

ECOWISE HOLDINGS LIMITED

Clean energy & zero waste for
an ecoWorld, better world

Sustainability Report 2021

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This sustainability report has been prepared by ecoWise Holdings Limited ("**Company**") and its contents have been reviewed by the Company's sponsor, W Capital Markets Pte. Ltd. ("**Sponsor**").

This sustainability report has not been examined or approved by the SGX-ST and the SGX-ST assumes no responsibility for the contents of this sustainability report, including the correctness of any of the statements or opinions made or reports contained in this sustainability report.

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1. Executive Summary

1.1 About ecoWise Holdings Limited

Founded in 1979, ecoWise Holdings Limited (“**Company**”, and together with its subsidiaries, the “**Group**” or “**ecoWise**”) is a leading integrated environment solution company that focuses on three (3) core business segments, namely (1) Resource Recovery, (2) Renewable Energy and (3) Integrated Environmental Management Solutions. Headquartered in Singapore, the Group has projects and operations which span across Singapore and Malaysia. The Group combines its innovative expertise and cost-effective management through research and development. To date, the Group has managed many notable waste-to-energy and resource up-cycling projects, constantly positioning itself prominently in the waste management value chain and contributed to the development of sustainable environment solutions for the world.

The Company is listed on the Catalist Board of the Singapore Exchange Securities Trading Limited (“**SGX-ST**” or “**Singapore Exchange**”). For more information on the Group, please visit the Company’s website at www.ecowise.com.sg.

1.2 Report Scope

The Group’s approach towards sustainability is set out in our organisational goals, which are (i) to understand our risks and responsibilities in a holistic manner; and (ii) to be a sustainable and profitable organisation committed to improving the environment and well-being of the communities that we serve. This sustainability report (“**Sustainability Report**”) outlines our practices in keeping our business sustainable amidst the challenging economic climate for the 12-month period from 1 November 2020 to 31 October 2021 (“**FY2021**”). This Sustainability Report will be based on material Environment, Social and Governance (“**ESG**”) factors. Key issues that are likely to have impact on the Group have been discussed, assessed from both quantitative and qualitative aspects and reviewed across the three (3) business segments of the Group.

1.3 Methodology

This Sustainability Report has been produced with reference to the International Integrated Reporting Council’s Framework (“**IR**”). We have chosen IR as the sustainability reporting framework as it brings greater cohesion and efficiency to the reporting process, and adopting ‘integrated thinking’ as a way of breaking down internal silos, reducing duplication and improving the quality and transparency of information available so as to ensure proper allocation of available capital. In this Sustainability Report, we focus on the identified material issues in determining the sustainability of our business. This Sustainability Report is developed jointly by a sustainability steering committee of the Group led by the board of directors of ecoWise (“**Board**” or “**Directors**”), to address all the sustainability material issues concerning the Group.

This Sustainability Report has not been externally assured. We welcome feedback from our stakeholders on this report at sustainability@ecowise.com.sg.

2. Board Message

The Board is pleased to present the Group's Sustainability Report for FY2021. The Sustainability Report highlights the effort and progress that was undertaken in FY2021, after taking into account sustainability issues as part of its strategic formulation.

As part of ESG efforts, we have been exploring ways to increase the value of upcycling opportunities within the Group so that we can work towards being a true circular economy in our existing trade. We are also in the midst of optimising our utilities consumption by turning to sustainable energy sources. In addition, our employees' development, safety and health remains a key priority in view of the COVID-19 pandemic which is still prevalent and continues to impact businesses worldwide.

Last, but not least, we would like to take this opportunity to thank our valued stakeholders for their continued support and will continue our efforts on this front to further enhance the Group's sustainability effort.

3. Covid-19 Response

With respect to the COVID-19 pandemic, our management continues to implement safe workplace measures to reduce the risk of infection and protect the health of our employees (which includes but is not limited to temperature taking for employees and visitors, provision of meals to employees to reduce external contact and restriction of any overseas travel, unless absolutely necessary). The management will also continue to monitor and adjust the workplace measures, as and when necessary, according to the relevant government advisories.

4. Sustainability Evaluation

Instead of seeing environmental sustainability as a cost, we value the opportunities within and view it as a window through which people can be better informed about the importance of sustainability commitment and where innovative practices can be developed to reverse or slow down the damaging effects of unsustainable practices.

ecoWise's evaluation of sustainability material factors are broken down into three (3) major sections, environmental, social and corporate governance. We believe that evaluation of these three (3) major sections will cover most, if not all possible risks, challenges and opportunities for any of such sustainable related policies and practices.

The major key guiding principles in the identification and addressing of sustainability factors stem from our Company's vision/mission statements and also from the adoption of best practices in stakeholder's engagement and management.

Vision/Mission Statements – ecoWise prides itself to be a preferred environmental solutions partner in the realm of renewable energy and resource recovery. We do this through adopting best practices in managing our existing businesses and inculcating an innovative mindset in delivering new methodologies to solve problems and fill existing gaps in the sustainability value chain. This serves as the bedrock from which the environmental and economic sustainability factors are derived.

Stakeholders – ecoWise values the involvement of all its stakeholders, including its shareholders, management and staff, customers, suppliers, regulators and community at large. Fair and transparent

engagement policies have been the central guiding principle of all relationship management. In such business settings, we have been and will always be creating win-win opportunities for all our stakeholders involved in any dealings with us.

4.1 Environmental



Since its inception in 1979, ecoWise's core businesses have been in the area of environmental sustainability. Through the years, ecoWise has developed many pioneering sustainability initiatives that include developing one of the first biomass power plant in Singapore, managing the first ever public-private partnership project involving biomass tri-generation power plant, the first ever company in Singapore to be included in United Nations Framework Convention on Climate Change's Clean Development Mechanism under the Kyoto Protocol, large scale recycling/upcycling of industry food waste from various food manufacturers, horticultural and construction wood waste, as well as waste tyres from truck and bus applications. The key mandate in our business is always to address and solve the problems associated with the ever-rising carbon footprint owing to unsustainable business practices in the various industries. We firmly believe that the sustainable practices which help create a circular economy can be applied in multiple industries and also that our involvement across various sectors also provides a way to diversify our business profile and become less susceptible to economic turbulence.


As much as we already possess a myriad range of services and solutions in the area of renewable energy and resource recovery, the Group is always in pursuit of novel technologies that can fill existing gaps and value add in the sustainability supply chain. The Group had successfully developed and trademarked its carnivorous and omnivorous fish feed from food waste with zero carbon footprint. The new treatment methodology does not just simply dry the food waste but improve overall nutritional value of these food and farm waste. The purpose of doing so is to achieve better economics for farm operations through achieving technologically superior feed products but at a fraction of the cost (usage of waste product and green energy which are essentially lower in cost). In addition, the farm waste can then be used as raw material to generate recycled materials usable in the farm again, exemplifying the circular economy concept within.

The Group is also working on closing the sustainability gap in our tyre re-treading facilities in Malaysia. Our existing tyre re-treading business in Malaysia, Seremban adopts a vertically integrated model wherein the process of tread liner production is integrated with tyre re-treading process. Although such a model allows for effective optimization of resources, there is however a limitation in the current recycling process wherein the used tyres can be re-treaded four (4) times at most. This hinders the achievement of a true circular economy in the tyre recycling process. To close the recycling loop and develop a truly zero waste system, we have developed a proprietary process (to be implemented in due course) that can recycle the un-retreadable tyres to recover raw materials and harvest the energy (electricity and heat energy) within. In doing so, we are able to produce the recycled carbon black which serves to replace the virgin carbon black used to manufacture the rubber tread liner. The incorporation of this novel technology will play a very important role in not only reducing the reliance on fossil fuel derived energy, but also providing a sustainable method in which carbon-based raw materials are being recycled, effectively reducing the carbon footprint of the re-treading process, achieving a true circular economy in the trade.

The above examples are clear testaments of ecoWise's commitment and desire to pursue continuous improvement and excellence in the field of environmental sustainability, across not just different industries but also various geographical regions, and we believe such opportunities will propel ecoWise to become a steward and front runner in its field.

Aside from new developments, ecoWise is also constantly reviewing its existing processes to ensure that they are optimised. One of the key factors in determining the sustainability of a process is its electricity and water usage. Since 2019, the engineering team has been tasked to work on the optimization of the various process equipment in all of the Group's areas of operation with the single objective of increasing its efficiency and reducing power consumption as well as carbon footprint. In addition to our portfolio of biomass cogeneration power plants that provides renewable energy for our plant and office operations, as well as externally to Gardens by the Bay, the Group has embarked on the installation of a solar power plant in our tyre re-treading factory in Malaysia over 2 phases. The first phase installation of 144 kilowatt peak of solar panels has been completed in FY2020. Due to restriction imposed during Movement Control Order ("MCO") implemented by Malaysia Government, the production in Malaysia was suspended for about two months in FY2021. As such, the second phase is on hold. Once completed, the improvement will bring the total solar power close to 1 megawatt peak. Water consumption is also an area of particular concern in a manufacturing industry like ours. Since 2018, ecoWise has appointed a Water Efficiency Manager and we have since then conducted a few rounds of comprehensive water efficiency audits. Through some water saving and recycling initiatives, we have successfully reduced the water consumption of our Sungei Kadut factory by around 50%. Through the above examples, the Group has demonstrated its commitment to continuously review and optimize its utilities consumption as well as to tap on green and renewable energy wherever possible.

The figure below also provides a snapshot on the sustainability results achieved in FY2021.

Our Achievements	
	Hosting over 20 visitors to the biomass power plants in Singapore and tyre retreading facilities in Malaysia in 2021
	35,240 tons of tree and wood waste was recovered in 2021
	Creating an environment that enables employees to work to their full potential irrespective of ethnicity, gender, nationality and age
	Reducing carbon footprint by arranging free minibus services for employees to commute to and from offices
	26,268 tons of food waste was recovered in 2021
	62,267 tons of carbon dioxide was reduced by the Group's green industrial processes in 2021
	61,508 tons of solid waste was converted into repurposed eco products in 2021



Since 2014, we have been awarded the **EQAIMS** business quality awards (ISO 9001 – Quality Management System and ISO 14001 – Environmental Management System) and have consistently been affirmed by the standards since then. EQAIMS is an independent third-party certification services company and accredited by the Singapore Accreditation Council for a number of standards. This illustrates our commitment to manage our environmental responsibilities by complying with statutory and regulatory requirements, increased leadership involvement and consistent strategic incorporation of environmental issues into our business management. All in which, the efforts proved a systematic recognition that contributes to the environmental pillar of sustainability. Lastly, our Halal certification also means that our spent grains, which can be upcycled into useful ingredients for animal feed, can be accepted widely and benefit more agricultural partners.

4.2 Social

As part of an ongoing corporate social responsibility at ecoWise, educational visits are arranged at our biomass plant at Gardens by the Bay, which not only promote the concept of environmental sustainability but also exemplify a liveable city and how the future can be embraced through innovation and collaboration with parties. ecoWise also participates in trade fairs to promote our sustainable rubber products such as retread tyres through our subsidiaries in Malaysia. We also engage with trade associations regularly to keep abreast of any updates in policies, regulations and matters that would be of concern to us. In view of the COVID-19 pandemic, many of these educational visits and trade fairs were suspended or limited to a certain number of visitors.

The waste management industry is generally regarded with a lower appeal as compared to other industries. To attract and retain talents can be a challenging task where non-monetary terms are often prioritised by employees. Hence, the Group emphasis on employees' welfare and awareness of the Company's impact to sustain one of the most important capital of the business. We emphasise on continuous learning and provide progressive opportunity for skills upgrading and learning through cross training within the organisation and external courses, to ensure that our employees' skills remain relevant and up-to-date. This is especially critical and relevant for our operation staff, who remain the key-backbone of our organisation and their competencies within their work scope has an impact on the organisation's productivity. Study loans are also available for selected employees who wish to pursue further knowledge in certain fields.

As a key building block of society, the workplace is also an environment where values are shaped, as such meritocracy is something which is practiced within our organisation, employees are regularly evaluated and provided opportunities to perform in other organisational functions. Job rotation enable employees to realise their full potential and allow those who are able to excel to go beyond their comfort zone.

Last but not least, we believe that stakeholders' engagement (aside from the annual general meeting held) is essential and will allow them to reach out to us through our various media platforms and also encourage their participation in shaping some part of our future.

4.3 Governance

At ecoWise, the Board is committed to maintaining a high standard of corporate governance within the Group. The Board recognises the importance of practising good corporate governance as a fundamental part of its responsibilities to protect and enhance shareholder's value and financial performance of the Group.

We recognise the importance of having strong corporate governance. It promotes the efficient allocation of resources in managing the Group's risks and opportunities, protects our reputation as a business, and more importantly, deliver value that is sustainable to our stakeholders. All in all, while maintaining full compliance with the necessary laws and regulations in the countries we operate.

Any substantial non-compliance cases lead to detrimental impacts, both financially and reputationally to our business. As such, we stand by our commitments to uphold a high standard of corporate governance in line with the Code of Corporate Governance 2012 and Code of

Corporate Governance 2018 from financial years commencing from 1 November 2019 onwards. We further seek to ensure that all relevant laws and regulations are complied with.

Our detailed corporate governance practices can be found in the Corporate Governance Report in our FY2021 Annual Report.

Supplier Assessment & Supply Chain Social Responsibility

As a company with a public brand presence, we are held to the high expectations by our stakeholders for our supply chain stewardship. Against the backdrop of providing environmental solutions, we have been actively engaged in delivering our supply chain social responsibility through our procurement strategy. This includes identifying the right partners to contribute in our value chain and conducting corporate screening to provide competitive and meaningful value to our client.

We continue to refine our supply chain initiatives that support our beliefs and meet the expectations of our stakeholders. In the years to come, improvement plans will be a deliberate effort as we want to grow the footprint of our supply chain.

Anti-corruption and whistle-blowing policy

This policy has been developed for the Group, to be committed to the highest possible standards of ethical, moral and legal business conduct. That said, ecoWise is committed to open communication so as to reassure all issues will be managed in good faith and responsibly.

Public and stakeholders can report to the audit committee of the Company for any improper conduct at the earliest timing. However, we urge complainants to take the reporting with utmost seriousness in evaluating the issue, that could have a large impact on the Group or if it threatens the industry practices and competitiveness. Details of our whistle-blowing policy are also set out in our FY2021 Annual Report.

Diversity in the hiring process



Diversity in our hiring is embedded in our values and an inherent part of our corporate culture. We believe it is about creating a workplace culture that helps every employee to contribute to his/her full potential. It is more than just policies, initiatives and processes: it is about how we work with each other every day.

Diversity means all the ways in which people differ and embracing the underlying cultural differences. We want to help each individual employee feel valued for what he/she brings to the organisation. This means providing a work climate that enables everyone to fulfil his/her potential and make a valuable contribution. Our commitment has provided us with a diverse workforce and a sustainable business that strongly cultivates creativity and innovation.



4.4 Workforce Health and Safety

The health and safety of our people are of utmost importance to ecoWise. We strive to keep a safe and healthy workplace for our employees, sub-contractors, and visitors. We believe that everyone has the right to work in a safe environment.

The Group understand that any lapses in our safety performance will have adverse consequences to our employees and the reputation of our business. We take extensive precautionary measures and ensure that they are appropriately adhered to in our day-to-day operations. We are cognisant that management holds a fundamental responsibility in ensuring the health and safety of our people.

With this responsible conduct in mind, we have developed a risk management process with reference to Workplace Safety and Health ("WSH") (Risk Management) Regulation and WSH Code of Practice to eliminate and reduce workplace hazards and risks. The risk management process outlines the necessary roles and responsibilities within an organisation and further.

5. Vision for ecoWise by 2025

It is a global interest in environmental protection and we constantly welcome new partners to participate in the value chain. The zero-waste movement has become an actionable target for many nations.

Leveraging on our footprint, we want to improve on recycling rates, particularly in the biomass and tyre recycling-related business and reduce overall carbon footprint in the energy sector for both Singapore and the region by two to three times more based on the projections of our biomass and tyre recycling-related projects. Supply chain plans to recover recycled materials to replace part of our raw materials are also underway to further reduce our carbon footprint in our tyre production.

With human capital as one of our key assets, staff training for better awareness and capabilities on environmental-related skill sets will be conducted to equip ecoWise with a better pool of talents and raise the bar for the entire waste management and clean energy sector.

Fostering cohesiveness within ecoWise not only create closer ties in the ecoWise family, but also bolster staff's unity, overall qualities and also leverage on our position as a leading waste management company to spread awareness in the society. ecoWise is looking forward to increasing the social awareness and education aspect of waste management, one of the key gaps in fulfilling the whole of the government's ambition of achieving zero-waste nation status.

Lastly, ecoWise is embarking on food waste valorisation through the recovery of food waste locally. Upcycling which is to be used as "human food" of pre-consumer food waste such as spent grain and okara, whilst fermentation and bio-digester is recycling to animal feed and compost respectively. All these of which are very dependent on local government policies, land resourcing and investments to pilot the initiative. ecoWise is looking forward to work with authorities closely to sustain the food culture by converting food waste into organic fertilisers and bio-energy, directly reducing carbon footprint and promoting a circular economy.

6. Targets for 2022 on Sustainability

We will continue to refine the analysis of the material ESG as and when there are new developments which warrant a review. If the need arises, new ESG will be identified and substantiation will be provided in forthcoming sustainability reports.

7. Conclusion

As part of the value chain where our end customers' demands responsible behaviour of the natural resources, ecoWise will continue to strive in providing a comprehensive Sustainability Report on our impact in our partner's initiatives and businesses. It is in our mission to create a greener world for future generations to live in.