

Micro Survey Report

aopg Insights

RESEARCH - ANALYSIS - ANSWERS

Is Sustainability Driving Change in Asian Computing Practices?

An AMD & AOPG Insights Survey Report

AMD 



INTRODUCTION

TOWARDS A GREENER FUTURE: UNRAVELLING SUSTAINABLE COMPUTING TRENDS IN ASIA

The urgency to combat climate change and its potential long-term impacts has never been more evident. According to the [World Economic Forum's 2022 Global Risks Report](#), "climate action failure" ranks as the top long-term threat to the world, with potentially severe consequences in the coming decade.

Global temperatures continue to rise due to human activities, particularly the emission of greenhouse gases (GHGs). The International Panel on Climate Change warns that [an average temperature increase of 1.5°C](#) represents a critical threshold for dangerous global warming, risking the destabilisation of social and economic structures worldwide, disproportionately affecting vulnerable communities.

In response to these challenges, leading semiconductor company AMD has embraced its role in protecting the planet and promoting energy efficiency to reduce GHG emissions. AMD's environmental sustainability approach is built on three pillars:

- [MINIMISING](#) environmental impacts in their operations and supply chain.
- [ADVANCING](#) environmental performance for it users.
- [COLLABORATING](#) to innovate solutions to environmental challenges.

In collaboration with AMD, [AOPG Insights](#) conducted a survey to understand how businesses in Asia prioritise sustainable computing initiatives. The survey engaged a diverse group of IT professionals from various companies across Asia, spanning a wide array of industries. Its primary goal was to gain comprehensive insights into their perspectives on sustainable computing, gauge their level of awareness and understanding of sustainable practices, and ascertain their future plans regarding technology adoption, which may impact their sustainability efforts.

By gathering data from these IT professionals, we aimed to paint a holistic picture of how organisations in Asia are approaching sustainable computing and how they plan to align technology with environmental consciousness in the future.

This report also presents valuable findings on the evolving landscape of sustainable computing across Asia and provides guidance for businesses seeking to drive efficiencies through sustainable practices.

We hope you find the findings in this report both informative and insightful as you navigate the path towards a more sustainable future.

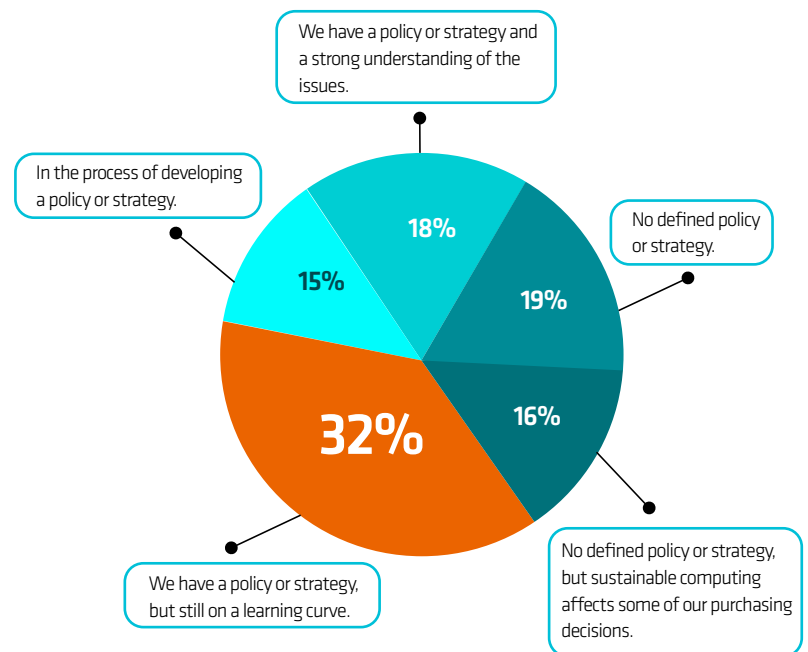


THE BIG QUESTION - ARE ORGANISATIONS TAKING SUSTAINABILITY SERIOUSLY?

With the impacts of climate change and global warming becoming increasingly evident, businesses bear a significant responsibility in tackling these challenges.

A [McKinsey and Company study](#) found that enterprise technology alone is responsible for emitting approximately 350 to 400 megatons of carbon dioxide equivalent gases (CO₂e)¹, which constitutes about 1% of the total global GHG emissions. Although this percentage might appear small initially, it amounts to roughly half of the emissions from aviation or shipping and is equivalent to the total carbon footprint of the United Kingdom.

How would you categorise your company's approach to sustainable computing?



In light of these alarming figures, enterprises must proactively take action to transform their social and environmental impacts, playing a crucial role in securing a better future for generations to come.

Today, there is a growing recognition among companies of the paramount importance of adopting sustainable practices to ensure both responsible operations and continued profitability. One tangible and effective measure that many businesses are embracing is the establishment of comprehensive sustainability policies.

¹McKinsey & Company - [The green IT revolution: A blueprint for CIOs to combat climate change.](#)

For instance, Boston Consulting Group (BCG) reported that [80% of companies worldwide](#) have expressed their intent to bolster their investments in sustainability². Additionally, [Deloitte's research](#) indicated that over 65% of businesses are actively working to enhance their energy efficiency and have already begun adopting more sustainable materials, including recycled alternatives and lower-emission products³.



Our survey results validate this trend, with a significant portion (over 60%) of companies having either developed or are in the process of developing comprehensive sustainability policies. This finding underscores the increasing awareness and commitment among organisations towards embracing sustainable practices.

However, it is important to note that a considerable percentage of respondents still lack a defined strategy for sustainable computing. Around 35% of participants admitted to having no policy or strategy in place, suggesting room for improvement in these organisations.

On a positive note, even among those without a formal policy, there is an acknowledgement that sustainability considerations can influence purchasing decisions. This demonstrates that sustainability has become a factor that businesses cannot afford to ignore, as it can have a direct impact on their market competitiveness.

² Boston Consulting Group (BCG) - [The Five Digital Building Blocks of a Corporate Sustainability Agenda](#).

³ Deloitte - [Deloitte 2022 CxO Sustainability Report](#).

SUSTAINABILITY – HOW MUCH DO WE CARE?

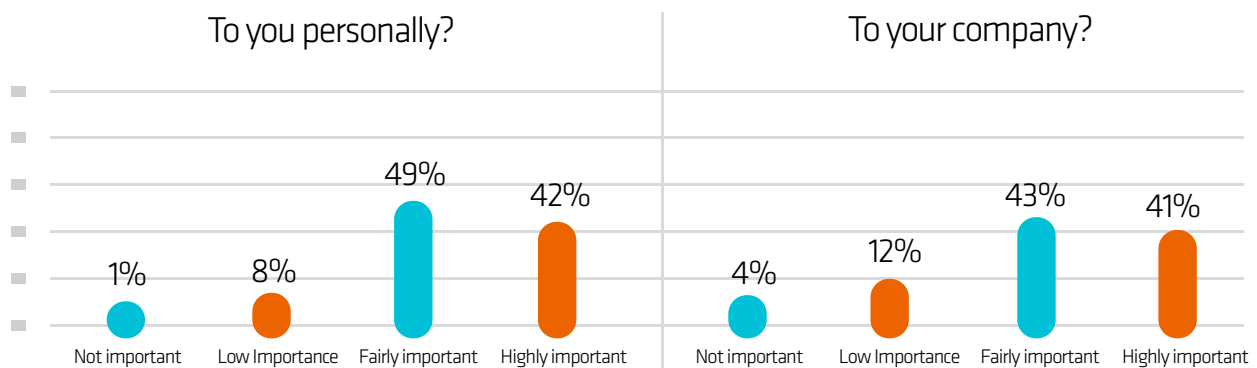
Sustainability in business entails adopting practices and processes that foster transparency, enabling companies to transform their social and environmental impacts while actively contributing to the betterment of society. It transcends mere reduction of emissions and pollution, encompassing a comprehensive range of social, economic, and environmental responsibilities integrated into every strategic approach.

However, all these efforts can be rendered meaningless if there is no buy-in or lack of concern from individuals and companies alike. It is crucial for stakeholders to genuinely care and demonstrate dedication towards sustainability.

Real and meaningful impact on sustainability is more likely to be achieved when individuals within companies share the same level of concern on these issues, as demonstrated by the companies through their policies and sustainability commitments.



How important are sustainable computing issues:



Based on the survey results, it is evident that both individuals and companies genuinely care about sustainability issues. However, there exists a slight discrepancy between personal and corporate priorities when it comes to sustainable computing.

When asked about the importance of sustainable computing on a personal level, an overwhelming majority of respondents (91%), mainly comprising IT managers, directors, company presidents, vice presidents, CIOs, and CEOs, expressed that it is either fairly important (49%) or highly important (42%) to them. In contrast, the figures for companies were slightly lower, with 84% of respondents indicating that sustainable computing is either fairly important (43%) or highly important (41%).

These findings suggest that those in higher leadership positions do indeed care and tend to prioritise sustainable computing slightly higher on a personal level compared to their perception of its importance within their companies. This difference in priority could stem from various factors, including individual values, awareness levels, and the influence individuals have over organisational decision-making processes.

Nonetheless, the overall conclusion remains clear: sustainability is a significant concern for both individuals and organisations. While personal importance slightly outweighs corporate importance in the respondents' perceptions, the findings highlight that sustainability is a shared priority among individuals and companies alike. It underscores the need for organisations to align their priorities with the growing personal concerns regarding sustainability and emphasises the importance of bridging the gap between personal and corporate perspectives to drive meaningful change.

The dynamic shown by the data indicates that increased corporate adoption of sustainability practices is likely to increase. If individuals' personal concerns remain higher than the company they represent, it stands to reason that the individuals responsible for executing these policies are coming from a position of motivation rather than apathy. They are also likely to push for more stringent company sustainability commitments over time.



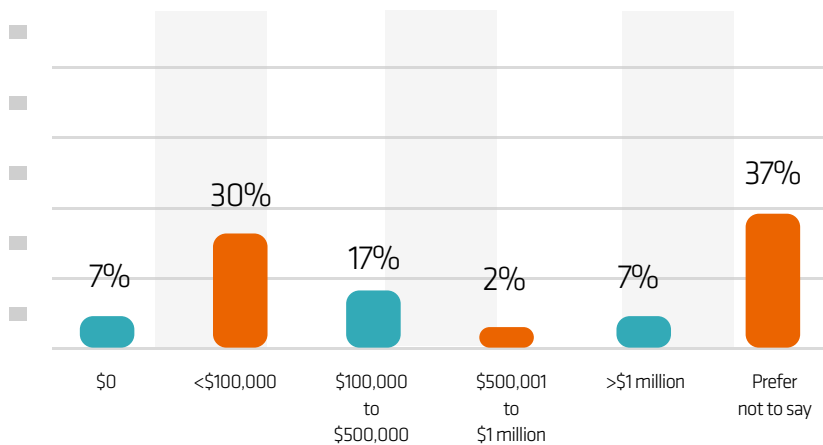
ARE WE PUTTING OUR MONEY WHERE OUR MOUTHS ARE?

There is a saying that “talk is cheap”. For all the good intentions and statements about sustainability, it comes to very little if budgets are not set aside to invest in executing sustainability aims.

Where respondents felt able to share information about their budgeting, we are able to see that the majority of companies allocate funds specifically to invest in sustainable computing technology.

Taken in light of the overall findings across this survey, we interpret this as an important trend. It is reasonable to extrapolate that if companies are setting aside a budget for sustainable computing options, they are also likely to factor sustainability as a purchasing criterion across all technology investments.

What budget do you expect to allocate to sustainable computing purchases in the next 12 months?



WHAT'S THE MOTIVATION?

A robust sustainability policy brings numerous benefits, motivating businesses to adopt greener practices:

- It demonstrates an organisation's commitment to ethical and responsible operations, which is vital in a changing regulatory and consumer landscape.
- Proving sustainability builds customer loyalty, attracts opportunities, and fosters a competitive edge.
- Recognition from investors and environmentally conscious customers can lead to improved financial performance and increased access to capital.
- Additionally, a strong sustainability policy ensures compliance while reducing costs through enhanced energy and resource efficiency.

The Top 3 Motivators for Organisations Adopting Sustainable Computing



Lower energy bills.



Smaller IT or data centre footprint.



Lower power consumption and carbon emissions.

Based on the survey responses, it is clear that the primary motivation for organisations to adopt sustainable computing initiatives is driven by economic factors, specifically cost and efficiency. The top three motivations selected by respondents were:

- **Lower energy bills** – This indicates that organisations recognise the potential cost savings associated with implementing sustainable computing practices. By reducing energy consumption and optimising their IT infrastructure, companies can not only lower their operational expenses but also contribute to environmental sustainability.
- **Smaller IT or data centre footprint** – This suggests that organisations are increasingly aware of the space constraints and environmental impact of their computing infrastructure. By adopting sustainable computing measures, such as virtualisation or cloud computing, companies can optimise their physical footprint and reduce their overall resource consumption.

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- **Lower power consumption and carbon emissions** – This aligns with the broader goal of reducing environmental impact. By implementing energy-efficient technologies and practices, organisations can minimise their carbon footprint and contribute to mitigating climate change.

Overall, the survey results highlight that the main driver behind the adoption of sustainable computing initiatives is the economic benefits they offer, including cost savings and improved efficiency. However, it is important to note that these motivations are not mutually exclusive, as they are interconnected with environmental considerations.

They may not fully grasp the significance, but for many businesses transitioning to digital operations, processors play a pivotal role as the foundational technology driving their pursuit of innovation. While not immediately apparent, the adoption of faster and more efficient processors delivers significant sustainability advantages:

- Faster processors enable efficient resource utilisation and streamlined operations, leading to reduced energy-intensive processing and, thus, energy consumption.
- The improved performance of faster processors not only lowers computing time, which results in energy savings but also reduces the need for additional hardware, minimising data centre space and electronic waste.
- Advanced processors with higher performance per watt maximise energy efficiency, contributing to a reduced carbon footprint.
- By reducing the need for frequent hardware upgrades, faster processors help future-proof computing infrastructure.

Hence, for companies aiming to reduce energy bills, minimise their IT or data centre footprint, and lower power consumption, a highly effective approach begins with the core of their digital business—the processor.



WHAT'S STOPPING STRIDES TO SUSTAINABILITY?

Despite the numerous benefits of embracing sustainable practices, not all businesses may find it feasible or straightforward to do so. Implementing sustainability initiatives often necessitates organisations to re-evaluate their strategies and perspectives on conducting business, carefully considering the advantages and disadvantages involved.

What's holding organisations back from implementing sustainable computing technologies?



High costs



Complexity



Lack of expertise or knowledge

We sought to understand what is holding organisations back from implementing sustainable computing technologies, and given a number of options, respondents identified the following as their top three obstacles:

- **High costs** - Implementing sustainable computing technologies often requires significant upfront investments, which can be a deterrent for organisations, especially those with limited budgets. While there may be long-term cost savings associated with sustainable practices, the initial financial burden can hinder adoption.



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- **Complexity** - Adopting any new or upcoming technology often involves unfamiliar or intricate systems and processes that require expertise to implement and maintain. The same goes for sustainable technologies. The complexity of integrating such technologies into existing infrastructure can be overwhelming for organisations, leading to reluctance in adopting sustainable computing practices.
 - **Lack of expertise or knowledge** - In direct correlation to the point above, organisations may face difficulties in navigating the complexities of sustainable computing due to a lack of comprehension or internal resources, which presents a challenge when it comes to effectively evaluating, choosing, and implementing the suitable technologies and strategies required for sustainability.

Despite these challenges, it is crucial for businesses to acknowledge the rapidly changing world. Today, businesses can no longer solely prioritise growth and profit while disregarding the environmental and social impacts. In the face of significant issues like climate change and resource depletion, sustainable practices may soon become an inevitable necessity.

It is wise to proactively prepare for this transition, ensuring that businesses stay ahead rather than be left behind in the face of evolving expectations.



SQUARING THE SUSTAINABILITY CIRCLE

The survey findings reveal an interesting contradiction between the perspectives on cost efficiencies as both a major driver for undertaking sustainability initiatives and the biggest obstacle to implementing sustainable technologies.

On the one hand, cost efficiencies emerged as the primary motivation for organisations to embrace sustainable computing practices, suggesting that organisations recognise the potential economic benefits that sustainability can bring. However, on the other hand, the same respondents also identified high costs as one of the major obstacles to implementing sustainable technologies.

This certainly showcases the complex nature of sustainability initiatives. It suggests that while organisations acknowledge the potential cost savings and long-term benefits of sustainable computing, they face practical hurdles when it comes to funding and allocating resources for implementation.

This contradiction indicates a need for organisations to carefully balance the potential cost efficiencies with the upfront investment required and consider the long-term economic benefits as well as the potential return on investment (ROI) when evaluating the feasibility of implementing sustainable technologies.



Organisations may need to explore strategies such as phased implementation or seeking external funding opportunities to overcome the initial financial barriers and ensure a smoother transition to sustainable computing.

Another way to address the issue of cost is by adopting technologies specifically designed for the sustainability era, which provide more value for their investments.

One notable example of this is the AMD EPYC processors, which continue to address one of the most significant computing challenges: delivering increased processing power and throughput while maintaining strict control over budgetary and power constraints.

As previously mentioned, the processor serves as the fundamental catalyst for today's advancements in technology and innovation.

While AMD EPYC processors are widely utilised in some of the world's fastest and most scalable data centres and supercomputers by scientists, researchers, and engineers, their technology has also been adapted for less demanding business applications. The latest AMD processors will allow businesses to:

- Deploy fewer servers to accomplish the same jobs, often with less power usage and the associated lower CO2 generation.
- Get more performance per watt than older processors at the same core count.

This means that businesses can optimise their processing power AND maximise their investments.
Case in point:

- 4th Gen AMD EPYC processors are powering [the most energy-efficient x86 servers⁴](#). They provide [125% MORE x86 memory throughput⁵](#) than the competition, the highest available today, and [50% MORE memory channels⁵](#) than any other x86 processor.
- A server powered by the dual-socket, 8-core EPYC 72F3 processor delivers [40% better floating-point performance per core⁷](#) compared to Intel's highest published dual-socket, 8-core server with Xeon Gold 6250 CPUs.
- It delivers an estimated [24% more integer performance⁸](#) and [~52% more floating-point performance](#) per watt⁹ than the previous CPU generation at the same core count (2x 64-core AMD EPYC 9534 vs 2x 64-core AMD EPYC 7763).
- Comparing 4-node, 2P servers running VMmark 3.1.1, the 32-core EPYC 9374F CPU has [2.1x the score and 2.2x the tile \(VM\) capacity¹⁰](#) than the 32-core Intel Xeon Gold 6338 CPU.

Best of all, in terms of advancing human rights, environmental sustainability and supply chain resilience, AMD takes a collaborative approach with its suppliers to promote continuous improvement and drive positive change [across its value chain](#).



⁴AMD - [SP5-072](#)

⁵AMD - [EPYC-032](#)

⁶AMD - [EPYC-033](#)

⁷AMD - [MLN-034A](#)

⁸AMD - [SP5-003A](#)

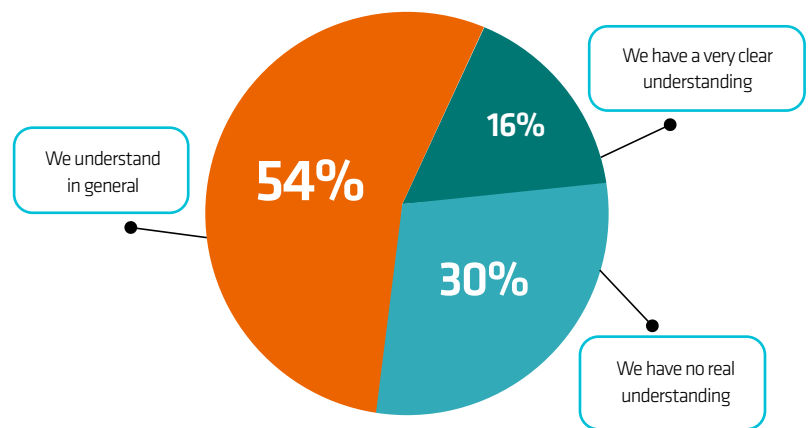
⁹AMD - [SP5-004A](#)

¹⁰AMD - [SP5-055A](#)

THE IMPACT OF TECHNOLOGY MODERNISATION

By minimising the number of physical servers they employ, organisations can make significant strides in reducing their carbon footprint. This can be achieved through the adoption of the latest CPUs. Moore's Law states that the number of transistors on computer chips doubles approximately every two years, and interestingly, this trend has held true [for more than 50 years now](#). Such advancements in CPUs allow for smaller, more efficient designs capable of handling increasingly complex tasks, a domain in which companies like AMD continually lead.

Does your company understand how the latest server CPUs can assist with physical server reduction?



However, the survey raises a question about whether respondents fully grasp the direct correlation

The responses indicate that there is a general, but not deep, understanding among companies regarding the potential impact of CPUs on energy efficiency.

Approximately 53% of the respondents indicated that they understand in general how the latest server CPUs can assist with physical server reduction. However, the fact that only 16% of respondents reported having a very clear understanding indicates that a significant portion of companies may lack in-depth knowledge about this specific aspect of sustainable computing.

Furthermore, 30% of respondents admitted to having no real understanding of how the latest server CPUs can assist with physical server reduction. This highlights a gap in knowledge and awareness within these organisations, which could potentially hinder their ability to fully leverage the energy efficiency advantages offered by modern CPUs.

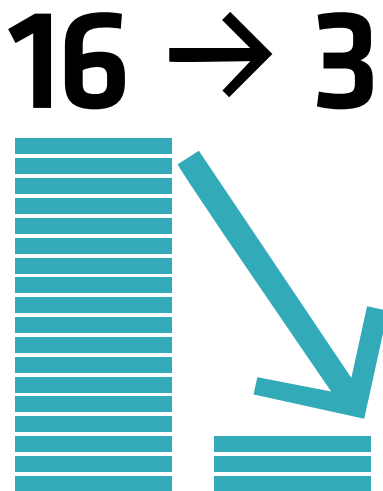
This knowledge or understanding is crucial because it enables companies to make better-informed decisions and strategic investments in advanced processors, effectively leveraging their potential to drive sustainability goals and reduce environmental impact.

For example, as highlighted by AMD, highly efficient CPUs offer businesses a multitude of sustainability benefits, such as:

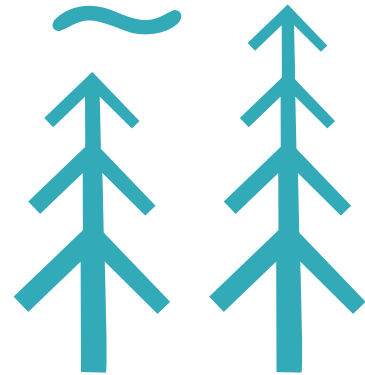
REFRESH AND CONSOLIDATE

- Cut 16 servers down to 3

To deliver 500 virtual machines with 1 core and 8 GB of memory allocated to each takes an estimated 81% fewer servers when comparing servers with two 96-core AMD EPYC 9654 with two 16-core Intel® Xeon® Gold 6130 CPUs [SP5TCO-015](#)



94 acres



CUT CO₂ EQUIVALENT EMISSIONS

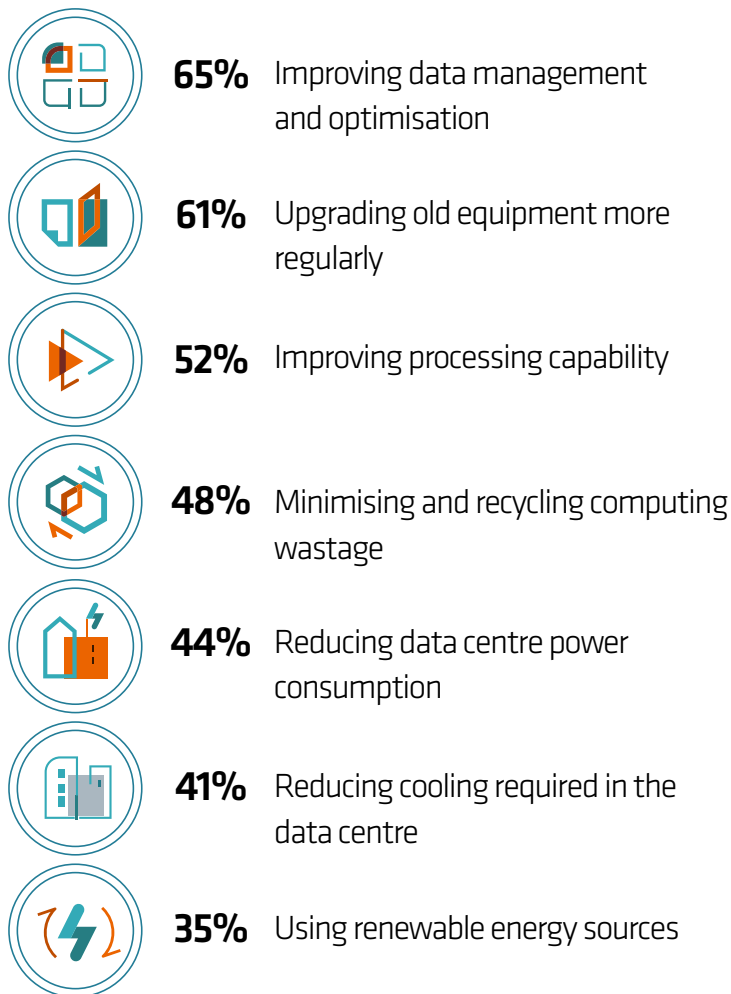
- Save up to 234 metric tons over three years

Using eight 2-socket servers with 96-core AMD EPYC 9654-powered servers instead of 47 2-socket servers with 16-core Xeon 6130 CPUs to power 1500 virtual machines, you can save ~516 MWh of electricity over 3 years, which is the carbon sequestration of 94 acres of forest annually in the USA [SP5TCO-016](#)

¹¹AMD - [SP5TCO-015](#)

¹²AMD - [SP5TCO-016](#)

Which of the following sustainable measures are implemented by your company?



The positive aspect is that irrespective of whether they have a defined policy or strategy, organisations have already implemented specific measures that contribute to sustainability efforts.

According to the survey results, the most common measures reported include improving data management and optimisation (65%), regularly upgrading old equipment (61%), improving processing capability (52%), reducing data centre power consumption (44%), and minimising and recycling computing wastage (48%).



These efforts not only showcase their commitment to environmental stewardship but also suggest a recognition of the benefits and profitability associated with sustainable practices, which may include:

- Lower operational costs.
- Higher energy efficiency.
- Better resource utilisation.
- An enhanced reputation as environmentally conscious entities.

This alignment between sustainability efforts and organisational benefits showcases a promising integration of environmental responsibility into corporate strategies and reflects a positive shift towards a more sustainable and responsible business landscape.

Interestingly, AMD is uniquely positioned to assist organisations with upgrading old equipment, improving processing capability, and reducing data centre power consumption – not only by providing cutting-edge CPUs and GPUs but also by [offering education, resources, and innovative technologies](#) to support environmentally conscious hardware upgrades.



TRANSFORMATION DRIVES SUSTAINABLE TECHNOLOGY

To assess the progress of companies in adopting sustainable technology, we conducted a comparison between the projected initiatives expected to impact sustainable computing footprint in the next 12 months and the planned implementation of solutions aimed at improving power consumption. Through this analysis, we aimed to examine the adoption of transformative technologies and their potential implications for sustainability.

In the next 12 months, do you expect to implement initiatives or solutions that could:

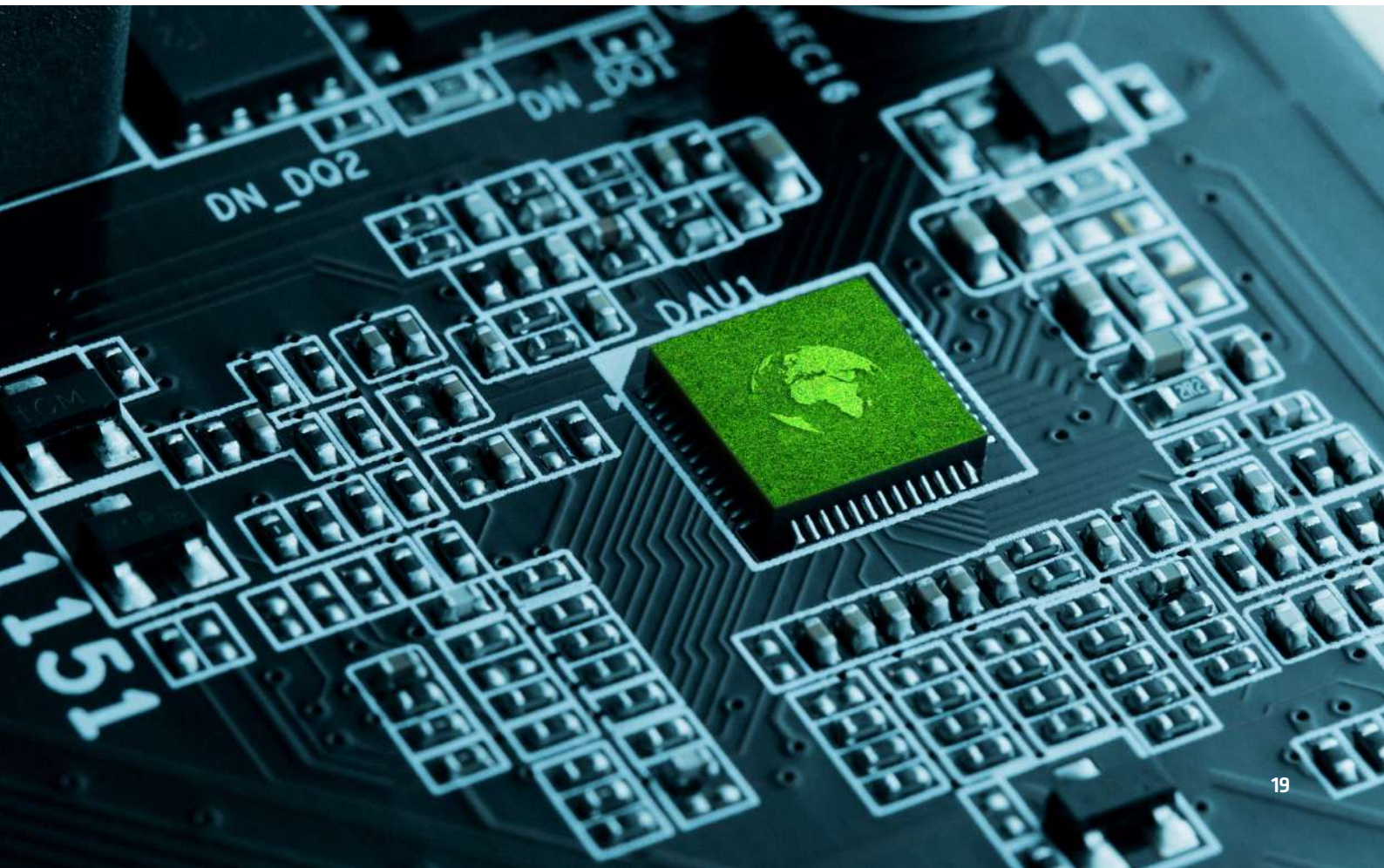
Impact your sustainable computing footprint?	Improve power consumption?
<p>69% Digital transformation</p>	<p>59% Virtualisation</p>
<p>57% Cloud migration</p>	<p>43% Sharing computer resources</p>
<p>54% Server refresh or purchase</p>	<p>39% Data compression</p>
<p>43% New AI-driven initiatives</p>	<p>39% Improved power management solutions</p>
<p>41% Increase in storage requirements</p>	<p>31% Containers/Kubernetes</p>
<p>24% New initiatives like AR or metaverse.</p>	



Over the next year, organisations are placing a strong emphasis on technological advancements and transformation, as reflected in the most common initiatives, including server refresh or purchase (54%), cloud migration (57%), digital transformation (69%), and new AI-driven initiatives (43%). These initiatives demonstrate a proactive embrace of innovative technologies to propel their operations forward.

When examining the planned implementation of solutions that can improve power consumption, we can observe several notable trends. The most prevalent solution mentioned is virtualisation (59%), followed by sharing computer resources (43%), improved power management solutions (39%), and data compression (39%). These solutions highlight a clear emphasis on resource optimisation, efficiency, and consolidation, which align with sustainable computing principles.

The comparison highlights the inherent link between transformative technologies and sustainability. While the primary driver behind these initiatives may be transformation rather than sustainability per se, the adoption of these new technologies inherently brings about resource sharing and efficiencies that contribute to sustainability goals. By strategically aligning transformative initiatives with sustainable computing principles, organisations can unlock the potential for both technological advancements and environmental responsibility.



CONCLUSION

SUSTAINABILITY MATTERS

Whether the driving factor for sustainability is moral or commercial is possibly less important than the fact that it is already permeating our technology decisions.

Our respondents demonstrated that they are driven by both. The fact that over 90% confirmed the issue is of personal importance to them shows that the moral aspect is highly relevant, yet other answers across the survey showed how cognisant respondents regard the commercial benefits of adopting sustainable computing practices and technology.

Of respondents who shared budget details with us, 85% confirmed they had already allocated a budget specifically to sustainable computing initiatives. Given the unique situation where legislation, ethical/moral consideration combine with sheer economics, it seems clear that sustainability as a criterion for decisions about technology investments will continue to become more important.

We interpret that organisations are incorporating sustainability objectives within their existing IT spending, particularly in the context of transformation and modernisation efforts. The assumption is that, despite companies setting aside sustainable computing budgets, much of the sustainable technology spending that is currently happening is being funded through existing IT budgets rather than dedicated sustainability budgets. This implies that organisations are integrating sustainability goals into their broader IT strategies, leveraging transformation initiatives to drive efficiency and, consequently, sustainability.

Technology companies that invest in improving the energy efficiency of their offerings will help technology consumers align with their sustainability aspirations.

AMD's leadership in driving energy efficiency across their data centre class processors is at the core of the sustainability drive. By providing education, resources, and innovative technologies, AMD can help organisations make informed decisions, optimise their computing infrastructure, and unlock the full potential of sustainable computing. Through collaborative efforts and partnerships, AMD can move the needle in promoting sustainable computing practices, enabling organisations to achieve their sustainability goals while also driving efficiency and overall environmental responsibility.

NOTES ON SURVEY METHODOLOGY

Survey Sample - We interviewed Asian-based enterprise decision-makers, inclusive of IT managers, IT directors, vice presidents, presidents, and C-level executives, all of whom had an element of responsibility for IT and digital transformation efforts within their respective organisations.

Respondents were predominantly from Malaysia, Singapore, Indonesia, the Philippines, and other Asian countries. We received responses from 75 individuals; however, 54 answered most of the questions, while a few others did not complete a significant portion of the survey. Nevertheless, the data obtained from the 54 respondents who provided comprehensive responses still provided valuable insights for our research.

All the surveyed companies were large enterprise corporations from a varied range of industries, broken down as follows:

Government	10.30%
Healthcare	7.40%
Technology	14.70%
Retail	2.90%
Pharma	1.50%
Manufacturing	14.70%
Logistics	7.40%
FSI	10.30%
F&B	10.30%
Engineering & Construction	16.10%
Education	2.90%
Energy	1.50%

Sample Selection - In conducting this study, we focused on our subscribers and readers, with whom we have convenient access and, where possible, with an identified interest in enterprise technology. For the purposes of a sustainability-related study, this method of sample selection was deemed appropriate as this survey needed to be completed by individuals with an interest in and knowledge of such issues. The insights gained from these highly targeted respondents are expected to be particularly insightful for understanding the challenges and opportunities associated with the impact of technology on ongoing sustainability efforts.

Modes of Data Collection - Data collection was conducted entirely online through our digital form. The survey was designed to be user-friendly and accessible, allowing respondents to provide their feedback conveniently through the digital platform.

Response Formats - AOPG Insights used a combination of dichotomous and ordinal-polytomous response options for the survey questions. This level of control was implemented to give standardised answers that could be grouped but were still wide-ranging.

Interviewer Effect - As the surveys were conducted using an online form, we deem that the chance for interviewers to have affected responses was negligible. However, we do acknowledge that the lack of understanding of some of the terms used in the questions may potentially cause respondents to provide erroneous answers.

Data Cleansing - Answers by respondents that were clearly from a non-relevant background were removed from the final selection set. The choice of which respondents to remove was left to individual researcher assessment. We acknowledge that this means it is possible, though unlikely, that a relevant respondent's answers may have been removed. We are confident that the final sample selection was representative of the skill base we needed to tap into.

Statistical Significance - Our sample set needed to have a specific skill set, in this case, a strong experience, knowledge and interest in IT. As such, the quality of respondents was preferred over quantity. We believe the sample set we have chosen provides a strong feel for the realities of the Asian IT professionals' experience and views on digital transformation.



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