



# Business Evolution Toward Green Product and Services

White Paper Volume 3 Greenwise Consulting

As businesses around the world grapple with the challenges of a rapidly changing global landscape, there is a growing recognition that sustainable practices are not only good for the planet but also good for business. Green products and services, in particular, are emerging as a key driver of the transition towards a more sustainable future, offering companies a range of benefits that extend beyond environmental stewardship.

This whitepaper, titled "Why Business Need to Transition into More Green and Sustainable Practices", provides a comprehensive overview of the importance of green products and services for businesses. Drawing on the expertise of Greenwise Consulting, a leading sustainability consultancy, this paper outlines the key features of green products and services, and examines their impact on business operations and the environment.

Through a series of case studies and examples, this paper highlights the benefits of green products and services for businesses, including reduced costs, increased customer loyalty, and improved environmental performance. It also provides insights into the global trends in green product and service production and consumption, as well as the emergence of green products and services in Indonesia.

Finally, this paper offers recommendations for businesses looking to transition to more sustainable practices, including the integration of environmental, social, and governance (ESG) considerations into their operations.

As the founder of Greenwise Consulting, I am proud to present this whitepaper, which I believe will be a valuable resource for businesses looking to adopt more sustainable practices. I hope that it will inspire more companies to embrace green products and services and take meaningful action towards building a more sustainable future for all.

> Viriya Paramita Co-Founder, Greenwise Consulting



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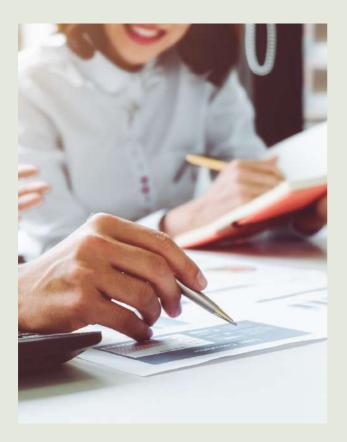
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# Who Are We?

Greenwise Consulting is a value-driven organization that gives advice and services to businesses and enterprises to become more environmentally sustainable. We aim to make lasting and distinctive changes in transforming business practices, operations, products, and services into green business with a mission to reduce climate deterioration while accelerating business growth and performance.





# What We Are Doing?

We mainstream the ESG (Environmental, Social, and Governance) practices into businesses end-to-end operations while aiming ambitiously to take climate action in the process. We help organizations to upskill, upgrade, and upscale their workforce, knowledge, capabilities, and performance using the ESG framework. Our niche expertise is assisting clients in on-ground projects for climate adaptation and mitigation by expanding current operations into more impactful sites.

### The Green Product and Service

#### **Understanding Green Practices**

As the climate crisis persists, customers are increasingly becoming aware of the significance of adopting sustainable practices. It gives rise to more demand for green products and services across all age groups. Besides customer demand, companies are also motivated to adopt environmentally friendly practices due to the need for legitimacy, competitiveness, and ecological responsibility. To achieve sustainable development, it is necessary to adopt a new growth paradigm, enhance quality of life, and create wealth through the production and sale of environmentally friendly products and services. Developing environmentally friendly products and services can also provide businesses with a competitive edge.

#### **Green Product & Green Service**

Green products are goods produced using sustainable methods and materials, emit a low carbon footprint, and can be recycled or disposed of in an environmentally friendly way. Examples of green products include organic food, energy-efficient appliances, hybrid or electric cars, and biodegradable cleaning products.

Green services are services designed to promote sustainability and reduce environmental impact. These services include but are not limited to environmentally friendly transportation options, energy-efficient home or building services, and sustainable waste management and recycling services

Green products and services are implemented to minimize their negative impacts on the environment. It can be achieved by emitting fewer greenhouse gases during manufacturing, usage, and disposal, resulting in a lower carbon footprint that is critical in mitigating the effects of climate change. Additionally, they aim to conserve natural resources like water, energy, and raw materials, which reduces demand and lessens the environmental burden. Green products and services also prioritize limiting waste throughout their production, use, and disposal stages, which can be achieved through the use of recyclable materials, biodegradable packaging, and more efficient production methods. Moreover, they have the potential to improve air and water quality by using cleaner manufacturing processes and minimizing the release of harmful chemicals, thereby reducing air and water pollution.



1997

The Kyoto Protocol is signed, committing industrialized countries to reduce greenhouse gas emissions and combat climate change.

2000

The Global Reporting Initiative (GRI) is established, providing a framework for organizations to report on their sustainability performance.

2001

The first hybrid car, the Toyota Prius, is introduced, popularizing the use of hybrid technology in automobiles.

2006

The Climate Neutral Network is launched, encouraging businesses and organizations to reduce their carbon footprint and become carbon neutral.

2008

The Cradle to Cradle Certified Products Program is launched, promoting sustainable product design and production.

The United Nations Framework
Convention on Climate Change
(UNFCCC) holds the COP16
conference in Cancun, Mexico,

2010

leading to the creation of the Green Climate Fund to support climate change mitigation and adaptation efforts.

2015

The Paris Agreement is signed, committing countries to limit global warming to below 2 degrees Celsius and pursue efforts to limit it to 1.5 degrees Celsius.

2018

The European Union bans single-use plastics, including straws, plates, and cutlery, to reduce plastic pollution.

2021

The U.S. rejoins the Paris
Agreement under President
Joe Biden, signaling a
renewed commitment to
global climate action.

# Taking Your Business into Advance: How Green Products & Services Can Benefit Your Company

Apparent and urgent danger of climate change drives higher expectations for companies to set targets for reducing net emissions of greenhouse gases (GHGs) to zero. Hence, sustainability issues start to become more imperatives to solve, particularly for the industries because of their reliance on natural resources and fossil fuels. Globally, the UNFCCC counted more than 30 leading financial institutions and companies with over US\$ 8.7 trillion collectively in assets under management have shifted to net-zero commitment. Taking the big step many companies have to take to emit minimal GHGs, profound and disruptive changes in capital outlays are expected to happen.

Responding to this trend, companies should consider playing offense instead of defense to meet shareholders, stakeholders, and customers' needs. By the year 2030, the first movers toward greener business would already have recognized new possibilities for value creation and even more-touch and penetrate niche markets that the current market cannot serve. This is particularly true if we take the World Economic Forum's research on how Generation Z (people born between 1995-2010) concerns most about sustainability-first buying decisions. Analysis by McKinsey suggested a scenario that if the world has reached net zero by 2050, goods and services, even value chains, and the dynamics within industries would experience a drastic pivot from emissions-intensive to without emitting GHGs. As the net-zero transition advances, emissions-intensive industries would slowly cease while the market for zero-emissions offerings would certainly expand. The same article also estimated that this progressively burgeoning demand for the net-zero offerings is potential in creating opportunities in 11 value pools that could generate more than \$12 trillion of annual sales by 2030.



Transforming into a green business requires drastic measures but the growing evidence has proven that the effort is worth in environmental and economic benefits. The current skepticism to sustainability in business may arise because companies often do not measure the concrete results or attribute them to sustainability. Hence, with the correct application and measurement, sustainability is actually a quantifiable term that benefits business.



#### **Business Growth**

Although decarbonizing often requires some up-front capital spending or breakthrough in technology or end-to-end transformations of the product and operation, green businesses had found to be more lucrative than conventional offerings. According to research by McKinsey, this is particularly true in fast-growing niches such as recycled plastics, meat substitutes, sustainable construction materials, and chemicals, where potential margin reaches 15-150% higher than usual. Companies that are among the first to pursue net-zero opportunities had expected to enjoy greater success since they have won the earliest customers in the market and built customer loyalty-all while setting up the foundation and expectations for the market.

Prioritizing sustainability to achieve net zero also triggers cross-functional nature by bringing diverse divisions together that may provide a common motivation to produce new and profitable ideas and products. This will lead to the company's growth as it drives innovation and improves internal and external competitiveness that would meet the needs of the changing market while strengthening the company's value proposition. As of the increasing profitability, companies' action in reducing net emissions by marketing the growing popularity (and also necessity) of sustainability attributes can also increase the share or price premiums.

## **Cost Savings**

Reaching net zero has pottential triggers more returns on capital and drastically reduces costs in many ways. First, sustainability in businesses might rise to create more circular-economy business models. A circular-economy model bring benefits to companies as it changes the status quo of the rising scarcity of and prices. and resources operational costs. By having the products' components more consumable, durable, and earth-friendly, companies can even save materials costs up to USD 1 trillion a year. Second, reducing net emissions also reductions drives cost and value propositions improvement through the improvement of resource management and reducing the environmental impact across the value chain. Converting to more resource-efficient energy as solar energy pays off in the long term, albeit might appear costly due to the upfront investment. For instance, research done by Maryville University found that the average commercial property owner will save about \$500 per month on electricity, which equals savings of \$587,377 over the life of the solar power system. To addtion, the research also stated that most businesses pay off the cost of panels in 5-7 years.



## Risk Management

With ever-growing concern about climate action, national and international regulations and policies on environmental issues are stricter. Transitioning to net-zero commitment entails proper stakeholder management and compliance with regulations and requirements. Going green shows that the companies are not only showing care beyond generating revenues, but also adding an advantage point in the marketing business and strengthening brand identity. Complying with sustainability regulations also helps companies minimize and mitigate the damage to the infrastructure, supply chain, and operational disruptions (for example resource scarcity, climate-change impact, community risks, etc.). Companies that prioritize climate actions in their businesses have predicted to have more potential and promising global funding. One of these is the investment opportunities offered by the Green Climate Fund (GCF). With more than 200 projects currently funded by GCF, the entities are not only dedicated to helping catalyze climate innovation but also securing their financing and capital through concessional instruments proposed by the GCF.



# Countries that produce & practice green product & services

#### Denmark: Global Frontrunner in Green Transition

Denmark is currently the leading country in the green transition. The turning point towards green energy for Denmark was the 1973 oil crisis. Back then, 90% of their energy supply relied on imported oil. Therefore, the crisis caused a huge price surge that impacted the whole country. Since then, Denmark has been on a journey to become a more sustainable and resource efficient society (State of Green, n.d.).

Several companies and institutions in Denmark that hold globally leading positions across the green industries are Orsted (renewable energy), Vestas (renewable energy: wind turbine), Grundfos (accessories for water & wastewater treatment plant), Danfoss (accessories & parts industries/plants), for Ramboll engineering & design consultancy company), Rockwool (building insulation), and many more.

In 2014, Denmark produced \$24.7 billion worth of green goods and services. They exported accounted for

> US\$10 or of total Danish exports.

-Danish Energy Agency, n.d.

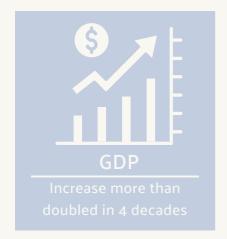


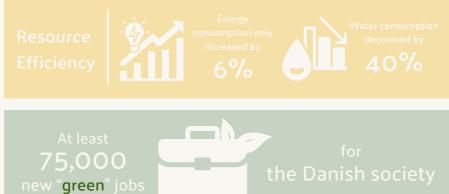






In their effort to create more green growth, Denmark has achieved:





#### **UK: A Transition to Green Industrial Revolution**

The United Kingdom is the first major economy to adopt a legally binding obligation to reach net zero greenhouse gas emissions by 2050 back in 2019 (HM Government, 2020). This is followed by their Ten Point Plan for a Green Industrial Revolution which they published in 2020. Since then, they have mobilized £26 billion of government capital investment for the green industrial revolution and secured more than £5.8 billion of foreign investment in green projects. (GOV.UK, 2021)

To date, there are 75,000 businesses in the low-carbon environmental goods and services (LCGES) sector in the UK, ranging from wind turbine manufacturers to recycling plants. These businesses provide 1.2 million jobs for society (kMatrix, 2021)

Examples of companies in the LCGES sector in the UK are Bio-bean (coffee bean recycle), Loowatt (waterless toilet flush), Ecotricity (new & renewable energy), Inkpen Downie (sustainable architecture), etc.



Image 5. Coffee flavoring from coffee waste Source: https://www.bio-bean.com/naturals/natural-



Image 6. Waterless flush toilet
Source: https://www.loowatt.com/loowatt-home
toilet.html#/



Image 7. Sun park
Source: https://www.ecotricity.co.uk/our-greenenergy/green-electricity



#### By increasing the growth of LCGES, the UK will:



Reduce the risk of increasing and fluctuating fossil fuel price



Increase resilience from climate change impacts



Seize opportunities from new and emerging markets



Save costs through increased energy and resource efficiency







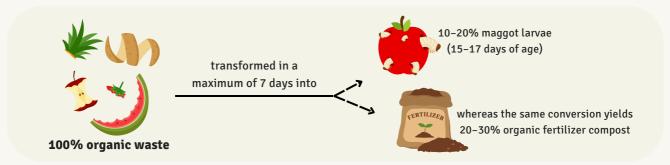
# Industrial Organizations of Sustainable Technology: Green Products and Services

Many nations have begun to make environmental sustainability one of their main priorities for growing domestic manufacturing. It is inextricably linked to the effects felt by the entire global population, where deteriorating environmental conditions were swiftly followed by an increase in the frequency and severity of natural disasters. Some of these effects are a result of the growth and development of sectors of the economy that are less concerned with the effects on the environment.

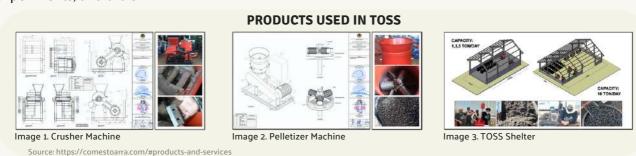
One of the methods proposed to mitigate this effect is the birth of the green industry idea, a theory of industrial development that emphasizes environmental considerations in its operational and production processes. The idea of the green industry, often referred to as such the green industry, has been used in several nations throughout the world, including Indonesia. In contrast to Indonesia, some other nations have already used the green industry concept in their domestic industries. Indonesia is one nation that has established a green sector nationwide.

#### Industries' Green Products

There are several companies implementing green products and services in Indonesia. With the use of maggot/black soldier fly maggot feed, clean processes organic waste to create protein, amino acids, and other beneficial components for animal feed. The aforementioned materials can also be utilized to create organic compost (frass/maggot), which is rich in nutrients. Partnership scale for waste volume calculation with the environmental service in numerous city regulations, the farm service, community groups, private parties, residential areas, as well as on a commercial scale ranging from 500 kg/day to 10,000 kg/day.



The next practice comes from a start-up company that provides methods for turning organic waste and biomass residue into renewable fuel using a method named TOSS. Renewable fuel can be utilized for cofiring, de-dieselization, and community energy needs. TOSS is a technique for handling garbage at community-based sources that shifts the paradigm from sorting initially to sorting at the end of the waste treatment process. The foul odor from the waste will vanish and dry by the peuyeumization (biodrying) procedure in 3–7 days (depending on the waste material). To help democratise the Company's innovation, the company has worked in conjunction with the Ministries of Home Affairs, Environment and Forests, Energy and Mineral Resources, and a number of municipal governments to perform studies, experiments, and trials.



The following company is a manufacturer of specialty chemicals such as water treatment and maintenance chemicals. Focuses on the waste management sector and the mining sector, which includes coal, minerals, gold, nickel, tin, oil & gas, cement, and steel. By creating high-quality, secure, and ecologically responsible products, they protect the harmony of the surrounding nature, always attempt to live up to their obligation to nature, and concentrate on environmental pollution issues.



# The Benefits of Creating Green Products



Environmentally friendly technology is a type of technology that pays attention to the principles of environmental preservation. As a result, the technology is not harmful to the environment nor produces hazardous waste. Another term for this technology is sustainable technology or green technology. Environmentally friendly technology has functions such as preserving nature from damage caused by technology that is not environmentally friendly andreducing the formation of waste that pollutes the environment. Aside from turning useless items into useful products for society, environmentally friendly technology has fulfilled various needs more easily.

This environmentally friendly technology can benefit human life in many ways, including by using natural resources very effectively and efficiently, preserving the environment, reducing waste products, preventing environmental pollution, enhancing the health of all living beings, especially humans, and reducing production costs since it uses natural resources as raw materials.

# Green Product & Services Impact

Using green products & services could be the first step towards creating a better world. Many aspects of our lives have assuredly changed in a more positive direction. The followings are the positive impact of several aspects of becoming green consumers:

#### **Environmental**

Going green has numerous environmental benefits. Going green means leading to less deforestation, no animal harm, ozone-friendly facilities, renewable energy, etc. We all can contribute to protecting the environment by avoiding behavior and product that aggravate the environment. Less demand for harmful products means less supply and production activity in conventional products & services that are deemed to bring negative impacts on the earth. For instance, if we as consumers have less demand for paper, there will be fewer trees cut down, hence opening an opportunity for a company to have paper substitution. Another example is if demand less harmful energy alternatives, the market will gradually start to produce more renewable energy such as solar panels, wind, or biomass.

Business depends on consumer behaviors and preferences. Ever since 1990, many environmental problems linked to consumer behavior (The Economist, 1990). Therefore, wisdom in consuming products and services as a consumer is a must, particularly in this ever-changing world. By a single act of choosing green products and services, several impacts follow:



Reduce pollution and emission



Natural resources and forests conservation can help stabilize climate and is a key role in tackling climate change



A substantial amount of reduced waste



Preserve indigenous and common species' natural habitat



Prevent natural damage such as rising temperatures, rising sea levels, flash floods, forest fires, etc



Improve air quality and health

#### **Technological**

The influence that the green industry brings to technology is undeniable. Technology does not only play an important role in modern living, but can also encourage an adoption of sustainable living style to preserve the environment. Green technology means using science and technology to protect the world's natural resources and mitigate the negative environmental impact of human activity. Green technology includes innovations like clean energy, wastewater treatment, waste management, and more.

There are a few examples of green technology:



Enliven green technology, we have contributed in terms of:



#### Low carbon construction

Traditional buildings and construction account for 38% of greenhouse gas emissions around the world (Normand & Safdie, 2023). Low-carbon buildings are designed to emit little to no carbon. They require minimal heating and cooling, produce very little waste and pollution, and are made from eco-friendly materials like bamboo and hemp.



#### Carbon capture and storage

We need to remove existing carbon from the atmosphere. Carbon capture and storage technology pull carbon from the atmosphere and make it much more scalable.



#### **Upcycling (Circular waste management)**

Upcycling is part of the circular economy, an economic model where 'waste' does not exist due to the transformation of waste into raw materials or even products in the economic chain.

#### **Societal**

Green products and services also give an impact to the society around us, such as:



#### Generate more jobs

According to a study by IRENA (International Renewable Energy Agency), the renewable energy industry created almost 5 lakh new jobs opportunity in 2017, an increase of 5.3% from 2016 (Das, 2023). The existence of green products and services can improve the country's economy through the creation of job opportunities and the rising popularity of investment from green funding



#### Prevent resources exploitation

Green product encourage the current generation to use natural and recycled-friendly resources



#### Protect the environment

Green products are made from natural and organic materials and are designed to use the least non-renewable resources and toxic chemicals. It can reduce greenhouse gas emissions, methane, pollution, and the deterioration of the climate

# Challenges in implementing green practices

In practicing green business, there are several challenges that green industries have to face to get the most of the competitive advantages of transforming green:

**Costly products** 



In developing green products, the company might need to charge added costs which potentially discourages consumers in their buying behavior

Consumers' awareness



Despite being important, the public's environmental awareness is still considerably low. Thus, industries need to take several measures in building the public's concern simultaneously

Investment



Achieving a sustainable green economy transition means we need to develop and translate new technology. This requires a large amount of investment which not every company can afford



# Insights & Further Recommendation

# Green Products & Services on Business Impact and ESG Findings

Recently, ESG performance has garnered the attention of investors, firm managers, and other stakeholders due to its growing significance in enhancing a company's value. ESG data is valuable to both investors and society. Investors often purchase additional shares based on ESG-related data. ESG investing is similar to fundamental investing, whereby a firm's performance in economics, the environment, social issues, and corporate governance are integrated. The ultimate objective of investors is to make a profit that has a positive impact on the environment and community. Companies are increasingly focusing on educating the public about environmental, social, and governance concerns. Despite this, studies investigating the connection between factors such as social and environmental performance and corporate performance frequently overlook the importance of corporate governance. There have been studies investigating the correlation between ESG and corporate performance, with a focus on the organization's environmental and social impact. Companies may achieve social responsibility by prioritizing profitability, as this allows them to provide returns to investors, fulfill employee needs and commitments, and provide consumers with quality products and services.

#### Research Result



To achieve short-term financial success, taking action is even more critical than having media disclosure. However, if a corporation wants to focus on long-term profits, pro-ESG efforts can reduce risks and increase profitability. Organizations must balance managing their financial portfolios and providing information to build an optimal financial plan. By prioritizing profits over other factors, corporations may overlook actions that promote transparency and openness, which can ultimately affect their financial performance. To increase financial performance, organizations should strengthen transparency and action, while maintaining a proper balance between the two.

The proposed method of ESG outperforms existing methods like machine learning and artificial intelligence in terms of economic growth. Investors who seek socially responsible investments use ESG criteria, which include environmental, social, and governance factors. Environmental criteria focus on a company's climate initiatives and how well it preserves the environment, while social criteria measure the company's relationships with employees, vendors, customers, and local communities. Administration includes audits, internal controls, and shareholder rights.

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