MAKE uk
The Manufacturers' Organisation

MANUFACTURING: STEPPING UP TO THE SUSTAINABILITY CHALLENGE

MakeUK.org

SUMMARY

Against a backdrop of rising concern about climate change impacts manufacturers are increasingly proving that environmental improvements pay in more ways than one. More than two thirds of manufacturers have reduced their costs whilst increasing environmental protections. Unsurprisingly businesses reported that cost savings was a driver for implementing change. However, they are increasingly looking beyond the simple energy saving measures and deepening their environmental credentials to respond to customer demands. Manufacturers are looking outside their own business and challenging their supply chains to explore new ways to maximise their resource use and reduce plastics waste.

The Committee on Climate Change's recent recommendation of a "net-zero" Green House Gas emissions target by 2050 triggered further public debate about the role of the public, companies and the government in addressing environmental problems. Many felt that all three should move faster and with more ambition even than the report's recommendations. Despite a highly uncertain political landscape in the UK movements such as the 'Extinction Rebellion' have ensured climate change remains firmly on the political agenda.
Our research shows that manufacturers are committed to sustainability and the benefits that brings to their business, their customers and the environment. The biggest barrier to businesses doing more on environmental sustainability and energy efficiency was an insufficient return on investment.

The UK's decision to leave the EU has significant ramifications for environmental policy, which has largely been driven and overseen by the EU. A new framework is now being developed to manage England's environment over the long term. Scotland and Wales have their own plans. For manufacturers, the future governance process can seem like an abstract process, but it will set the boundaries within which they will be expected to operate.

In that context, we review the manufacturing sector's approach to sustainability from the bottom up, starting with what the sector is doing already and what drives change in these uncertain times.

Taking energy management as an example for a deeper dive, we have found around half of manufacturers are taking simpler steps such as implementing employee engagement programs and installing more efficient equipment. Nearly a fifth have taken further steps, installing onsite renewables and investigating power purchase agreements.

Unsurprisingly in a sector where a significant majority of players are not household names with brands to promote, or at least protect from negative publicity, cost savings remain the main driver of action. And – where those are missing – the main barrier.

However, we see an increasing number of companies looking further ahead to future-proof their business and across more of their value chain. There is also a growing awareness of the new markets that are opening up, and investors are giving more thought to environmental risk as well as potential opportunities. With concerns about the environment high on young people's agendas it is also essential that manufacturers think about the image the sector represents if it wants to attract a skilled and motivated work force.

With that in mind, we suggest those companies that haven't already made sustainability a board-level issue consider it as part of wider long-term business planning.

We also call on government to take better account of how business operates when designing environmental policy. This includes setting long-term goals where the responsibility falling to each actor is clear to enable appropriate investment, taking a supportive approach where larger scale changes are required and harnessing the power of supply chains, sector agreements, and voluntary certification where these can avoid the need for regulation.

Key Findings

– 71% of respondents reported that the last environmental improvement they made reduced costs. 79% of respondents said this was a driver for implementing that improvement.

– Energy saving is a typical first step because it is easily quantifiable for businesses. Half of respondents were taking steps towards greater energy efficiency.

– Once regulatory requirements and easy cost saving measures have been implemented, companies are taking the next step towards reducing their impact on the environment. Measures can include maximising resource use, waste reduction and looking at the impact of their wider supply chain.

– Pressure along the supply chain can be a major driver for businesses to ‘green’ their products. 25% of companies in our survey were taking action to meet customer demands. In fact, nearly two thirds of respondents had achieved or were working towards standards such as ISO14001.

– The biggest barrier to businesses doing more on environmental sustainability was an insufficient return on investment. This was the same for energy efficiency measures.

WHAT ARE MANUFACTURERS DOING TO MANAGE THEIR SUSTAINABILITY?

The past couple of years have seen growing public interest in some environmental issues, particularly plastics and air pollution, and government is responding accordingly. The finance sector too has been more vocal about the risks of climate change. However, manufacturers continue to face a broad range of challenges, not least of them Brexit. In this context, we thought it would be useful to look again at the environmental improvements they are making, what drives them and what stops them going further.

We have surveyed Make UK's members about sustainability twice for this report, once as part of a wider assessment of chief executives' views, focusing that time on climate and energy, and later in the year in the form of a more detailed survey sent to experts within companies. As well as ongoing conversations with our members, we also interviewed several experts with connections to the sector. Thanks to the following for their support: Martin Baxter, Executive Director for Policy at the Institute for Environmental Management; Steve Reeson, Head of Climate Change and Policy at the Food and Drink Federation; Professor Paul Leinster, Professor of Environmental Assessment, Cranfield University; Anita Lloyd, Director, Squire Patton Boggs; and Prof Steve Evans, Director of Research, Institute for Manufacturing at The University of Cambridge.

As the rest of this section shows, it seems there is a progressive journey manufacturers take with respect to the environment.

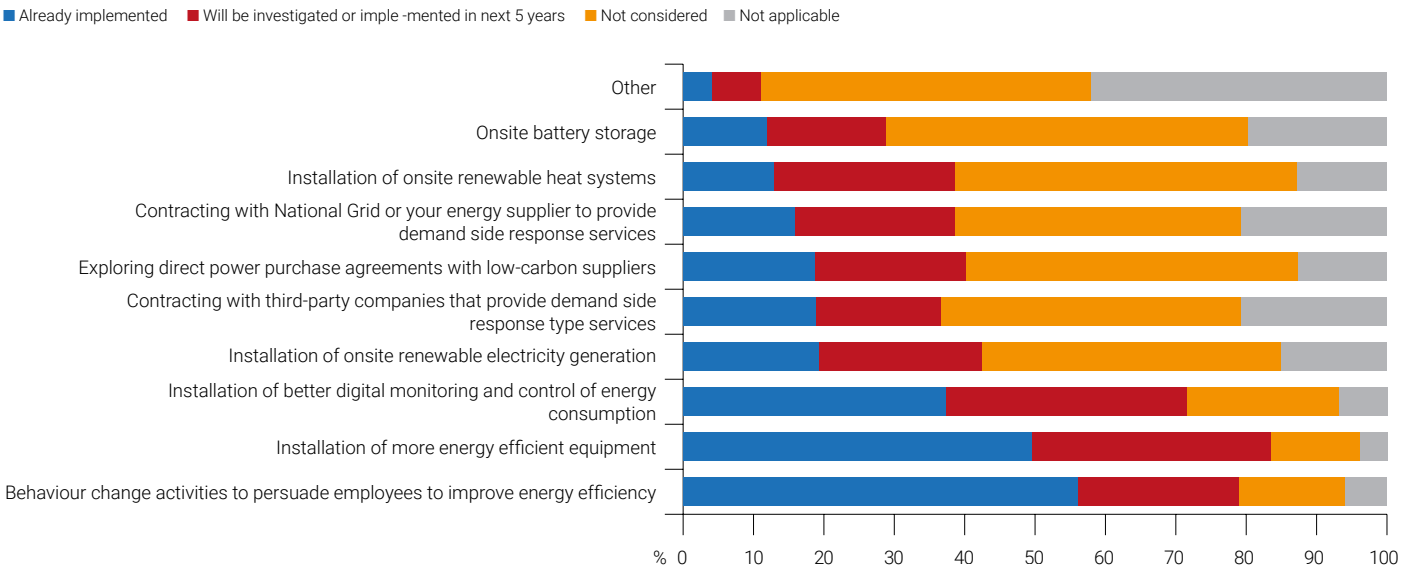
Most have taken some basic first steps that have an obvious and immediate return. Whether they have moved beyond this to address wider impacts, such as the impact of their supply chain or examining new business models or greening products, depends on a range of factors including their sector, size, ethos and public profile. Across the sector as a whole, the biggest driver is clearly financial savings but issues such as regulation and demand from customers are also significant.

Easy wins

With energy saving there is a clear quantifiable return, making this a common first step. Figure 1 below focuses specifically on energy-related actions. It illustrates how Make UK's members have tended to start with "no-regret" measures with little or no upfront cost such as encouraging employees to be more energy conscious, and switching machines off during breaks before progressing to more substantial investments[1].

Energy costs typically make up a small amount of spend and turnover (around 2%) but for some of our members they are much more substantial. Data compiled by the government shows there are sixteen sectors, nine of which are classed as energy intensive industries, for which energy costs account for more than 10% of expenditure [2]. (The figure is as high as 32% for the iron and steel sector.) These sixteen account for four percent of the UK's total GVA.

Figure 1: Energy management activities being undertaken or planned by manufacturers



Source: Climate and Energy Survey 2018

[1]Bogdanski, Hermann and Thiede, A systematic method for increasing energy and resource efficiency in manufacturing companies, 2012 https://ac.els-cdn.com/S2212827112001357/1-s2.0-S2212827112001357-main.pdf?_tid=62fe1752-bd7c-421e-99db-29d6b80ce1a8&acdnat=1548247956_7fcc2105559424d011b5382ca8fe9167
[2]BEIS, 2018, Business Energy Statistical Summary

Demand Side Response (DSR), which features relatively prominently here given it is still relatively new, refers to the turn down of equipment at times of peak electricity demand. Uptake may increase as the market becomes more standardised as it offers a financial return, however there is still considerable wariness about letting the third-party aggregators that often provide this service onsite.

Switching to renewable electricity and heat or installing batteries, requires more substantial upfront investment and payback periods that may be challenging for some companies. To make these technologies pay for themselves it is often necessary to stack a whole series of different revenue streams against them, including DSR, savings from avoiding peak grid pricing periods and, until its recent demise, income from the Feed-in Tariff subsidy scheme.

Other early stage activities that also have a clear upfront saving include steps to reduce waste by ensuring it is recycled back into processes, avoiding over-ordering and training staff to be more conscious of the issue.

When asked about their last major investment in sustainability, almost 80% of Make UK members said that reducing costs was a key driver for that investment (see figure 2). This is consistent with previous surveys and more than 20 percentage points higher than the next biggest driver[3]. It was also cited the main driver for the investment in more than a third of cases. Other key drivers for environmental improvements cited by respondents were:

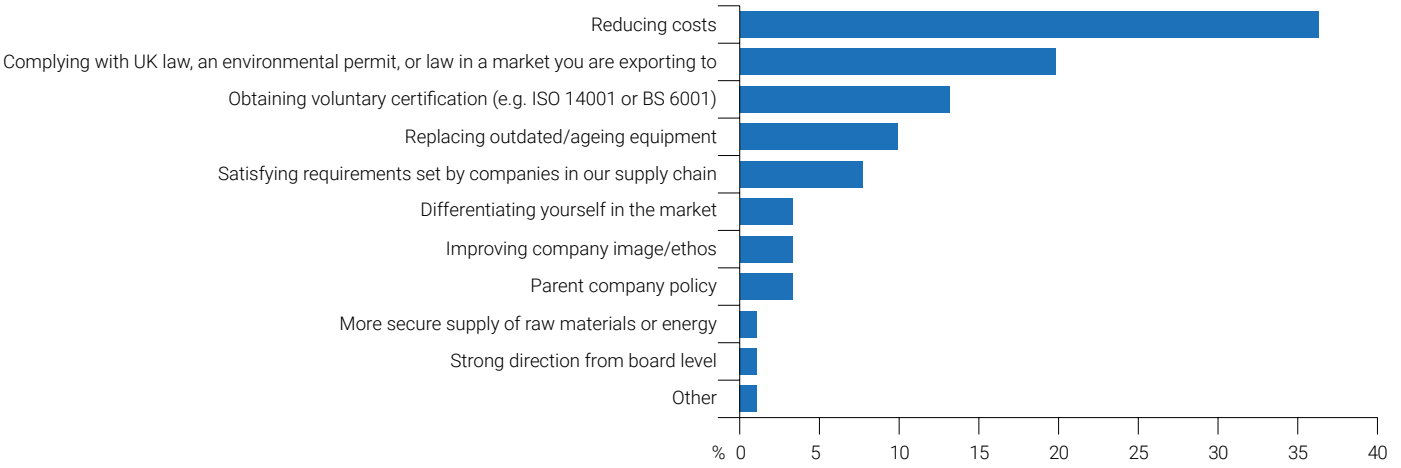
- **Company image:** There is clearly a benefit for some companies in promoting their environmental credentials and avoiding negative publicity. However, it is notable that this was rarely identified as the leading driver among survey respondents, probably because most of Make UK's members are in business-to-business not end consumer markets.
- **Regulatory requirements:** These vary by sector and size of company but some members face strict environmental permitting requirements requiring action on their sites to prevent air pollution for example. Others will manufacture products such as cars that are heavily regulated, products in which certain chemicals aren't allowed, or simply place items such as packaging or electronics on the market that come with end-of-life responsibilities.
- **Replacing outdated equipment:** In some sectors, manufacturing plant is expected to last several decades. It is often when companies replace equipment or move sites that the biggest opportunities for improvement occur. One of our interviewees, Steve Reeson of the Food and Drink Federation, had this to say: *The big step change is really when you replace the equipment and optimise it. This could be replacing a whole plant, moving site, a production line. That's the big opportunity to do something about energy efficiency, it's about the next investment cycle, that's where the step change is.*
- **Voluntary certification for environmental or energy management (see box on ISO14001):** This may be a customer requirement. Around two thirds of respondents to our sustainability survey said that their businesses had, or planned to achieve, certification against the newly upgraded standard.

Figure 2: Driver for the last change/investment that achieved a positive environmental outcome

Source: Climate and Energy Survey 2018

[3]EEF, 2016, Upgrading Power

Figure 3: Main driver (follow up question)



Source: Climate and Energy Survey 2018

Next steps

Companies that have implemented the easiest cost saving measures and complied with any regulatory requirements may then look to their wider environmental impacts.

Here's one high-profile company setting out its view:

"There's more in the mix than regulation. Regulatory concerns are the minimum. Climate change isn't going away and there's certainly more pressure there. Access to resources, whether that's energy or simply having the resources to make products now and in the future products is key and ties in with the circular economy so being able to recycle things into a valuable product is a key driver as well. Environment manager, Make UK member company

A portion of manufacturers are also looking outside of their own organisations to their supply chains and the products they produce. This can future-proof a business against risks associated with their supply chains – the use of unsustainable sources of palm oil to take one example – or ranges of products. Examples of the latter might include diesel cars, which until recently were promoted as the solution to climate change but are now being more actively targeted by air pollution policies, and single use plastic items.

Companies such as Unilever have set their environmental targets based on the lifecycles of their products, aiming to address the points at which they cause most environmental harm, even if those are outside the firm's direct control. Another example would be the 115 companies from around the world that ask their suppliers to quantify and report on their efforts to manage climate, water and deforestation related risks[4].

As with mandatory product standards, particularly tailpipe emissions limits for cars, pressure coming along the supply chain can be a major driver for businesses without the same immediate focus on sustainability as shown by the 25% of companies in our sustainability survey taking action to comply with customer requirements.

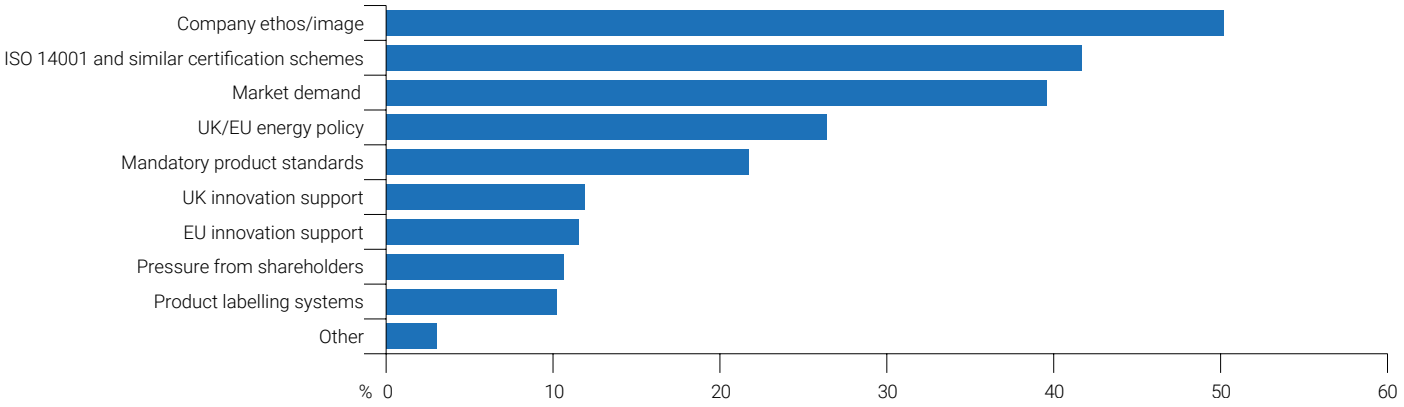
Figure 4 shows, where companies have greened their products, company image is a key factor as are certification standards and market demand.

Interviewees highlighted a considerable range of reasons companies of all sizes could be at different stages of the sustainability journey. Many of the high profile examples of particularly progressive companies, eg Siemens or Unilever have a public image to manage or sell products in this area. Others are in sectors such as food or construction where regulation or voluntary standards and wider public concern have prompted the calculation of products' whole lifecycle impacts.

Finally, it's important to note that it's not for lack of willingness that most companies aren't doing more. Manufacturers see the importance of playing their part in tackling issues such as climate change. The challenge is balancing this against day-to-day operating requirements – staff availability, management time, skill sets and availability of capital.

[4]https://www.cdp.net/en/articles/supply-chain/a-decade-of-purchasing-power-brings-sustainability-up-the-corporate-agenda-as-worlds-biggest-businesses-cut-633-million-metric-tonnes-of-co2-from-their-supply-chains

Figure 4: Which of the following have driven the greening of your products - 19% were ruled out because they said no to greening



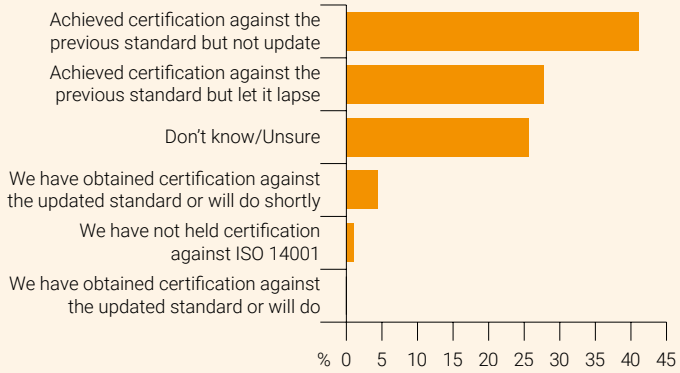
Source: Climate and Energy Survey 2018

ISO 14001

The long-established ISO 14001 standard allows businesses to work towards certification of their environmental management systems – as demanded by some customers – but also operates as a framework in which businesses can get information and develop those strategies.

The latest iteration stretches beyond onsite management systems, forcing board-level engagement with the environment and encouraging firms to build sustainability into their whole business models rather than leaving it siloed as a compliance concern. The graph below indicates no drop off in popularity following the changes, and that a quarter of respondents to the sustainability survey thought the new program would change their behaviour. However, there are concerns it could make certification more arduous for small companies.

ISO 14001 revisions



What is stopping further action?

Our survey respondents and interviewees set out a range of barriers to further environmental action in the manufacturing sector, with the biggest barrier seen by respondents as an insufficient or slow return on investment (see Figure 5).

Even for those improvements that clearly save money, particularly raw material and energy efficiency improvements, the rate at which investments pay back is an issue. Most companies cannot invest in projects with more than a couple of years' payback and even then projects are competing against request for funding from other parts of the business and for management attention.

This also explains the third of companies that saw lack of government support as a barrier.

For other types of environmental improvement, the barriers are more varied and higher. Besides, financial payback, our members regularly cite problems with skills, information and awareness, and lack of interest from customers and management.

Strong direction from the board was cited as a driver of environmental improvement in more than a quarter of cases in our sustainability survey and slightly over half of respondents said they had a strong board level champion for climate and environmental issues. This was also an issue discussed by our interviewee Paul Leinster, who noted it could vary as a factor from company to company:

"What is the driver? There are some companies that will act in a certain way as an expression of their belief system. Others because it gives them a competitive advantage. For many

listed companies there often needs to be a strong financial reason for going beyond compliance otherwise they may not be viewed as maximising shareholder value." Professor Paul Leinster

Research suggests that while smaller businesses can be more agile in their ability to implement sustainability strategies, in some respects, they are more likely to be held back by a lack of expertise[5]. This was also a point made by environmental lawyer Anita Lloyd, a partner at law firm Squire Patton Boggs, specialising in the environmental risks of transactions:

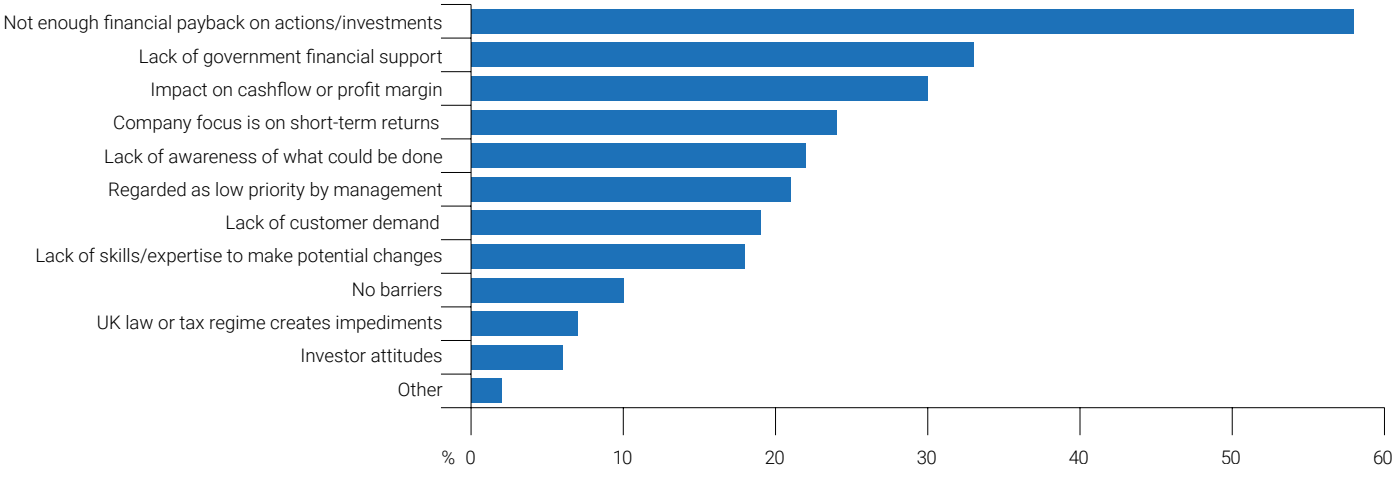
"Very often larger organisations have more expert people in their teams, such as an environmental manager, where a smaller organisation may not. Smaller businesses may not always spot where environmental legislation applies to them. On the other hand, sometimes smaller businesses have less bureaucracy and can be more responsive and entrepreneurial where there is a higher level of risk, but they don't necessarily have the ability to invest. Upfront costs are often a barrier for smaller companies, whereas bigger companies have bigger budgets and potential for investment."

Numatic, who make the 'Henry' vacuum cleaner brand and employ circa 1000 people at their Chard site, are implementing projects to meet a 'zero-plastic waste to leave the site' target. For example, Numatic are increasing the use of their own recovered plastic and recently launched a range of trollies made from recycled-post consumer resources.

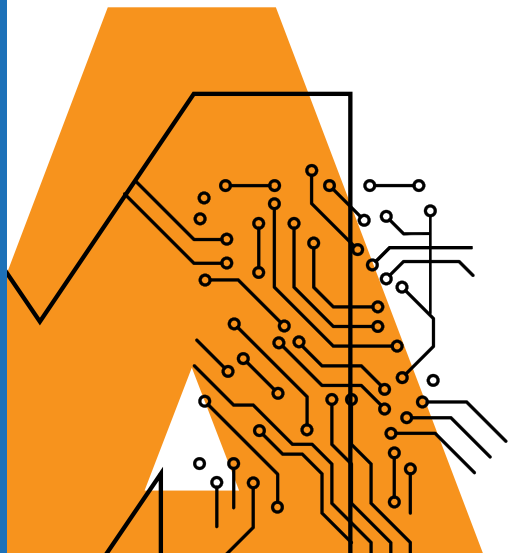
Another interviewee, Professor Steve Evans from Cambridge University spent twelve years in industry and now works closely with companies on sustainable engineering and industrial systems, also elaborated on some of the organisational challenges:

"Energy managers in factories have a target about energy reduction/efficiency but their area of authority is often outside of the wall of the factory and inside the fence. They deal with boilers, solar panels on roofs but don't mess with the production machinery. So energy managers may have the skills but are not invited into the production process." Steve Evans.

Figure 5: Barriers to your company doing more on the environment

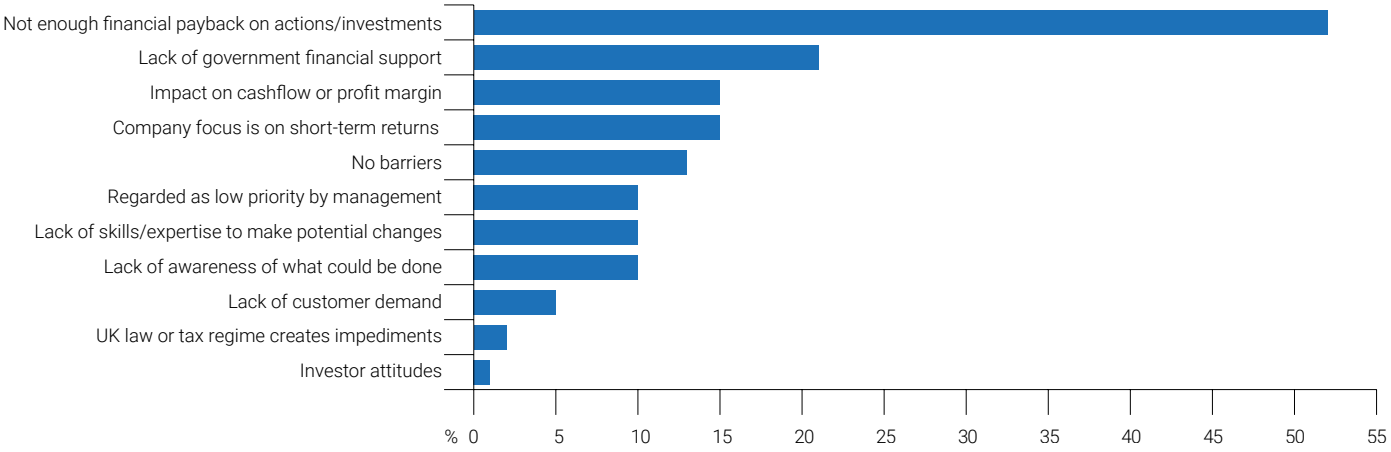


Source: Climate and Energy Survey 2018



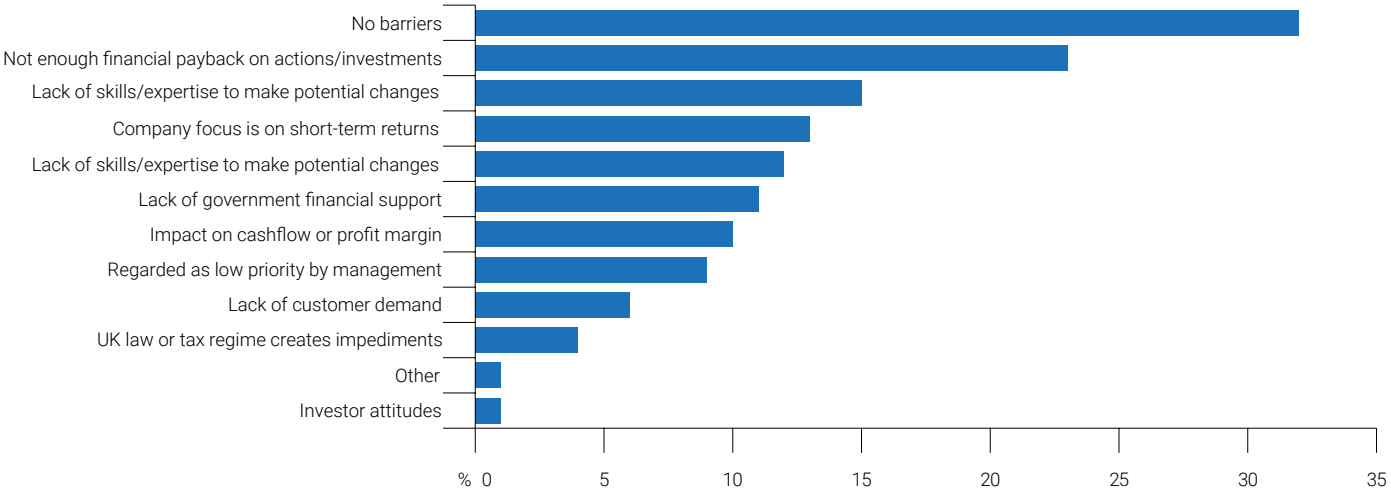
[5]Bhanott Neeraj, Enablers and Barriers to sustainable manufacturing, results from a survey of Researchers and Industry Professionals, 2015, https://ac.els-cdn.com/S2212827115000451/1-s2.0-S2212827115000451-main.pdf?_tid=893d75e0-ebea-4913-8114-5388e99fc111&acdnat=1548247410_d4fd9e690dd95571237a88a5380b5f3b

Figure 6: Barriers to energy efficiency



Source: Climate and Energy Survey 2018

Figure 7: Barriers to resource efficiency



Source: Climate and Energy Survey 2018

WHY DO MORE?

For manufacturers struggling with the day-to-day realities of running a business, the arguments for going above and beyond regulator or customer requirements can seem a bit theoretical. However there are good reasons companies should be engaging in this agenda.

Energy and resource efficiency

71% of companies surveyed reported that the last environmental improvement they had carried out had reduced costs. This isn't surprising given nearly 80% said that was a driver in making the change. The fact that not all expected costs savings are realised should however be a note of caution. It can sometimes be harder to get new equipment or practices to deliver the expected benefits immediately. Nonetheless, there are clear gains to be made.

Our interviewee Steve Evans also had an interesting view here, pointing out that companies often prefer to make an investment rather than simply think about how they could use existing resources more effectively. Psychologically this seems simpler than rethinking production processes.

Looking more broadly, research by Centrica suggests that if half of UK manufacturers switched to distributive energy models, which it defines as including energy efficiency, onsite generation, battery storage and demand side response, the cumulative annual savings would amount to £540 million[6]. Not all of these technologies offer an immediate return and investments need to be carefully planned and with an eye to the ever-changing policy environment (see later).

However for companies with access to the right expertise or that can live with longer payback periods, there are additional benefits in terms of company image and, in areas with less reliable power supply, a backup source.

Initiatives aimed at reducing the use of other raw materials have similar financial benefits, both as a result of lower input costs and less waste being generated. Companies that are very exposed to import markets will see an extra value in being more resource efficient and less exposed to volatile market prices and exchange rates in changeable times.

"Green" products, image and reputation

For consumer-facing organisations, the arguments for action on sustainability are much more obvious and the risks of inaction more immediate.

In a recent global survey of 17,000 people, 56% described themselves as "green", defined as "one who avoids environmentally harmful products, minimises waste, tries to save energy and chooses environmentally friendly products as often as possible[7]". It is becoming more important to consumers that goods or services come with "green" credentials. A 2015 survey by Nielsen showed that 66% of respondents were prepared to pay more for sustainable goods[8] demonstrating a potential economic opportunity for environmentally sustainable product lines.

However, even companies that don't sell direct to customers may increasingly be under pressure via the brands with which they interact. (See earlier comments on supply chain pressure.)

Furthermore, there is a growing body of evidence to suggest younger people are seeking careers in organisations that have a good reputation for corporate and social responsibility[9] including environmental responsibility[10]. If manufacturers want to train and retain the best staff, it is worth considering the benefits of being seen as a sustainability leader. Around a third of our sustainability survey respondents observed increased employee satisfaction as a result of their last investment, notably almost half said this particular benefit had been unexpected.

Manufacturers may also want to consider the changing policy landscape around hot topics such as air pollution and plastic waste. The Government's 25 Year Plan (25 YP) for the Environment and its Resources and Waste Strategy will substantially change the way some businesses operate. Staying ahead of likely regulation such as that affecting packaging waste could lessen the impact further down the line. Manufacturers may also want to position themselves to take advantage of any resulting green procurement initiatives, where the Government is leading by example and making its purchases in an environmentally sustainable way.

Official stats on the low-carbon and environmental goods and services market in 2011 and 2012 put the UK sixth internationally with 3.7% of the total global market[11]. Between those two years, there was an impressive 4.8% increase in UK sales to £128 billion. Unfortunately, that helpful work and more recent data sets aren't directly comparable. Figures compiled by EU statisticians using different parameters estimated UK output in the environmental goods and services sector at €87 billion in 2015, up €15bn from 2014[12]. We also have data from the Office of National Statistics on the low-

[6]https://www.centricabusinesssolutions.com/sites/g/files/qehiga126/files/Powering%20Britain%20Industrial%20report.pdf
[7]https://www.researchgate.net/profile/Dinesh_Samarasinghe/publication/317276762_The_Impact_of_Green_Attributes_on_Customer_Loyalty_of_Supermarket_Outlets_in_Sri_Lanka/links/59e942ae458515c36352ccae/The-Impact-of-Green-Attributes-on-Customer-Loyalty-of-Supermarket-Outlets-in-Sri-Lanka.pdf
[8]https://www.nielsen.com/content/dam/nielsenglobal/dk/docs/global-sustainability-report-oct-2015.pdf
[9]https://www.theguardian.com/sustainable-business/2015/may/05/millennials-employment-employers-values-ethics-jobs
[10]https://www.ft.com/content/8b08bf4c-e5a0-11e7-8b99-0191e45377ec
[11]https://www.gov.uk/government/publications/low-carbon-and-environmental-goods-and-services-2011-to-2012
[12]http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do

carbon and renewable energy economy between 2014 and 2017, showing slight growth in turnover of related business activity to around £80 billion despite a changeable policy environment[13]. Besides highlighting the lack of consistent statistics, this indicates already sizeable markets. With the UK and other countries' commitments under the Paris Accord potentially becoming stronger plus recent public interest in other environmental issues, all the indications are that environmental markets will continue to grow.

Investor attractiveness

Members currently see investor pressure as a relatively limited driver of environmental improvement. The benefits of reducing further risks should not be underestimated.

Anita Lloyd, from Squire Patton Boggs, highlighted this as an important consideration:

"I think it's rare these days to see a transaction where environmental considerations are not part of the due diligence. It is now far more common for due diligence exercises to cover questions such as environmental complaints, laws, permits and that they know what is coming over the horizon. There is also an element of future proofing – so not just current compliance but future compliance. Even though environment is often included in initial due diligence questionnaires these days, we still find people getting caught out with regimes that they didn't realise they were subject to. The packaging waste regime for example, people often think it's about handling packaging waste but it is actually about packaging handled or sold through their businesses." Anita Lloyd

Institutional investors are also paying much more attention to environmental issues as can be seen by the growing number of initiatives in this area from the long-established Carbon Disclosure Project, through to the Taskforce for Climate-Related Disclosure and UK government's own Green Finance Taskforce[14]. Some investors have seen environmental management as a proxy for good management more generally but these kinds of projects are more focused on avoiding future financial risks – the risk for instance of 'stranded assets' that no longer have value because of changing regulatory or consumer markets.

Most of the news stories around divestment on environmental grounds have been around oil and gas but this could spread to other sectors, particularly energy intensive sectors such as the steel industry[15].

Circular aspirations

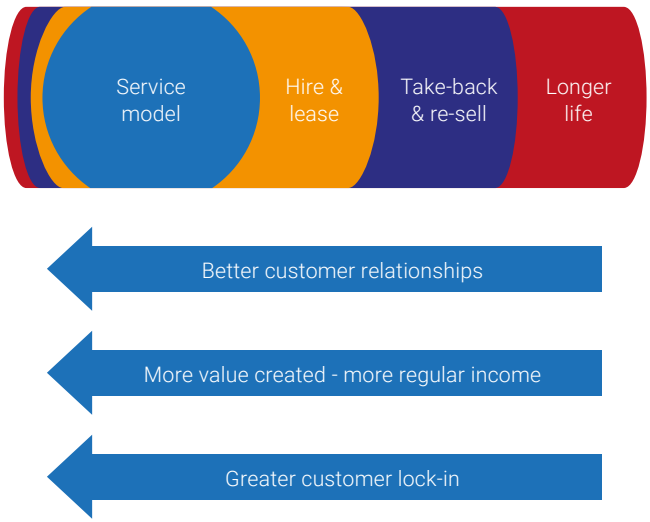
Some of the most forward-thinking companies in this area are embracing the concept of the circular economy where products and materials are kept in use for longer and fed back into production at the end of their lifecycles rather than being disposed of. This can include use of recycled materials and enabling recycling but goes much further, including exploration of entirely new business models.

Some of these business models also have wider business benefits. Famous examples include Rolls Royce's power by the hour model of service provision and Interface's carpet rental option. Among Make UK's membership there are also companies that remanufacture parts or whole products, issuing them again with full warranties as new, and that take back and re-sell their products when customers no longer need them. The Brew project run by Wrap a couple of years ago highlights more firms considering these kinds of business models ranging from tyre companies to manufacturers of stairlifts and cars[16].

The advantages of more service-based models include closer relationships with customers and retention of valuable resources. As the figure below shows, they can also bring in a more regular stream and are well-suited to the age of the Internet of Things where products can be monitored and adjusted remotely.

Circular business model benefits

(technical products)

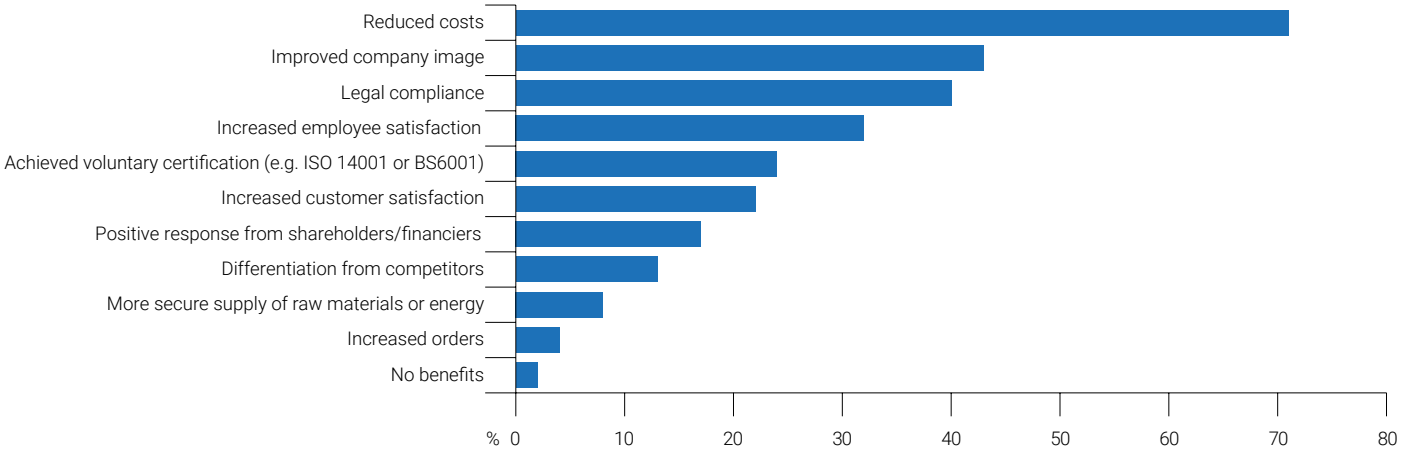


Source: Climate and Energy Survey 2018

At the broader scale, analysis from the Ellen MacArthur Foundation has estimated that transition to more circular transport, food and built environment systems across Europe, making use of the latest disruptive technologies, could save up to €900bn by 2030, increasing household income by €3,000 a year and halving CO2 emissions below current levels[17].

[13]https://www.ons.gov.uk/economy/environmentalaccounts/datasets/lowcarbonandrenewableenergyeconomyindirectestimatesdataset
[14]http://greenfinanceinitiative.org/green-finance-taskforce/
[15]https://www.smithschool.ox.ac.uk/publications/reports/SAP-divestment-report-final.pdf, https://www.theguardian.com/environment/2018/sep/10/fossil-fuel-divestment-funds-rise-to-6tn, https://www.eulerhermes.com/en_global/economic-research/insights/cop24--stranded-assets--the-trillion-dollar-question-for-the-ene.html
[16]www.rebus.eu.com
[17]Ellen MacArthur Foundation, 2015, Growth Within

Figure 8: Which benefits noticed after last change



Source: Climate and Energy Survey 2018

Implementing change

Discussion with members and our interviewees suggests the companies that are leaders on sustainability tend to have a few key characteristics:

1. Real board-level interest and drive:

Strong direct from the board was cited as a driver of environmental improvement in more than a quarter of cases in our sustainability survey and slightly over half of respondents said they had a strong board level champion for climate and environmental issues. This was also an issue discussed by our interviewee Paul Leinster, who noted it would vary as a factor from company to company:

"What is the cost driver? There are some companies that will do things because they believe it is morally right to do it. I would say that is primarily going to be owner operator businesses or you get to a certain size and in fact that is your business model – body shop for example. For most, certainly listed companies, then people are taking much harder nosed decisions about it and in that situation, there needs to be a strong financial element to it because otherwise they are not maximising shareholder value potentially." Professor Paul Leinster

Another interviewee gave the example of Toyota UK, which has committed very seriously to energy efficiency and consistently reduced consumption by 8% year on year. The bulk of this reduction was due to creative and strategic thinking about the production process. For example, machines are turned off during breaks and operators are supported by a sign in obvious view. The main cost of this change is management time and required support to run throughout a business from top to bottom.

2. Long term planning.

Almost 70% of respondents to our survey agreed that long-term planning was needed within companies in order to achieve improvements in energy, material/resource or environmental performance.

3. Willingness to learn and compare performance against other companies

Some companies are also more engaged with wider business management trends and have more capacity to consider new ways of working.

Steve Evans who has worked with a number of companies says the following:

"If they asked me what should I do - I would tell them to go and visit other factories and copy the good things they find there. At the moment the ability to be resource efficient is a weak muscle but once it's been flexed a few times it will become stronger…

"There is a common and simple way of thinking that says, if I want my water to be cleaner, I will have to spend more money on equipment – but that's only one way of looking at it. If you go and look at the leading organisations you see that they solved the problem a different way, for example they got rid of the dirty process or got it under more control, which is just good old fashioned engineering, and they didn't have to spend thousands on a new filter – instead they spent a few minutes thinking." Steve Evans

HOW CAN POLICYMAKERS INCENTIVISE ENVIRONMENTAL IMPROVEMENT IN THE MANUFACTURING SECTOR?

It is in everyone's interest for environmental policy to be well-designed, supporting business to make sustainable decisions rather than creating unnecessary regulatory hurdles or adding costs that don't effectively drive change. Brexit provides an opportunity to review the regulatory environment and ensure appropriate long-term goals are in place to guide investment and that environmental outcomes are being achieved as effectively as possible. However, manufacturers are not keen to see divergence from EU standards in areas relating to products.

What do manufacturers think of the current policy framework?

Conversations with manufacturers show they find the current regulatory landscape crowded, confusing and complex. Just to take energy efficiency as an example, there is the Climate Change Levy and option for some to avoid it via Climate Change Agreements, the Energy Savings Opportunity Scheme, Streamlined Energy and Carbon Reporting and the EU Emissions Trading System. Then there are (much appreciated) new funding programmes aimed at fuel switching, industrial heat recovery and industrial energy transformation. BEIS meanwhile is consulting on a new scheme for improving energy efficiency in SMEs, with options including a system mimicking the existing ECO programme for households and a new auction-based programme.

Manufacturers tell us that multiple overlapping schemes in the same area, even if they are individually quite light-touch, drain their resources and can prevent more practical action to improve environmental performance. The majority also say that it is not quick or simple to find appropriate guidance on environmental regulations.

"One of the challenges for industry is that due to cuts in funding for the Environment Agency and Defra, a lot of the industry guidance that previously helped people comply with rules, regulations and good practice was withdrawn. For example pollution prevention guidelines in England (which are still available for Scotland and Northern Ireland). As a consequence we refer to the European guidance and that doesn't necessarily answer the question. I think that creates more uncertainty compared to things like health and safety law where there are approved codes of practice and guidance." Environment manager, Make UK member company

Linked to this is the view that climate change policies, and environment policies more generally, still largely add to costs and decrease international competiveness, rather than stimulating new markets (see figure 9 below). The situation has improved recently, the 'low-carbon economy' at least conjures up the image of electric vehicles as well as wind turbines, but manufacturers in many sectors still need to be convinced that they will see real benefits from decarbonisation and environmental management.

It's clear that Brexit might be an opportunity to streamline some aspects of environmental regulation and this is something that the majority of our sustainability survey respondents' agreed with.

However, that change must be approached very carefully, given close trading ties with the EU and need for regulatory continuity. Manufacturers also want product-related regulations, for instance around chemicals or product energy efficiency, to remain aligned with those of the EU to avoid manufacturing multiple products for multiple markets or being undercut domestically by poor-quality imports.

A strong foundation

One of the biggest complaints we hear is regarding uncertain policy environments. This has been very evident in conversations around air pollution, with government policy a decade ago encouraging diesel vehicles and now a perception that the situation has changed very quickly and no defence is offered by government of even the most modern and lowest emitting diesel cars. Similarly proposals put forward by Ofgem on electricity network charges over the past year are undermining the investment signal for onsite electricity generation and demand management, despite Government ostensibly supporting both. These examples also highlight the need for cross-government collaboration. In addition, more clarity is needed where there are key infrastructure decisions to be made that could affect business investment, for instance on whether hydrogen or electrification will predominantly be used to decarbonise heat.

"Providing regulatory and policy certainty is critical really. If things keep changing every time there is a different minister with different ideas that doesn't provide the right policy landscape. So, we don't just need policy direction but some vision of how that might be achieved in practice." Environment manager, Make UK member company

Last year a report by the Aldersgate Group on the effectiveness of environmental regulation reached the same conclusion, arguing that innovation is more likely to occur where impacts on business are over the long term with sufficient timescales

to allow businesses to adapt and pitched at the right scale (eg across the whole EU market for car tailpipe emissions standards.

Although not perfect, the EU has created a relatively stable framework for environmental policymaking. Leaving could present a risk to this and we are therefore supportive of the approach taken by Government in developing the Environment Bill. However, at the moment, the Bill is reliant on the targets set out in five-yearly Environmental Improvement Plans; this could mean that targets change every time the government changes.

Ultimately, manufacturers don't want deregulation just good, stable and well-enforced rules that take into account business reality.

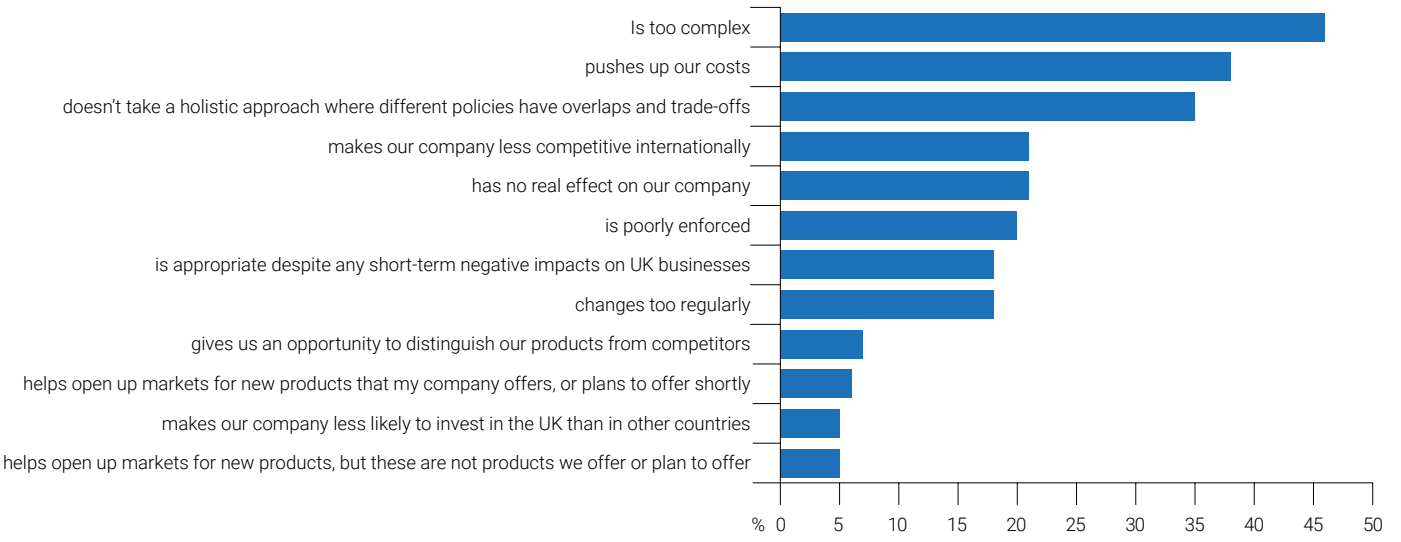
Alignment with business needs

Obvious as it sounds, the environmental world sometimes seems to forget that environmental regulation is only one of many drivers affecting company behaviour. It doesn't help that civil servants often cycle through some environment-related roles in quick succession. For business almost everything comes back to financial viability, be it directly when talking about funding or when discussing more intangible issues such as the ability to attract skilled employees. They have other broader refurbishment timetables to coordinate environmental action with and those that are trying to compete internationally can't pass on any additional UK-only costs to their customers. The latter is a problem not just with direct action on climate change by industry but also with the costs passed on from the electricity sector which have pushed up UK electricity prices to some of the highest in Europe. Recently we have seen a more supportive approach from Government with the funds mentioned earlier to support energy efficiency and decarbonisation measures. These are very welcome as they shorten payback periods enabling these investments to compete internally. They could also help counter high electricity prices for some firms. However they remain piecemeal and one-off measures.

For some companies there are strong reputational drivers to improve environmental performance and risks associated with poor management. This can be capitalised by encouraging these firms to look to their supply chains as well as their own performance.

In theory, policies aimed at greening end products satisfy consumer demand while also creating pull factors along supply chains including public procurement initiatives and green building standards. They are also less likely to have a detrimental effect on international competitiveness as all products placed on the UK market are treated equally. This is in contrast to controls on processes, which affect only producers based here – direct controls on carbon emissions from plant for instance – and offer no advantage in global markets.However, attempts to further expand product-based initiatives need to be taken on a case-by-case basis to check that they do not have unforeseen consequences and take into account lifecycle impacts. They must also not overlap with similar EU measures after Brexit.

Figure 9: UK Govt climate and energy policy



Source: Climate and Energy Survey 2018

What does government need to do differently?

With that in mind we recommend the following:

– Brexit could be an opportunity to streamline some climate and environmental policy tools without diminishing environmental outcomes.

– The UK should remain closely aligned with EU product-related policies.

– The Environment Bill needs a mechanism for setting long-term targets, where the duties falling to different actors are obvious well in advance.

– Greater effort is needed to highlight and build market opportunities for environmental goods and services, including 'circular' business models.

– If successful, new funding programmes such as the Industrial Energy Transformation Fund should be put on a long-term footing and there should be a preference for more supportive policies of these types.

– Government should try and find ways to tap into existing company behaviour to avoid regulation, for instance exempting companies with voluntary certification from some regulatory requirements, and encouraging supply chain collaboration.

– Similarly, policymakers should consider where they can help create markets for sustainable goods beyond those created by EU legislation. However, this should be approached on a case-by-case basis

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