

# **Sustainability Report of T.Loop**

DM2720 Sustainable ICT in Practice

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# Executive Summary

The escalating energy consumption and environmental impact of data centers, constituting a significant portion of global energy demand, spotlight the urgent need for sustainable ICT practices. This report aims to analyze T.Loop and its sustainability practices and is a part of the DM2720 Sustainable Information and Communication Technology in Practice course at KTH Royal Institute of Technology. T.Loop is a company that specializes in the production and maintenance of data energy centers (DECs) for clients for computationally intensive tasks.

After conducting three semi-structured interviews with employees from T.Loop, it was evident that they are committed to contributing to a more sustainable world. By using cutting-edge cooling technologies, reusing excess heat produced by the servers, and utilizing unused space in buildings, they are combating waste and contributing to a circular world. Furthermore, they have great in-house competence with employees from diverse backgrounds, such as engineering and law.

T.Loop is working on sustainability, but there is still room for improvement. These improvements include a waste management system, transparent sustainability reports, customer screenings, and a deep understanding of the value chain.

Based on insights gathered from interviews with T.Loop's executives and an analysis of the company's operations, this report proposes several recommendations to deepen T.Loop's sustainability impact:

1. **Transparency and Reporting**
2. **Sustainability Training for Employees**
3. **Circular Economy Integration**
4. **Supplier Sustainability Audits**
5. **Policy Advocacy and Industry Leadership**
6. **Community Engagement**
7. **Investments in Renewable Energy Projects**

These recommendations aim to support T.Loop in navigating the challenges of sustainable digital infrastructure development while capitalizing on its unique position to effect industry-wide change.

# 1. Introduction

The electricity consumption of data centers accounts for around 1% of global energy demand. That is more than the national energy consumption of many countries, and the energy consumption in the sector will most probably grow in the coming years due to continued digitalization (Obringer et al., 2021). The energy use in the segment grows by 20-40% annually (Data Centres & Networks, 2023), and only in the European Union, it is estimated that electricity consumption of data centers will increase to almost 150 TWh by 2026 which will account for over 5% of the total electricity demand in the region, an increase from 100 TWh in 2022 (Electricity 2024, 2024). Looking at greenhouse gas emissions from data centers, most of the impacts are caused during the use phase, where around 60% of the emissions come from the components such as servers storage systems, and 40% are caused by infrastructure for cooling, air conditioning, and other related services (Bieser et al., 2023). According to one prediction, data centers will be responsible for 29% of greenhouse gas emissions within the information and communication technology (ICT) sector in 2030 (Bieser et al., 2023).

As the digital economy continues to expand, the role of data centers as both critical infrastructure and a significant source of energy demand and emissions put them at the forefront of sustainability issues. This will require an approach that will not only be about technological improvement but also need policy changes, collaboration within the industry, and a shift by corporations to greener practices. Moreover, cultivating a culture of sustainability within organizations can drive the adoption of green technologies and practices, ultimately contributing to a more sustainable future for the digital economy.

This report is the result of a project for the Sustainable Information and Communication Technology in Practice course at KTH Royal Institute of Technology in Stockholm. The report aims to assess the integration of sustainability practices within the daily operations of T.Loop, a company specializing in energy-efficient data centers, and to explore opportunities for further implementation of sustainable principles into their core business strategies.

## 2. Background

This section will cover the significance of sustainability in business. It will explore the role of ICT in environmental impact and evolving business sustainability practices. Frameworks such as the 1.5°C Business Playbook and the circular economy will be introduced as strategies for effective sustainability implementation.

### 2.1. What is sustainability, and why does it matter?

According to the World Commission on Environment and Development (1987), the definition of sustainability is “meeting the needs of the present without compromising the ability of future generations to meet their own needs.” This concept often stands in stark contrast to human nature. Our instinct for self-preservation has fueled a relentless pursuit of growth, which has placed increased pressure upon our planet’s natural resources. With increasing temperatures, risks of famine, diseases, and the eventual demise of human civilization, adopting the sustainable mindset has become as imperative as ever for our species and our planet's survival.

There are many ways to act sustainably, although the methods differ depending on the scope. For individuals, a reduction of their emissions would be a good course of action. This could be achieved by small lifestyle changes such as reducing one's meat consumption, air travel, or time spent online (Naturvårdsverket, n.d.). However, a more impactful approach entails collaborating with others to advocate for corporate and legislative accountability, recognizing that collective action yields greater results than individual efforts.

From a business point of view, there are a plethora of measures that can be taken to act more sustainably. Examples include using environmental management systems such as the ISO 14001, adhering to sustainable frameworks such as the 1.5°C Business Playbook, using circular business models, engaging in sustainable design principles, and shifting away from the growth-based mindset. Actively embracing these practices not only helps in reducing environmental impact but also translates into tangible benefits for businesses. This includes cost savings through resource efficiency, enhanced brand reputation, competitive advantage in a market increasingly driven by consumer preferences for sustainability, and compliance with regulatory standards.

Ultimately, the efforts from either side will not matter if they are not performed collectively. Cooperation will be required by all actors involved, as the issues we are facing today are inherently a result of our growth-based mindset. Thus, changes must be incorporated at the governmental, business, and individual levels to achieve a change.

## 2.2. ICT and Sustainability

Two things are essential to harness ICT for the benefit of sustainability: stop the growth of ICT's own footprint and try to apply ICT as an enabler to reduce the footprint of production and consumption by society (Hilty & Aebischer, 2015). Switching to solar or wind power and implementing building management systems that control lighting, heating, and ventilation are two examples of these approaches. However, it is easier said than done. The increased use of the Internet, for example, is one of the hidden sources of global CO<sub>2</sub> emissions, where streaming videos in Ultra HD for four hours a day would result in a carbon footprint of 53 kg CO<sub>2</sub>e (CO<sub>2</sub> and other greenhouse gasses) every month. However, by lowering the video quality from HD to standard, the monthly footprint would drop to 2.5 kg CO<sub>2</sub>e (Obringer et al., 2021). Making users aware of the costs of their online actions would help to pave the path for a more sustainable digital world, but service providers and data centers have to continue to work towards improving efficiency and reducing the environmental footprint of their energy use. Companies have to continue striving to limit the environmental footprints of their products (e.g., not offering high-definition video quality without users' consent) in addition to reducing the energy and environmental footprint of data processing and transmission.

Sustainable ICT in the future will depend not only on advances in technology but a transformation in both societal values and organizational practices. The movement towards post-growth recognizes that the planet's material resources are finite, and infinite economic growth is impossible. This approach prioritizes sustainability, social justice, and community empowerment. Initiatives such as access to open-source code demonstrate the potential for ICT to contribute to a more egalitarian and environmentally friendly society by fostering open, collaborative production models and leveraging local, decentralized solutions (Pansera & Fressoli, 2020). This approach not only addresses the environmental footprint of ICT but also aligns with broader societal goals of reducing inequality and promoting a more participatory and democratic technological development. However, transitioning to a post-growth economy presents significant challenges. It requires rethinking current economic models, such as welfare systems, that are heavily dependent on continuous growth (Corlet

Walker et al., 2021). This paradigm shift challenges economic interests, consumer habits, and policy frameworks that prioritize gross domestic product (GDP) growth over environmental and social well-being. Overcoming these barriers would be possible through an integrated approach, including new policy reform, cultural change, and the development of new economic indicators valuing environmental health and human well-being along with economic metrics (Basheer et al., 2022).

### 2.3. Sustainability in Business

Sustainability is crucial for long-term business viability and competitiveness. Nowadays, people are more aware of the environmental impact of their purchases and want to be well-informed before deciding which product to buy. However, unethical practices, like greenwashing, are common and are growing for many reasons, such as companies' lack of ability or willingness to act on what is expected of them in regard to sustainable practices (BSR, 2009).

Change towards sustainable practices, especially in companies where sustainability is not a common topic to discuss, requires a lot of willingness to make changes in how the company operates on a daily basis. One typology of business sustainability focuses on effective contributions to sustainable development, where the authors distinguish four levels of business (Dyllick & Muff, 2013):

- Business-as-usual
- Business Sustainability 1.0 (Refined Shareholder Value Management)
- Business Sustainability 2.0 (Managing for the Triple Bottom Line)
- Business Sustainability 3.0 (True Sustainability)

Dyllick and Muff (2013) define the true sustainability as:

*Truly sustainable business shifts its perspective from seeking to minimize its negative impacts to understanding how it can create a significant positive impact in critical and relevant areas for society and the planet. A Business Sustainability 3.0 firm looks first at the external environment within which it operates and then asks itself what it can do to help overcome critical challenges that demand the resources and competencies it has at its disposal.*

Companies Business Sustainability 3.0 try to change the rules of the game but are also engaged on a sectorial or cross-sectoral level, where they try to change the common approaches and practices shared by all members of an industry. By sharing their practices and setting new standards, the company can impact and outreach their sustainability strategies.

#### 2.4. The 1.5°C Business Playbook

The 1.5°C Business Playbook is a tool that helps higher-level executives such as CEOs, board members, and employees to act more sustainably in organizations of all sizes (Exponential Roadmap Initiative, 2023). The playbook came about as a reaction to the most pressing global climate goal: “to stabilize the global climate at 1.5°C above pre-industrial levels or as close to this limit as it is possible to achieve”. This can be done by adhering to the so-called “four-pillar strategy,” which consists of the following steps:

1. Reduce one’s own emissions.
2. Reduce one’s value chain emissions.
3. Contributing to reduced emissions in society through one’s own products or services.
4. Contribution to reduced emissions beyond the scope of the organization's own business and value chain.

By applying the strategy mentioned above to one's business and helping halve emissions by 2030, companies can help restore the Earth and its resources.

#### 2.5. The Circular Economy - a Brief Introduction

The circular economy is an alternate economic paradigm that mimics the way nature works. In this paradigm, waste never accumulates in nature as reuse, maintenance, and recycling are essential in the production of products and services - hence the circular aspect of the “circular

economy.” Breaking it down into its components, it is built on top of three core principles - removing waste, circulating products, and regenerating nature (Ellen MacArthur Foundation, 2022).

### **3. Presentation of the Company**

T.Loop is a company that works in the data center industry, and its goal is to transform the industry by using its concept called Data Energy Centers (DEC). The DEC's are placed in buildings where heating needs align with the excess heat from the DEC's, so instead of losing the heat from the servers, it is used to heat the whole building. According to T.Loop's website, this decreases heating costs by 30% and results in a 100% lower climate footprint than a traditional data center (T.Loop, 2024). The company was launched in 2022 and currently operates one DEC in Stockholm, which opened in 2023. However, the company aims to establish more energy centers in the near future.

### **4. Method**

In February 2024, three semi-structured interviews were conducted with T.Loop employees. All three interviewees came from C-level management. The objective was to engage with individuals across various areas of responsibility to better understand T.Loop's operations and how their roles contribute to the company's sustainability practices. The questions to the interviewees ranged from individual thoughts on sustainability to more technical and theoretical questions regarding Data Energy Centers and their clients. All interviews were conducted in Swedish and were later translated into English.

One of the interviews was recorded, while during the other two, one person asked questions while the other took notes. The recorded interview was then transcribed, and notes were prepared for analysis. After all the interviews were conducted, the data was then analyzed through a thematic analysis to make out recurring patterns and themes. An inductive approach was used, meaning that themes from data were derived with no preconceptions or beforehand prepared themes. Both authors worked individually with the data and later discussed the findings together. The company data was also supplemented by information



from the company's website. These two sources form the foundation for this sustainability analysis and are the main source of the recommendations and suggestions for improvement.

## 5. Results and Analysis

### 5.1. Definition of Sustainability and Goals for T.Loop

At the beginning of the interview, the interviewees were asked about their views on sustainability and what it means to them. All of them said that it is about the usage of resources in a more efficient way and for multiple purposes. They were aware that many resources are being wasted in the data center industry, such as keeping up the servers' uptime. This was also one of the reasons why T.Loop was established to change how data centers think about resources and make an impact in the industry. The quality of services does not need to be negatively impacted by thinking about data centers in a circular way. Instead, it is something positive where every stakeholder can gain something positive from that.

The company is also aware that if it wants to promote and advocate for sustainability externally, it needs to show a good example and good practices that lead to more sustainable work. One participant put it this way:

*In terms of internal sustainability and within our company, it's clear that we cannot advocate for sustainability externally if we haven't sorted it out internally first. It's crucial for us to have our own practices in order, which is something we have taken seriously. As we launch a new company today, it's essential that we comply with all relevant regulations and follow recommendations as closely as possible to lead by example.*

T.Loop works with companies from different sectors: data centers, real estate companies, and electricity companies. All these three sectors are different from one another, and they do not possess expert knowledge of what the other sectors are doing. T.Loop's goal is to find a way to collaborate between sectors. The company wants to make the integration as simple as possible and adapt to different sectors' needs. T.Loop aims to be an integrator of these three sectors.

## 5.2. Economy and Sustainability

During the interviews, interviewees were asked to share their thoughts on whether profitability and sustainability are mutually exclusive concepts. One interviewee noted that while there is a potential conflict between these two terms, it can be navigated with the right mindset. Another interviewee suggested that there does not need to be any opposition between these terms, emphasizing that sustainability also involves economics. They argue that without profitable and sustainable solutions, there is no incentive for sustainability efforts in the long term, and profitability can be achieved through various means. For instance, T.Loop's approach to sustainability and its integration into their business model and circular mindset were highlighted. This business model enables the company to generate new revenue streams unavailable to other data center operators, resulting in higher profitability for their data centers than traditional ones. It also allows for releasing currently unused resources without adding additional costs for the company, as this is integrated into the business's operations. One participant expressed it this way:

*So, I have for a long time worked to show what it [sustainability] leads to, both in the first instance regarding that this is a better investment, but also how it affects your company's profile, which in turn makes it attractive to your customers. And that is the truth today, I would like to claim in our industry, that one must have taken those steps to be a credible partner, and it can also lead to being able to charge more for one's services, which increases margins.*

T.Loop, in that sense, is extending resource value using resources that many regard as unusable and transforming them into new forms of value. Value is captured by turning otherwise “wasted” resources into new forms of value (Bocken et al., 2016).

## 5.3. Circular Economy and Resource Optimization

The employees at T.Loop displayed a commitment to the circular economy during the interviews. All interviewees see sustainability as the core value of the company. One of the interviewees said that the idea of the circular economy is their selling point to attract different stakeholders. According to T.Loop's website: “We can confidently say that a Data Energy Center has 30% lower energy costs and 100% lower climate footprint compared to a traditional data center.” (T.Loop, 2024) This is achieved through liquid cooling in the data center, which simultaneously reduces the climate footprint by utilizing the server heat to

warm the building where they are located. This aligns with the first principle of the circular economy that was discussed in section 2.5, that is the elimination of waste.

As for now, T.Loop has yet to have a policy to manage electronic wastes that the data centers will produce sooner or later, as their equipment has a long life span. The servers used in their data centers are not owned by T.Loop but by their partners, so T.Loop cannot affect from which sources the servers come from. This is also one idea for the future development of T.Loop to try and control both the upstream and downstream of the chain value, to make sure that the equipment that is used has a high sustainability standard, but also to make sure that the equipment is either recycled or to try and extend their lifespan to function longer time.

#### 5.4. Data Energy Center (DEC)

The Data Energy Centers are the core business of T.Loop. The company aims to transform data centers into “eco-friendly powerhouses. These DEC’s are designed, built, and operated by us, strategically placed in buildings with heating needs that align with DEC excess heat.” (T.Loop, 2024)

The participants also highlighted the need for regulations in the data center industry, as more needs to be done to change how data centers operate. They said:

*I believe regulation is necessary. There must be requirements established, and indeed, many investments are being made. There was something introduced called energy audits for large companies. I became certified as such an auditor and traveled around looking at different types of operations and presented proposals for action. But nothing was implemented, even though we presented good and simple measures. And that's because the focus is elsewhere. [...] So, nothing will happen unless someone takes a decisive stand or subsidies are provided for such measures.*

Another issue within the industry is some signs of greenwashing when other data center companies portray themselves as environmentally friendly to the public and in how they present their statistics. One interviewee cited the example of green electricity to illustrate this point. The companies label themselves as green because they purchase green electricity, but this only involves reallocating the green portion of an existing electricity mix. That means, in the end, that someone else must use the electricity from fossil fuels or sources that are not considered “green.” For this reason, T.Loop is examining the standard electricity mix in Sweden to understand the emissions associated with every kilowatt-hour (kWh).

## 5.5. Sustainability Challenges and Opportunities

A commonality between the three interviews was that all three interviewees mentioned that the company needed to be more mature, which is why sustainable methods such as recycling, certifications, value chain control, sustainability reports, etc., still need to be employed. Still, there is an interest in implementing this as the company grows. Paraphrasing one of the participants, they stated that they would like to start looking at their suppliers upstream in the value chain to ensure that their products are sustainable while aiding their customers downstream in choosing the correct product from a sustainable point of view. When asked about third-party certifications, they mentioned that they have a clear ambition to become certified according to the ISO-14001 standard.

*Our aim is to take it one step further - not only to meet the requirements, but also to exceed them. (Paraphrase from one of the participants)*

*Here at T.Loop, I believe we can integrate it more thoroughly into our process. There's definitely an ambition for all investment decisions to be made in consultation with such an assessment when choosing the type of product, for instance, but today, it's probably not standard. To be entirely honest.*

When asked about sustainability-related materials, such as the 1.5°C Business Playbook, some interviewees stated that they had heard about it, while one was unaware of it. Instead, the extensive industrial and academic knowledge collected by the three interviewees and others at the company forms the basis for their sustainability efforts.

Some challenges the interviewees mentioned were related to incentivizing their partners to go circular, the emissions from building new sites, and purchasing new materials.

## 6. Discussion

The company is aware of the sustainability challenges within the data center industry and recognizes how T.Loop can contribute to its improvement. Currently, in its startup phase, T.Loop regards sustainability as a core value and a guiding principle for future work in data centers. The interviews reveal a unified vision among company leaders; their ultimate goal aligns despite differing perspectives from different industries. However, there is a need for increased transparency in the company's sustainability efforts. Incorporating independent

oversight to monitor the company's practices should be a priority to ensure that the company will not fall into greenwashing practices.

## 6.1. Evaluation of Current Sustainability Practices

As mentioned in 4.2, T.Loop relies heavily on in-house knowledge and experience in their sustainability practices. As two participants stated, sustainability is engrained in the company's core values and is not something they need to think about actively all the time.

Although the company follows good practices and has clear ambitions to be a leading actor within its industry, it will eventually need third-party certifications and further work on sustainability reports for increased transparency that are either developed by the company or a third party.

Intending to become a leading force in the field of sustainable ICT services and products, T.Loop has expressed goals of achieving ISO-14001 certification, aiding their partners both upstream and downstream in their value chain to become more sustainable, and choosing the best possible suppliers from a sustainability point of view. Although they have some work left to be done, the current practices are suitable for a company of T.Loops size.

## 6.2. Social and Environmental Sustainability

Social and environmental sustainability are interconnected, and it is important for companies focusing primarily on environmental sustainability to understand the social impact of their actions. One way of implementing social sustainability is to use the Common Good Matrix (Lindner, n.d.), a tool for evaluating the impact of corporate activities on the common good. It could be a part of the future sustainability reporting at T.Loop as a way to implement the social aspect of sustainability. The Business Sustainability Typology, with four distinct levels, was presented in the introductory chapter. In that model, T.Loop is at Business Sustainability 1.0. T.Loop contributes with its service to resolve sustainability issues in society, and the challenge has been translated into a business model that works and is beneficial for all of the stakeholders. This level needs to address further broader implications of business operations on the environment and society. This model, while focusing on specific aspects of sustainability, would benefit from integration with other models to achieve a more comprehensive view. For instance, the Common Good Matrix offers an external perspective on social sustainability, incorporating aspects that are not apparent in the Business

Sustainability Typology. This includes taking into account the roles and impacts on suppliers and customers, ensuring a broader and more inclusive approach to sustainability.

T.Loop is working to promote a new way of thinking in the data center industry. However, a key challenge industry-wide is balancing energy efficiency with an increase in demand. As highlighted in the Digital Reset report by Lange et al. (2023): “Regarding data centres, annual energy efficiency improvements range from 10% to 15%. Again, increasing energy efficiency of digital equipment and power usage effectiveness in data centres is counterbalanced by rapidly increasing demand for processing, storing and transmitting data. [...] Although there is legitimate hope for further efficiency improvements in data centres, a drop in data centre total energy consumption does not seem likely given expected further growth in data traffic.” In Sweden or other Scandinavian countries, demand increase might not be that problematic compared to other countries where most of the electricity comes from fossil fuels. However, this demand increase ultimately leads to a rebound effect, where we are still consuming more resources despite efficiency improvements.

### 6.3. Reflection on Sustainability Culture

At T.Loop, sustainability is a fundamental part of the business model, and the team possesses a comprehensive understanding of both sustainability practices and T.Loop's approach to integrating them. The company is currently quite small and in its startup phase. However, when the company reaches its expansion phase, it will be important to ensure that every new employee grasps T.Loop's values and understands how they can contribute to our sustainability goals. Currently, there is no sustainability training at the company, but that would be something good to implement in the future. The sustainability training will ensure uniformity in understanding sustainability concepts and how individuals in their respective roles can contribute to these efforts. Moreover, this could significantly impact not only the company but also encourage employees to be more mindful of their daily actions and the effects these may have on the climate, among other aspects.

### 6.4. Circular Economy and T.Loop

As mentioned in the interviews and on their website, T.Loop aims to make data centers circular. Whilst it is true that they follow circular practices, they only cover a small portion of the defining pillars of the circular economy. The claim stems from the fact that they are reusing waste from their production (excess heat) and the fact that they are utilizing unused

space in office buildings. The reutilization of waste and materials is an essential component of the circular economy, one of the three principles according to the Ellen MacArthur Foundation. However, more could be done to adhere to the principles of the circular economy.

As described in section 2.5, the circular economy consists of three core principles:

- Elimination of waste and pollution
- Circulate Products and Materials
- Regeneration of Nature

T.Loop, in its current state, fulfills the first principle. To meet the second one, they could, for example, place a great emphasis on the maintenance of their materials, reuse server racks, and handle worn-out equipment accordingly by extracting valuable parts and reusing them. Furthermore, they could keep reusability in mind when purchasing new materials, ensuring that nothing will go to waste when the product comes to the end of its lifecycle. Finally, the third principle is met by default when the other two have been satisfied.

To further boost how T.Loop is working with sustainability, getting familiar with The 1.5°C Business Playbook might be beneficial to implement the four pillar strategy: reduce your own emission, reduce your value chain emission, provide and scale solutions, and accelerate climate action in society (Exponential Roadmap Initiative, 2023). Combining the Business Playbook, the Common Good Matrix, and the Business Sustainability Typology would simplify sustainability reporting and enable T.Loop to have an overview of their progress in various fields. There are, of course, implementation challenges, as these frameworks offer rather broad perspectives, which would require time and resources to apply to T.Loop. However, this is also their strength, as they are flexible enough to be applied in any industry. All these frameworks also encourage long-term thinking, which is crucial in working with sustainability. Without a long-term perspective on sustainability, achieving a sustainable world would not be possible.

## 6.5. Method Limitations

The study results are based on three interviews with C-level management members of T.Loop, along with publicly available information about the company. This limited number of interviewees might only partially capture the diverse perspectives and experiences of some

employees. Therefore, the report should not be viewed as a comprehensive overview of the company's operations. The findings may also reflect a selection bias, emphasizing the views of the company's upper management without representing the perspectives of other important employees from different levels within the company.

The qualitative nature of this study, based on thematic analysis of the data, introduces a level of subjectivity in the interpretation of the interviews. Efforts were made to limit this subjectivity by having the authors work independently during the initial analysis phase. In the later stages, the authors collaborated to compare their individual analyses and identify patterns that appeared during the interviews.

It is also important to remember that the analysis captures a specific moment in T.Loop's work on sustainability. These findings should be viewed as a brief snapshot only and do not fully represent what may be the situation in the future or how strategy changes unfold. However, from these interviews, we can draw some conclusions about how T.Loop addresses sustainability issues and presents some recommendations for future work in sustainability.

## 7. Recommendations

The recommendations in this chapter are based on the analysis of the findings during the interviews. The recommendations are divided into three levels of importance and potential impact on the company and its business model.

### Essential Actions

These recommendations should be initiated very shortly. They represent valuable opportunities to uphold the company's sustainability commitments.

- **Transparency and Reporting:** T.Loops is in the process of creating its sustainability policy, but it is important to have free access to the sustainability reports from the website and start planning to obtain third-party certifications. This will build trust with various stakeholders and provide a benchmark for measuring progress.
- **Sustainability Training for Employees:** As T.Loop is now in a startup phase, and everyone at the company is well aware of the sustainability practices within the company, it might be a good idea to implement sustainability training for all future



employees to enhance their understanding of sustainability issues, the company's sustainability goals, and how they can contribute to these goals in their daily work.

## Short-Term Strategies

These are actions that T.Loop can implement within a couple of years. They will require more planning, but it is important to increase the company's sustainable practices further.

- **Circular Economy Integration:** Beyond heat reuse, investigate and integrate broader circular economy practices, such as sustainable material sourcing and lifecycle management of IT equipment. Partner with suppliers and clients to ensure sustainability standards are met throughout the supply chain.
- **Supplier Sustainability Audits:** As there is an idea for T.Loop to recommend which equipment to buy for their clients, it would be beneficial to conduct sustainability audits of suppliers and establish strict sustainability criteria for future procurement. This will ensure that T.Loop's supply chain reflects its sustainability values and commitments.

## Long-Term Initiatives

These recommendations are more of a visionary character and aim to position T.Loop as a leader in sustainable ICT. These initiatives focus on fundamentally transforming the industry and will take a long time to implement.

- **Policy Advocacy and Industry Leadership:** Engage in policy advocacy and industry forums to promote higher sustainability standards across the data center industry. Lead or participate in organizations to drive systemic change, including setting industry-wide sustainability benchmarks.
- **Community Engagement:** Develop programs to give back to the communities where T.Loop operates. This could involve supporting local projects or partnerships with local non-profits focused on environmental sustainability or social welfare.
- **Invest in Renewable Energy Projects:** Invest in or partner with different renewable energy projects. This could include solar, wind, or hydroelectric projects, contributing to the transition to a low-carbon economy.

## **8. Conclusion**

This report has been conducted to analyze and evaluate how T.Loops works with sustainability in their daily operations and how data energy centers can support the change in the data centers industry. Our analysis reveals that T.Loops is well aware of sustainability practices and aims to change perceptions of how data centers function, integrating them with different industries to benefit all stakeholders. We understand that T.Loop is a newly established company, and many processes are still being developed. However, this report's recommendations should be seen as suggestions and things to keep in mind when working with sustainability in the future. The company's unique position can potentially change contemporary perspectives on data center operations. Furthermore, T.Loops' commitment to sustainability should always remain a priority, as it represents a core value of the company.

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