NATURAL CAPITAL

Haycarb's approach to managing its natural capital and the associated sustainability and climate related risks and opportunities aligns with its strategic emphasis on sustainability

OUR NATURAL CAPITAL

INPUTS IN 2023/24

Raw material consumption

Coconut shells
50,468 Mt

Coconut shell charcoal
101,753 Mt

Energy consumption
1,132,964 GJ

Water consumption
732,634 m^3

OUTPUTS IN 2023/24

Total carbon footprint
26,696 tCO_2e

Emission intensity
0.56 tCO_2e/per revenue Rs. Mn

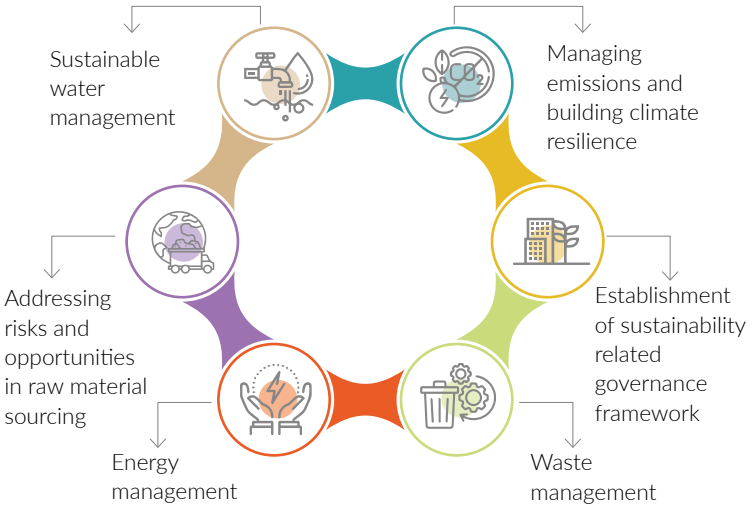
Energy intensity
26.24 GJ/ per revenue Rs. Mn

Water intensity
16.97 m^3/ per revenue Rs. Mn

Effluents
269,079 m^3

Solid waste generation
5,403 Mt

FOCAL AREAS IN 2023/24



- **Rs. 1,237.5 Mn** investment for the promotion of sustainable environmental practices.

VALUE CREATED IN 2023/24

- A key strategic intervention is Formulating Activate, our ESG Road map with target reductions by 2030 embedding our environmental, social and governance targets to business strategy and decision making.
- Strategic management of climate related physical and transitional risks and building climate resilience through the assessment of different climate scenarios.
- Installation of solar panels at Badalgama & Madampe factories in Sri Lanka will lead to increase renewable energy (electricity) reliance by 14%
- Pursued multiple strategies including to strengthen supply chain resilience and ensure an uninterrupted supply of raw materials. Ongoing emphasis on promoting the use of sustainable charcoaling practices along the supply chain.
- 78% of our total energy consumption for operations is through self-generated energy.
- Emphasis on sustainable water management practices led to a 6% increase in sustainable water sourcing,
- >45,800,000 litres of rainwater harvested
- >25,000 trees planted

CAPITAL TRADE-OFFS

- Increased investments in Natural Capital have short-term negative implications on Financial Capital.
- However, these investments build business resilience, strengthening Financial Capital in the long-term.

WAY FORWARD

- Ongoing emphasis on strengthening supply chain resilience by building global supply chains, expand and support existing supply networks.
- Upgrade Recogen to enhance its electricity generating capacity.
- Ongoing emphasis on improving the energy efficiency of our operations.
- Continued focus on promoting sustainable water management.
- Strategic emphasis on reducing our carbon footprint while monitoring the development of climate related risks and opportunities.
- Investments on rooftop, ground mounted and floating solar projects
- Emphasis on life cycle assessments for products

LINK WITH MATERIAL TOPICS:

M1, M7, M10, M11, M14

LINK WITH KEY RISKS AND OPPORTUNITIES / SRROS / CRROS

R1, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22

ALIGNMENT WITH STRATEGIC PRIORITIES

CONTRIBUTION TO SDGS

NATURAL CAPITAL

OUR ESG ASPIRATIONS AND PROGRESS MADE

> Our proactive approach to sustainability not only positions us well for compliance with potential future environmental regulations

GOVERNANCE

Haycarb's approach to managing its natural capital and the associated sustainability and climate related risks and opportunities aligns with its strategic emphasis on sustainability as articulated in its 2030 ESG roadmap, Activate. Activate's 'Restore' pillar specifically focuses on sustainable natural capital management through policies and clearly defined 2030 goals across materials, waste, energy, emissions and water and effluents enabling focused strategic planning and resource allocation. Further, The Group remains committed to investing resources to projects which promote biodiversity as well.

MANAGEMENT OF THE LEGAL AND REGULATORY FRAMEWORK

GRI 2-23 | RT-CH-530a.1

The environmental legal and regulatory framework in Sri Lanka, Thailand and Indonesia currently focuses on diverse environmental related risks. Growing concerns about climate change are prompting a global shift towards a low carbon economy. This could lead to tightening of environmental regulations in these regions over the medium to long term. Further, jurisdictions like Sri Lanka are currently offering opportunities for securing green loans. (Refer page 306)

Recognising this shift, we have proactively assessed our environmental footprint and developed Activate, our ESG 2030 roadmap, which outlines our governance, environmental policies and sustainability goals enabling efficient strategic planning and resource allocation. Our proactive approach to sustainability not only positions us well for compliance with potential future environmental regulations but also allows us to capitalise on opportunities in a world increasingly focused on environmental sustainability.

At present, we adhere to all environmental laws and regulations relevant to the country of operations. Our environmental practices are also in compliance with international best practice through certifications including ISO14001:2015, ISO 9001:2015, OHS 45001:2018 and WQA Sustainability Certification (Refer page 138 to 139). Environment related audits are carried out on a quarterly basis and actions taken and resources allocated to address if any issues raised. The Group's environment management framework is subjected to a surveillance / re-certification audit on an annual basis by the relevant certification bodies. Therefore, there were no instances of non-compliances during the year under review.

RAW MATERIALS

GRI 301-1 to 3 | RT-CH-410b.1, 2

Haycarb's primary raw material is coconut shell charcoal, which is produced from the charcoaling of coconut shells generated as a by-product material primarily from coconut industry and household consumption. The raw material is sourced from Sri Lanka, Thailand and Indonesia, where our manufacturing entities are established and from our supplier networks in India.

Therefore, availability of our raw material is directly dependent on crop yield of the coconut industry in these countries. This agricultural dependence exposes the Group to risks associated with climate change as coconut yields can be impacted by extreme weather events as well as long term climate implications. The strong growth in the coconut shell activated carbon industry, and the resultant demand for raw materials exposes the Group to volatilities in input prices. Stagnation coconut crop yields in Sri Lanka over the past two decades have limited local capacity expansion, placing upward pressure on pricing. Supply risks in Thailand and Indonesia, stem from

competition from alternative, higher-value crops. Risks associated with pricing and supply are likely to emerge in the short-medium term and will have implications on the operations of the Group.

On this backdrop, the Group has placed emphasis on developing strategies to address these risks and secure an uninterrupted supply of its key raw material to meet emerging market demand and its aspirations of expanding its global market share in the coconut shell activated carbon industry by 1% by 2030. In this regard, strategies implemented by the Group include,

- **Building global supply chains**

1. The Group is presently in the process of advancing its greenfield investment in activated carbon manufacture in the Philippines. Coconut is a major economic agricultural crop in the Philippines with an annual coconut yield of approximately 14 Bn coconut nuts per year, supported by a well developed coconut industry.

2. Broad basing the supplier base across multiple geographical locations aims to mitigate the risk of supply interruptions in specific regions.

- **Expand and support existing supply networks.**

1. Building long term relationships and creating mutual value for existing coconut charcoal suppliers in Sri Lanka, Indonesia and Thailand as well as India has enabled an uninterrupted supply of coconut charcoal to fulfil our raw material requirements. (refer Social and Relationship Capital Page 161 to 164 for more information)

2. The Haritha Angara programme has also increased access to coconut shells discarded from households whose consumption exceeds that of industry in Sri Lanka increasing the availability of our key raw material to the activated carbon industry.

- **Enhancing coconut crop yields**

1. Ongoing collaborations with the Coconut Research Institute, Coconut Development Authority and industry partners on strategies to improve coconut crop yields.

2. Active investment in the initiative of Coconut Cultivation Board supported by the Coconut Research Institute to establish a second coconut triangle in the Northern Province of Sri Lanka through the planting of 67,500 coconut saplings. Haycarb contributed 25,000 plants to farmers within this initiative.

- **Process innovations to enhance yields and reduce waste**
  Ongoing initiatives to minimise waste and improve resource efficiency through lean manufacturing process innovations and the use of tools such as Life Cycle Assessment practices.

- **Exploring the use of alternative raw materials**
  We explore the potential of alternative raw material sources for the manufacture of activated carbon products for the applications we cater to.

GREENING OUR SUPPLY CHAIN

GRI 308-2

The adverse environmental implications of coconut shell charcoaling have presented the Group with the opportunity to promote green charcoaling practices along its supply chain. A summary of processes and practices implemented to reduce the environmental impacts of coconut shell charcoaling is given below.

Sri Lanka

>90%

of raw material requirement met through green charcoaling practices

Thailand

>15%

of raw material requirement met through green charcoaling practices

VALUE CREATED IN 2023/24

Our proprietary charcoaling technology enables the production of high-quality coconut shell charcoal while minimising its environmental impacts. This technology converts the traditional open pit charcoaling process to a closed pit unit enabling the combustion of greenhouse gases and hazardous gases produced during the charcoaling process, preventing its release into the environment. This technology also optimises energy consumption for charcoaling as energy is required only for initiation with subsequent energy needs met by harnessing the exothermic energy generated during the charcoaling process.

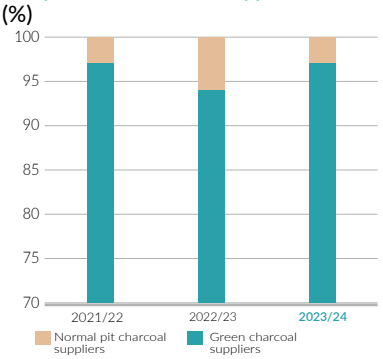
Traditional open pit method
Release of greenhouse and other gases to the environment.

Haycarb proprietary closed pit charcoaling technology
All harmful gases released are combusted within an enclosed space and is not released to the environment

SRI LANKA

- 90% of our local raw material requirement in Sri Lanka is sourced through green charcoaling technology.
- Significant efforts and investments have been made to support the adoption of this technology along the supply chain.

Composition of charcoal suppliers in Sri Lanka



- During the year under review, the Group invested Rs. 0.55 Mn and provided technical support to green charcoaling practices along the supply chain and established 23 new closed pit charcoaling systems.

INDONESIA

- Despite considerable effort and investment towards promoting green charcoaling practices to suppliers in Indonesia, uptake has been relatively slow. During the year under review, the Group invested Rs. 2 Mn and provided technical support to install 9 new closed pit charcoaling systems,
- The Group remains committed to investing resources to promote the acceptance of green charcoaling practices among suppliers in Indonesia.

VERTICAL KILN CHARCOALING

Similar to the green charcoaling technology implemented in Sri Lanka and Indonesia, vertical kiln charcoaling and premium environment friendly charcoaling pits also converts the traditional open pit charcoaling process into a closed pit charcoaling system preventing the release of harmful gases into the atmosphere.

Thailand

Approximately 15% of our raw material requirement in Thailand is sourced through vertical kiln charcoaling.

RECOGEN

This patented technology also produces coconut shell charcoal in a closed system enabling the combustion of harmful gases released during the production process. The heat generated in this process is used to operate a boiler/ steam turbine to generate electricity which is supplied to the National Grid. Recogen is registered under the International Environmental Treaty of the UNFCCC (United Nations Framework Convention on Climate Change).

Sri Lanka

- 18% of our raw material requirement in Sri Lanka is sourced through this technology.
- Over 800,000 kWh of electricity was supplied to the national grid during the year under review.
- Plans are underway to expand the electricity generation capability of Recogen in the year ahead.

NATURAL CAPITAL

Chemical usage within direct operations is limited to less than 10% of raw material cost and volume. Our products do not contain any Globally Harmonised System of Classification and Labelling of Chemicals (GHS) category 1 and 2 health and environmental hazardous substances. However, we have implemented stringent processes and practices on safe storage and use of chemicals to prevent spills and accidents. We are also exploring improvements to processes to minimise the use of chemicals in the production process.

We are also committed to enhancing the sustainable use of packing material within our direct operations with a 2030 goal of increasing the use of sustainable packing material for raw material packaging by 25%.

No recycled material was used in the production process during the year under review. No incidents of product reclaims or their packing materials took place during the year under review. Our material consumption during the year under review is given below.

Raw Material	UOM	2023/24	2022/23	% change
Renewable materials				
Coconut shell	Mt	50,468	46,592	8%
Coconut charcoal	Mt	101,753	112,293	(9%)
Packing materials*	Nos	1,119,392	1,096,745	2%
Non-renewable materials				
Chemicals	Mt	4,276	7,043	(39%)
Packing materials*	Nos	4,821,211	5,724,866	(16%)

**Only bags and sacks were considered.*

Upstream activities → **Direct operations** → **Downstream activities**

Charcoaling	Transport of raw materials to production locations.	Manufacturing process	Transport of finished goods to seaports.	Shipping and delivering of finished goods to end-user.

ENERGY MANAGEMENT

GRI 302-1 to 5 | RT-CH-130a.1

Energy is a vital input across our value chain as illustrated below. The manufacture of our product range is reliant on a mix of renewable and non-renewable energy sources. Non-renewable energy comprises of fossil fuel-based energy sources, thereby exposing the Group to risks associated with availability and price volatility across all time periods. In contrast, stakeholder perception and commitment to reducing fossil fuel consumption given its implications on climate change has given rise to new opportunities in renewable energy investments and enhancing the energy resilience of the Group. Key areas of energy consumption along the value chain is given below.

Key energy metrics for the year under review are given below.

Energy consumption *	UOM	2023/24	2022/23	y-o-y % change
Non-renewable sources				
Furnace oil	GJ	65,923	59,915	10%
Electricity	GJ	113,477	112,045	1%
Diesel	GJ	33,449	59,995	(44%)
LPG	GJ	34,207	32,865	4%
Other	GJ	296	319	(7%)
Total self-generated energy	GJ	885,612	942,301	(6%)
Total energy consumption	GJ	1,132,964	1,207,438	(6%)
Grid electricity	%	10	9	11%
Self-generated energy	%	78	78	-
Energy intensity per revenue Rs. Mn	GJ	26.24	19.81	32%

**Energy consumption was calculated based on type of energy source consumed quantity,density & net calorific value*

While the manufacture of activated carbon products is energy intensive, we have engineered our processes to reduce our reliance on fossil fuel sources by harnessing the exothermic energy generated during production. Furthermore, Recogen, a patented technology, uses the heat generated from the combustion of harmful gases during charcoaling to operate a boiler/steam turbine to generate electricity which is supplied to the National Grid. Building on strategies already implemented to minimise our energy consumption within our direct operations, we have also committed to reducing our energy intensity per Rs of revenue by 10% by 2030 while increasing renewable energy use by 50% by 2030 on a baseline performance of 2022/23.

Our energy policy clearly sets out our commitment to achieving these goals and include guidelines on compliance, interventions, timely reporting, energy conscious procurement procedures and prioritization of renewable energy. Energy usage optimisation involves the implementation of lean management practices and the application of Life Cycle Assessment (LCA) concepts. Key initiatives implemented during the year that enabled us to stay on track towards the achievement of our 2024/25 interim goal include,

- The installation of solar panels at factory premises in Badalgama and Madampe will lead to the generation of electricity over 9,900 GJ per year and will increase reliance on renewable energy sources (electricity) by 14%.
- The re-engineering of factory equipment at Badalgama plant to reduce its fossil fuel consumption by 25%.
- Upgrade of the dryer to reduce fuel consumption for the drying operation.
- Explored the possibility of using waste heat for the drying operation.

The installation of solar panels at factory premises in Badalgama and Madampe will lead to the generation of electricity over 9,900 GJ per year

Our 2030 energy-related targets and performance during the year under review are given below.

2030 Target

- 50% increase in renewable energy use
- 10% reduction in energy intensity per revenue Rs. Mn

2023/24

Interim target vs actual performance

	Interim target	Actual performance	Achieved / Missed / On track
Increase in renewable energy use (as a % of non-renewable energy consumption)	7%	5,915 (2.4%)	
Reduction in energy intensity per revenue Rs. Mn	1.4%	26.24 GJ (↑32%)	

2022/23

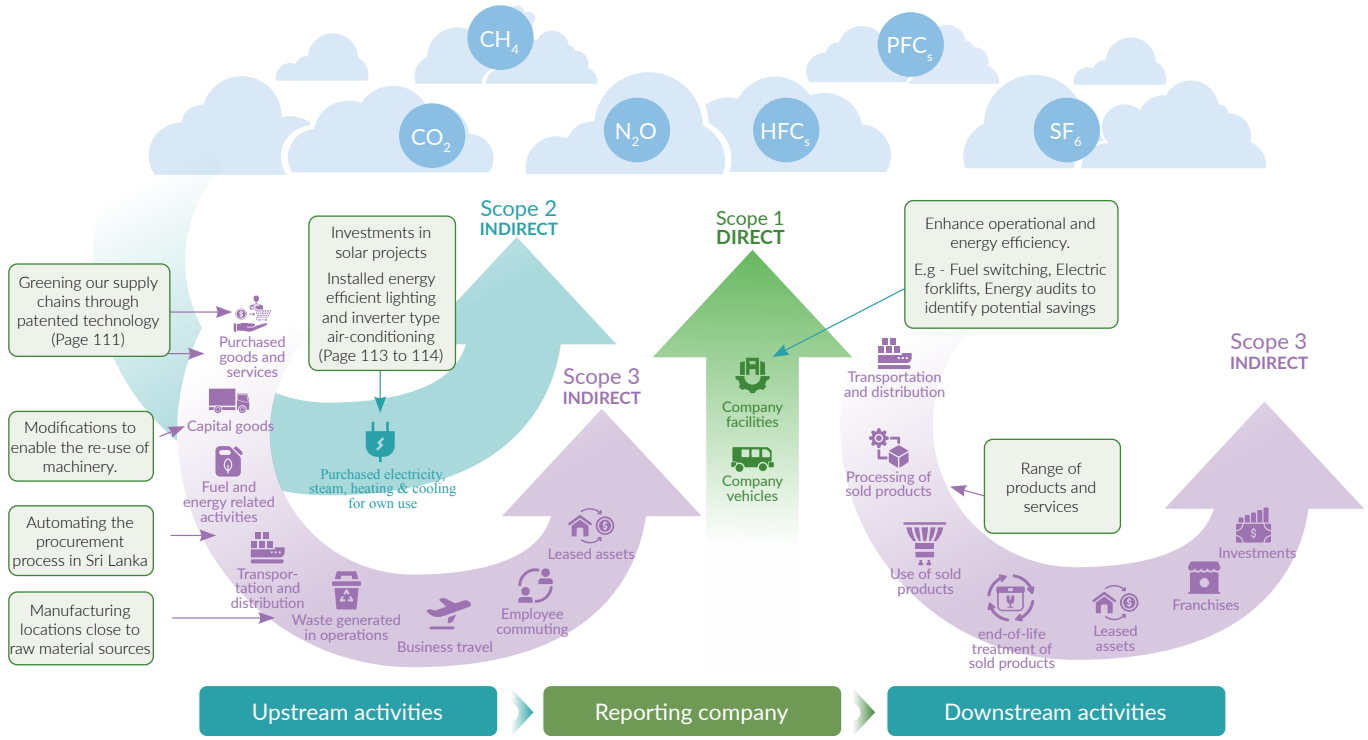
Baseline performance

	2022/23
Renewable energy use	5,390 GJ
Energy intensity per revenue Rs. Mn	19.81 GJ

EMISSIONS AND CLIMATE CHANGE

GRI 305-1 to 7 | **RT-CH-** 110a. 1,2

Our value chain activities lead to the generation of GHG emissions from fossil fuel combustion. Scope 1 and 2 GHG emissions arise from direct operations while Scope 3 emissions are related with upstream and downstream activities. Haycarb's manufacturing process complies with all relevant environmental regulations and has been verified through continuous monitoring and third-party audits to emit insignificant amounts of NOx, SOx, POPs, VOCs, HAPs, and these are combusted at high temperatures while dust extractors have been installed to retain particulate matter. Therefore, significant levels of air pollutants are not released into the atmosphere.. Further, we do not engage in importing or exporting ozone-depleting substances. We have already implemented a range of strategies to mitigate the release of harmful gases into the atmosphere while reducing GHG emissions along our value chain. A summary of strategies implemented are given below.



Adaptation of the GHG protocol: Corporate value chain diagram

In addition to the above, we have implemented the following processes within direct operations to mitigate the release of harmful gases into the atmosphere :

- The installation and maintenance of dust extractors
- Installation and maintenance of the volatile gas burning chamber to prevent the emission of petroleum based volatile gases.
- Periodic air quality monitoring and emission testing.
- Introduction of the wet scrubber mechanism to avoid emitting acid/base fumes into the environment.
- Ongoing investments in research and development for innovative pollution control technologies.

Further, the Group has obtained a third party assurance from Sri Lanka Climate Fund (Pvt) Ltd for its total GHG Emissions for the financial year 2022/23 and the calculation improvements have been incorporated in to the year under review.

Third-Party Verification for GHG Emissions (22/23)

NATURAL CAPITAL

Our carbon footprint and air quality metrics for the year under review are given below.

Carbon footprint *	UOM	2023/24	2022/23	y-o-y % change
Scope 1 emissions	tCO_2e	10,903	12,622	(14%)
Scope 2 emissions	tCO_2e	13,485	13,330	1%
Scope 3 emissions	tCO_2e	2,308	2,444	(6%)
Total emissions	tCO_2e	26,696	28,396	(6%)
Emission intensity (Scope 1 & 2) MT of made activated carbon	tCO_2e	0.51	0.53	6%
Emission intensity (Scope 1 & 2) per revenue Rs. Mn	tCO_2e	0.56	0.43	33%
Biogenic emission	tCO_2e	48,658	41,305	18%

** Basis of preparation for Greenhouse Gas (GHG) Emission reporting - Reporting of Green House Gases, Corporate Standard of Greenhouse Gas Protocol by World Resource Institute (WRI), IPCC Sixth Assessment Report (AR6) and Energy balance 2021 by Sri Lanka Sustainable Energy Authority*

Our performance in 2023/24 against our 2030 emission goals are set out below. Performance in 2022/23 has been established as the baseline performance.

2030 Target

- Ensuring science-based target approach to reduce carbon footprint per revenue.
- 25% reduction in Scope 1 and 2 emissions
- Reduced emission intensity per revenue Rs. Mn
- Maintain 100% mapping of direct and indirect GHG emissions of the sector

2023/24

Interim target vs actual performance

	Interim target	Actual performance	Achieved / Missed / On track
Ensuring science-based target approach to reducing carbon footprint per revenue	-	-	☑
Reduction in Scope 1 and 2 emissions	3.5%	24,388 (↓6%)	✓
Reduction in emission intensity per revenue Rs. Mn	1.4%	0.56 (↑33%)	✗
Mapped % of direct and indi-rect GHG emissions of the sector	-	All direct & Indirect emissions are being calculated	✓

2022/23

Baseline performance

	2022/23
Emission intensity per revenue Rs. Mn	0.43 tCO_2eq
Total scope 1 and 2 emissions across the Group	25,952 tCO_2eq
Scope 1 emissions	12,622 tCO_2eq
Scope 2 emissions	13,330 tCO_2eq

Moreover, multiple strategies have been implemented to address the key climate related physical and transition risks identified by the Group. Details are summarised below.

PHYSICAL RISKS

Acute	Chronic
Strategies to address physical risks	
 Broad-basing manufacturing locations	 Broad-basing raw material sourcing/ Supporting efforts to increase coconut crop yields
 Insurance to mitigate physical damage due to adverse weather events	
	 Broad-basing raw material sourcing
	 Supporting efforts to increase coconut crop yields
	 Sustainable water sourcing and consumption
	 Energy and emission management along the value chain

TRANSITION RISKS

Policy and legal	Market	Reputation	Technology
Increased emission related regulations/policy/disclosure requirements	**Increased customer emphasis on reducing their Scope 3 emissions**	**Increased stakeholder concerns on climate change**	**Increased need to substitute existing processes and adopt new processes and practices to reduce emissions.**
Strategies to address transition risks			
Embedding sustainability in strategy	Activate – our 2030 ESG roadmap	Board oversight over energy and emissions management	Establishing the ESG Steering Committee and department
Ongoing emphasis on sustainability related capacity building	Conducting ESG audits	Voluntary reporting on a range of sustainability standards and a range of environmental standard accreditations	Ongoing strategic emphasis on enhancing the resource efficiency of our processes as detailed above.

ASSESSING CLIMATE RELATED RESILIENCE

As climate related risks increase in importance, we determined it important to assess the resilience of our business strategy to climate related changes and developments given our reliance on natural inputs. Due to limitations in resources and the availability of quantitative models, Haycarb chose initiate a qualitative scenario analysis, in line with the transitional relief allowed for the implementation of SLFRS-S2. We are

Methodology

Methodology

Our approach to scenario analysis was aligned with that of our parent entity, Hayleys PLC and was carried out in line with the principles outlined in the TCFD framework. Given our global footprint, we opted to align with global scenarios for our climate scenario analysis.

The international physical and transition climate scenarios adopted by Haycarb in alignment with that of the Hayleys Group are given below.

IPCC AR 6 Scenarios

These scenarios use Representative Concentration Pathways (RCPs) and Shared Socioeconomic Pathways (SSP) to explore the future physical implications of climate change and socioeconomic trends.

International Energy Agency – World Energy Outlook 2023 transition scenarios

These scenarios explore different pathways for the global transition towards a low carbon economy and takes into consideration national policy choices, techno-economic inputs and macro drivers.

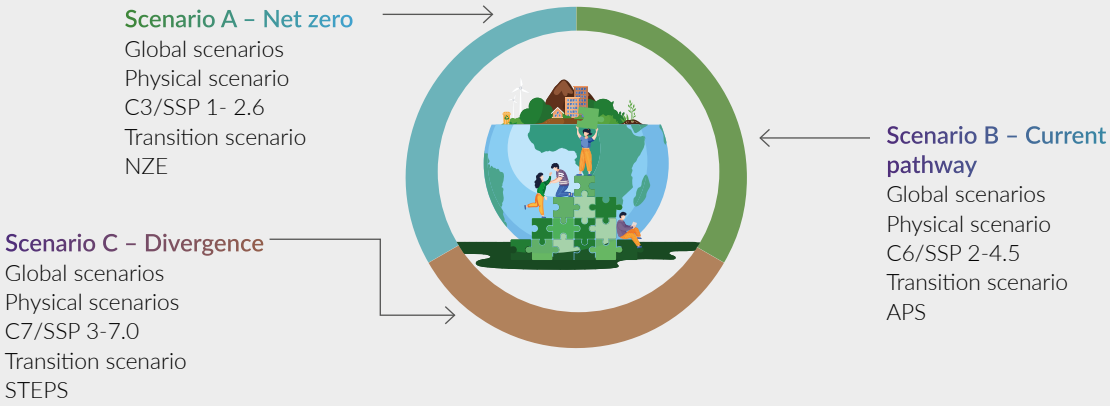
The Group considered the following global physical and transition climate scenarios when developing its climate scenarios.

Source	Scenario	Key assumptions
IPCC AR 6	C3/SSP 1-2.6	• Low emission scenario • Increase in global warming limited to 2^{0}C by 2100 • Net zero status achieved between 2055 and 2060 • An almost 65% reduction in GHG emissions by 2050.
	C6/SSP 2-4.5	• Intermediate emission scenario • Global temperatures projected to increase by 3^{0}C in 2100 compared to pre-industrial levels.
	C7/SSP 3-7.0	• High emission scenario with global temperatures projected to increase by 4^{0}C in 2100 compared to pre-industrial levels.
IEA 2023	Net Zero Emissions (NZE) Scenario	• Considers a pathway where the global energy sector achieves net zero by 2050 and thereby limits the global temperature increase to 1.5^{0}C. it assumes the deployment of an array of clean energy technologies without offsets from land use measures alongside the successful achievement of key energy related SDGs.
	Announced Pledges Scenario (APS)	• This scenario assumes governments will meet all announced climate-related commitments in full and on time. These commitments include longer term net zero targets, and pledges in Nationally Determined Contributions (NDCs).
	Stated Policies Scenario (STEPS)	• This scenario considers the policies and measures currently in place and the present efforts of governments to achieve their targets. This scenario projects a temperature rise of 2.4^{0}C in 2100 (with a 50% probability).

Based on the above, we adapted our parent entity's climate scenarios to accommodate our global footprint and arrived at the following scenarios.

in the process of identifying key variables and inputs required for a quantitative scenario analysis and will strive to extend this assessment quantitatively going forward. The methodology we adopted to carry out the scenario analysis, its results and potential strategic responses under each scenario, is summarised below.

Haycarb's climate scenarios



The Group considered the following global physical and transition climate scenarios when developing its climate scenarios.

Scenario	Description and assumptions	Reference global scenarios	
Scenario A – Net Zero	• An orderly global transition towards reducing emissions and rapid deployment of clean energy technologies and energy efficiency. • Significant decline in the demand for fossil fuels and pricing strategies for fuel leading to a steep reduction in emissions. • The increase in global temperature is limited to 2°C. • Fair and effective global co-operation with advanced economies taking the lead and achieving net zero earlier than emerging market and developing economies. • Global access to electricity and clean cooking by 2030 in alignment with energy related SDGs. • Extensive investments in mitigating climate implications. • The IPCC projects a likely increase of 0.0-6.6% in the annual global land precipitation by 2081-2100 relative to 1995-2014 levels. Near-term projections are uncertain.	C3/SSP 1-2.6	NZE
Scenario B – Current path-way	• Limited external investments in technology and funding to drive the transition to a low carbon economy. • Average temperatures expected to increase by approximately 2.5°C. • The IPCC projects a likely increase of 1.5-8.3% in the annual global land precipitation by 2081-2100 relative to 1995-2014 levels. Near-term projections are uncertain.	C6/SSP 2-4.5	APS
Scenario C - Divergence	• Global deviation from decarbonisation goals resulting in significant weather-related impacts on businesses and communities. • Average temperatures expected to increase by approximately 4°C. • No specific climate related interventions. • The IPCC projects a likely increase of 0.5-9.6% in the annual global land precipitation by 2081-2100 relative to 1995-2014 levels. Near-term projections are uncertain.	C7/SSP 3-7.0	STEPS

Haycarb's climate scenarios

- According to the IPCC, the precipitation change will demonstrate significant regional differences and seasonal contrasts as global average of near surface air temperature increase. Precipitation is projected to very likely increase over tropical oceans and likely increase in large parts of monsoon regions. Inter-annual variability is also projected to increase.
- The IPCC also states that while near term monsoon precipitation changes are uncertain, over the long term (2081-2100) monsoon rainfall will feature a north-south asymmetry and an east-west asymmetry, Therefore, a greater increase in projected in the northern hemisphere than in the southern hemisphere and in the Asian African monsoon regions as opposed to the North American monsoon regions.
- Based on our climate related risks and opportunities assessment, we have chosen to assess the physical risks of temperature and precipitation and the transition risk of technology against the climate scenarios identified above.

Optimal climate conditions for coconut growth and yield	
Mean temperature	27+/- 5°C
Relative humidity	>60%
Rainfall (well-distributed)	2000 mm/year

**In areas of uneven distribution of rainfall, irrigation is required.*

**Coconut is tolerant of a wide range in intensity and distribution of rainfall.*

Source: ICAR-Central Plantation Crops Research Institute – India

- Given the reliance on an agricultural input as our key raw material, optimum climate conditions for coconut growth and yields as determined by the Central Plantation Crops Research Institute in India is given alongside.
- Mean annual temperature in our input sourcing and manufacturing countries

Sri Lanka	28-29°C
Indonesia	25-26°C
Thailand	26.3°C with a seasonal variation of 5.7°C

Source: World Bank and ADB climate risk country profiles for Sri Lanka, Thailand and Indonesia (2021)

Water stress		
Haycarb Madampe, Sri Lanka	High	3-4
Haycarb Badalgama, Sri Lanka	High	3-4
Haycarb Palu Mitra, Indonesia (Considered Central Sulawesi)	High	3-4
PT Mapalus Makawanua Charcoal Industry, Indonesia	High	3-4
Carbokarn, Thailand	Extremely High	4-5
Shizuka, Thailand	Medium to High	2-3

Source: World Resources Institute, https://www.wri.org/aqueduct

- Due to our reliance on water as an input to our operations we consider water stress as an important aspect that has to be monitored and managed.

OUR QUALITATIVE CLIMATE ASSESSMENT

Scenario	Risk	Outputs of the scenario analysis	Our response
Scenario A – Net zero	Transition risk/ opportunity Technology	• An orderly transition to a low carbon economy will result in increased clean energy-related policies and regulations. • This will increase our compliance costs while requiring us to incur additional capital expenditure to adopt new clean technologies as it emerges particularly in the short-to-medium term. • Concessionary funding opportunities may become more readily available, facilitating the adoption of our strategic priorities and potentially reducing our financing costs. • On the flipside, growth opportunities for energy storage carbon products will be strongest under this scenario particularly in the short-to-medium term. • However, an escalation in global demand for coconut activated carbon products could potentially intensify competition for coconut charcoal, leading to elevated input prices and insufficient supplies to meet the surge in demand.	• Under this scenario, our strategic priorities would be as follows, • Intensify our efforts to adopt clean technologies and enhance our energy efficiency across our manufacturing operations. • Investments in R&D to evolve our energy storage carbon products to meet emerging needs. • Enhance business development efforts to establish ourselves in global supply chains for energy storage carbons. • Explore new opportunities for securing adequate raw material supplies. • Sustainable water management, including monitoring and reducing consumption, managing withdrawals in stressed areas, conducting audits, investing in water-saving technologies, and preparing for water-related emergencies
	Chronic physical risk Temperature	• Our exposure to a rise in temperature stems primarily from our reliance on an agricultural input. • Despite a 2°C temperature increase, the mean annual temperatures in these countries will remain within the optimal temperature range for coconut growth and yield. Moreover, this scenario presents the lowest increase in temperature. Therefore, we do not envisage an impact on coconut growth and yield under this scenario.	
	Chronic physical risk Precipitation	• The increase in precipitation in the long term is projected to be the lowest under this scenario. Further, given the resilience of coconut to a wide range in intensity and distribution of rainfall (ICAR-Central Plantation Crops Research Institute – India), we do not envisage a significant impact of precipitation on the coconut crop and yield. • Our manufacturing locations are in tropical countries and therefore, the increased risk of extreme precipitation events over these regions could give rise to operational disruptions. However, since the increase in temperature under this scenario is limited to 1°C, we deem this risk is at its lowest under this scenario.	
	Chronic physical risk Physical water availability	• Surface, ground, and rainwater are the sources used for industrial and domestic requirements across geographic operational locations. The availability of those sources of water could be impacted by climate change. • Drawdown of the groundwater table and drying off of surface water bodies are the outcomes of long-term droughts due to the impacts of climate change. Additionally, excess and heavy rainfall and floods can lead to the deterioration of the usable sources. In the Net Zero scenario, the mentioned potential impacts could be zero or minimal in the short and medium term.	

Scenario	Risk	Outputs of the scenario analysis	Our response
Scenario B – Current pathway	Transition risk/ opportunity Technology	• As transition-supportive policies are anticipated to be less prevalent under this scenario in comparison to Scenario A, the demand for clean technology is expected to be moderate, resulting in a slower pace of adoption. • Therefore, capital expenditure and compliance costs incurred in this regard, will be lower under this scenario when compared with Scenario A. • Growth opportunities will still remain for energy storage carbon products but it will not be as dominant as under Scenario A. • Uncertainty prevails in ascertaining the global demand for coconut charcoal. This will be determined by growing demand across multiple applications as opposed to being driven significantly by energy related activated carbon products.	• Under this scenario, our strategic priorities would be as follows, • Maintain investments in R&D to evolve our energy storage carbon products will exploring new opportunities in other applications. • Build supply chain resilience by diversifying our geographic footprint for raw material sourcing. • Moderate emphasis on strengthening the energy resilience of our business. • Sustainable water management, including monitoring and reducing consumption, managing withdrawals in stressed areas, conducting audits, investing in water-saving technologies, and preparing for water-related emergencies in a more focused manner.
	Chronic physical risk Temperature	• Despite a 2.5°C temperature increase under this scenario, the mean annual temperatures in the countries we source raw materials from will remain within the optimal temperature range for coconut growth and yield. Therefore, we do not envisage an impact on coconut growth and yield under this scenario.	
	Chronic physical risk Precipitation	• The increase in precipitation in the long term under this scenario is projected to be higher than under Scenario A. However, given the resilience of coconut to a wide range in intensity and distribution of rainfall (ICAR-Central Plantation Crops Research Institute – India), we do not envisage increased precipitation to have a significant impact on the coconut crop and yield. However, if precipitation is unevenly distributed, this may have implications on the crop and yield. • The implications of extreme precipitation events on operational activities at our manufacturing locations will be moderate under this scenario compared with Scenario A.	
	Chronic physical risk Physical water availability	• Surface, ground, and rainwater are the sources used for industrial and domestic requirements across geographic operational locations. The availability of those sources of water will be impacted by climate change. • Drawdown of the groundwater table and drying off of surface water bodies are the outcomes of long-term droughts due to the impacts of climate change. Additionally, excess and heavy rainfall and floods will lead to the deterioration of the usable sources.	

Scenario	Risk	Outputs of the scenario analysis	Our response
Scenario C – Divergence	Transition risk/ opportunity Technology	• Since no specific climate interventions will be implemented, the adoption of clean technology will be determined by financial feasibility. Moreover, the speed of development of clean technology will also be much slower than in Scenarios A and B as no incentives will be provided for its development and adoption.	• Under this scenario, our strategic priorities would be as follows, • Diversify our activated product portfolio across multiple applications. • Diversify our supply chains to mitigate risks associated with reductions in coconut crop yields and extreme precipitation events. • Diversify the geographic distribution of our manufacturing locations to mitigate operational disruptions caused by extreme precipitation events. • Measures to mitigate financial losses due to operational disruptions caused and damage to property caused by extreme weather events. • Process water recycling, additional water sourcing locations, Shifting the washing intensity of operations (in the worst case), research & development for reduction of water consumption for production.
	Chronic physical risk Temperature	• A temperature increases of exceeding 2.5°C will now place almost all countries beyond the upper bound of the optimal temperature range for coconut growth and yield. Temperature increases beyond this point may begin to adversely affect yield, thereby impacting the supply of our key raw material. This could lead to an increase in our input prices.	
	Chronic physical risk Precipitation	• The increase in precipitation in the long term under this scenario is projected to be the highest under this scenario. The coconut crop is resilient to a wide range of intensity and distribution of rainfall (ICAR-Central Plantation Crops Research Institute – India) and therefore the increase alone may not impact yields. However, the likelihood that precipitation will be uneven increases given the increased prevalence of extreme precipitation events under this scenario. This could affect the coconut crop and yield. • The implications of extreme precipitation events on operational activities at our manufacturing locations is highest under this scenario.	
	Chronic physical risk Physical water availability	• The availability of water in the required quantity and quality will be impacted. The same will impact operation continuity; in the worst-case scenario, washing operations will be impacted.	

NATURAL CAPITAL

WATER AND EFFLUENT MANAGEMENT

GRI 303-1 to 5 | RT-CH-140a.2, 3

Our interaction with water is primarily in both direct operations as water is critical for the washing process of activated carbon, activation process and domestic consumption for employees. Operating in water-stressed locations in Sri Lanka (classified as highly stressed by the Food and Agriculture Organisation) and medium-to-high stress regions in Thailand and Indonesia (as classified by the World Resource Institute's Aqueduct Water Risk Atlas) exposes the Group to medium-to-long term risks associated with water scarcity, increases in water sourcing costs and potential operational disruptions arising from changes in precipitation patterns as a result of climate change. We source water from various sources as given below. At present we do not face strict monitoring mechanism by the governments, stakeholder concerns or competition for water resources in the regions we operate in. However, these risks may emerge over the medium to long term. Therefore, we are focusing our water management initiatives on optimizing usage, recycling and tapping sustainable water sourcing.

Our processes also generate wastewater which requires treatment prior to discharge. Compliance with all relevant environmental standards in the countries we operate mitigated legal and financial risks associated with non-compliance which could arise across all time frames and result in reputational damage. No incidents of non-compliance with water quality permits, standards and regulations occurred during the year under review.

Our water withdrawal, consumption and effluent management related metrics for the year under review are given below.

Water withdrawal, consumption and Effluents	UOM	2023/24	2022/23	y-o-y % change
Water withdrawal and consumption				
Surface water	m^3	429,191	445,099	(4%)
Ground water	m^3	250,156	198,885	25%
Rainwater	m^3	45,839	-	100%
Municipal water	m^3	7,448	5,699	31%
Total water consumed	m^3	732,634	649,683	13%
Total water withdrawn	m^3	732,634	649,683	
Water intensity per revenue Rs Mn	m^3	16.97	10.66	59%
Effluents				
Surface water	m^3	250,411	205,992	22%
Ground water	m^3	18,668	17,179	9%
Total wastewater discharged	m^3	269,079	223,171	21%

We harvested rainwater and collected over 45,839 m³ during the year. This method fulfilled 6% of water needs for our operations

Our water management aspirations focus on conserving and optimising water usage, increasing dependencies on sustainable water sourcing and exploring new avenues for recycling and reusing water. We have implemented methods for blackwater recycling and reducing water withdrawal and consumption through collection methods such as commercial rainwater harvesting, installation of sensor operated/ low flow taps, waste water recycling for gardening.

Key initiatives implemented during the year under review include,

We conducted pump tests within the factories in Sri Lanka in collaboration with the Water Resource Board for water sourced to ascertain the sustainable water extraction yield. This study provided us the data to drive towards the sustainable consumption of our ground water resources.

Expanded the capacity of the reservoir at the Shizuka factory in Thailand by 52,146 m³ to increase rain water harvesting. This system fulfils 100% of water needs at the factory.

We also collaborated with the communities in Sri Lanka to utilise abandoned brick pits to harvest rainwater and collected over 6,500 m³ from November 2023 onwards. This method currently fulfilled 9% of water needs at the Badalgama factory, for the year under review.

Effluents generated from our operations are treated at effluent treatment plants located at all manufacturing locations prior to responsible discharge. Treated waste water quality is monitored on an ongoing basis and has consistently been within the parameters specified by the environmental authorities in Sri Lanka and overseas. Third party accredited laboratory testings are carried out periodically to ensure compliance with all regulatory requirements.

NATURAL CAPITAL

Reflecting our commitment to the sustainable consumption of water, our gaols and performance during the year under review in relation to sustainable water sourcing and consumption and reductions in water intensity and wastewater generation as given below. These goals are benchmarked against our performance in 2022/23.

2030 Target

- 10% sustainable water sourcing across the Group.
- 15% water usage dedicated to reuse and recycling sustainable practices.
- 30% reduction in group water intensity.
- 10% reduction in wastewater generated.

2023/24

Interim target vs actual performance

	Interim target	Actual performance	Achieved / Missed / On track
Sustainable water sourcing across the Group (Litres '000)	1.4%	45,839 (6%)	
Water usage dedicated to reuse and recycling sustainable practices (Litres '000)	2%	12,318 (2%)	
Reduction in water intensity per revenue Rs.Mn	4%	16.97 m^3 (↑59%)	
Reduction in wastewater generated per revenue Rs.Mn	1.4%	6.22 m^3 (↑70%)	

2022/23

Baseline performance

	2022/23
Sustainable water sourcing across the Group (Litres' 000)	-
Water usage dedicated to reuse and recycling sustainable practices (Litres' 000)	-
Group water intensity per revenue Rs. Mn	10.66 m^3
Total wastewater generated per revenue Rs. Mn	3.66 m^3

WASTE MANAGEMENT

GRI 306-1 to 5 | RT-CH-150a.1

The waste generated from our manufacturing process comprises primarily with charcoal powder, paper, cardboard, polythene, stones (from destoners) and sweeping waste which is deemed non-hazardous. The countries we operate in have specific regulations for waste management, which exposes the group to risks associated with non-compliance across all time periods. Waste disposal-related stringent regulations in Sri Lanka include the prevention of open dumping and open burning of waste materials that can harm the environment and communities, with similar approaches in other operating countries as well.

Aligned with our commitment to responsible consumption of resources and waste reduction, our processes are guided by the 7R principles of Reduce, Reuse, Reclaim, Replace, Repair, Recycle and Reject

Given the regulatory environment associated with waste management, we have implemented stringent measures to ensure applicable compliance requirements in all of our operations. Waste is segregated properly at the points of generation and stored securely. Approximately 86.6% of waste is recycled and reused while adhering to internal policies, procedures and legal requirements.. Biodegradable waste generated in factory premises are composted. Hazardous waste generated in the reporting period was managed in full compliance with all relevant regulatory requirements and internal policies and procedures. There were no incidents related to non compliance recorded during the year under review

Our waste related metrics for the year under review is given below.

Waste	UOM	2023/24	2022/23	y-o-y % change
Waste diverted from disposal				
Composting	Kg	60,813	39,555	54%
Recycled	Kg	1,504,027	688,146	119%
Reused	Kg	3,178,731	4,765,226	(33%)
Waste diverted to disposal	Kg	658,413	1,095,599	40%
Hazardous waste generated through our operations	Kg	1,200	-	100%

Aligned with our commitment to responsible consumption of resources and waste reduction, our processes are guided by the 7R principles of Reduce, Reuse, Reclaim, Replace, Repair, Recycle and Reject. Waste minimisation practices include improving resource efficiency through lean manufacturing process innovation and the use of tools such as Life Cycle Assessment (LCA) practices. In addition to ensuring the proper segregation of all categories of process and non-process waste, minimising waste generation across all touch points and conducting regular waste audits, we are also committed to promoting zero landfilling practices through agreements with third-parties including waste collectors and disposers. Waste management information is tracked and monitored on an ongoing basis to drive continuous improvements and ensure progress to targets.

Our waste related 2030 goals and performance in 2022/23 are set out below. Performance in 2022/23 has been established as the baseline.

2030 Target

- 15% reduction of solid waste generated.

2023/24

Interim target vs actual performance

	Interim target	Actual performance	Achieved / Missed / On track
Reduction in solid waste generated per revenue Rs.Mn	2.1%	0.12 Mt (↑16%)	

2022/23

Baseline performance

	2022/23
Solid waste generated per revenue Rs.Mn	0.11 Mt

CONSERVING NATURAL ECOSYSTEMS

GRI 304-2

Behold the Turtle – Sea turtle conservation initiative

We continued to contribute towards the conservation of endangered and critically endangered sea turtles of Sri Lanka through our collaboration with the Department of wild life conservation, Sri Lanka. This project is carried out at the Kumana National Park and entails,

- The preservation of sea turtle eggs.
- Assisting hatchlings' return to the sea
- Counting and record keeping of the different species of sea turtles and their eggs
- Maintenance of the hatchery and lodge.

Turtle species	No. of hatchings
Loggerhead turtle	390
Olive ridley turtle	1,066
Hawksbill turtle	427
Green turtle	47
Other	2,293
	4,223

Tree planting initiatives

In efforts to combat climate change, the Group engaged in several tree planting initiatives during the year. A brief summary of these initiatives are given below.

- In collaboration with the Coconut Development Authority and Coconut Cultivation Board, Haycarb engaged in coconut tree planting initiative. The goal is to plant 67,500 coconut trees in the Northern region of Sri Lanka, specifically in Mullaitivu, Kilinochchi and Jaffna. This initiative plays a crucial role in a broader national effort to establish a second coconut triangle. Phase one of the project commenced in Iyakachchi, Jaffna, with the distribution of 25,000 coconut seedlings.
- Fruit tree planting project in Madampe factory premises.
- On the occasion of World Coconut Day, Haycarb factories planted over 200 coconut trees, distributed over 2,000 coconut plants to our employees.

Butterfly and medical plant garden

We have developed a butterfly/ dragonfly and medicinal plant garden in Badalgama factory premises, 27 perches in extent. There are more than 70 medicinal plant species planted in the garden while more than 08 butterfly species are found in the area.