

# At Work

## Background and explanation of our proposals

Electricity and gas use by organisations in the city is responsible for over 40% of Leicester's carbon emissions from our direct fuel and energy use. Employee commuting and business travel, and transporting goods to and from businesses, also contributes a lot to the city's emissions from transport. The materials used by businesses have a carbon footprint of their own too. As well as reducing carbon emissions, to stay competitive business will need to provide sustainable products and services in order to meet changing consumer demands.

This section covers businesses in the city as well as organisations such as charities, educational institutions and public services including the council and NHS.

### 1. Carbon neutral organisations

For Leicester to become carbon neutral, businesses and organisations will need to play their part. This will mean changes to heating, insulation, lighting and equipment - and much more generation of renewable energy.

This will require support and funding from central government, and from the Leicester and Leicestershire Enterprise Partnership (LLEP). The LLEP will need to take account of the climate emergency in local strategies, direct national funding to address these issues and lobby central government for the changes that are required.

### 2. Installing low carbon heating and cooling

Most businesses and organisations are still heated using gas boilers, or gas-powered blowers. Natural gas heating will need to be phased out due to the carbon emissions from burning it. Instead heating and hot water will need to come from zero or very low carbon sources, such as:

- Heat pumps – these use electricity to extract heat from the air or ground, and are more energy efficient than standard electric heating.
- Hydrogen Boilers – hydrogen could replace natural gas as a fuel if it can be produced using a carbon neutral process. Hydrogen is not yet widely available though.
- Infra-red heaters – these heat a specific area instead of a whole space. They may be a more efficient way of heating large premises like warehouses, where heat is needed only in certain areas.
- Heat Networks – these generate heat more efficiently at a central boiler, and pump it to multiple buildings. More information can be found in the At Home section.
- Electric blowers – in some spaces, if heat pumps are not suitable these could replace gas blowers, but would likely use a lot of electricity so aren't ideal.
- Heat re-use – some machinery and processes produce lots of waste heat. This could be captured and re-used to heat premises.

As discussed in the At Home section, we are not proposing the use of wood-based 'biomass' fuel at a large-scale in Leicester.

Keeping buildings cool will become more important as hotter summers and heatwaves become more common due to climate change. This will need to be done without air-conditioning where possible, to avoid increasing electricity demand further. More information can be found in the At Home section.

### **3. Energy Efficient Workplaces**

Many buildings are poorly insulated, and it will be necessary to improve their insulation to reduce the energy use and cost of heating them. High levels of insulation will be needed for heat pumps to be effective and affordable to run. They will also be necessary to limit the extra demand on the electricity grid as gas is phased out.

Non-domestic properties are often harder to insulate than homes, as there is a much wider range of building types and uses. They often have lower levels of existing insulation too. Solutions will need to be found to allow these buildings to be insulated.

All lighting in workplaces will need to be energy efficient. This will mean replacing halogen and fluorescent lighting with LEDs.

### **4. Renewable energy**

Organisations will continue to have a carbon footprint from electricity use as long as gas is used to generate some of the electricity in the UK. Electricity demand is also likely to increase significantly in the future, meaning that more generating capacity will be needed.

We think that most organisations will need to have renewable energy generation systems installed. Those premises with a large roof space will be especially suitable for solar PV panels, and organisations with a high electricity demand will be able to use the energy on-site. Solar PV panels could also help to generate a financial return for the organisation.

Battery storage systems will be needed in some organisations to store excess electricity generated. These will allow self-generated renewable electricity to continue to be used on site when generation is low and can cut electricity costs.

Organisations which have high electricity demand but are able to vary the time at which they use it could benefit from taking part in 'demand response' programmes. These programmes can pay participants to reduce energy use when demand on the grid is high. As renewable energy is less predictable than fossil fuel sources, these programmes make it easier to utilise renewable capacity as it is produced

'Smart' energy controls will be appropriate for many organisations. This could include monitoring devices and software to show where energy is wasted, or usage could be reduced. More detail on other technologies is available in the At Home section.

### **5. Travel and transport**

Businesses and organisations are also responsible for a lot of carbon emissions from travel. This includes emissions from vehicles they own or rent, employees commuting and business travel, and the transport of goods to or from the business.

The Travel and Transport section explains the overall changes that will need to be made, which businesses and organisations will need to implement.

## **6. Low-carbon production**

Production and manufacturing services which use a lot of electricity and gas can be responsible for a large proportion of many organisations' carbon footprints. This includes energy use for computers and electronic systems used to provide services.

When buying new equipment and machinery organisations will need to choose the most energy efficient options. Existing machinery could also be refurbished to improve its efficiency. Whilst this may lead to a higher initial capital cost, the energy savings should provide pay-back over time.

Where these machines and processes use electricity, this will need to come from renewable sources. This will require organisations to install their own renewable energy technologies as discussed above. Where gas is used for production processes low carbon alternatives will need to be found.

Organisations will also need to look at ways to use behaviour change schemes to help staff reduce carbon emissions and save energy. This could involve using switch-off procedures or educating staff on energy-saving. Incentive schemes and improved facilities could also be used, for example making it easier for staff to walk or cycle to work.

## **7. Waste**

The waste produced by businesses and organisations will also need to be reduced, as waste causes carbon emissions in a number of ways. This is discussed further in the Waste section.

## **8. Creating low carbon products**

Manufacturers will need to design products so that they can be more easily repaired and refurbished, and retailers will need to supply them to consumers. Replacement parts and repair instructions for items will also need to be made available to consumers more easily. The government could support this through legal and regulatory changes to make it easier. Items such as clothes will need to be designed to last for more than one season.

Any organisations purchasing goods, including raw materials, components, ingredients and finished products need to buy them from sustainable sources, and suppliers that are tackling their own carbon footprints. This includes using as much previously recycled material as possible. Packaging materials will also need to change, with all products provided in recycled and recyclable or re-usable packaging. Local

organisations will need to use their influence to drive these changes in their own supply chains.

These changes will also be driven by changing consumer demands, as public awareness of and engagement with the climate emergency increases. Demand for products that have been produced sustainably, have a small carbon footprint and can be re-used or recycled easily will increase. Businesses will therefore need to meet these demands to make sure they remain competitive in a changing market.

The council has already brought in sustainable procurement guidelines for its purchasing and can play a role in leading by example, ensuring the guidance is strengthened over time. We are also embedding 'social value' into our contracts, giving us the chance to seek additional outputs through our contracts where appropriate.

## 9. The public sector leading by example

Many of the largest employers in the city are public sector organisations. These include schools, the NHS and the council. These organisations should help to lead by example through addressing their own emissions.

The council has already invested in increasing the energy efficiency of its own buildings and fitting renewable energy sources. We will look to continue this work.

The council is also the landlord of a large number of business rental units. It could work to further improve the energy efficiency of these premises. Tenants could be engaged on how to reduce energy use and carbon emissions too.

## Summary of our proposals

### Vision for employers

- Businesses and other employers will need to use low or zero carbon heating and cooling systems and generate their own renewable electricity wherever possible. Workplaces will also need to be more highly insulated to reduce their heating need.
- Business processes and equipment will need to be much more energy and resource efficient. Production processes will need to be carbon neutral – using renewable energy generated on-site where possible.
- All items and materials procured by businesses and organisations will eventually need to come from sustainable sources, for example using recycled materials.
- Customers will expect the good and services they use and buy to be sustainable and zero carbon, so businesses and organisations will need to achieve this to stay competitive.

### Potential actions at work

*Potential actions by the council and other public service providers*

1. The council could invest in improving the energy efficiency of the business premises they own and rent out, and educate tenants about energy savings and carbon reduction.
2. More could be invested in improving the energy efficiency of the council's and other public sector organisations' own buildings. This could include investment in more renewable energy systems.
3. The council could apply for more funding to support to local businesses and organisations, particularly SMEs, to increase the energy efficiency of their premises.

*Potential actions by businesses*

4. Employers could replace gas heating with low carbon alternatives such as heat pumps or connect to district heating networks. They could also improve building insulation.
5. More solar PV panels or other renewable energy systems could be installed by employers. Where appropriate they could also install battery storage systems to make full use of energy generated on-site.
6. Employers with high electricity demand could sign up to demand-response programmes where they are available.
7. Existing machinery and equipment could be replaced with more efficient alternatives by employers. They could also replace machinery using gas or other fossil fuels with electric alternatives.
8. Organisations could design, manufacture and sell products that use sustainable materials, and are designed to be re-used and repaired.
9. The Leicester and Leicestershire Enterprise Partnership (LLEP) could integrate the climate emergency into their strategies, direct national funding to the climate emergency and lobby government for more support.

*Actions by individuals*

10. Individual staff could encourage their employers to take action on the climate emergency, for example through staff incentive schemes and behaviour change programmes.

*Actions by the government*

11. The government could make a national plan for moving to low or zero-carbon heating and provide funding and support to employers.
12. Support and funding could also be provided by the government to improve other aspects of energy efficiency in businesses and organisations premises.