



Climate Action Guide

for Better Gaming and the Planet

This guide compiles best practices for better game development. It is crafted for those who want to act for a better future but don't know where to start.

Climate actions don't have to be difficult, demanding, time-consuming, or expensive. They can be easy, everyday, concrete, and profitable. You can start with small, simple actions.

This is your everyday guide to integrating planet-friendly strategies into profitable iGaming. What is good for our planet is good for business as well.

Introduction

Introduction

The ICT industry has been drawing attention recently for its climate impact as it is currently one of the fastest growing greenhouse gas-emitting and energy-intensive sectors. However, this attention has only partly reached the gaming industry, with the focus more directed at video and mobile games, almost entirely dismissing the impact of online gambling, or iGaming, as it is often called nowadays. The iGaming industry has been growing exponentially since it began in the 1990s and is estimated to reach a global revenue of approximately USD 107 billion in 2024. This means the industry also has a growing impact on the climate.

The iGaming industry is changing and becoming more aware of its environmental impact, but it still faces challenges in achieving sustainability. We still lack a comprehensive understanding of what 'sustainable' or 'climate-smart' means in our industry and how we can overcome these challenges to reach a level where businesses can thrive while creating products that support both the joy of gaming and a healthy planet.

Advocates of responsible gambling are often focused solely on potential health risks but do not consider the environmental impacts. Now is the time to actively change our approach and understand all the impacts of gambling on society, including the planet we live on.

We recognize that the transition to a more sustainable society requires coordinated efforts from leaders, developers, players, and other industry stakeholders. We must take the lead and start meeting the needs of climate change mitigation, as only profound and lasting actions will be enough to meet the challenges ahead.

Veikkaus has embarked on an ambitious journey to inspire our peers to take action. Our mission is clear: to lead the way in promoting climate-smart practices and offering innovative solutions within and beyond our industry. We understand that this transition requires a united effort from iGaming operators, developers, players, and industry stakeholders alike.

This guide serves as a beacon, presenting climate-smart game development practices. By addressing and overcoming the obstacles in our path, we can collectively navigate towards a more sustainable society.

Roadmap



EMISSIONS MEASUREMENT

Quantifying the greenhouse gas emissions generated by gaming operations and activities.



SUSTAINABLE GAME OPERATION

Implementing practices to ensure sustainable operation of gaming platforms and services, including energy-efficient infrastructure and responsible resource management.



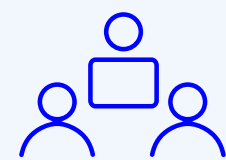
GREEN VALUE CHAIN

Promoting sustainability throughout the entire gaming industry value chain, from game development to distribution and consumption.



ECOLOGICAL IMPACT ASSESSMENT

Understanding the environmental footprint of gaming through comprehensive evaluation.



GREEN GAME DEVELOPMENT & DESIGN

Incorporating eco-friendly practices into the creation and design of digital games, focusing on minimizing environmental impact.



ECO-CONSCIOUS GAME TESTING

Conducting game testing procedures with environmental considerations in mind, aiming to reduce energy consumption and waste generation.



PLAYER'S ENVIRONMENTAL ROLE

Highlighting the importance of gamers' responsibility in reducing their environmental footprint while enjoying gaming experiences.

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CHAPTER 1

The Climate Crisis Quest

Setting up: Defining the Terms

To fully grasp the bigger picture and zoom in on the details, we must explore the meanings behind the terms used in the context of sustainability and climate change in the gaming industry.

iGaming Industry:

The iGaming industry refers to online gambling including a wide range of activities such as online casinos, poker, sports betting, lottery and more. In this context, it also includes all iGaming-related operations.

Digital Gaming:

Digital gaming refers to video and online games or interactive entertainment experiences on electronic devices like computers, consoles, or smartphones. These games are typically accessed and distributed online and come in various genres, from action to simulation.

Digital Sustainability:

With the industry shifting towards digital practices, digital sustainability becomes essential. It involves utilizing technology responsibly, considering the creation, utilization, transmission, and sourcing of electronic data, and ensuring the responsible use of digital resources.

Software and Hardware:

In gaming, software refers to programs and applications for creating and managing games, while hardware includes equipment like computers and machinery necessary for gameplay.

Game Development and Design:

This encompasses creative and technical processes involved in creating, designing, and building video games. It includes everything from conceptualizing game ideas to testing the final product for functionality and user experience, with a focus on implementing climate-smart practices.

Quality Assurance and Game Testing:

These are integral to ensuring games meet high standards of reliability, functionality, and performance. Quality assurance involves systematic processes to address issues, while game testing uncovers bugs and glitches, ensuring a polished gaming experience.

Gaming Operations:

This refers to activities involved in maintaining and optimizing gaming platforms and software systems. In iGaming, operational practices focus on ensuring smooth gameplay while minimizing environmental impact, prioritizing energy efficiency and resource optimization.

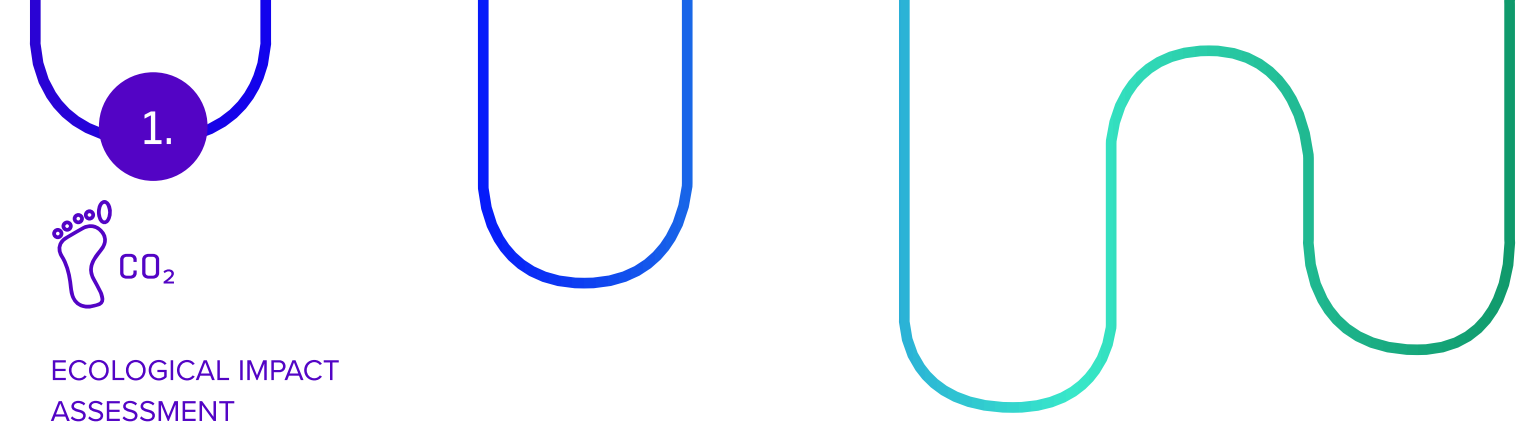
Calling All Players: Who is This Guide for?

With this guide, our aim is to ignite inspiration and drive among operators, particularly in the iGaming business. This guide is crafted to offer insights and a set of practices for businesses operating within the iGaming industry. Our primary goal is to connect with business decision-makers in the iGaming industry, while also reaching those involved in designing, developing, producing, and delivering games.

Decision-makers, as well as development teams, wield considerable influence and are well-positioned to undertake a variety of swift actions to decarbonize the industry in both the short and long term. Equipping them with climate-smart development practices and resources can significantly influence the overall environmental footprint of games. In the pursuit of our ambitious mission, climate actions should become a shared endeavour for everyone involved at every stage of the development process.

From reimagining design approaches to advocating for decarbonization among cloud service providers, iGaming operators have considerable power in influencing climate action. It's crucial that the iGaming sector considers the entire spectrum of climate impacts, ranging from game design strategies to partnerships for development and sales, as well as procurement policies.





Mastering the Environmental Impact in the iGaming Industry

So, what's the current state within our industry in terms of environmental footprint? According to some sources, the ICT sector currently contributes to 3-5% of all global emissions and stands as one of the fastest-growing industries. If this growth trajectory continues, emissions are expected to triple in the next decade.

Now, when it comes to the game development sector alone, it accounts for 0.04% of global emissions, equivalent to a whopping 15 million tonnes of CO₂ per year.

The gaming industry emits more carbon than the entire global film industry and roughly matches the emissions of the country of Slovenia. And mind you, this calculation excludes emissions from game distribution and player activity. These figures, while eye-opening, remain estimates at best, with hopes of improved accuracy as greater transparency and disclosure are embraced. **Yet, there's uncertainty about whether the iGaming industry is factored into these numbers, underscoring the critical need to enhance climate responsibility awareness and advocacy within our industry.**

At the forefront of our concerns is the lack of comprehensive measurement of our industry's environmental footprint. As the digital gaming

realm expands, it becomes increasingly entangled with global processes that exacerbate the climate crisis. Additionally, we face challenges in ensuring the sustainability of our supply chains, production practices, and material extraction methods. The colossal energy consumption of data centres, server farms, and supporting infrastructure adds another layer of complexity to our environmental impact. Amidst these challenges, there is hope. Collaborative efforts to establish standardized sustainability practices and certifications offer a path forward. The responsibility rests not on the shoulders of a single entity but on the collective action of the entire gaming community.



Towards a Greener Future

There's a growing consensus that the gaming industry is shifting towards more responsible practices, with the iGaming sector also acknowledging its environmental impact. Collaboration across the industry is key to driving meaningful change, where every idea and solution contributes to a greener future. For example, there's exciting potential for games to play a role in addressing climate change. Imagine immersing yourself in a game that not only entertains but also educates about climate change and corporate responsibility. It's like levelling up your knowledge while having a blast!

However, there's no time to waste. To truly make a difference, we need more advocates championing continued research and advocacy efforts. This means delv-

ing into what makes a game truly ecological, scrutinizing environmental impact at every stage of production, analysing carbon emissions throughout development, distribution, and gameplay, showcasing efforts to reduce or offset emissions, and examining the environmental implications of gaming device materials.

Climate actions aren't just crucial for the environment; they're also essential on an organizational and business level. By implementing eco-friendly solutions, businesses can streamline operations, reduce costs, and enhance their brand image as responsible corporate citizens.

So, why is adopting climate-smart practices good for businesses? Well, for starters:

Operational Efficiency and Innovation

Cost Savings:

Saving the planet and saving cash? Energy-efficient tech and smart resource optimization not only reduce environmental impact but also help companies achieve greater financial savings over time.

Innovation and Operational Efficiency:

Implementing climate actions isn't just about optimizing processes and resources. It's also about thinking outside the box, sparking innovation, and fostering a culture of experimentation. This leads to the development of new technologies and products that bring value to customers and stakeholders.

Competitive Advantage and Compliance

Competitive Advantage:

In a competitive market, businesses that prioritize climate actions gain a significant edge. Whether it's attracting environmentally conscious customers, securing partnerships, or accessing new markets, our commitment to sustainability sets us apart from the competition.

Compliance with Legislation:

With the introduction of new laws and regulations focused on environmental responsibility, businesses need to adapt to stay compliant. Embracing climate actions ensures we meet regulatory requirements while also positioning ourselves as responsible corporate citizens.

Risk Management and Resilience

Risk Mitigation:

Sustainability isn't just about being eco-friendly right now – it's also about staying ahead of the curve when it comes to regulations and risks. By playing it smart and staying on top of environmental issues, a company can future-proof itself against fines, penalties as well as other regulatory headaches and reputational damage down the road.

Resilience and Adaptability:

Reducing dependence on finite resources, minimizing environmental risks and promoting long-term sustainability will greatly help any company to withstand environmental disruptions, market volatility, and changing customer preferences.

Employee Engagement and Culture

Employee Engagement and Retention:

Getting the team on board with sustainability initiatives can greatly boost morale, foster a sense of purpose, and help build a workplace where everyone can feel good about the work they do.

Brand Image and Reputation Building:

Environmental Responsibility:

By going low carbon, companies can really show the world they mean business in protecting the planet. Whether it's cutting carbon emissions or cutting down on waste, demonstrating commitment to environmental responsibility and contributing to mitigating climate change is essential.

Enhanced Reputation and Brand Image:

Transparency is key in today's business landscape. By openly integrating environmental considerations into our operations, we not only build trust with stakeholders but also strengthen our brand image as an environmentally conscious company.

To summarize, adopting climate action is not only an ethical imperative but also a strategic necessity for companies looking to enhance their competitiveness, reduce costs, mitigate risks, drive innovation, and contribute to a more sustainable future. By embracing sustainability as a core principle, companies can achieve both environmental and economic benefits while creating value for stakeholders and society.



CHAPTER 2

Understanding Your Impact

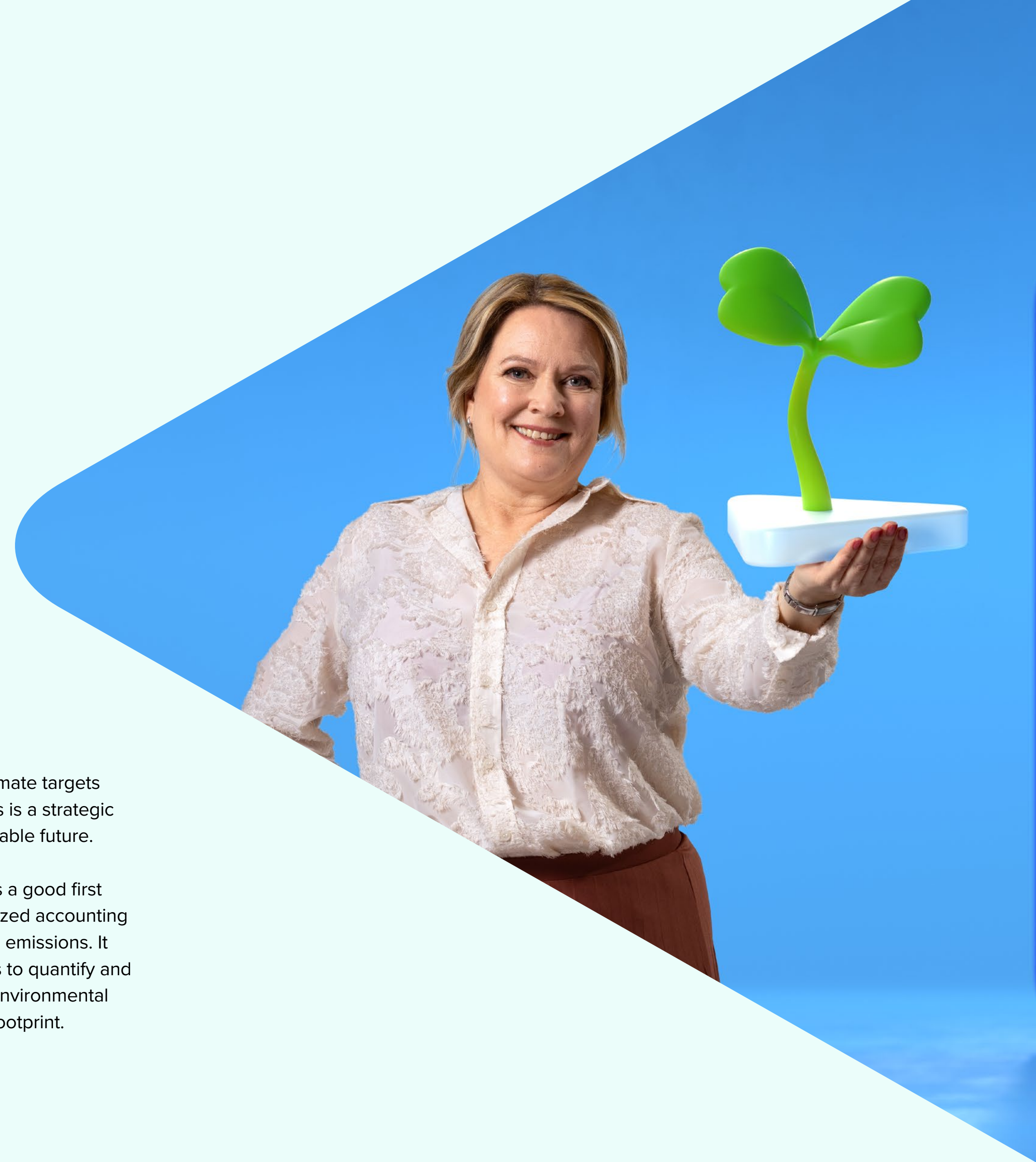
Defining the Carbon Footprint

For any environmentally conscious tech company, it's a no-brainer to want to reduce emissions. But what to do next, and how? A good starting point is understanding the impact your company has on the environment. Calculating company emissions will help pinpoint their sources and identify emissions-intensive areas, aiding in prioritising decarbonisation actions.

Regular emission calculations enable companies to track their progress over time and focus on what needs attention. Doing the right things the right way not only fosters transparency and accountability towards stakeholders but also guides the direction of action. Additionally, emission reporting is becoming more of a compliance matter. Understanding emissions helps companies

to identify and manage climate-related risks and set climate targets aligned with global climate goals. Calculating emissions is a strategic choice and plays an important role in shaping a sustainable future.

If your toolbox is lacking, turning to the GHG Protocol is a good first step. The Greenhouse Gas Protocol is a widely recognized accounting standard for measuring and managing greenhouse gas emissions. It provides a comprehensive framework for organizations to quantify and report their emissions, helping them understand their environmental impact and develop strategies to reduce their carbon footprint.



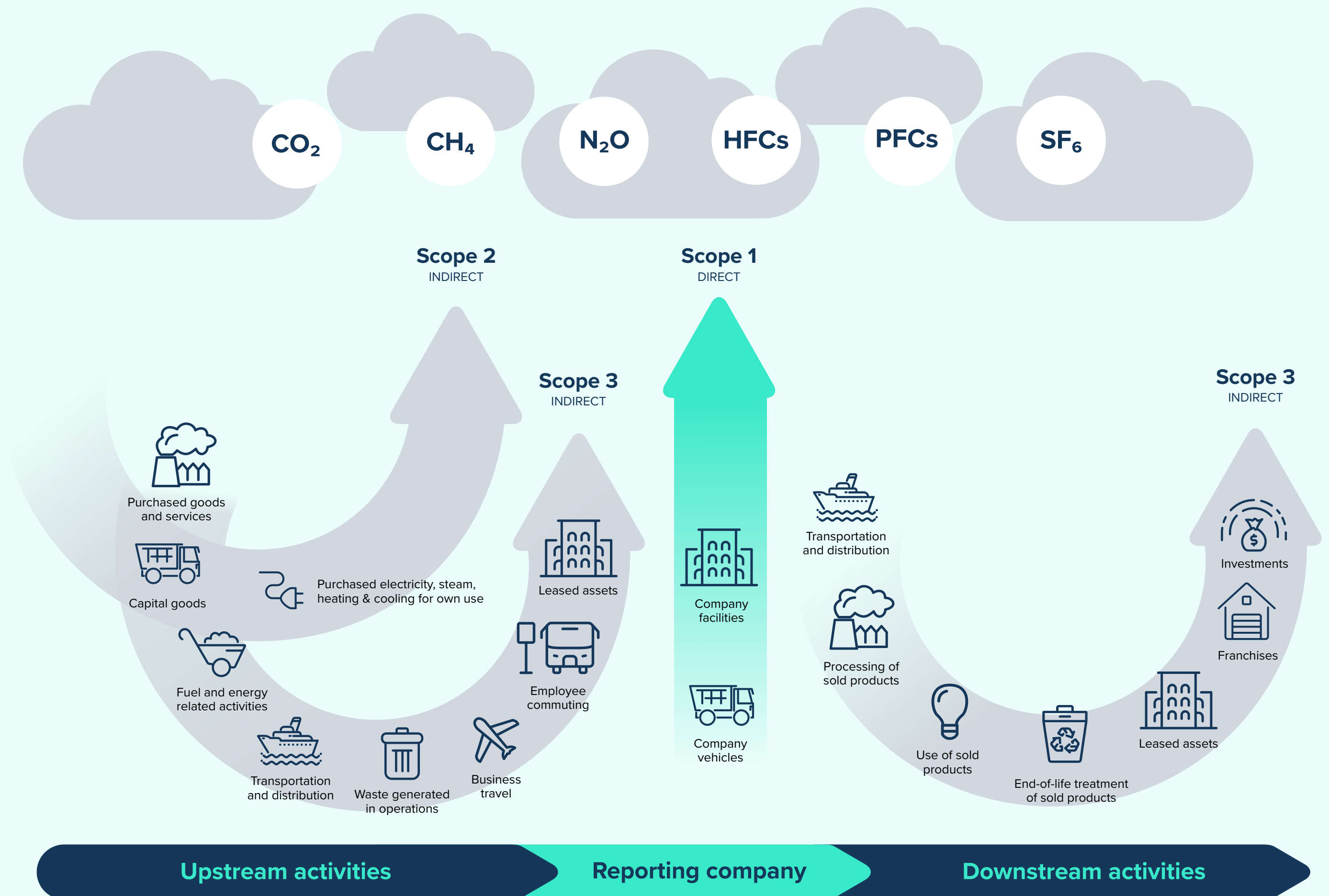
The GHG Protocol categorizes greenhouse gas emissions into three scopes:

Scope 1: Direct emissions from sources that are owned or controlled by the organization. These include emissions from onsite fuel combustion, process emissions, and fugitive emissions. For example, greenhouse gases emitted from company-owned vehicles, boilers and manufacturing processes belong to Scope 1.

Scope 2: Indirect emissions from the generation of purchased electricity, heat, or steam consumed by the organization. These emissions occur outside the organization's direct control but are associated with its energy consumption. Scope 2 emissions are often generated by power plants and other energy suppliers.

Scope 3: Indirect emissions from sources not owned or controlled by the organization but related to its activities. These include emissions from the supply chain, business travel, employee commuting, product use, and waste disposal. Scope 3 emissions typically represent the largest portion of an organization's carbon footprint, but measuring and managing them can be challenging.

The GHG Protocol provides guidelines and methodologies for all required calculations, allowing organizations to standardize their reporting, compare performance over time and subsequently identify opportunities for emissions reduction.



2.



EMISSIONS
MEASUREMENT

A 10-LEVEL GUIDE TO

Mastering Emission Metrics

How to start your measuring process? To make it easy for all those eager to join the climate mission, we have compiled a 10-step guide to help you embark on your measuring journey.

Set Your Timeline:

Plan and decide your reporting timeline – are you, for example, reporting on an annual or quarterly basis?

Select Calculation Methodologies:

Choose appropriate methodologies for calculating emissions based on industry standards. These methodologies provide formulas and data requirements for quantifying emissions from different sources. Standardized methods provide consistency in calculations and reporting.

Gather Data:

Collect data on energy consumption, fuel usage, transportation, and other relevant activities across your organization. This may include utility bills, fuel receipts, vehicle mileage records, and production data.

Identify Emission Sources:

Determine the sources of greenhouse gas emissions within your organization. This could include direct emissions from combustion (Scope 1), indirect emissions from purchased electricity (Scope 2), and other indirect emissions from activities like business travel and supply chain operations (Scope 3).

Calculate Emissions:

Use the gathered data and selected methodologies to calculate emissions for each emission source category. This involves applying emission factors to activity data to estimate greenhouse gas emissions in terms of carbon dioxide equivalent (CO₂e).

Aggregate Results:

Aggregate emissions data from all sources to obtain a comprehensive picture of your organization's carbon footprint. This will help you understand which activities contribute most to emissions and where mitigation efforts should be focused.

Document and Report:

Document the emissions calculation process, including data sources, methodologies, and assumptions used to ensure transparency. Prepare emissions reports for internal use and external reporting, such as sustainability reports or regulatory disclosures.

Review and Validate:

Review the calculated emissions data to ensure accuracy and completeness. Validate the calculations with relevant stakeholders and experts to verify the results and address any discrepancies or uncertainties.

Set Targets and Action Plans:

Use the emissions data to set emission reduction targets and develop action plans to achieve them. Identify opportunities for efficiency improvements, renewable energy adoption, emissions reductions, and other mitigation measures.

Monitor and Review:

Continuously monitor emissions data and progress towards targets to track performance over time. Regularly review and update emission calculations as operational activities change, or new data becomes available.

By following these 10 steps, organizations can initiate the process of calculating emissions and gain valuable insights into their environmental impact, enabling informed decision-making and effective emission reduction strategies.

Consistency and standardization of measurement remains an issue and due to it, a holistic understanding of the industry emissions is still lacking. Estimation methods used especially in Scope 3 emissions provide only a broad view, which is not necessarily accurate enough. This shows that obtaining accurate and reliable data on GHG emissions can be challenging, especially for companies with a diverse supply chain.

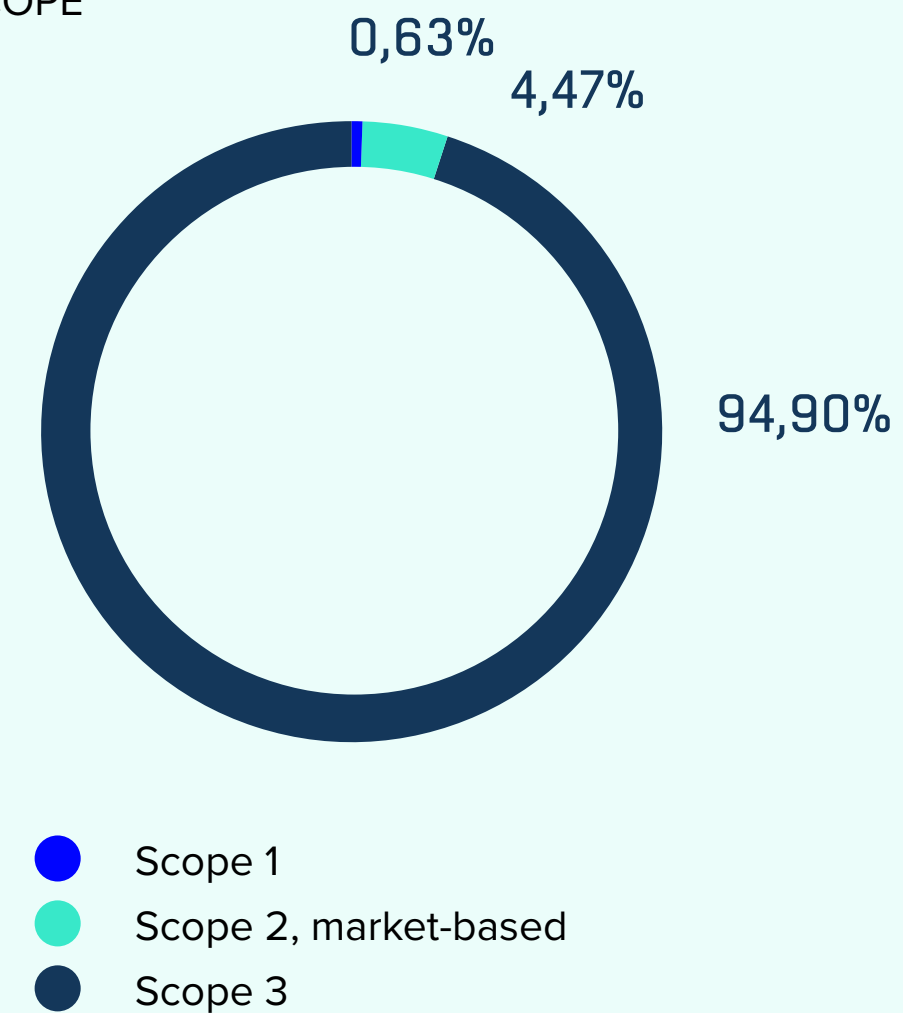
CASE INTRO

Measuring in Action – Veikkaus Strengthens Carbon Reduction with Science-Based Targets

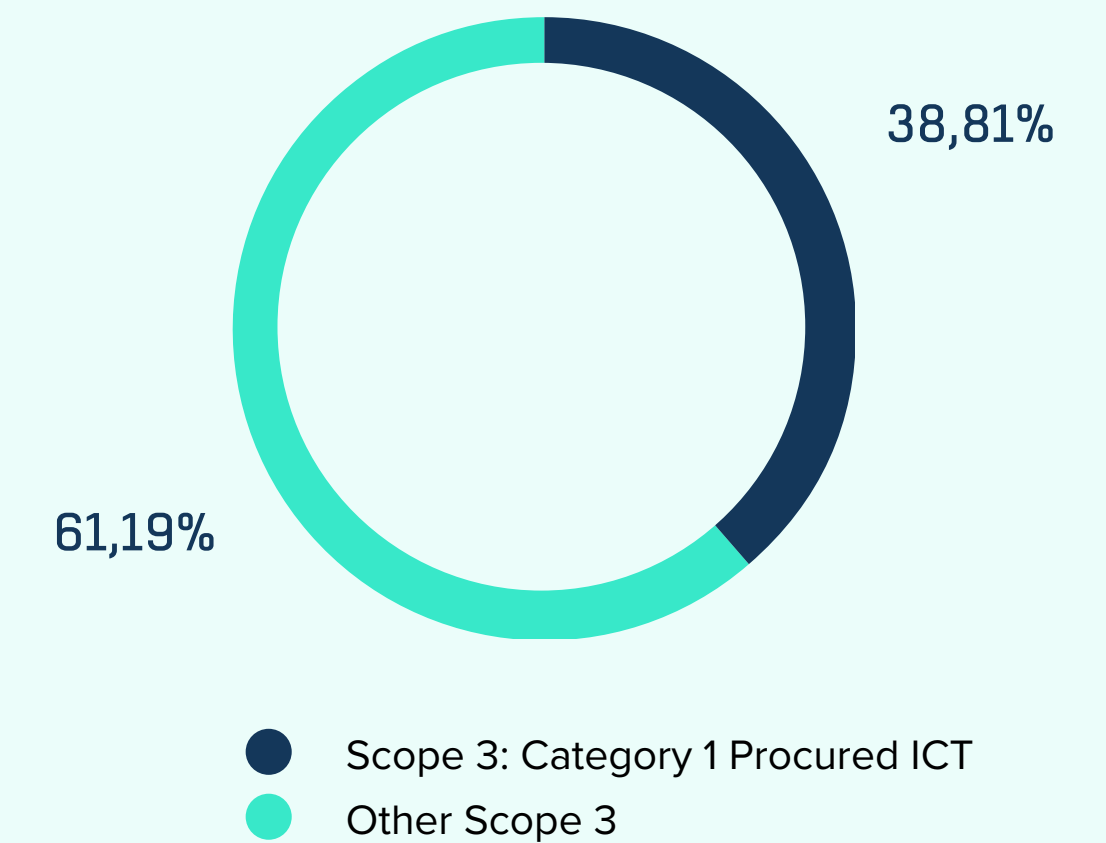
In 2020, Veikkaus embarked on a journey to understand and mitigate our environmental impact by measuring our carbon footprint. Since then, we have made significant progress in our annual carbon emissions calculation and reporting process. To ensure accuracy and thoroughness in our calculations, we've assembled a dedicated working group comprising members from various functions across the organization. This collaborative effort enables us to gather comprehensive data from all relevant sources, allowing for a holistic view of our emissions profile. Recognizing the importance of independent validation and to ensure credibility and transparency, we engage a third-party entity to verify the accuracy of our emission calculations.

Aligned with global climate science, we have set Science-Based Targets approved by the SBTi in 2023, underscoring our commitment to driving meaningful emission reductions. Setting Science-Based targets has compelled us to investigate our operations in greater detail and set targets that guide us in our climate journey, providing clear benchmarks for our decarbonization efforts.

VEIKKAUS EMISSIONS
BY SCOPE



SCOPE 3
EMISSIONS



Based on our results, 88 percent of our emissions stem from our procurement, and more specifically from our ICT-services (37 %), highlighting the importance of acknowledging this issue. Not only do we need to reduce our own energy usage, but also find more sustainable partners to support our journey.

CHAPTER 3

Game Development Lifecycle



Climate Action Through the Phases of Game Development, Testing, and Operation

Just what kind of sustainability practices are implemented and where will largely depend on the lifecycle phase in question. Climate action in the three different phases – software development, testing, and operation – requires a combination of sustainable design practices, energy-efficient technologies, and ongoing optimization efforts to minimize environmental impact across the entire software lifecycle. By integrating sustainability considerations into each phase, organizations can contribute to a more sustainable future.

In the game development phase, climate action involves incorporating sustainability considerations into the design of software applications, as well as adopting the use of green technologies and programming languages that have minimal environmental impact.

In the testing phase, the key is minimizing energy consumption and resource usage during software testing activities. This includes adopting test automation techniques, virtualizing or containerizing test environments, and scheduling tests during off-peak hours to reduce energy consumption.

In the operational phase, focus should be in optimizing the energy efficiency of the infrastructure used to host and run software applications – through methods such as cloud computing and constant monitoring.

Next, we will examine in detail how climate action activities and processes may vary across game development, testing, and operational phases.

Development & Design Phase

Steering Towards Climate Smart Game Development and Design

In the field of game development, game developers and designers are considered to have considerable influence in driving the industry towards climate-smart practices, both in the short and long term. While they may have less power in decision-making compared to upper management, they have control in shaping the type of games created and how they're made. Change can indeed be sparked from within the development teams themselves.



Concrete Tips for Climate-Smart Game Development and Design

So, what means do game developers and designers have in order to move towards low carbon game design and work life? According to industry experts, there are several tangible measures to consider:

Leverage Collective Power:

Gather your fellow eco-warriors within the company to amplify visibility and concern as a group. Together, we can raise awareness and make our voices heard. Remember, every hero counts – even the smallest NPC can make a big impact!

Software Consideration:

When possible, consider the environmental impact of each digital tool, like AI, and opt for options that align with green values.

Hardware Lifespan:

Reflect on the lifespan of hardware, such as servers, workstations, and monitors used and supported by the games produced. Thoughtful development practices can deter unnecessary upgrades made by players.

Power-Efficient Game Design:

Craft games that go easy on players' power meters! Optimize game design to minimize energy demands on hardware, ensuring a smoother gaming experience while saving energy.

Lean Codebase:

Write clean, efficient code to reduce resource consumption. Avoid unnecessary loops, optimize algorithms, and minimize memory leaks.

Asset Compression:

Shrink those digital treasures without sacrificing quality! Compress textures, audio files, and other assets to reduce file sizes and save energy during downloads and gameplay.

Increase Awareness:

Spread the word of your sustainability efforts to the industry and beyond. After all, the more adventurers, the merrier!

Maximizing Efficiency and Embracing Eco-Friendly Practices on a Company-Wide Scale

For seasoned developers and designers, these tips should seem quite feasible on an individual level. However, making an impact on a company-wide scale may pose a more challenging task. Nevertheless, when possible, there are additional tips and tricks your company could consider implementing for low carbon game development. The golden rule remains to design games with both climate solutions and emissions in mind, considering factors such as graphical quality, game elements, and player experience. Let's explore some more tips:

Use Effective Software Development Methods:

Following approaches like agile development can make the development process more efficient, avoiding waste and saving resources, including energy. By applying effective software development techniques, studios can improve their workflows and lessen the environmental impact of game development.

Improve Code Efficiency and Adopt Energy-Efficient Practices:

The development stage has a high energy consumption. Enhancing code efficiency lowers CPU usage, which reduces power consumption. Moreover, using energy-efficient hardware, implementing server-side optimization techniques, and choosing eco-friendly web hosting providers can greatly decrease a studio's carbon footprint.

Reduce Digital Waste:

While unconventional, the concept of virtual waste is gaining relevance. When games are abandoned or discontinued, they persistently occupy server space, resulting in energy waste. Studios can mitigate this by ensuring backward compatibility, offering cloud-based gaming options, and providing frequent updates. These measures extend the lifecycle of games, effectively diminishing digital waste.

Harness the Power of Gameplay for Education:

Games have the potential to be impactful educational resources. By designing games that share knowledge on environmental conservation or integrate sustainability challenges into gameplay, studios can engage players in meaningful learning experiences. This doesn't always require climate change to be the central narrative; even subtle in-game messages can prompt players to reflect on their environmental footprint.

Overcoming Challenges: What's Stopping Us?

In a nutshell, sustainable game development encompasses energy-efficient coding practices, server use, and hardware consideration, alongside creating games that educate players about environmental issues or utilize sustainable hardware.

One of the biggest challenges, however, lies in reconciling company values with available resources. While promises for a greener future may abound, tangible investment in climate action is essential for meaningful change. When it comes to concrete action, many game developers feel their hands are tied, but seasoned experts believe change is possible through collective effort and advocacy.

By integrating sustainability into core operations and culture, studios can create engaging experiences while contributing to a healthier planet and society.



Testing Phase

Climate-Smart Testing Practices for Low Carbon Gaming

While testing might not have the glamour of designing flashy graphics or composing epic soundtracks, it plays a crucial role in ensuring that our gaming experiences are smooth sailing. However, it's important to recognize the environmental impact of digital activities, including game and software testing.

Did you know that quality assurance also has its environmental footprint? While it might be easy to overlook, game software testing does have environmental consequences. From those nightly automation tests that seem to run forever to the production and disposal of testing hardware, various factors contribute to energy consumption and environmental harm.

Luckily there are strategies we can employ to lighten our environmental load:

Smart Testing:

Instead of throwing every test imaginable at your code, let's focus on the essentials. Streamlining testing process can reduce unnecessary energy consumption and minimize the carbon footprint.

Test Automation:

Harness the power of automation to run tests more efficiently. Automated tests run faster than manual ones, automating repetitive tasks contributes to cutting down on energy usage and speeding up the testing process.

Performance Engineering:

By fine-tuning software to use fewer resources and constantly monitoring and tweaking, it not only boosts performance but also saves energy. It's like giving the game's engine a turbo boost while being kind to the planet!

Energy-Efficient Testing:

Modify testing practices to make them more energy-efficient. Schedule the tests during off-peak hours to avoid hogging electricity when it's in high demand. Plus, investing in energy-efficient hardware gives us the power to test without leaving a big carbon footprint.

Virtualization:

By using virtualization technology, you can simulate hardware and operating systems without the need for a whole fleet of servers. Less hardware means less energy consumption and fewer resources wasted.

Cloud-Based Testing:

Leverage cloud-based testing solutions to minimize hardware requirements and energy usage. Cloud providers often use modern, efficient data centres, reducing energy consumption and environmental impact compared to traditional on-premises infrastructure.

Renewable Energy Usage:

Choose cloud providers and data centres powered by renewable energy sources such as solar, wind, or hydroelectric power. By opting for renewable energy, you can reduce the carbon footprint of testing activities and support the transition to a sustainable energy future.

Operational Phase

Driving Climate Action in iGaming Operations

When it comes to keeping our games running smoothly while also being eco-friendly, our attention turns to the operational phase of the lifecycle. Here, energy-efficient data centres and cloud services are the key elements in optimizing the ongoing use and maintenance of software systems. Modern data centres are all about cutting down on energy use with cooling technologies and smart energy management. Similarly, cloud services offer a more resource-efficient model compared to traditional on-premises solutions, using far less energy and reducing that carbon footprint. So, how do we minimize environmental impact without having to make any compromises on the gaming fun? Let's break it down.

5.



SUSTAINABLE GAME OPERATION

Energy-Efficient Infrastructure:

Opt for energy-efficient hardware and infrastructure solutions for hosting and running software applications. Think servers, data centres, and cloud providers that prioritise renewable energy.

Resource Optimization:

Let's get smart about using resources – that means allocating just the right amount of energy needed to run software operations, but never too much. From optimizing server use to managing power efficiently, every little bit helps.

Cloud Computing:

Cloud providers often operate more energy-efficient data centres and offer scalable infrastructure solutions that can dynamically adjust resource allocation based on demand, optimizing energy usage.

Virtualization and Containerization:

These are your go-to technologies for saving energy and cutting down on hardware. By running multiple virtual instances or containers on a single physical server, organizations can keep things lean and green.

Green Data Centers:

Consider partnering with green data centres or colocation facilities that prioritise energy efficiency, renewable energy usage, and sustainable practices. Green data centres employ advanced cooling systems, energy-efficient hardware, and renewable energy sources to minimise environmental impact.

Monitoring and Optimization:

Knowledge is power – especially when it comes to sustainability – so keep an eye out to stay on top of the things that matter most. Tools that continuously monitor software operations help you track energy and resource use and identify inefficiencies. Performance monitoring is key to optimising software systems for enhanced energy efficiency and sustainability.

Lifecycle Management:

Adopt lifecycle management practices to extend the lifespan of software systems and reduce electronic waste. Regularly update and maintain software applications to ensure optimal performance and security, avoiding premature hardware upgrades and replacements that contribute to environmental impact.

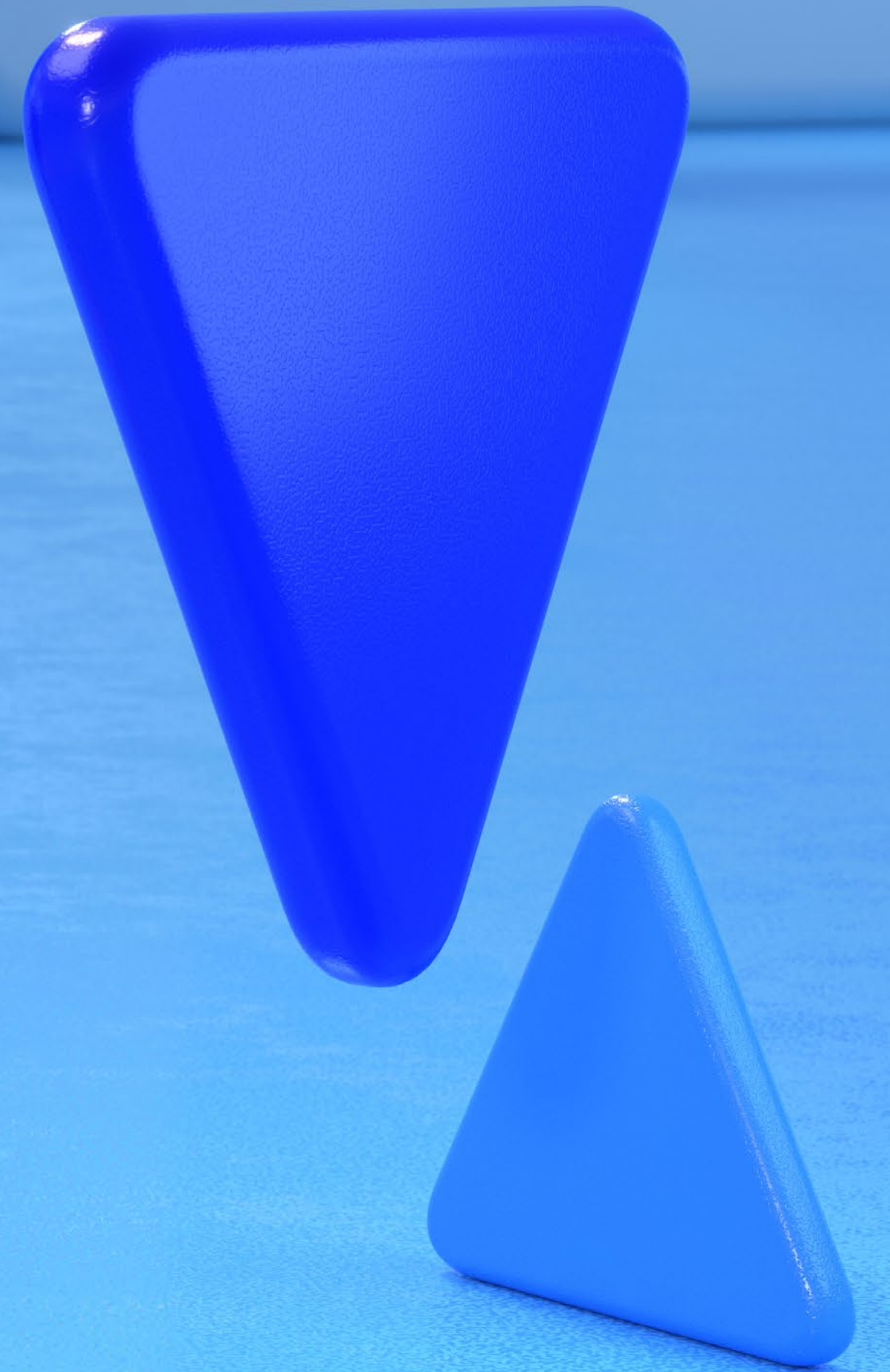
Spreading the Word:

Get the whole team on board with best eco-friendly practices! Raise awareness among employees about the environmental impact of software operations and promote sustainability in day-to-day operations. Provide training and education on energy-saving measures, resource optimization techniques, and environmentally responsible behaviour to empower employees to contribute to environmental sustainability.

By putting these strategies into action, we're not just gaming – we're gaming responsibly. Let's keep the fun going while also keeping our planet happy!

CHAPTER 4

Climate-smart Value Chain





Mastering Sustainable Procurement in ICT to Cut Down Scope 3 Emissions

In sustainability, it's the entirety of the value chain that matters. No statistic underlines the fact better than this: In the iGaming industry, a whopping 90%, of emissions stem from the value chain, classified as Scope 3 emissions. Sustainable procurement in the ICT sector is an area that plays a crucial role in contributing to climate change mitigation. When conducted sustainably, procurement in ICT involves sourcing goods and services in a manner that prioritises environmental and social responsibility.

Action ought to be focused on the following strategies:

Emission Reduction:

By prioritising suppliers with environmentally friendly practices and products, sustainable procurement can help reduce greenhouse gas emissions associated with the production, transportation, and use of ICT equipment and services. This includes selecting energy-efficient devices, opting for renewable energy-powered data centres, and choosing low-emission transportation methods for product delivery. Encourage cloud and web services to reduce their emissions.

Energy Efficiency:

Sustainable procurement encourages the adoption of energy-efficient ICT products and solutions, such as computers, servers, and networking equipment. Energy-efficient devices consume less electricity during operation, resulting in lower carbon emissions over their lifecycle. Selecting energy-efficient hardware is another critical aspect of low carbon computing. Businesses are encouraged to invest in devices that consume less power and have a smaller environmental impact. This includes considering energy ratings and lifecycle impacts of hardware during procurement.

Renewable Energy Adoption:

Procuring ICT services from suppliers that prioritise renewable energy sources, such as wind, solar, or hydroelectric power, can significantly reduce the carbon footprint of data centres and other ICT infrastructure. Supporting renewable energy initiatives through procurement contracts can accelerate the transition to a low-carbon economy.

Waste Reduction:

Sustainable procurement practices promote the use of durable and recyclable ICT products, as well as the implementation of take-back and recycling programs for end-of-life equipment. This helps minimise electronic waste (e-waste) generation and reduces the environmental impact of disposal, including greenhouse gas emissions from landfill decomposition and incineration.

Lifecycle Assessment:

Prioritising products with LCAs available. Life cycle assessment for gaming hardware and software helps to understand their environmental impact and inform procurement decisions. This includes considering factors such as energy consumption, material sourcing, and end-of-life management.

Eco-Labeling and Certifications:

Prioritising products and services that carry eco-labels or certifications indicating their environmental credentials.

Transparency and Reporting:

Encouraging transparency from suppliers regarding their environmental practices and requiring regular reporting on key sustainability metrics to track progress and ensure accountability. Assess all supply chain activities and publicly disclose climate risk in profit projections and investor information – and always explore how to improve this data.

Overall, sustainable procurement in the ICT sector encourages collaboration with suppliers to improve environmental performance throughout the supply chain, leading to collective efforts to mitigate climate change. This is achieved by reducing carbon emissions, promoting energy efficiency and renewable energy adoption, minimising waste generation, and fostering collaboration with suppliers to improve environmental performance at every turn. Through strategic procurement decisions, organisations can play a significant role in advancing sustainability goals and driving positive environmental impact in the ICT industry.

CHAPTER 5

User's Responsibility





Engaging Players in Climate Action

Previously, we have examined measures which help the iGaming industry enhance its environmental sustainability throughout its ecosystem: game development and design, testing, operations and procurement.

But what can an individual do to make their digital gaming more environmentally sustainable? Next, we will look at some useful tips that climate-aware players of mobile and internet games can turn to, to reduce their climate impact.

01

Find Out About Sustainability of Games and Devices

Awareness is key in all decision-making, so be sure to ask and find out. Players can enquire about the measures makers of games are taking to ensure their products are climate-smart through and through. The same applies for hardware: research how your device has been manufactured and how much energy it consumes during use, as well as how long its software and security updates will be available. You may want to consider the purchase of used or refurbished devices, so long as their energy efficiency is sufficient. Also be sure to right size your display, as going too big might lead to unnecessary energy consumption.

02

Maximise Device Lifespan and Be Mindful of Disposal

Using your devices for as long as they meet your needs is good for the environment. Where possible, repair devices rather than buying all-new ones and look for software upgrades to extend their lifespan. When relieving your device of duty, consider trading it in so it can have another life or, at the very least, be sure to dispose of it properly.

03

Choose Your Games Portfolio Accordingly

To make the most of your digital gaming's positive effect on the environment, select only the games that are the most eco-friendly. For example, running a video always requires more data transfer (and thus, energy usage) than showcasing an individual photo, so when it comes to audiovisuals, the simpler the better. Also pay attention to the game resolution, as higher image quality translates to higher data and energy usage.

04

Consider Modifying Your Gaming Habits

An easy way of making a difference is checking and, if needed, changing the system settings on your device. Using power saving options when not actively playing, helps reduce energy consumption. Know how to find and activate energy saving mode and turn off the device when not in use. An added benefit is a lower electricity bill.

05

Choose Renewable Energy

One of the most concrete climate measures an individual player can take, is making sure they choose the right electricity supplier. To make the most informed choice possible, it is advised to check your electricity supplier's carbon credentials and your current contract. Switching to 100 % renewable energy is a great way of maximizing emission reduction on an individual level.

06

Pay Attention to Your Internet Connection

Prefer fixed broadband, such as optical fibre, instead of mobile data, as data transmission using the former is vastly more energy efficient than the latter. Significantly more data moves in a fibre network in a shorter time, which makes it the go-to option for a climate-aware user. Also note that using a Wi-Fi router slightly increases energy consumption.

07

Spread Awareness

In addition to staying informed yourself, also let your friends and community know about the best climate practices. Decision-makers are key in the rapid transition to clean, renewable energy and other low-carbon solutions. Their actions are greatly influenced by public opinion, so demands for reducing digital emissions by making the digital society and infrastructure as sustainable as possible, will not fall on deaf ears. A strong call for company accountability will determine which policies and measures are considered worth promoting – so getting the message across is vital.

With these tips any user can keep playing iGames and be sure that they are playing their part in striving for a more sustainable tomorrow. It is the companies' responsibility to continue offering climate-smart options for players to enjoy.

Closing Words

Closing Words

As the gaming industry navigates the complexities of climate action, collaboration and innovation emerge as cornerstones of progress. By embracing sustainable practices across all phases of game development, from design to testing and operations, we pave the way for a low carbon gaming landscape, where entertainment and environmental consciousness intertwine harmoniously.

At Veikkaus, we're no strangers with the environmental challenges that define the gaming industry landscape. Recognising the need

for proactive solutions and collective effort, we're committed to addressing these challenges head-on. That's why we're shining a spotlight on these common issues, bringing them to the forefront of industry discussions. With this guide, we hope we have equipped you with ideas and practical tips to navigate these challenges in your day-to-day operations. Together, we can turn these obstacles into opportunities for growth and innovation. After all, in an industry as dynamic as ours, every challenge presents a chance to excel.

Together, let's embark on this journey towards a brighter, more green future for gaming and our planet.

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