

CUSTOMER RESEARCH

# Sustainability as a key factor in making IT decisions – where are organisations today?

*acer*  
for business

RESEARCH CARRIED OUT BY Px3 Ltd.  
RESEARCH COMMISSIONED BY ACER

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**'Over 97% of IT decision makers think that reducing carbon footprint is important but, despite this, only just over 50% of organisations have a CSR or ESG strategy which includes IT as part of their carbon reduction plans.'**

# 1 Executive Summary

Market research carried out on behalf of Acer has examined the importance of sustainability in today's IT sector based on the responses from 250 IT UK decision-makers across the public and private sectors.

Over **97%** of IT decision makers think that reducing carbon footprint is important but, despite this, only just over **50%** of organisations have a CSR or ESG strategy which includes IT as part of their carbon reduction plans.

## SUSTAINABLE CHOICES

Of particular concern, less than **25%** of decision makers list energy consumption or carbon footprint in their "top 5" decision making criteria when selecting new devices. With end user computing (EUC) devices such as desktops and laptops being responsible for **34%** of IT related pollution this is an important area, particularly as up to **80%** of emissions are caused by their use, rather than manufacture and disposal.

## SCIENCE-BASED MEASUREMENTS

It is clear that more information, particularly standardised, science-based data is required. **95%** of respondents would find it useful to know accurate information about the GHG emissions caused by using a device and **87%** of respondents would also be interested in certified "carbon neutral" devices.

## CIRCULAR ECONOMY & SOCIAL VALUE

Less than **50%** of respondents reported that they cleaned data from some legacy devices and donated them to either educational establishments (48.40%) or charity (46.0%).

## STAFF ATTRACTION AND RETENTION

**79.2%** of respondents stated they would prefer to work for a company with a strong ethical approach to climate change and sustainability.

## HYBRID WORKING

Reduced commuting is estimated to be able to cut travel to work emissions by **60%**. With 58% of staff indicating they wish to continue with some form of home working the provision of effective mobile IT continues to be a priority, with decision-makers focused on performance and battery life.

## BENEFITS OF LOW-ENERGY DEVICES - BENCHMARKING THE ACER SPIN 513

The Acer Spin 513 LTE was independently benchmarked against both legacy and current EUC devices and found to be **84%** more energy efficient than legacy desktop devices and up to **50%** more efficient than comparable modern devices.



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## 2 Background & Key Issues

### SUSTAINABILITY

Since the Industrial Revolution, human polluting activity has caused **1.0°C** of global warming and an increase to **1.5°C** is expected between 2030 and 2052 if emissions continue to increase at the current rate [1].

Scientists calculate that reaching and sustaining “net zero” global CO2 emissions from human activity by mid-century will halt global warming, but current strategies such as vehicle electrification and renewable energy will not be sufficient to bridge the emissions gap forecast for 2030 [2].

Scientists and governments agree that all aspects of human activity which cause pollution must be examined and low-carbon alternatives researched and adopted during the next decade, with the UN Environmental Programme suggesting a combination of existing technology and innovation is required [2].

Given the criteria, end user computing (EUC) devices are prime candidates for change as they generate **1%** of global GHG annual emissions - caused by manufacturing **460 million devices** annually and the energy consumed by **4.2bn active users** [3].

Current research indicates that the annual EUC device carbon footprint is 556,000,000 tCO2e of GHG emissions, equivalent to 1.4bn fossil fuel car miles and requiring a forest the size of Argentina to remove the pollution from the atmosphere [3].

In the UK alone EUC devices are responsible for **34%** of IT related pollution and up to **80%** is caused by their daily use. This “use phase” is creating **3m tonnes of CO2e**, equivalent to **650,000 cars driving on UK roads annually** [4].

Acer has recycled and remanufactured over **50 metric tonnes** of batteries.



There are signs that the IT industry is beginning to respond to environmental concerns. In 2021 Acer, one of the world’s leading device manufacturers, announced that it had joined RE 100, a global initiative bringing together the world’s most influential businesses committed to 100% renewable electricity, pledging to achieve this by 2035. The Acer Group, including its global operations and subsidiaries, has already achieved its 2020 target of reducing carbon emissions by 60% worldwide.

The commitment extends beyond energy use into manufacturing and packaging. In 2020 all Acer notebooks switched to recycled paper for packaging, **saving 8,750 kg of paper pulp and 20 million plastic bags**. In addition Acer has recycled and remanufactured **over 50 metric tonnes of batteries**.

Acer has also launched the Aspire Vero notebook which is very much focused on sustainability, using post-consumer recycled (PCR) plastic throughout the device’s chassis and keyboard caps. The eco-friendly packaging features a shipping box made from 80-85% recycled paper pulp, paper sleeves replacing plastic bags for adapter protection and 100%

industrial recycled plastic used for the laptop bag and sheet between the keyboard and screen.

All shipping box graphics are printed with soy ink and the notebook chassis itself is not painted, reducing the environmental impact. To extend the useful life of the device and support “right to repair” initiatives the notebook features easily-accessible, standardised screws for a simpler disassembly process.

As part of their sustainability strategy Acer commissioned independent specialists Px3 to carry out benchmarking of devices to accurately quantify their use phase energy consumption. This data, available in technical reports and white-papers, provides customers with accurate information for CSR / ESG reporting as well as playing an important role in carbon reduction plans and “Net Zero” initiatives.

#### THIS UNDERLYING RESEARCH

*The Market Research was commissioned by Acer and designed by Px3 to substantiate the belief that sustainability was increasing but still under-represented in IT decision making. To assess this, feedback was captured and analysed from 250 decision makers within UK commercial companies and public sector organisations with more than two hundred and fifty employees.*

# 3 Environmental Concerns as a Decision Factor

It is clear that sustainability is increasing in importance across both business and personal agendas. In the research over 97% of respondents indicated that this was an important area. Less than **3%** of respondents reported they were not concerned about reducing their carbon footprint, while over **65%** considered it very important.

Concern was higher in the private sector with 73% rating the issue as "Very Important" compared with just over 60% in the Public sector.

## CHOOSING A SUSTAINABLE DEVICE

**94.8%** reported that they would find information on the carbon footprint of devices useful or very useful.

Overall there was a greater awareness and concern in the largest private-sector organisations, with legal, travel and engineering organisations showing particular focus and plans for action. Education and health sector organisations, together with smaller private sector organisations (turnover of less than £1m or less than 500 employees) were less focussed on opportunities to cut their emissions.

As an example of the variation in priorities, **86%** of respondents indicated they would choose a device they knew had a low carbon footprint, but **33%** of Education and **27%** of Healthcare respondents indicated that this would not be a factor in their decision making, which may reflect different pressures and priorities across the sectors.



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**reported that they would find information on the carbon footprint of devices useful or very useful.**

Reflecting the growing interest in carbon-neutrality **86.8%** of respondents indicated that they would be more likely to buy a device if its carbon footprint had already been offset.

In terms of devices, **74.4%** of decision makers report being reliant on "Energy Star" ratings to guide them on energy efficiency. Unfortunately the energy efficiency benchmark only measures and reports power draw and electricity consumption when the device is not actually in use, specifically recording low power-use modes such as 'off', 'sleep' and 'idle' [4].

In effect this means that the energy efficiency of the device in completing actual work tasks is effectively excluded from any calculations. During this 'active' mode devices consume additional electricity while processing requests, seeking data from storage, memory, or cache and populating the screen with images. Px3 research has shown that up to 80% of device emissions are caused by this 'use phase' and that variables such as the type of operating system (OS) and chipset mean that EUC device energy-efficiency varies considerably [4].

These findings strengthen the requirement for independent benchmarking of device sustainability of the type commissioned by Acer to provide customers with real-world, validated figures for CSR, ESG and carbon-reduction plan reports.



**“organisations seeking to adopt sustainable IT strategies are enabled to achieve abatement goals, reduce electricity consumption and accurately substantiate success by transitioning to the Acer 513 Spin Chromebook”**

JUSTIN SUTTON-PARKER, PX3's RESEARCH DIRECTOR

# 4 Legislation, Compliance and the Circular Economy

Legislation already exists to encourage organisations to make changes aimed at reducing operational GHG emissions. Recent research, however, suggests that resistance factors, such as a lack of awareness, mean that over one of organisations simply third fail to react [5].

From a UK perspective, the Climate Change Act [6] includes a Companies Act [7] amendment, ensuring that organisations operating in the UK are subject to mandatory GHG emissions reporting.

This means that since April 2019 all organisations listed on the London Stock Exchange, all large unquoted companies and large Limited Liability Partnerships (LLPs), Government departments, non-ministerial departments, agencies and Non-Departmental Public Bodies are required to abide by the legislation [7].

These organisations, collectively referred to as the 'service sector', represent over 50% of the total national workforce with 10.74m working in large companies and 5.4m in public organisations. Significantly the sector consumes **32%** of all UK electricity. **10.4%** of this electricity is attributed to the use of IT solutions making it the third largest consumer behind lighting (14.5%) and cooling and ventilation (13.4%) [8].

To directly address this growing GHG source, the UK government's updated 'Greening ICT' policy for 2020-2025 [9] requires EUC device procurement and subsequent operation to meet what are described as 'hard targets'. These include a requirement for all

future purchases to be accompanied by a scientific target capable of supporting the Government plan for net zero by 2050. In effect this could be as simple as selecting EUC devices proven to be energy efficient when operated in the workplace, leading to a reduction in GHG emissions. To investigate whether this has been translated into strategy and policy the research investigated IT sustainability commitments in organisational policy.

Around **95%** of organisations reported having a CSR/ESG strategy in place, but over **25%** of those had not included carbon reduction as part of their strategy.

Of those who have a CSR/ESG policy **78.4%** reported that it included IT in the scope, however combining the two figures indicates that only just over **50%** of organisations have formally adopted GHG reduction as part of their corporate IT strategy.

## CIRCULAR ECONOMY/ SOCIAL RESPONSIBILITY

With increasing interest in the circular economy and social value, the research looked at organisations' treatment of "legacy" devices which had been replaced during an upgrade.

Just under **50%** of respondents reported that they cleaned data from legacy devices and donated them to either educational establishments (48.40%) or charity (46.0%). In support of such initiatives Acer has introduced the option of an extra two-year warranty to allow devices to be re-purposed for social value, reducing the potential overheads of technology donations on the recipient organisations.



Significantly the sector consumes **32%** of all UK electricity.

**38.4%** reported cleaning the data off and reselling the device, while **34.8%** were using software to convert them into "thin clients".

Extending the useful life of devices, either within or outside the organisation, reduces the "scope 3" embodied carbon proportionately. As an example, providing a device to a school under such a scheme where it could be used for a further two years would typically reduce the embodied carbon value by over **30%**. **86.40%** of respondents would be interested in knowing the carbon footprint of the device they were trading in or repurposing in this way.

Such initiatives have implications for staff attraction and retention, with **79.2%** of respondents stating they would prefer to work for a company with a strong ethical approach to climate change and sustainability.

# 5 Sustainability Implications of Modern & “Hybrid” Working

Hybrid and remote working are important trends in the workplace which have been accelerated by the pandemic, with the proportion of UK working adults who did any work from home increasing from 27% in 2019 to 37% in 2020.

**24% of businesses stated that they intended to increase homeworking**, with online job advertisements featuring the term in May 2021 three times above their February 2020 average.

There are clear implications for employers. Of working adults currently homeworking, **85% wanted to use a “hybrid”** approach of both home and office working in future. However, there was uncertainty among businesses, with **32% stating they were not sure** what proportion of the workforce will be working from their usual place of work.

Working adults stated work-life balance was the greatest positive of homeworking while challenges of collaboration were the greatest negative. Only **2%** of businesses reported that they did not expect the workforce to return to their usual work place at all, however 19% were unsure about where their employees will be working in the future. Figures vary between sectors with 81% of ICT workers and 71% of professional, scientific and technical staff working remotely compared with just 8% in retail and 16% in transportation [11].

From a sustainability perspective research indicates that the reduced commuting [12 & 13] in 2020 has significantly lowered greenhouse gas emissions [14].

As transportation generates 14% of global GHG emissions [14 & 15], reducing commuter emissions is key to a sustainable future and achieving international GHG abatement targets [16].

Recent research [10] investigated whether IT-enabled remote working is capable of significantly contributing to carbon reduction. The research measured 815 employees across a 2-year time period spanning both pre and COVID-19 periods. The results indicate remote working reduced commuting emissions by **43% in 2019 and 97% in 2020, generating a reduction of 1.9 tonnes of CO2e** per person over the study period.

Examining the commuting data generated by the employees in twenty-four countries using twelve forms of transport, the research found that as remote working has been proven to be feasible for a wider audience **future abatement of 60% is achievable** through the adoption of the ‘new normal’ of hybrid working [10].

The right support, collaboration tools and equipment are clearly key to enabling these new, more flexible ways of working. Looking specifically at the devices, the Px3

research asked respondents to rate which aspects of devices were most important to them.

**Performance (62%) and battery life (53%)** were among the most important selection criteria, well ahead of **price / value for money at 41%**. Perhaps due to the decrease in work-based travel, weight and portability, often previously raised as major concerns, were both rated of much lower importance at less than **25%**. Interestingly the aesthetics of the device were rated as being of the lowest importance at less than 20%.

The findings suggest that this new way of working with more time spent working from home is leading decision makers to favour devices with high performance and good battery life over concerns about looks, weight and even price.

Despite featuring very highly in terms of personal concerns, the importance of device energy consumption and carbon footprint were rated relatively low in importance at **27% and 21%** respectively. Clearly the importance of these factors is likely to change as organisations adopt carbon-reduction plans and include IT in their plans to achieve Net-Zero operations.



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# 6 Illustrating the Benefits of Low-Energy Devices: Benchmarking the Acer Spin 513 LTE

As we draw nearer to 2050 it is inevitable that the scope of organisations subject to mandatory GHG emissions reporting will broaden and that the imperative for (or indeed penalties for not) reducing emissions will increase.

This means that organisations will be under pressure to weight energy-efficiency, sustainability and circular economy much higher in the selection criteria for items such as end user computing devices.

A number of vendors, including Acer, have already begun this journey with investments in recycled materials, reduced packaging and re-usable or upgradeable components.

The ACER Spin 513 LTE is notable, however, for setting an exceptional standard in low-energy consumption, as validated by the Px3 independent [benchmarking](#).

This exercise scientifically measured energy consumption when the device was used extensively for 'real-world' productivity tasks. The tests found that the Spin 513 LTE exhibited a category-leading energy performance consuming as little as 0.046 kWh per working day. Using the "silent sole" benchmark from Px3 this is noted as being equivalent to the energy required to take just 791 human steps per day.

As such, using a Spin 513 would reduce emissions from an average mixed environment of desktops & laptops by around **70%**. Compared with a typical legacy estate of Windows desktop PCs the energy and emissions savings were estimates an impressive **84%**.

Even benchmarking the SPIN 513 LTE against comparable market-leading notebooks, savings of up to **50%** were recorded.

For a typical medium-sized organisation with 500 IT users the annual energy savings delivered by switching to the device are significant, reducing emissions by 2,606 kgCO2e every year of use. To put this into more accessible figures, that is the equivalent to reducing travel by **9,460 UK car miles** or having an additional **3.2 acres of mature forest** removing emissions from the atmosphere.

While significant at an organisational level, the true benefits are even more impressive when illustrated at a national level. Research has determined that 67% of workers require a laptop, desktop or similar device

to fulfil their job role [4] equating to 21.7m devices being used daily across the UK, giving a 'use phase' emissions value in the region of 162,592,000 kgCO2e.

Switching to low-energy devices such as the Acer 513 Spin Chromebook this could be reduced to 49,494,240 kgCO2e, equivalent to the pollution created by almost **410 million car miles** or having the 'sequestration' benefits of an extra **135,000 acres of mature forest, roughly the size of the Isle of Man.**

Demonstrating the commitment to energy efficiency across the product range equivalent benchmark testing has also been conducted on other Acer models and devices including the Acer B8 24" display and the Acer Spin 713 Notebook both of which fell within the "low-energy" classification used by Px3. The B8 monitor consumed just 0.09 kWh energy during a working day, while the Spin 713 consumed just over half of that, recorded at 0.0527 kWh.

With the Spin 513 LTE Acer has demonstrated its forward-thinking and commitment to investing in devices that balance lower-energy use with the demands for performance and battery life, creating a notebook that is ideal for the hybrid and mobile worker and matches the highest priority selection criteria for devices identified by decision makers.

In the words of Px3's Research Director "organisations seeking to adopt sustainable IT strategies are enabled to achieve abatement goals, reduce electricity consumption and accurately substantiate success by transitioning to the Acer 513 Spin Chromebook".



**Around 70% of emissions would be reduced from an average mixed environment of desktops & laptops if using a Spin 513**

# 7 Conclusions – Taking the Initiative on Sustainability

**One thing that is immediately clear from this research is that there is a conflict or disconnection in the findings.**

The findings of this research indicate a clear conflict or disconnection between concern and action. Over **97%** of IT decision makers think that reducing carbon footprint is important (and more than two-thirds think it is very important), yet within the same group less than **25%** list energy consumption or carbon footprint in their “top 5” decision making criteria when selecting new devices.

Given that UK end user computing (EUC) devices are responsible for **34%** of IT related pollution and that up to **80%** of this is caused by their use (rather than manufacture, shipping and disposal) this should be an area of greater concern. To put this in perspective that is the emissions equivalent of **650,000** cars driving average mileage on the UK’s roads annually [1].

This may be due to a lack of integration between IT decision making and corporate strategy. **67%** of organisations report having a carbon reduction strategy in place, but only just over **50%** have specifically included their IT strategy as part of their plans.

One factor that was common across respondents was an interest in science-based measurements, with **95%** of respondents indicating they would find it useful to know accurate information about the GHG emissions caused by using a device, with nearly 55% rating this information “very useful”. **87%** of respondents would also be interested in devices which were certified as “carbon neutral”.

Circular economy and social value also featured in the study, with nearly **50%** of respondents cleaning data from their devices and donating them to charities or educational establishments at the end of their useful life, compared with **38%** who sold them. 87% were interested in the sustainable aspects of this, wanting to know the carbon footprint of traded-in devices.

From a “hybrid working” perspective it was clear that most decisions around device choice were still principally based on a combination of performance, operating system, vendor and battery life, although it is likely that increased focus and regulatory pressure will increase the importance of sustainability metrics in selection criteria in the near future.

Research also assessed the ability of the new generation of EUC devices to address some of the issues and priorities highlighted. The Acer Spin 513 LTE was benchmarked against both legacy and current alternatives rated as **84%** more energy efficient than legacy devices and up to **50%** more efficient than comparable modern devices.

Acer has made significant changes to its manufacturing processes and packaging to improve sustainability as well as introducing the option of an extra two-year warranty to allow devices to be re-purposed for social value, reducing the potential overheads of technology donations.

These factors, combined with market-leading performance and battery life make a compelling proposition for organisations seeking to deliver computing which is powerful, mobile and “green”.



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Read the **Acer Global CSR report** [here](#)

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