's head office or the office which you would visit most often.

MC ASK IF EMPLOYED; IF CODES 1-6 ARE ALL SELECTED, SKIP TO Q11

Q8 Does the company you currently work on having any of the following low carbon technologies installed/ available on the company site which you are based? *Please select all that apply*

1. Solar panels
A panel usually installed on the roof of a house or building designed to absorb the sun's rays as a source of energy for generating electricity or heating
2. Electric Vehicle charging points
These are vehicles that run on a rechargeable battery rather than a petrol or diesel engine and plug into an electricity source to recharge the battery when not in use.
3. Heat Pump
Heat pumps transfer heat from underground or the outside air, to provide homes and businesses with heating and hot water.
4. LED Lighting
LED lightbulbs produce brighter light whilst using less energy than other bulbs

5. Smart meters

A smart meter is an electronic device that records consumption of electric energy and communicates the information to the electricity supplier for monitoring and billing.

6. Other (Please Specify)
7. None of the above [EXCLUSIVE]
8. Don't know [EXCLUSIVE]

MC ASK IF EMPLOYED

Q9 Is your company considering installing any of the following? *Please select all that apply*

Show options not selected at Q8 (valid only for codes 1-6), include 'Don't Know' and 'None of the above'; If code 7 or 8 selected at Q8, show codes 1-6

MC ASK SEPARATELY EACH NOT SELECTED AT Q8 OR Q9 INDIVIDUALLY

Q10 Why do you think your company is not considering installing any of the following:

1. No roof space for solar panels **ONLY SHOW FOR SOLAR PANELS**
2. Rented building
3. No car park access **ONLY SHOW FOR EV CHARGING**
4. Cost to the business
5. Other (Please Specify)

SC ASK SEPARATELY EACH OPTION SELECTED AT Q8

Q11 How pleased do you feel that your company has installed [INSERT FROM Q8]?

Please answer on a scale of 1 to 5, where 1 is "Not pleased at all" and 5 is "Very Pleased".

1. Not pleased at all
- 2.
- 3.
- 4.
5. Very Pleased
6. Don't know

OE ~~ASK IF EMPLOYED~~ ASK SEPARATELY FOR EACH SELECTED AT Q11

Q12 Why is this?

SC ASK ALL

Q13 How important is it for you, as [an employee **EMPLOYED** / a future employee **FUTURE EMPLOYMENT**], that your company installs Solar panels in the workplace?

Please answer on a scale of 1 to 5, where 1 is "Not at all important" and 5 is "Extremely important".

1. Not at all important
- 2.
- 3.

- 4.
5. Extremely important
6. Don't know

S ASK ALL

Q14 Why do you say that?

SC ASK ALL

Q15 How important is it for you, as [an employee **EMPLOYED** / a future employee **FUTURE EMPLOYMENT**], that your company installs Electric Vehicle Charging points in the workplace?
Please answer on a scale of 1 to 5, where 1 is "Not at all important" and 5 is "Extremely important".

1. Not at all important
- 2.
- 3.
- 4.
5. Extremely important
6. Don't know

Q15OE Why do you say that?

SC ASK IF EMPLOYED

Q16 Does your company have a dedicated budget for sustainability/lowering their carbon footprint?

1. Yes
2. No
3. Don't know

SC ASK ALL

Q17 How important do you personally think it is that your [company **EMPLOYED** / a future company **FUTURE EMPLOYMENT**] has a dedicated budget for sustainability/lowering their carbon footprint?

Please answer on a scale of 1 to 5, where 1 is "Not at all important" and 5 is "Extremely important".

1. Not at all important
- 2.
- 3.
- 4.
5. Extremely important

6. Don't know

SC ASK IF EMPLOYED

Q18 As an employee, are you able to provide any input in company decisions to become sustainable?

1. Yes
2. No
3. Don't know

SC ASK IF CODE 2 OR 3 AT Q18

Q19 Would you like your company to ask for your input?

1. Yes
2. No

OE ASK IF CODE 1 OR 2 AT Q19

Q20 Why do you say that?

SC ASK IF EMPLOYED

Q21 Do you think your company would become more appealing to prospective employees if it became more sustainable?

1. Yes
2. No

OE ASK IF EMPLOYED

Q22 Why do you say this?

SC ASK IF EMPLOYED

Q23 How appealing would your company be to prospective employees if you have solar panels installed?
Please answer on a scale of 1 to 5, where 1 is "Not at all appealing" and 5 is "Extremely appealing".

1. Not at all appealing
- 2.
- 3.
- 4.
5. Extremely appealing
6. Don't know

SC ASK IF EMPLOYED

Q24 How appealing would your company be to prospective employees if you have ~~EV~~ Electric Vehicle Charging points installed?

Please answer on a scale of 1 to 5, where 1 is “Not at all appealing” and 5 is “Extremely appealing”.

1. Not at all appealing
- 2.
- 3.
- 4.
5. Extremely appealing
6. Don't know

BUCKET EXERCISE

S ASK ALL

Q25 If you were looking for a new employer, how important would these following items be when making a decision of what company to work for? *Please drag the options into the appropriate boxes.*

1. Essential
2. Very important
3. Fairly important
4. Nice to have
5. Not important

SHOW ONE AT A TIME

RANDOMISE ALL CODES

- Solar panels
- Electric vehicle charging points
- Recycling
- Cycle to work schemes
- Ethical pensions
- Charitable work
- Social budgets
- Training opportunities
- Company car (petrol or diesel)
- Company car (Electric)
- Train season ticket salary sacrifice

ONLY RANK THOSE IN ‘ESSENTIAL’ and ‘VERY IMPORTANT’ BUCKET; SKIP IF NO CODE IS MARKED AS ‘ESSENTIAL’ OR ‘VERY IMPORTANT’

Q26 Please now rank these items from most important to least important.