Imperial

Climate Change and Environmental Sustainability
Framework and Strategy

Contents

This strategy template has been developed by as a useful framework for Imperial divisions to adapt to their own requirements. January 2020.

1. CEO's Message

At Imperial, we have long recognised that a business that does not behave in a socially and environmentally responsible manner will not be sustainable, no matter how strong it's financial performance. While the delivery of value to shareholders and investors is a key business driver, our focus is not only on economic prosperity but also on maintaining a sustainable environment in which all stakeholders benefit from shared values.

We are committed to integrating sustainability practices into our day-to-day core business because we recognise that sustainability is no longer a "nice to have" or even a matter only of good corporate citizenship – it has become central to business success.

We firmly believe that the way a business conducts itself in society, the way it treats its employees, communities, suppliers and the environment have an impact on its bottom line. Our business affects a broad array of stakeholders and we have structured the sustainability framework around the broad pillars of economic, social and environmental (ESG) impact – or "profit, people and planet".

In this framework, we have addressed material issues pertaining to the environment.

In a multinational of Imperial's size and with our international geographic footprint, protecting and enhancing our reputation as a responsible corporate citizen through the consistent application of our values is a complex task. We drive this through a demonstrable commitment to ethics by our leaders and managers at every level of the organisation. Imperial has a proud tradition of ethical leadership that sets the correct tone from the top, supported by our code of ethics and policies that ensure the highest standards of operation wherever we are in the world.

On the climate change and environmental front we remain committed to reducing our environmental impact wherever possible. We have made a commitment to follow sustainable building practices in all new developments.

We have invested in water recycling facilities and established rain harvesting systems to reduce our dependency on municipal water.

In this framework document, we have sought to provide a balanced and transparent view of the ways in which we have to integrate sustainability practices into our business. While we are pleased with the progress we have made thus far, we also recognize that integrated sustainability is a journey.

This Strategy document is designed to demonstrate what Imperial is already doing, and proposes to undertake, to reduce its impacts in its range of operations, planning, policy and procedural development, etc.

Recognizing that meeting the challenge posed by climate change and other environmental issues is the responsibility of all Imperial divisions, and the important role that the Divisional CEO's must play in guiding the growth of Imperial if the challenge is to be met.

We are fully committed to the principle of continuous improvement in environmental management and that this Strategy framework will provide a basis upon which to build into the future.

The implementation of our sustainability management system, and ongoing improvements in data collection, is enabling individual businesses to set environmental targets. Our approach to environmental sustainability is to achieve efficiencies in terms of resource conservation, cost reduction and optimal waste management. While savings achieved at an individual company level may be small, across the group they add up to a meaningful reduction in environmental footprint. There is still significant scope for improvement in our environmental performance and this will continue to be a focus going forward.

Imperial is fully committed to making a positive impact through outstanding environmental sustainability performance. This is a level of ambition that presents a huge challenge that will take time and resources to fulfil. It will also mean that the way we deliver some activities will need to be different, many behaviours changed, and projects redefined. Whilst there are risks and initial additional costs involved, there will be long-term benefits and the reputational risk of poor performance will be averted. Our new approach resonates with Imperial's vision and multi-faceted approch to customise, collaborate and compete approach that provides a focus for action and decision-making. Our performance needs to be benchmarked against peer institutions nationally and internationally.

I fully support our climate change and environmental sustainability vision and call upon all staff of Imperial to play their part in achieving the aims and ambitions set out in this Climate Change and Environmental Sustainability Framework and Strategy.

Mohammed Akoojee

Group Chief Executive Officer

2. Introduction

All Imperial employees have a role to play in making Imperial a more sustainable company for future generations and protecting our reputation as one of the leading logistics company. Through the – *Imperial Sustainability Action Statement*, all divisions and departments will lead by making the environment central to our planning, operations and policy decisions.

Responding to this challenge, Imperial has made a commitment to reducing our environmental impacts through adopting an environment policy, setting key objectives and targets, developing an environmental management strategy to achieve our goals, and monitoring and reporting our achievements.

This Climate Change and Environmental Sustainability Framework and Strategy document, describes our policy, objectives, actions, communications, monitoring and review processes to reduce or environmental impacts. The actions have been developed to:

> ➢ be simple to understand and implement
> ➢ clearly delegate responsibility
> ➢ commit to times for achievement
> ➢ integrate with our existing procedures and activities.

This strategy addresses all relevant aspects of the operations of Imperial, including all Local, Regional and International locations.

About Imperial

Imperial is a mainly African and European logistics provider of outsourced integrated value-add, supply chain and route-to-market solutions, customised to ensure the relevance and competitiveness of its clients. With established capabilities in transportation, warehousing, distribution and synchronisation management and expanding capabilities in international freight management, the divisions operate in specific industry verticals – consumer packaged goods, specialised manufacturing and mining, chemicals and energy, healthcare, automotive, machinery and equipment and agriculture.

SOUTH AFRICA

- Leading market position in a mature and highly competitive market.
- Specialised operations, extensive regional footprint and end-to-end service offering, with an unrivalled ability to reduce clients' costs and enhance their competitiveness.
- Unique value and risk-based commercial engagements focused on eliminating supply chain inefficiencies for clients.
- Differentiated through range and scale, customisation and specialisation – with a strong ethos of continuous improvement and transformation

AFRICAN REGIONS

- Unique distributor approach supported by local partnerships, and exclusive relationships with principals.
- Provides end-to-end integrated route-to market solutions across African markets to multinational clients, with a focus on creating maximum value for principals and their customers.
- Deep experience in navigating the complexity, diversity and distinct challenges of African markets.
- Ability to grow consumer and pharmaceutical brands in challenging trading environments with complex sales and marketing channels.

INTERNATIONAL

- Manages complex logistics services in developed niche markets.
- Provides road and river transportation, express freight and specialised value-add logistics to the highest quality standards, with a leading position in demanding industries such as chemical, automotive, steel, machinery, equipment and shop fitting.
- Ability to reproduce high-quality offerings in new industries and markets through an integrated portfolio of services across clients' supply chains.
- Well-established client partnerships are the basis for entering new markets

We have just over 450 sites that we operate from globally. These are either owned, managed or leased sites.

The key environmental impacts of the delivery of our core business have been identified in **Appendix 2** of this Climate Change and Environmental Sustainability Framework and Strategy document.

3. Context and Drivers for Climate Change and Carbon Management

Climate Change and Carbon Management Strategy

At Imperial, climate change presents challenges that will be with us for generations to come. While individuals can and must act to reduce carbon emissions, it is societal and institutional action, sustained through the decades, which must lie at the heart of meeting these challenges. Imperial as a leading Logistics and Supply Chain provider is in a strong position to provide such sustained leadership based on actions that are well documented and rigorously evaluated.

Society as a whole faces the challenge of making absolute reductions in emissions while simultaneously seeking to improve quality of life, often through economic growth. Imperial faces a similar challenge: the likelihood is of continued growth, particularly in respect of our logistics activities.

Imperial has in the past set ambitious *aspirational absolute* carbon reductions targets. Imperial will very likely continue to grow, but we must nonetheless reduce our absolute emissions. Therefore we need to reshape our institutional initiatives and policies in order accelerate our reduction programme.

This document sets out Imperial's Carbon Reduction Strategy. This strategy is concerned with the reduction of Imperial's carbon footprint, which is related to the activities of Imperial that pertain to climate change or greenhouse gas emission reduction.

The strategy is presented as a set of policies and approaches that we will take. *These approaches are rational, whatever our targets might be.*

A set of implementation plans based on this strategy has been developed further in this document, following the adoption of the strategy. There will be difficult choices to make in the future, potentially leading to Imperial forgoing some opportunities. The strategy does not seek to make those choices, rather it provides a framework and approach to minimise the number and magnitude of those difficult decisions, recognising that even over the next ten years the landscape will change markedly.

This strategy will interact with the other Imperial Strategies; all these strategies will have to be further developed in concert.

Aspirations and Targets

Greenhouse gas emissions are conventionally classified into one of three 'scopes':
Scope 1.
Emissions that arise from direct emission, primarily carbon-based fuel combustion, including operational vehicles, but also fugitive emissions due to leaks, (e.g. Petrol, Diesel & HFO);

Scope 2.
Emissions which arise from purchased electricity, heat, steam, etc. – but whose production is from carbon-based fuel;

Scope 3.
Emissions at this point in time will only be restricted and notably arise from the following two categories:
All other emissions, notably those that arise from:
      a. business travel
      b. waste disposal
Our Scope 3 emissions are someone else's Scope 1 and 2 emissions.
Whilst we have a good understanding of our Scope 1 and 2 emissions, we are not in a strong position with respect to Scope 3, other than Business Travel. This is not uncommon;

the usual approach of other organisation's has so far been to start by addressing Scopes 1 and 2. But this is changing.

We need to take care, that as we get a better understanding of our Scope 3 emissions, we compare like-for-like when understanding our progress on reduction.

Imperial faces a complex set of drivers which set the context for carbon management. Crucially, Imperial recognises that these cannot and should not be viewed in isolation from each other or the principle goal of continuously minimising its environmental impact whilst maximising its contribution to society and the economy.

Ultimately, a strong performance with respect to carbon emission reduction should deliver financial benefits to Imperial by mitigating the risks associated with e.g. increases in energy tariffs and levies such as the Carbon Tax.

The following represent the key carbon drivers for Imperial:

- Government targets

- European targets

- Peer/Industry targets

- Rising energy costs

- Principle that investments in carbon reduction are generally associated with commensurate reductions in future expenditure

- The need to eliminate waste of resources and to increase efficiency

- Imperial's own carbon management targets

- Depletion of the world's finite resources

- It's the right thing to do

Legislative drivers for carbon management

At the United Nations Climate Change Conference, commonly known as Conference of Parties (COP), COP 15 in 2009, South Africa voluntary committed to curb GHG emissions by 34% by 2020 and 42% by 2025, below the Business as Usual (BAU) trajectory with emissions peaking in 2020 - 2025, stabilising in 2025 - 2035 and declining in absolute terms from around 2035, subject to support from developed countries in the areas of climate finance, capacity building & technology transfers.

South Africa ratified the Paris Agreement in November 2016 and endorsed the submission of its Nationally Determined Contribution (NDC) which requires that emissions peak in 2020 to 2025, plateau for a ten year period from 2025 to 2035 and declines from 2036 onwards.

The Paris Agreement will require sizable reductions in energy-related greenhouse gas (GHG) emissions by large emitters, including in developing economies. The NDC noted carbon tax as an important component of our mitigation policy strategy to lower GHG emissions.

South Africa's response to climate change has two objectives:

- Effectively manage inevitable climate change impacts through interventions that build and sustain South Africa's social, economic and environmental resilience and emergency response capacity.

- Make a fair contribution to the global effort to stabilise greenhouse gas (GHG) concentrations in the atmosphere at the level that avoids dangerous anthropogenic interference with the climate system within a timeframe that enables economic, social and environmental development to proceed in a sustainable manner

Carbon tax forms an integral part of climate change response policy package under the National Climate Change Response Policy (NCCRP) of 2011, and in the National Development Plan (NDP), as an important cost-effective instrument.

The Carbon Tax Bill gives effect to the polluter-pays-principle and helps to ensure that firms and consumers take these costs into account in their FUTURE production, consumption and investment decisions. Assists in reducing GHG emissions and ensuring SA will meet its NDC commitments as part of its ratification of the 2015 Paris Agreement.

Rationale for a carbon tax/price

A carbon tax is a means by which government can intervene by way of a market based instrument to appropriately take into account the social costs resulting from carbon emissions.

A carbon tax seeks to level the playing field between carbon intensive (fossil fuel based firms) and low carbon emitting sectors (renewable energy and energy efficient technologies).

"The introduction of a carbon price will change the relative prices of goods and services, making emission-intensive goods more expensive relative to those that are less emissions intensive. This provides a powerful incentive for consumers and businesses to adjust their behaviour, resulting in a reduction of emissions".

Tackling climate change is an urgent and fundamental challenge. Achieving the Paris Agreement goals to limit warming to below 2ºc above pre-industrial levels, and pursue efforts to limit temperature increase to 1,5ºc requires large scale transformation in the structure of economic activity, including major changes in economic activity especially power generation, industrial processes, transport and public transportation systems, space heating and cooling systems, land use and behaviour of households. To succeed, to deliver efficiently and fully realise the benefits of climate policies, care policy design is essential. Climate policies, if well designed and implemented, are consistent with growth, development and poverty reduction.

The key design features of the carbon tax bill include the following:

- The tax will be phased in over a period of time to allow for smooth transition in adopting cleaner and more efficient technologies and behaviours. The first phase will run from implementation up to 2022.

- The initial marginal carbon tax rate will be R120 per tonne of CO_2e (carbon dioxide equivalent), which will increase at Consumer Price Index (CPI) + 2% until 2022. Taking into account the thresholds mentioned below, the effective tax rate is much lower and ranges between R6 and R48 per tonne.

- To allow businesses to adapt and transition to low carbon alternatives in the first phase a basic percentage based threshold of 60% will apply below which tax is not payable. The following additional tax-free allowances apply:
  - An additional 10% for process emissions;
  - An additional allowance for trade exposed sectors, to a maximum of 10%;
  - An additional allowance of up to 5% based on performance against emissions intensity benchmarks. These benchmarks will be developed in due course;
  - A carbon offsets allowance of 5 to 10% per cent, depending on sector; and finally
  - An additional 5% tax-free allowance for companies participating in phase 1 of the carbon budgeting system.

- The combined effect of all of the above tax-free thresholds will be capped at 95%, depending on the emissions activity in question.

- Due to the complexity of emissions measurement in the waste and land use sectors, 100% thresholds have been set i.e. these sectors are excluded from payment of the carbon tax in phase 1.

- The tax base comprises emissions from fossil fuel combustion, emissions from industrial processes and product use, as well as fugitive emissions.

- The greenhouse gases covered include carbon dioxide, methane, nitrous oxide, perfluorocarbons and sulphur hexafluoride.

- The carbon tax on liquid fuels (petrol and diesel) will be imposed at source, as an addition to the current fuel taxes.

- For taxation on stationary emissions, reporting thresholds will be determined by source category as stipulated in the National Environmental Air Quality Act. Only entities with a thermal capacity of around 10MW will be subject to the tax in the first phase. This threshold is in line with the recent Department of Environmental Affairs (DOE) Greenhouse Gas (GHG) emissions reporting regulation requirements and the proposed Department of Energy (DoE) energy management plan reporting.

- The carbon tax will be administered by the South African Revenue Service (SARS).

What is clear, is that the carbon tax, along with other additional compliance regulations (for example pollution prevention plans, mandatory GHG reporting) will increase the reporting burden as well as taxation costs on a company. Therefore, it is important to be pro-active by:

- Ensuring that data gathering processes are robust;

- Setting an internal carbon price for decision making and informing the business case on investments;

- Setting a science based target in order to set long term plans to be more efficient whilst growing;

- Taking environmental considerations into account in the strategy of the business, and not seeing it as a mere reporting function.

Tax base

The tax will be levied on greenhouse gas emissions from fuel combustion, industrial processes and fugitive emissions. As previously proposed, the carbon tax will be included in the fuel tax regime for non-stationary emissions.

Some of the main South African legislative drivers affecting Imperial are as set out hereinunder; however, the list is not definitive.

- Legal compliances: Environmental Framework - National Environmental Management Act No. 107 of 1998
- Air Quality - National Environmental Management: Air Quality Act No. 39 of 2004
- Greenhouse gas (GHG) management - Draft Climate Change Bill, 2018
- Energy management - Electricity Regulation Act 4 of 2006
- Water management - National Water Act No. 36 of 1998
- Waste management - National Environmental Management: Waste Act No. 59 of 2008
- Biodiversity management - National Environmental Management: Biodiversity Act No. 10 of 2004
- Hazardous Substances - Hazardous Substances Act 15 of 1973
- United Nations Framework Convention on Climate Change, 1992

Some of the main African Regions legislative drivers affecting Imperial are as set out hereinunder; however, the list is not definitive.

- Kenya: The Energy (Solar Water Heating) Regulations
- The Kenya Climate Change Act, 2016 (Number 11 of 2016)
- Kenya: Environmental Management and Co-ordination (Waste Management) Regulations 2006
- Kenya: Environmental Management and Co-ordination (Water Quality) Regulations 2006
- Nigeria: Electric Power Sector Reform Act 2005

- Nigeria: HARMFUL WASTE (SPECIAL CRIMINAL PROVISIONS) ACT CAP H1, LFN 2004
- Nigeria: WATER RESOURCES ACT, CAP W2, LFN 2004.
- Nigeria: Environmental Pollution Control Law
- Mozambique:; [Environmental Law Act No. 20/97 Environment Act.](#)
- Botswana: Waste Management Act
- Malawi: [Water Resources Act, 2013](#)
- Namibia: [Hazardous Substances Ordinance 14 of 1974](#)
- Namibia: [Environmental Management Act 7 of 2007](#)
- Zambia: [Environmental Management Act, 2011 (No. 12 of 2011).](#)
- Zambia: [Water Resources Management Act, 2011 (No. 21 of 2011).](#)
- Ghana: ENVIRONMENTAL PROTECTION AGENCY ACT - 1994 (ACT 490)

In Europe the European Union regulates many of the policy mentioned topics. The European law can be seen as a minimum requirement each of the country in the EU has to fulfill. Each country is allowed to set stricter laws.
European guidelines and laws which affect Imperial in Europe:

- Energy efficiency: Directive 2012/27/EU (Link: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012L0027&from=DE)
- Climate change targets: Directive 2009/28/EC (Link: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=LEGISSUM:2001_8&from=DE)
- Waste: Directive 2008/98/EC (Link: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=LEGISSUM:ev0010&from=EN)
- Air pollution: Directive 2016/2284 (Link: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=LEGISSUM:4367298&from=DE)
- Water quality: Directive 2000/60/EC (Link: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=LEGISSUM:l28002b&from=EN)
- Flood risks: Directive 2007/60/EC (Link: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=LEGISSUM:l28174&from=EN)
- Environmental protection: Directive 2011/92/EU (Link : https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=LEGISSUM:ev0032&from=EN)

European targets of the European Union are set within the *General Union Environment Action Programme to 2020 'Living well, withing the limits of our plant'.* Further information in the official paper Decision No 1386/2013/EU (Link: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013D1386&from=EN). In short found here: https://ec.europa.eu/environment/action-programme/.

In addition, Imperial is a member, participant and signatory of:

- Carbon Disclosure Project (CDP);
- FTSE4GOOD on the London Stock Exchange which commits Imperial to Climate Change and Environmental, Social and Governance (ESG) principles.
- Global Reporting Index (GRI)
- ECO Vadis (ESG Rating Agency)
- Vigeo Eris (ESG Rating Agency)

This strategy document will aid the delivery of key sustainability management programmes in a carbon efficient and sustainable manner.

Other drivers for effective carbon management:

While reducing the financial and legal risks posed by various legislative requirements is a significant driver behind the Imperial's carbon management programme there are other factors supporting the need for improving energy efficiency and reducing carbon emissions, but not limited to the following:

- **Improved engagement with key stakeholders**: Key stakeholders of Imperial, including the local community, are increasingly focusing on sustainability. Imperial's engagement and enhanced commitment will enhance the relationship with these stakeholders.

- **Cost saving:** The case for carbon reduction is strengthened by current financial constraints requiring reduced operating costs whilst maintaining effective service delivery. This provides a strong incentive to cut resource consumption to release this money for frontline services.

- **Reputational benefit**: By delivery of sustained carbon reductions, Imperial will be viewed as an exemplar enhancing the organisations broader sustainability credentials.

- **Improved staff satisfaction**: Studies have identified a correlation between an organisation with strong environmental performance and high staff satisfaction.

4. Climate Change and Environment policy

Imperial's climate change and environment policy is our company's public commitment to improving our environmental performance and is consistent with and leads the development of our environmental strategy and identified scope of impacts upon which this is based. The policy forms the basis of all other components of our Strategy.

Climate Change and Environmental Sustainability Policy Statement

Imperial is committed to responsible climate change and environmental stewardship and sustainable business practices. As a leading logistics and supply chain service provider, we recognize that our different business activities have an impact on the environment. In the interest of our stakeholders, including our employees, customers, shareholders and suppliers, we are firmly committed to minimizing this impact and to developing, promoting and implementing innovative solutions and services that are environmentally friendly, by creating an inspirational brand that makes a positive difference to our customers, our planet and each other.

We believe we have a responsibility to care for and protect the environment in which we operate and are committed to improving environmental performance across all our business activities. We also encourage our business partners to support us in this effort.

Imperial recognises our key impacts to be in the areas of:

- Energy use
- Materials use
- Waste generation
- Emissions to air/water
- Water use
- Transport
- Procurement

At Imperial we will endeavour to continually strive to reduce our ecological footprint by:

- Adopting the highest environmental standards in all areas of our operations, by meeting and exceeding all relevant legislative requirements.

- Assessing our organisational activities and identifying areas where we can minimise our impacts.

- Minimising waste through careful and efficient use of all materials and energy.

- Purchasing sustainable products wherever feasible [e.g. recycled, low environmental impact products and energy from renewable resources], with waste avoidance and reduction of environmental impacts in mind.

- Striving towards zero waste to landfill through waste reduction, reuse and recycling.

- Minimising the use of water.

- Improving the efficiency of buildings through environmentally sustainable design with new and refurbished projects.

- Training employees in good environmental practices and encouraging employee involvement in environmental actions.

- Reducing risks from environmental, health or safety hazards for employees and others in the vicinity of our operations.

- Adopting a green transport strategy.

- Aiming to include environmental and ethical considerations in investment decisions where appropriate.

- Assisting in developing solutions to environmental problems in our own business and in our sector.

- Continuously assessing the environmental impact of all our operations and set meaningful and realistic targets to improve our performance.

Imperial in each of our business divisions have developed a series of action plans to supplement each of our environmental policy objectives.

Imperial will periodically review its performance and publish these results in an appropriate manner.

5. WASTE MANAGEMENT POLICY

1. Introduction

Due to the diverse nature of activities of Imperial, a wide variety of wastes are produced and collected, ranging from general wastes and recyclable materials, through to special and hazardous wastes. Imperial has a duty to ensure that all of these wastes are disposed of responsibly, using approved, registered waste contractors.

This policy sets down the framework for all waste management at Imperial. Detailed, up-to-date information on the correct disposal routes for all waste types to be communicated.

2. Policy Statement

Imperial will adopt the principles of the 'best practicable environmental option' in the delivery of its waste management services. Imperial will apply a 'waste hierarchical approach', to reduce, reuse, recycle and recover waste products in preference to the disposal of waste to landfill.

There is a legal requirement for all who produce, keep or dispose of waste of any type to comply with the various regulations and the Duty of Care under Environmental Protection legislation. Imperial recognises the importance of meeting these legal requirements and to manage its waste responsibly, reduce the volume of waste sent to landfill and maximise reuse and recycling where possible.

Imperial requires all staff, contractors and anyone else making use of the premises to comply with this Policy, to ensure compliance with all waste legislation.

In accordance with the Policy Statement Imperial will fulfil the following Policy Objectives.

3. Policy Objectives

The objectives of this policy are:

- To ensure that waste management is performed in accordance with all waste legislative requirements, including the duty of care, and to plan for future legislative changes and to mitigate their effects.

- To minimise waste generation at source and facilitate repair, reuse and recycling over the disposal of wastes, where it is cost effective.

- To provide clearly defined roles and responsibilities to identify and co-ordinate each activity within the waste management chain.

- To promote environmental awareness in order to increase and encourage waste minimisation, reuse and recycling.

- To secure where possible revenue for recyclable material to reinvest into the expansion of recycling opportunities at the various Imperial sites.

- To ensure the safe handling and storage of wastes at the various Imperial sites.

- To provide appropriate training for staff, and other stakeholders on waste management issues

- To promote industry waste management best practice

- To appoint competent person(s) to provide waste management advice.

4. Application

This policy applies to all activities undertaken by Imperial including those of its staff, contractors and suppliers.

5. Organisation and Management

The responsibilities and organisational arrangements for this Waste Management Policy lie with a variety of personnel within Imperial.

SHEQ Officer

Responsible for:

1.   Provision of advice and guidance to Imperial on waste management.

2.   Setting Environmental Performance Indicators for waste management.

3.   Reporting monthly on progress against the Environmental Performance Indicators.

4.   Monitoring and auditing the management systems for all wastes, to ensure legal compliance.

5.   Monitoring and auditing all waste contractors working for Imperial.

6.   Provision of appropriate training for all personnel who have responsibilities for waste management.

7.   Coordinating the gathering of, and supplying all relevant information to appropriate enforcement agencies, when information relating to waste management is requested.

9.   Investigation of any incidents or accidents relating to waste   management.

Managers

Responsible for:

1. *Non-hazardous Wastes* (central waste and recycling contract);

ensuring that no hazardous waste is disposed of through the general or waste recycling streams. *(N.B. There is no requirement to sign any Waste Transfer documentation or keep records for centrally managed waste and recycling services).*

2. *Hazardous Wastes*;

Nominating a *'responsible person'* within their site to coordinate waste disposal for any hazardous wastes.

3. Informing the Health, Safety and Environment Officer who the nominated

'responsible person' is and updating the HSEO if and when the *'responsible person'* changes

Staff

Responsible for:

1. Disposing of waste responsibly, through the appropriate waste stream, in accordance with Imperial policy and procedures.

2. Reporting any problems with waste collection schemes to Imperial.

Contractors and Suppliers

Responsible for:

Disposing of waste responsibly, through the appropriate waste stream. This must be either in accordance with Imperial policy and procedures, or, through a scheme approved by Imperial. Copies of waste transfer notes must be made available to the responsible designated officer

Glossary of Terms

1. Best Practicable Environmental Option (BPEO)

The Best Practicable Environmental Option refers to the analysis of different methods of waste disposal. The preferred option is the one which minimises harm to the environment as a whole, taking into account what is affordable and practicable.

2. Hazardous Waste

These are the most dangerous wastes as they can cause the greatest environmental damage or are dangerous to human health. Some common hazardous wastes are listed below:

Acids	Pesticides	Fluorescent Tubes
Alkaline Solutions	Photographic Chemicals	Televisions
Batteries	Waste Oils	Paint
Solvents	Computer Monitors	

Other hazardous wastes, such as asbestos and radioactive substances, are subject to their own specific legislation.

3. Recycling

The diversion of waste away from landfill or incineration and the reprocessing of those wastes either into the same product or a different one. This mainly includes non- hazardous wastes such as paper, glass, cardboard, plastic and scrap metal.

4. Responsible Person

The person who oversees the wastes to be removed from the premises at which it was produced or is being held.

5. Waste
The hierarchy lists the different ways of dealing with waste in order of preference.

5.1 Reduce
Also known as waste minimisation, to reduce the amount of waste materials being produced.

5.2 Re-use
To continually re-use an item in order to eliminate the use of resources in making new items.

5.3 Recovery

Recycling – The collection and reprocessing of wastes either into the same product or a different one.
Composting – biological decomposition of organic material to create a soil conditioner.
Energy – waste is incinerated and the heat is recovered to generate energy.

5.4 Disposal

Waste is sent, untreated, to landfill.

GUIDING PRINCIPLES THAT GOVERN IMPERIAL MANAGEMENT

a. The Chief Executive Officer and senior management in each division are the environmental champions and are responsible and accountable for waste management.

b. Waste management is an integral part of the daily system of the company and is recognised as one of the corporate priorities. Processes are in place to ensure that the Chief Executive Officer and Board of Directors are fully informed about environmental and health and safety issues pertaining to waste.

c. All operations shall comply with the following principles and initiatives:
    i. Measurement and reporting of material environmental indicators including waste management
    ii. Appropriate targets are set and initiatives implemented once reliable baselines have been achieved for applicable indicators
    iii. Monitoring and reporting mechanisms track progress made against set targets.
    iv. Aspirational improvement targets set for responsible waste management practices.

d. Imperial is cognisant of its responsibility for all its products and services, raw material usage and management of waste products after use. Where practicable Imperial will make sustainable use of renewable resources and, wherever practicable, use renewable or recyclable materials. In addition, the company will promote the efficient and optimal use of finite resources, thereby conserving such resources. The company will reduce and, where practicable eliminate, waste through appropriate and sustainable waste minimisation techniques. All waste will be handled and disposed of through legally compliant, safe and responsible methods. The management of waste by disposal to landfill will be used as a last resort, where alternatives are not practicably available.

e. Waste management considerations will form part of assessments for significant new projects and of the planning phase for modifications to existing operations.

f. Imperial will strive to minimise the environmental, health and safety risks to employees and the communities in which the company operates through safe technologies, facilities and operating procedures.

g. All operations will be prepared for emergencies. Imperial divisions will strive to appropriately communicate with those affected by conditions caused by the company that endangers the environment or public health and safety.

6. WATER MANAGEMENT POLICY

As a responsible corporate citizen Imperial is committed to being a responsible custodian and consumer of water through measuring, monitoring, managing and reporting its water usage as an aspect of standard business practice and, when and if necessary, to proactively implementing initiatives that conserve water or mitigate the effects of its usage as a consequence of business operations.

- Acknowledges the value of water as a finite and scarce natural resource, its necessity for social and economic development worldwide, and the potentially detrimental effect of polluting water or removing water from environmental systems , particularly in water stressed regions
- Recognises that water constraints are a serious threat to sustainability
- Actively encourages all its stakeholders to consider positives steps they may take with regards to water use and related impacts
- Constant participation in its value chain to promote water use awareness and appropriate responses

This approach aligns with the group's Code of Ethics, Code of Conduct, the Imperial Climate Change and Environmental Sustainability Framework Policy, and with its commitment to being a responsible corporate.

Policy

The group recognises that water is an increasingly scarce and critical global resource. Although none of its material operations are particularly water-use intensive, Imperial is nonetheless committed to more efficient water consumption through conservation, increased recycling and water harvesting initiatives. Water use considerations form an integral part of daily business activities, including risk management, strategic planning, capital expenditure and operating procedures. Imperial strives to minimise the impacts of its operations on water resources.

This Policy applies to the entire Imperial Group, including all of its Business Units, Group Functions and controlled subsidiaries, regardless of region or operation (collectively, "the Group"). The Policy does not apply to joint ventures and subsidiaries which are not controlled by the Group. This applies to all employees and directors, as well as contractors, consultants and external advisers (and their personnel) when they are acting on behalf of the Group, and aligns with leading practices worldwide, as outlined in documents by the Global Water Reporting Initiative, among many other.

This is a Group Policy that applies to Imperial globally, unless any aspect of the Policy is not permitted by local law or regulation.

Imperial has established clear reporting structures in all divisions that culminate in compliance with relevant legislation and adherence to this policy. Material non- compliance will be reported to the Group Social, Ethics and Sustainability Committee, and thereafter to the Board of Directors.

The group strives to minimise the risk of any future water resource constraints and realise the commercial benefits of effective and efficient water usage, through such initiatives.

Throughout all its operations the group is committed to:

- Meeting all regulatory standards regarding its water usage
- Transparent public reporting in terms of its protocol for Accounting and Reporting of Water Use and Management as a consequence of Business Operations.

All Imperial divisions will publish divisional Water Use Policies appropriate to the business of each division, subordinate to this company policy, which will, inter alia :

- Establish clear accountability for water use performance with top management, as a part of good corporate governance
- Require compliance with relevant water laws, other standards and codes of practice to which the company subscribes
- Where practical, ensure optimisation of water utilisation, recycling, and harvesting and discharge
- Ensure that water use considerations form part of the company's overall risk management processes
- Promote water use awareness in the company operations
- Require the maintenance of open dialogue with stakeholders to promote sound water use practices
- Develop contingency procedures to deal with unscheduled occurrences and community concerns

Imperial will continue to assess its physical, regulatory and reputational risks associated with water usage and, where feasible, adapt its operations, processes and procedures accordingly. It will also pursue relevant identified opportunities.

All material aspects related to water use are reportable to the Group Social, Ethics and Sustainability Committee, a sub-committee of the Imperial Board of Directors.

All operations within the Imperial Group are expected to uphold the principles contained within this policy which is to be read in conjunction with the Imperial Climate Change and Environmental Policy.

Imperial is committed to measuring and reporting its progress in terms of this policy.

WATER MANAGEMENT- GUIDING PRINCIPLES

For Imperial, responsible water use and stewardship is an integral part of the daily management system of the company and is recognised as one of the corporate imperatives. Implemented processes ensure that the CEO and Management are fully informed about pertinent environmental issues, including water use.

The CEO and Management in each division are responsible and accountable for water use management.

Where relevant, quantifiable objectives and targets are set by each division to address significant environmental impacts that have been identified.

Water use and recycling indicators are measured and monitored. Each division should continuously seek ways to better manage and improve its water use efficiency.

Water stewardship will form part of significant new projects and of the planning phase for modifications to existing operations.

Imperial accepts responsibility for its water use and all divisions will strive to:

- Conserve water and improve water use efficiency within their operations as well as relating to their products and services sold
- Eliminate the release of substances that may harm water or water sources
- Ensure all water discharges are within applicable legal and regulatory parameters
- Optimise recycling and water harvesting initiatives

Imperial strives to minimise the environmental, health and safety risks to employees and the communities in which the Company operates through sound water stewardship practices.

All operations will be prepared for emergencies. Imperial divisions will inform, in a timely manner, anyone who may be affected by conditions caused by the Company that might endanger the environment including safe water consumption and discharge.

7. Biodiversity Policy

1) Background and Context

The Imperial Biodiversity Policy aims to be an overall positive contributor to environmental sustainability, aspiring to positively contribute to sustainable and resilient communities and ecosystems through the protection of biodiversity.

We understand biodiversity to be the variety of life in all its forms and see protecting biodiversity as enabling the survival of flora and fauna species, genetic variability and natural ecosystems. We recognise the intrinsic value of biodiversity, but also understand the interdependence between healthy and diverse ecosystems and the wellbeing of our society. We further recognise the importance of ecosystem services that directly or indirectly benefit our business through the provision of natural resources such as food, water, fuel and natural fibres, and through the absorption of pollution and waste.

We are aware that the Logistics sector can have both positive and negative impacts on biodiversity and that these may occur as a direct result of our actions or indirectly across the value chain. At the most basic level, we recognise the direct tension in terms of land use, in that land occupied by commercial buildings replaces natural ecosystems and reduces available habitat. Our development activities typically occur within existing built environments, however, we remain mindful that the physical footprint of our assets can have an impact. The design, construction and maintenance of our assets can also directly impact on biodiversity through our selection and use of materials and the protection and creation of natural environments within our assets.

We believe that responsibly managing our biodiversity impacts will enable us to strategically assess biodiversity-related risks and opportunities in managing our investments, anticipate and respond proactively to emerging regulations and increasing societal expectations, and play our part in working towards our aspiration of sustainable and resilient communities. We also believe that through creating assets that are connected to their local and natural environments we offer our site users a more attractive proposition.

2) General Policy

Imperial is committed to making a positive contribution to biodiversity. Wherever possible this will be undertaken in the local environment. Imperial will also support and encourage others where it can meaningfully do so.

This includes aiming to:

- Assess the potential biodiversity impacts of all proposed projects (above and beyond regulatory requirements), and design with the aim of overall net positive impact through maximising opportunities for positive impacts and compensating for negative ones;

- Restore, protect and support biodiversity as most appropriate for each site, taking account of local indigenous flora and fauna. Our aim is to improve the biodiversity value of our sites through local measures;

- Select and use materials in the development and maintenance of our sites taking account of their impacts on upstream and downstream ecosystems;

- Track and report on appropriate measures associated with biodiversity; and

Establish relationships with local community partners to support them in their goals relating to protecting and enhancing local biodiversity and draw on their expertise in managing our own impacts.

3) Implementation and Review

Ultimate responsibility for implementation and review sits with the Imperial Board. This role is primarily performed through delegation and oversight from the ImperialSocial, Ethics and Sustainability Committee.

The Policy will be regularly reviewed in light of legislation and organisational changes and developments in sustainability best practice, or at a minimum, every two years.

8. Supply Chain Social and Environmental Responsibility Code of Conduct

Background

Imperial, is a JSE Listed, South Africa-based international group of companies, is committed to growth founded on socially-responsible actions and behaviors in all countries in which it operates and in all fields in which it does business. Imperial is committed to high standards of business ethics, as reflected in our own employee Code of Conduct, and to best practice and continuous improvement in the broader sustainability performance of our business and projects

Imperial is committed to adhere to the principles based on the Universal Declaration of Human Rights, the international Labour Organization's (ILO) Declaration on Fundamental Principles and Rights at Work, the Rio Declaration on Environment and Development and the United Nations Convention Against Corruption.

These commitments have been reiterated in the company's "Code of Ethics". This charter is regularly updated and is available on the Imperialwebsite. The charter puts forward a common set of key references. Each individual, from top executives to all employees, must comply with it in all circumstances.

Imperial intends to make these principles key elements of its purchasing policy.

Application

Within the framework of invitations to tenders, Imperial considers social, environmental and fair economic business principles as key elements in business award decision, both for new and existing suppliers. Supplier compliance with standards that match our own as outlined below is of utmost importance for Imperial.

Imperial reserves the right to carry out, at any time, audits at Supplier's various sites, by Imperial or by a third party appointed by Imperial, in order to verify conformance of the Supplier's practices with the Imperial requirements.

Imperial Code of Conduct Sourcing & Supply Chain:

Commitments

1. Obey the Law

Suppliers must respect and comply in all areas with the laws and regulations in force in all of the countries in which it operates and/or sells. When legislation is lower than the international standards outlined below, suppliers are still required to converge to these latest standards.

2. Responsible Supply Chain Management

Suppliers should prevent any contravention of human rights and prevent or mitigate environmental impacts that its enterprise may cause or contribute to through its own activities, or which may be directly linked to its operations, products or services by its business relationships.

Suppliers should carry out human rights and environmental assessments, in order to identify, prevent, mitigate and account for how they address their potential adverse impacts. Suppliers shall apply this code throughout its own supply chain.

Labour & Social Policies

3. No Child Labour

Suppliers are prohibited from employing children in violation of the stipulations of the International Labour Organisation's convention (ILO Convention No's 138, 182). The minimum age for employment shall be the country legal minimum age, or the age for completing compulsory education in that country, whichever is higher. In any case, suppliers will not employ children under the age of 16, and will comply with the provisions of the ILO regarding the health, safety and morality of young people aged between 15 and 18. As an example, but not limited to, suppliers should ensure workers younger than 18 do not exceed the prescribed working hours within the countries it operates.

4. No Forced Labour

Suppliers must not, under any circumstances, resort to forced or compulsory labour. Forced or compulsory labour is any work or service which is forced upon any person under the menace of a penalty and which the person has not entered into of his or her own free will. Forced labour can include practices such as restricting people's movement; withholding wages or identity documents to force them to stay on the job; or entangling them in fraudulent debt or wage deductions from which they cannot escape; or developing their dependency of in-kind payments; or deprivation of food, shelter or other necessities; applying compulsory overtime; or loss of social status; etc. (see ILO Conventions No's 29, 105).

Suppliers should ensure that workers understand their rights with regard to payment of wages, overtime, retention of identity documents, etc.

Migrant workers, workers who are part of a group that has suffered from long-standing discrimination, young people & unskilled or illiterate workers, and women among these groups, constitute populations which may not be aware of their legal rights. Therefore suppliers will ensure that they are treated fairly and their rights are respected.

In the case workers are recruited by third parties, suppliers will pay particular attention that these principles are properly applied.

5. Working Hours

Working hours (including overtime), as well as break times and periodic days off, shall be compliant with applicable laws & regulations, collective-bargaining agreements and international conventions. Overtime work should be voluntary and paid as such. Work or service outside normal daily working hours shall not be imposed by exploiting a worker's vulnerability under the menace of a penalty. For example, employers shall not set performance targets that result in an obligation to work beyond normal working hours because of the worker's need to be able to earn the minimum wage.

6. Fair Wages

Suppliers shall comply with all applicable laws and regulations, including those relating to minimum wages, overtime hours and legally mandated benefits. In places where no legal requirement exists for defining a minimum wage, ILO Convention No 131 can serve as a basis for the definition. Workers must be paid in a fairly and timely manner, and the basis on which workers are being paid must be clearly conveyed.

7. Non-Discrimination and Equal Remuneration

Suppliers must not discriminate against any worker based on race, color, age, gender, sexual orientation, ethnicity, disability, religion, political affiliation, union membership, national origin, social origin, or marital status in hiring and employment practices such as applications for employment, promotions, rewards, access to training, job assignments, wages, benefits, discipline, termination and retirement (see ILO Convention No's 100, 111).

8. Freedom of association

Suppliers must respect the right of workers to associate freely, form and join workers organization of their own choice, seek representation, and to bargain collectively, as permitted by and in accordance with the applicable laws and regulations. Suppliers shall ensure that representatives of such personnel are not the subject of discrimination and that such representatives have access to their members in the workplace as well as adequate working space in order to work effectively and without interference (see ILO Convention No's 98, 87). Where the right to freedom of association and collective bargaining is restricted under law, suppliers should provide workers a parallel mechanism to make their views known to the management, and take those into consideration.

9. Health and Safety

Suppliers shall ensure that the health and safety (H&S) risks to their policyholders, employees, contractors and members of the public which arise from its operations are reduced as far as is reasonably practicable. We require that our suppliers carry out their operations in a safe manner in line with relevant regulation, approved codes of practice and industry best practice and in a way that does not expose any person to the risk of injury or ill health. Accordingly, its chosen contractors or suppliers are expected to demonstrate a clear commitment to Health and Safety Management and that they maintain effective policies and procedures.

The social impact of accidents can be incalculable and may indicate a weakness in H&S controls and training. We therefore consider the incidence of accidents together with reactive monitoring very seriously and require full disclosure of statistics. Suppliers shall then provide Imperial with their H&S indicators, risk assessment and associated H&S improvement plan, if requested. Suppliers shall adopt a continuous improvement approach, based on the collection and analysis of occupational incident and accident data and feedback. Suppliers shall also respect worker's rights of participating in such activities and H&S decisions.

Imperial believe that employee involvement is critical to the success of an organization and this principle applies as strongly to H&S Management. We expect that suppliers will have provided training to its employees and anyone else impacted by their activities, where the details may include training in use of work equipment; manual handling; risk assessments; fire safety, emergency response and preparedness; first aid; personal protective equipment and training relevant to the particular health and safety risks relevant to or created by that organization's operations.

Suppliers should ensure the provision and maintenance of protection equipment, at no cost to the workers. Under the hierarchy of control measure personal protection equipment is deemed the last line of defense and as such must offer the necessary protection against foreseeable hazards.

Environment

10. Environment

Environmental Policy: Suppliers shall not only comply with all environmental laws and regulations, but also implement measures contributing to the protection of the environment. Therefore, they should strive to minimize the adverse environmental impact of their products and services during the whole product life cycle: conception, development, production, transport, use and disposal or recycling. To this end, we encourage the supplier to be ISO 14001 certified or equivalent.

Innovation & product life cycle: Imperial is particularly attentive to bringing to market, in all countries, vehicles with better standards of environmental performance and endeavors to research and promote innovative technical solutions contributing toward this. Consequently and if applicable, Suppliers commit to adopt a voluntary policy in the

field of research in order to develop its products to achieve an ever-higher standard in terms of respect for the environment.

Suppliers are expected, not only to consider the environmental impacts of their products during their design phase, but also in their production & procurement processes as well.

Natural resources preservation: Suppliers should be focus on reducing the use of raw materials and resources as well as to eliminate the waste produced by all its activities. This goal will be achieved through the improvement of production, maintenance and cleaning processes, modes of conservation and transportation, as well as the substitution, re-use and recycling of materials, design, process changes, innovations, etc.

Prohibited substances and materials: Products or parts bought from Suppliers by Imperial, whether they are standard or specifically-developed by the Suppliers for Imperial, must not contain any product, material or substance prohibited by the legislation or regulations applicable in the Suppliers' countries, more generally, in all of the countries in which these supplies, products or parts are used and should be validated beforehand by Imperial. Imperial may also, in some cases, ask its suppliers to provide disclosure on the use and provenance of certain substances and materials for legislation and regulations compliance purpose. Suppliers are to establish policies, due diligence frameworks, and management systems, consistent with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, that are designed to accomplish this goal. As an example, suppliers could have to disclose whether the products they manufacture or contract to manufacture contain "conflict minerals", which means minerals that directly or indirectly finance or benefit armed groups in specific countries.

CO2 emission reductions: The Suppliers shall promote the development of technologies limiting CO2 emissions as well as energy saving and recycling solutions, and implement logistic strategies that minimize environmental impact.

Economic practices

11. No Corruption & Bribery

Suppliers shall prevent and fight all forms of corruption, bribery, extortion and improper advantage, and comply with all applicable laws pertaining to these issues.

Suppliers should not, directly or indirectly, offer, promise, give, demand or accept any bribe or other undue advantage, to Imperial Holdings employees, public officials or other private or public actors, with the intention to obtain or retain business or any other improper advantage. Suppliers should develop and adopt adequate internal controls, ethics and compliance programmes or measures for preventing and detecting bribery. These may include promoting employee awareness of the company policies against bribery and a system of financial and accounting procedures, reasonably designed to ensure the maintenance of fair, transparent and accurate books, records, and accounts.

12. Fair Business Practices

Suppliers shall strive for fair business practices, and in any case suppliers must comply with all applicable laws and regulations related to fair competition.

Suppliers shall also commit to communicate its financial health, on business activities, evolution and forecast to business stakeholders.

A conflict of interest exists when an employee or a close relative liable to benefit personally from a transaction involving a company in the Imperial group. Conflicts of interest shall be addressed by avoiding, identifying and revealing situations where there is an actual risk of conflict of interest in association with Imperial employees or their relatives. Imperial has strict policy as for the acceptance of gifts and gratuity from suppliers, for details please refer to "Code of Ethics"

9. Emissions Baseline and Projections

Carbon Footprint Baseline, Cost and Projections

Scope and Boundaries of the Carbon Footprint

The resources to be included in a carbon footprint are defined in relation to two boundaries, the organisational and the operational boundary.

Definition of the boundaries is determined by the extent of the property, goods and services over which Imperial has operational control, and the availability of good quality data.

Organisational Boundary

Organisation boundary: sets out which assets are to be included in the footprint and is shown in the "category" column in Table 1 below.

Operational Boundary

Operational boundary: essentially sets out the emission sources included in the footprint and is shown in the "emissions" column in Table 1 below.

In keeping with the Greenhouse Gas Protocol[1] (WRI 2004), the operational boundary should include all Scope 1 and Scope 2 emissions (e.g. fuel combustion, company owned vehicles and purchased electricity consumption). Scope 3 emissions (e.g. waste, water, and business travel) are considered discretionary but are included where data is available. No train kilometres have been included, air kilometres have been included.

Table 1: Imperial's Carbon Footprint Boundaries

Category	Function Examples	Emissions Source
Offices		Electricity, gas, water, waste
Workshops		Electricity, gas, oil, water, waste
Warehouses		Electricity, gas, water, waste
Fleet		Fuel and Business Kilometres
Other		Electricity, gas, oil, water, waste

[1] The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard Revised Edition, World Resources Institute; World Business Council for Sustainable Development, 2004.

Excluded Emission Sources include:
- Contaminated waste e.g. medical
- Confidential waste
- Specialist waste e.g. media
- Air mileage travel
- Home-to-office mileage
- Utility sources not directly billed (e.g. included within a service charge)

Data Sources

The data sources used in our Carbon Management Plan are based on robust data provided by both internal and external partners. The main streams of data (consumption and costs) input are as follows:-

i) Stationary Sources
- Electricity - Smart Energy Management, historical data, utility bills
- Gas - Smart Energy Management, historical data, utility bills

ii) Water
- Historical data, utility bills

iii) Waste
- Historical data, waste management reports and billing

iv) Transport
- Historical data, fleet management data

v) Others
- XX

Data is then collated and converted to a CO_2e tonnage equivalent using GHG Protocol (Global) factors for Company Reporting[2]. The chosen Reporting Year was 20XX which constitutes the majority of fiscal year 20XX/XX.

Conversion factors were taken for Scopes 1, 2 and 3 which relate to total direct emissions and are therefore in keeping with the methodology employed to determine previous Carbon footprints. As such, no 'Well to Tank' or 'Outside Scope' factors have been used.

Carbon Footprint Baseline

Imperial's overall Carbon Footprint for the Baseline year of 20XX/XX was XX tonnesCO_2e.

Electricity constitutes XX% of the 20XX/XX Carbon Footprint Diesel (XX%) representing the largest contributor.

Within the next 5 years, Imperial will potentially see xx changes in the 20XX period, with the associated partial or complete closure of a number of buildings; however some of these closures will fall into the Carbon Management Plan period.

[2] http://www.ghgprotocol.org/

Environmental objectives and targets

Key objectives and targets have been set to improve our environmental performance. The following section identifies how these targets will be met.
Objectives and targets must, as a minimum, reflect Government policy commitments by embracing:

> ➢ targets for minimising water and energy consumption, and waste production
> ➢ a preference for procurement of sustainable products and services
> ➢ the integration of environmental assessment into key decision-making processes
> ➢ cover all site operations.

Examples are provided below.

Targets:

1) Develop an environment policy by January 2020.
2) Develop targets for improving environmental performance for waste, energy and water reduction by January 2020.
3) Form regional environment teams to drive the implementation of the strategy.
4) Increase our ability to measure our environmental impacts through establishing data collection systems or processes by January 2020.
5) Integrate environmental assessment into all Imperial's decision-making processes and operations.
6) Lead by example through reducing greenhouse gas emissions from our operations by an aspirational target of 5%.
7) Create a culture of reducing our environmental footprint.
8) Reduce waste generation by 15% by 2020, compared to 2017 baseline.
9) Increase proportion of waste recycled to 90% by 2025, compared to 2017 baseline
10) Reduce energy consumption from our key activities by an aspirational target of 5% by December 2020, compared to 2008 baseline and reduce energy consumption from existing baseline continuously over the three years to 2022
11) Purchase 15% of electricity where appropriate and applicable from renewable sources by June 2025.
12) Reduce water consumption by 20% by 2025, compared to 2008 baseline.
13) Integrate environmental specifications into purchasing policy by September 2019.
14) 20% of vehicles in the fleet are LPG or low emission by June 2025.
15) Include key environmental specifications for our procurement of <identify goods and/or services> and develop and implement an environmental purchasing policy.
16) Support suppliers who will take back their products and packaging for recycling or reuse.
17) Increase our stakeholder and client awareness of our environmental sustainability commitments.
18) Report on internal and external achievements quarterly.

Carbon Targets and Settings

This section is meant for divisions that have yet to consider how to reduce their greenhouse gas (GHG) emissions. It is intended as a primer for the divisions or new aquisitions that are just starting to consider how to develop internal GHG reduction targets and plans that are scientifically-relevant and consistent with their strategic objectives.

Internal GHG reductions are reductions made within Imperial's organisational boundary or supply chain through measures such as energy efficiency, onsite renewable energy

and/or fuel substitution. Generally, reductions are delivered through some combination of behavioural, process and/or capital asset changes.

Identifying and delivering internal GHG reductions is an integral part of Imperial's climate change strategy and, when combined with carbon offsets, allows Imperial divisions to meet their GHG targets in the most cost-efficient way.

The remainder of this section outlines the basic steps involved in developing an internal GHG reduction target and plan. Although presented sequentially in Figure 1, in practice this process may be iterative and involve revisiting back and forth between the steps.

Figure 1. Steps Involved in Developing an Internal GHG Reduction Target and Plan
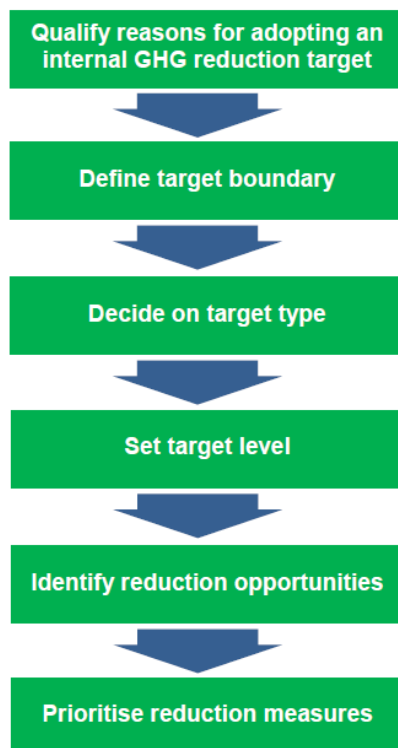
Target setting

There is no one-size-fits-all formula for setting internal GHG targets. Targets are meant to be regional/division-specific and will depend on the division's strategy, culture, competitive position and regulatory environment. It is, therefore, not the purpose of this section to prescribe what the division's target should be, but rather to provide a framework and process for setting one.

Motivations for setting GHG reduction targets

Imperial has adopted internal GHG reduction targets for a variety of reasons, with the most common being:

> **Managing regulatory risk:**
> Regulatory risk is a strong driver for Imperial's divisions with exposure to the costs of meeting future regulations on GHG emissions. Divisions that invest today in lowering their emissions are therefore improving their competitive market position in a future carbon constrained economy, even if emissions are not regulated today. Adopting a voluntary GHG reduction target also provides divisions the opportunity to establish internal systems and procedures and to "learn by doing" in order to prepare for future regulation of GHG emissions.

> **Increasing competitiveness:**
> A robust carbon management strategy presents immediate opportunities to drive value for Imperial. By using energy and other resources more efficiently, divisions can reduce production costs and become more competitive. At the same time, by creating products and services that use less energy and produce lower GHG emissions, divisions can differentiate their products and services in an increasingly environmentally conscious marketplace.

> **Demonstrating leadership and corporate responsibility:**
> Consumers, investors and employees are increasingly considering Imperial's climate change strategy when making decisions. A commitment such as setting a public GHG target demonstrates leadership and corporate responsibility. This can improve our company's standing with our customers, employees, investors, business partners, and the public as well as enhance our brand reputation.

Types of targets

There are two broad types of GHG reduction target Imperial divisions can set – an absolute target and an intensity target.

Absolute GHG reduction targets compare total GHG emissions in the target year to those in a base year. For example, a target to reduce CO2 emissions from the combustion of fossil fuel at Imperialsites by five percent below the 2008 level is an absolute target for one of the major GHG emissions from site operations.

By comparison, an intensity target is expressed as a ratio of emissions relative to a particular business metric. Business metrics are typically measured in physical units (e.g., number of employees) or monetary units (e.g., Rand R of revenue). A target to reduce GHG emissions by 25 percent per full-time employee is an example of an intensity target.

Neither type of target is inherently better or worse, but as illustrated by Table 1, both possess unique pros and cons that should be carefully considered before choosing one type of target over another. It should be noted that some companies adopt both an absolute and intensity-based target.

Table 1. Comparison of absolute and intensity targets

| Parameter	Absolute Target	Intensity Target
Environmental Integrity	Ensures a specified quantity of GHG reductions to the atmosphere	No guarantee that there will be fewer GHG emissions to the atmosphere – absolute emissions may rise even if intensity goes down (and output increases)2
Metric Definition	Not applicable	May be difficult to define a single common business metric for companies with diverse operations. If a monetary variable is used for the business metric (i.e.,rand/euro of revenue or sales), it should be adjusted for changes in product prices, product mix, and inflation – adds complexity to the tracking process.
Confidentiality	Not applicable – no business metric assigned to target.	Maybe an issue – data on the business metric needs to be reported.
Effects from Base Year Re-calculations	Target base year recalculations for significant structural changes to the organisation	GHG changes due to production fluctuations are usually not required.

	and complexity to tracking progress over time	
Relation to Organic Growth or Decline	Recognises a company for reducing GHGs by decreasing production or output (organic decline)	Reflects GHG performance improvements independent of organic growth or decline.
Comparison of GHG Intensity/Efficiency	Does not allow for comparison of GHG performance between companies, if they choose to do so.	Comparability of GHG performance between companies may be increased.

The six Kyoto greenhouse gases are: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydroflourocarbons(HFCs), perflourocarbons (PFCs) and sulphur-hexaflouride (SF_6).

2 It is important note that a growing business can meet an intensity based reduction target whilst increasing absolute emissions, if the rate of business growth exceeds the improvement in carbon efficiency

A study of the world's largest 100 companies found that absolute targets are almost twice as popular as intensity targets, with many companies having both absolute and intensity metrics targeting different parts of the business. Of the intensity based targets half used a normalization measure based on a unit of production and a third used an intensity measure linked to revenue.

Figure 2. The types of reduction targets used by the world's 100 largest companies
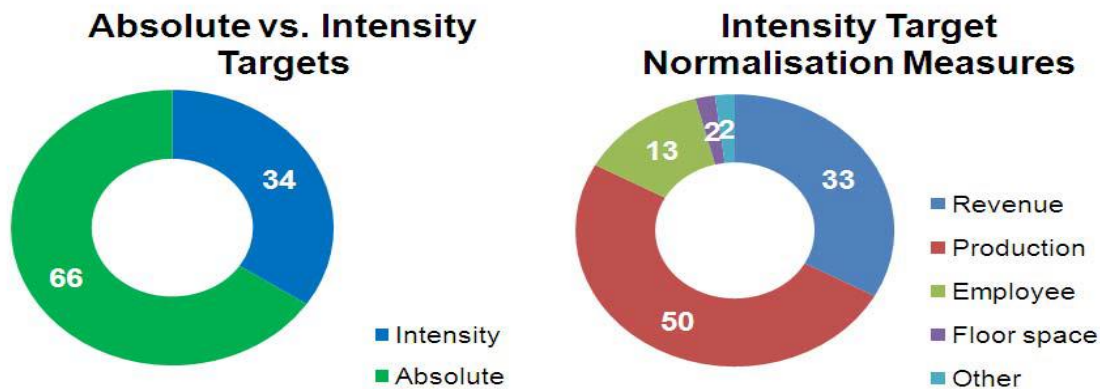
3 Carbon Disclosure Project – The Carbon Chasm

Setting the target level

Once the target type has been selected, the target level should be determined. The process of setting the target level can be either "top-down" or "bottom-up." In a top-down target-setting process, the level is initially derived for the whole company at once. The target may then be allocated to the operating units in various ways, so that the sum of the "sub-targets" equals the company target. Under a "bottom-up" process, the company target level is based on analysis of potential reductions by individual operating units. Whether a top-down or bottom-up approach is taken, the basic process for setting the target level remains the same.

Normally, the first step in determining the appropriate target level is to develop an emissions inventory. An inventory is a formal system for measuring, aggregating and reporting GHG emissions for a particular organisational boundary and period of time. An inventory is used in setting the target, developing the plan to meet it and tracking progress towards achieving it.

The second step is choosing the year in which the target will be achieved. Balancing the target level with the target year is a risk management exercise. A more distant target is not necessarily more or less difficult to achieve than a short-term target, but carries greater risks associated with changes in technology and markets. A popular target year is 2012, which correlates with the final year of the Kyoto Protocol. The popularity of short-term targets is not surprising given that the budget cycles for many businesses tend to be either annual or run over a few years. Some companies, however, have

adopted both short- and medium- to long-term targets, recognising the importance of managing their GHG emissions over an extended period of time.

The third step is to project baseline emissions under a business-as-usual scenario. The baseline projection is based on the company's investment and operations plan, and their future energy use.

The fourth and final step is to assess how reasonable a given target level is compared with the forecasted business-as-usual emissions. Companies with a history of delivering reductions often use past performance as the basis for evaluating future targets, however if a company doesn't have a history of delivering reductions, it will need to examine specific reduction opportunities to assess the reasonableness of the proposed target.

Benchmarks

As illustrated by the selected corporate GHG targets in Box 1, GHG targets can vary considerably from one company to another, both in terms of the target level and achievement year.

Box 1. Selected corporate GHG targets

General Electric Company pledges to reduce total global GHG emissions by 1% from 2004 to 2012.

Sun Microsystems, Inc. pledges to reduce total global GHG emissions by 20% from 2007 to 2015.

Cadbury pledges to reduce absolute carbon emissions by 50% from 2010 to 2020.

HSBC pledges to reduce total global GHG emissions by 6% from 2008 to 2011.

PepsiCo pledges to reduce U.S. GHG emissions by 25% per tonne of production from 2006 to 2015.

ACE Group pledges to reduce global GHG emissions by 8% per employee from 2006 to 2012.

EMC Corp. pledges to reduce U.S. GHG emissions by 8% per square foot from 2005 to 2012.
Unilever pledges to reduce global GHG emissions by 25% per tonne of production from 2004 to 2012.

BT pledges to reduce its CO2e emission per unit of contribution to GDP by 80% from 1996/7 to 2020.

Scottish & Southern Energy pledges to reduce carbon intensity by 50% from 2005/06 to 2020 in electricity produced at power stations in which it has an ownership or contractual interest.

Source; United States Environmental Protection Agency (EPA) Climate Leaders and Carbon Disclosure Project – FTSE 100 Carbon Chasm

Internal reductions

Once an internal GHG reduction target has been adopted, a GHG reduction plan should be developed to deliver against the target, taking into consideration the main sources of GHGs and the likely cost-effectiveness of alternative emission reduction measures.

GHG reduction plans should be reviewed periodically to assess progress against planned actions and to assess the feasibility for further reductions, taking into account the availability of new technologies, enabling policies and incentives provided by government and the overall business context. Where applicable, a director or senior manager should be given the responsibility to develop and implement the plan for reducing emissions.

Internal reduction measures

This section explores a broad range of emission reduction measures available to the operating companies to reduce their GHG emissions. The measures discussed in the following tables are applicable to most companies, however, in practice, companies may find it necessary to work with experts or consultants in the fields of energy efficiency, conservation and renewable energy to identify those measures that are specific to their company.

Office energy consumption

Office energy consumption is typically a significant contributor to a service-based company's GHG emissions. Some simple emissions reduction measures are detailed below[4]:

Action	Potential saving - %	Examples of CO2 equivalent
Switch off monitors rather than using screen savers.	Up to 10% of computer electricity consumption.	UK: annual saving of 0.44 tonnes of CO_2 for every 50 employees who switched off over lunch time for a year[13]. US: annual saving of 0.46 tonnes of CO_2 for every 50 employees who switched off over lunchtime for a year[14].
Purchase ENERGY STAR rated desktop computers rather than typical models.	Up to 30% of computer electricity consumption.	UK: annual saving of 1.2 tonnes of CO_2 per 50 person office [15]. US: annual saving of 1.3 tonnes of CO_2 per 50 person office [16].
Consolidate multiple printers into a single printer in a central location.	Up to 60% of printer electricity consumption.	UK: annual saving of 0.4 tonnes of CO_2 when moving from 5 mid-size printers to 1 large one[17]. US: annual saving of 0.4 tonnes of CO_2 when moving from 5 mid-size printers to 1 large one[18].
Turn heating down by 1°C.	8% of heating energy.	UK: annual saving of 2 tonnes of CO_2 per 50 person office[19]. US: annual saving of 3 tonnes of CO_2 per 50-person office[20].
Regularly maintain air-conditioning (AC) system.	Up to 30% of AC energy consumption.	UK: annual saving of 9 tonnes of CO_2 per 50 person office[21]. US: or an annual saving of 9 tonnes of CO_2 per 50-person office[22].

Action	Potential saving - %	Examples of CO2 equivalent
Implement a staff awareness campaign.	Up to 10% of electricity consumption.	UK: annual saving of 10 tonnes of CO_2 per 50 person office[5]. US: annual saving of 20 tonnes of CO_2 per 50-person office[6].
Make good use of natural light from windows by ensuring blinds or objects are not obstructing light unnecessarily.	Up to 20% of lighting electricity consumption.	UK: annual saving of 6.7 tonnes of CO_2 per 50 person office[7]. US: annual saving of 15.6 tonnes of CO_2 per 50 person office[8].
Upgrade your office lighting to energy efficient bulbs.	Up to 80% of lighting electricity consumption.	UK: annual saving of 1 tonne of CO_2 for every 10 bulbs replaced[9]. US: annual saving of 1.1 tonne of CO_2 for every 10 bulbs replaced[10].
Install energy management system (EMS) technology to control lighting systems automatically Implement.	10 to 15% of total lighting electricity consumption.	UK: annual saving of 5 tonnes of CO_2 per 50 person office[11]. US: annual saving of 10.3 tonnes of CO_2 per 50 person office[12].

[4] Emission savings may be reduced if multiple actions are taken.
[5] Derived from Carbon Trust 2005 and Defra 2008.
[6] Derived from Carbon Trust 2005, EIA 2006 and IEA 2006. It is assumed that electricity is not used for space heating.
[7] Derived from CIBSE 2004, Defra 2008 and RICS 1997.
[8] Derived from CIBSE 2004, EIA 2006 and IEA 2006.
[9] Derived from Defra 2008 (assuming a 100W bulb is replaced with a 20W bulb).
[10] Derived from Defra 2008 (assuming a 100W bulb is replaced with a 20W bulb).
[11] Derived from Energy Efficiency Partnership 2009 and EIA 2006.
[12] Derived from Energy Efficiency Partnership 2009 and EIA 2006.
[13] Derived from Defra 2008 (assuming 85W monitor and 20% energy saving from screen saver).
[14] Derived from Defra 2008 and IEA 2006 (assuming 85W monitor and 20% energy saving from screen saver).
[15] Derived from Energy Star 2007 and Defra 2008 (assuming energy star category A desktops in place of average 2007 performance desktops).
[16] Derived from Energy Star 2007 and Defra 2008 (assuming energy star category A desktops in place of average 2007 performance desktops).
[17] Derived from HP 2009 and Defra 2008 (based on replacement of 5 CM3530 printers with 1 CM4730fsk).
[18] Derived from HP 2009 and IEA 2009 (based on replacement of 5 CM3530 printers with 1 CM4730fsk).
[19] Derived from CIBSE 2004, Defra 2008 and RICS 1997.
[20] Derived from CIBSE 2004, IPCC 2006 and EIA 2006.
[21] Derived from Carbon Trust 2007, CIBSE 2004, Defra 2008 and RICS 1997.
[22] Derived from Carbon Trust 2007, CIBSE 2004, and IEA 2009

Waste

GHG emissions from waste may be reduced through procurement choices and the presence of recycling facilities. There are additional benefits to minimising waste including lower disposal costs and reduced GHG emissions from waste transportation.

Action	Potential saving - %	Examples of CO2 equivalent
Divert waste from landfill by recycling.	Not applicable, see examples for CO2 equivalent.	UK: 24 kilograms of methane or 600 kilograms of CO_2 equivalent per tonne of waste diverted from landfill[23]. US: 35 pounds of methane or 893 pounds of CO_2 equivalent per tonne of waste diverted from landfill[24].
Divert waste from incineration by recycling.	Not applicable, see examples for CO2 equivalent.	UK: 226 kilograms of CO_2 per tonne of waste diverted from incineration[25]. US: 498 pounds of CO_2 per tonne of waste diverted from incineration[26].

[23] Derived from Smith et al 2001, Brown et al 1999, IPCC 2006. Assuming average UK rate of methane capture at landfills.
[24] Derived from Smith et al 2001, Brown et al 1999, IPCC 2006. Assuming average US rate of methane capture at landfills.
[25] Derived from Smith et al 2001.
[26] Derived from Smith et al 2001

Commuting (Logistics International only)

Divisions can influence their employees' commuting habits through the location of their workplace, the availability of facilities such as shuttle buses or changing rooms to encourage low carbon forms of transport.

Action	Potential saving - %	Examples of CO2 equivalent
Cycle or walk rather than driving to work.	Up to 100% of commuting emissions.	UK: 33 kilograms of CO_2 per 160 kilometers[27]. US: 79 pounds of CO_2 per 100 miles[28].
Catch the train rather than driving to work.	70% per passenger kilometer in the UK. 50% per passenger mile in the US.	UK: or 23 kilograms of CO_2 per 160 kilometers[29]. US: or 42 pounds of CO_2 per 100 miles[30].
Car pool.	50% per additional passenger.	UK: 33 kilograms of CO_2 per avoided 160 kilometers[31]. US: 79 pounds of CO_2 per avoided 100 miles[32].

[27] Derived from Defra 2008
[28] Derived from EPA 2008.
[29] Derived from Defra 2008 assuming 'average car' of unknown fuel type and 1 passenger per vehicle.
[30] Derived from EPA 2008 assuming 'average car' of unknown fuel type and 1 passenger per vehicle.
[31] Derived from Defra 2008.
[32] Derived from EPA 2008.

Business travel

Along with energy consumption, business travel is often a sizable contribution to a division's carbon footprint. Considerable savings may be achieved through the implementation of some of the measures detailed below.

Action	Potential saving - %	Examples of CO2 equivalent
Travel by train rather than plane for short-haul journeys.	66% per passenger kilometre in the UK. 35% per passenger mile in the US.	UK: 1.3 tonnes of CO_2 per 10 return journeys Edinburgh to London[33]. US: 0.5 tonnes of CO_2 per 10 return journeys New York, NY to Washington, DC[34].
Combine meetings to reduce flight requirements.	100% per avoided flight.	UK: 2.4 tonnes of CO_2 per 10 return short-haul international flights[35]. US: 2.4 tonnes of CO_2 per 10 return medium-haul flights[36].
Fly economy class rather than premium economy for long-haul flights.	37% per passenger kilometer.	UK: 6.8 tonnes CO_2 per 10 typical return international long-haul flights[37]. US: 6.8 tonnes CO_2 per 10 typical return long-haul flights[38].
Fly premium economy rather than business class for long-haul flights.	45% per passenger kilometer.	UK: 14.8 tonnes of CO_2 per 10 typical return international long-haul flights[39]. US: 45% per passenger mile or 14.8 tonnes of CO_2 per 10 typical return long-haul flights[40].
Use video-conferencing equipment instead of flying.	100% per avoided journey.	UK: 2.4 tonnes of CO_2 per 10 return short-haul international flights[41]. US: 2.4 tonnes of CO_2 per 10 return medium-haul flights[42].

[33] Derived from Defra 2008, Google maps and Airrouting.com.
[34] Derived from Defra 2008, EPA 2008, National Railroad Passenger Corp. 2008,Google maps and Airrouting.com. Note that in the USA for medium and long haul flights, plane travel is currently less carbon intensive than train travel. Elsewhere in the world, however, train travel is typically far less carbon intensive than plane travel.
[35] Derived from Defra 2008.
[36] Derived from Defra 2008.
[37] Derived from Defra 2008, Google maps and Airrouting.com.
[38] Derived from Defra 2008, Google maps and Airrouting.com.
[39] Derived from Defra 2008, Google maps and Airrouting.com.
[40] Derived from Defra 2008, Google maps and Airrouting.com.
[41] Derived from Defra 2008.

Additional measures

The following measures will reduce the indirect GHG emissions associated with an organisation's activities but are difficult to quantify so there is no estimations on likely emission savings.

Action
Purchase recycled paper which generates fewer associated GHG emissions in production than paper from virgin sources.
Replace electronics only when necessary. The GHG emissions generated during production are often greater than in-use GHG emissions.
Reduce or cease the use of bottled water and plastic cups within the office to reduce production and waste emissions.
Share printers, faxes and scanners within the office to reduce both production and in-use emissions.
Buy fresh, unpackaged foods for general consumption to reduce waste and production emissions.
Encourage sustainable activities amongst suppliers and associate companies.
Choose local suppliers to reduce travel and delivery emissions.

[42] Derived from Defra 2008.

Prioritising internal reductions

Once a division has identified its various options for reducing emissions, the division should consider establishing evaluation criteria to prioritise the reduction activities. Such evaluation criteria might include:
- Net Return on Investment
- Type of costs (fixed vs. variable running costs)
- Additional benefits to the division, the environment and the community
- Time to implement
- Contribution to core business
- Obstacles to implementation

A commonly used strategy for prioritising internal emission reduction measures is to prioritise the *avoidance* of emissions first, then their *reduction* through energy efficiency and finally the *replacement* of high-carbon energy sources with low or zero-carbon alternatives. Generally speaking, measures that help avoid emissions are the most transformative and long-lasting in terms of reducing a division's GHG footprint.

Another particularly useful and commonly used method for prioritising internal reductions is to develop a division-specific GHG marginal abatement cost curve. As illustrated by Figure 2, a GHG marginal abatement cost curve is a set of options available to the division to reduce its GHG emissions, ranked in order of their net cost over the lifetime of the measure (net costs include all fixed and variable costs as well as any avoided costs).

Figure 2. Hypothetical Corporate GHG Marginal Abatement Cost Curve
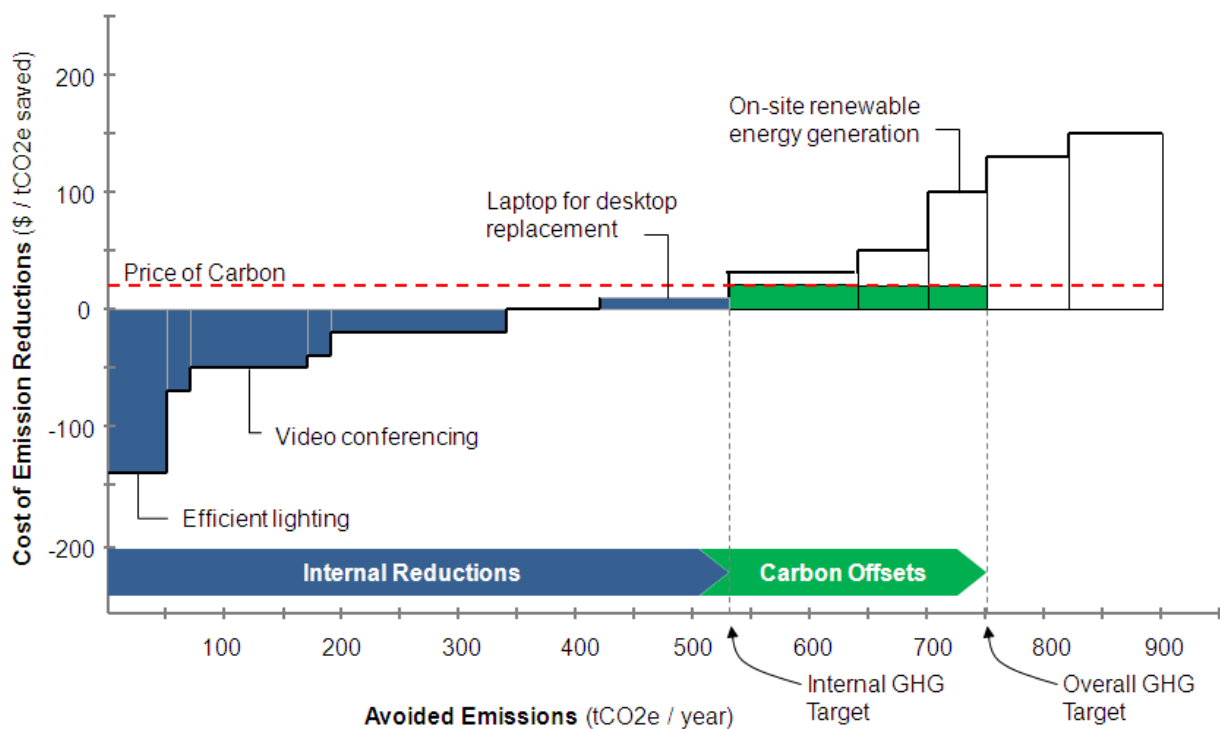
Each bar represents one option, with its width representing the amount of emissions that can be reduced annually by means of the option and its height representing the average net cost of avoiding one tonne of GHG emissions with the option. A negative cost indicates a net benefit or savings to the division over the lifetime of the option whereas a positive cost means that capturing the option would incur an incremental cost to the division.

Superimposing the division's internal GHG reduction target over its GHG marginal abatement cost curve allows it to identify which emission reduction measures to implement and in what order to meet the target most cost-effectively. It will also show at what point purchasing carbon offsets becomes a more cost-effective solution to achieving a given GHG reduction goal.

Environmental Performance
Baseline Data Table 2008-09

Site:	*<Insert site name>, indicating if the data presented is for one or a number of sites> If more than one site is used collate the data to*
Normalising factors (KPI's)	
Number of FTE	
Square metres of site/ sites	
Total fleet kilometres travelled	
Other KPi's (as appropriate)	

STATIONARY ENERGY USE				
Data	**Quantity**	**Measure (total divided by best normalising factor)**	**Greenhouse gas emissions (tonnes CO^2-e) – as applicable**	**R Cost**
Total electricity consumption (kWh)		*kWh per FTE*		
		kWh per m^2		
*Total Green Power consumption (kWh) (Future)		*% of total kWh use*	*(GHG avoided)*	
*Total gas consumption Megajoules (MJ) (Future)		*MJ per FTE*		
		MJ per m^2		
Total energy consumption (MJ: gas plus MJ electricity)		*MJ per FTE or other (select)*		
		MJ per m^2		
Total Greenhouse: Emissions Stationary Energy			*<total of this column>*	
Comments				

WATER				
Data	**Quantity**	**Measure (total divided by best normalising factor)**	**Greenhouse gas emissions (tonnes CO^2-e) – as applicable**	**R Cost**
Water consumption kilo Litres (kL)		*kL per FTE or other (select)*	*If available – note this is a scope 3 GHG emission to be considered if usage is substantial*	
		kL per m^2 or other (select)		
Comments				

TRANSPORT				
Data	**Quantity**	**Measure (total divided by best normalising factor)**	**Greenhouse gas emissions (tonnes CO^2-e) – as applicable**	**R Cost**
Petrol Fuel usage Litres (L)		*g (GHG) / km*		
Diesel fuel usage (Litres) (L)		*g (GHG) / km*		
Heavy Fuel Oil usage Litres (L)		*g (GHG) / km*		
LPG (Litres)		*g (GHG) / km*		
Total greenhouse gas emissions: Travel			*<total of this column>*	
Air travel travelled (km))			*If available – note this is a scope 3 GHG emission*	
Comments				

WASTE				
Data	**Quantity**	**Measure (total divided by best normalising factor)**	**Greenhouse gas emissions (tonnes CO^2-e) – as applicable**	**R Cost**
Total waste generation kg's or tonnes		*Kg per FTE or other*		
Waste to Landfill kg's or tonnes		*Weight of materials as a % of total waste*		
Recycling Kg's or tonnes		*Weight of materials as a % of total waste*		
Organic Waste kg's or tonnes		*Weight of materials as a % of total waste*		
Total diversion kg's or tonnes		*Weight of materials as a % of total waste*		
Total greenhouse emissions: Waste			*<total of this column>*	
Waste avoided kg's or tonnes		*Weight of waste as a % of total waste*	*GHG emissions avoided*	
Comments				

PROCUREMENT			
Data	**Quantity**	**Measure (total divided by best normalising factor)**	**Comments**
Green procurement Total R spend (exclude stationary)		*% of total procurement spend (excluding Stationary)*	
Green Stationary Total R spend		*% of total stationary spend*	
Paper purchased Reams		*Reams per FTE*	

Other Significant impacts	*Include other indicators, e.g. biodiversity impacts, water quality, chemical use etc., as appropriate based on your Divisional Impacts Register.*

Total Greenhouse Emissions	*Total of stationary energy, waste and transport emissions. Note exclude your scope three emissions*

Current Year Data Table 2020-25

Site:	*<Insert site name>, indicating if the data presented is for one or a number of sites> If more than one site is used collate the data to create*
Normalisation Factor (KPI's)	
Number of FTE	
Square metres of site/ sites	
Total fleet kilometres travelled	
Other KPI's (as appropriate)	

STATIONARY ENERGY USE				
Data	**Quantity**	**Measure (total divided by best normalising factor)**	**Greenhouse gas emissions (tonnes CO_2-e) – as applicable**	**R Cost**
Total Electricity consumption (kWh)		*kWh per FTE*		
		kWh per m^2		
***Total Green Power Consumption (kWh) (Future)**		*% of total kWh use*	*(GHG avoided)*	
***Total Gas consumption Mega joules (MJ)**		*MJ per FTE*		
		MJ per m^2		
		MJ per (select as above- as appropriate)		
Total energy consumption (MJ: gas plus MJ electricity)		*MJ per FTE or other (select)*		
		MJ per m^2		
Total Greenhouse: Emissions Stationary Energy			*<total of this column>*	
Comments				

WATER				
Data	**Quantity**	**Measure (total divided by best normalising factor)**	**Greenhouse gas emissions (tonnes CO_2-e) – as applicable**	**R Cost**
Water consumption kilo Litres (kL)		*kL per FTE or other (select)*	*If available – note this is a scope 3 GHG emission to be considered if usage is substantial*	
		kL per m^2 or other (select)		
Comments				

TRANSPORT

Data	Quantity	Measure (total divided by best normalising factor)	Greenhouse gas emissions (tonnes CO^2-e) – as applicable	R Cost
Petrol Fuel usage (L) Litres (L)		*g (GHG) / km*		
Diesel fuel usage (Litres)		*g (GHG) / km*		
Heavy Fuel Oil usage Litres (L)		*g (GHG) / km*		
LPG (Litres)		*g (GHG) / km*		
Total greenhouse gas emissions: Travel			*<total of this column>*	
Air travel travelled (km))			*If available – note this is a scope 3 GHG emission*	
Comments				

WASTE

Data	Quantity	Measure (total divided by best normalising factor)	Greenhouse gas emissions (tonnes CO^2-e) – as applicable	R Cost
Total waste generation kg's or tonnes		*Kg per FTE or other*		
Waste to Landfill kg's or tonnes		*Weight of materials as a % of total waste*		
Recycling Kg's or tonnes		*Weight of materials as a % of total waste*		
Organic Waste kg's or tonnes		*Weight of materials as a % of total waste*		
Total diversion kg's or tonnes		*Weight of materials as a % of total waste*		
Total greenhouse emissions: waste			*<total of this column>*	
Waste avoided kg's or tonnes		*Weight of waste as a % of total waste*	*GHG emissions avoided*	
Comments				

PROCUREMENT

Data	Quantity	Measure (total divided by best normalising factor)	Comments
Green procurement Total R spend (exclude stationary)		*% of total procurement spend (excluding Stationary)*	
Green Stationary Total R spend		*% of total stationary spend*	
Paper purchased Reams		*Reams per FTE*	

Other Significant impacts	*Include other indicators, e.g. biodiversity impacts, water quality, chemical use etc, as appropriate based on your Organisational Impacts Register.*

Total Greenhouse Emissions	*Total of stationary energy, waste and transport emissions. Note exclude your scope three emissions*

Data Comparison

Summarise changes over time

Data	Base Year	Year 1	Year 2	Change/ Comment
Total GHG emissions				
Total MJ stationary energy use				
Total MJ stationary energy by m2				
Total MJ stationary by FTE				
Total R Cost stationary energy				
Total kL water use				
Total kL water by FTE				
Total R Cost Water				
Total tonnes waste generated				
Total tonnes waste generated by FTE				
Waste diversion rate %				
Total R Cost Waste				
Total transport GHG emissions (tonnes)				
Transport GHG emissions (tonnes) by km travelled				
Total R cost transport				
Total Green Spend R				
Green Spend R as% of total				
Total Paper use (reams)				
Paper use (reams) per FTE				
Total R Cost Paper				

Data graphs

Use this space to report and graph out changes in your energy, water and waste impacts since your base line was established.

Include targets and business as usual projections where relevant in the graph.

Environmental objectives and targets

Objectives indicate the high level directions your division is heading in to reduce its environmental impact and do not necessarily need a set time frame or be quantifiable to be useful.

When setting objectives for your division ensure that they are consistent with the Imperial's Scope, Environmental Policy, LSMS Data management system and the biggest environmental impacts identified in your Divisional Impacts register.

Targets should be quantifiable and focus on what you hope to achieve over the life of this iteration of your environment strategy.

When setting targets you can either quantify the expected result of you action plan and use this to inform your action plan set "aspirational" targets and then establish what actions will be needed to reach them

In either case you need to consider if you have the resources available to meet the target and what your division's usual approach to setting reductions targets is.

As a rule, targets should be:
SMART
Specific
Measurable
Achievable
Realistic
Time-Framed – meaning they require a base line and target year

When presenting targets it is recommended to group them by environmental impact, e.g. group all energy related objectives together.

All objectives and targets must, as a minimum, reflect Imperial and Government policy commitments by embracing:

- ➤ targets for minimising water and energy consumption, and waste production
- ➤ a preference for procurement of sustainable products and services
- ➤ the integration of environmental assessment into key decision-making processes
- ➤ cover ALL entity operations including key services delivered and core business activities.

Example objectives and targets are provided below. The number for each can then be included in your action plan in the targets column for quick reference. At a minimum you should have at least one action for each objective or target listed.

Objectives and targets

Incorporate environmental considerations into all key service and core business activities.

Targets to meet this objective:

    1) Establish the environmental significance of all actions in current business plan by January 2020

Continually strive to reduce our greenhouse gas emissions

Targets to meet this objective:

    2) Reduce greenhouse gas emissions from our operations by 5% compared with <insert base year> by 20….

    3) 30% of Commercial and passenger vehicles in the fleet generate less than 150 g CO^2-e/km by June 20….

Continually strive to reduce our waste outputs

Targets to meet this objective:

    4) Reduce waste generation by 15% by 20…, compared to <insert year> baseline.

    5) Reduce instances of littering at sites we control by xx% compared to <insert year> baseline by 20….

Continually strive to reduce our water use

Target to meet this objective:

    6) Reduce water consumption by 20% by 20…, compared to <insert year>baseline.

Increase our ability to measure our environmental impacts through the Logistics Sustainability Management System.

Target to meet this objective:

    7) Develop targets for improving environmental performance for waste, energy and water reduction by January 2020.

Integrate environmental assessment into all decision-making processes and operations

Targets to meet this objective:

    8) Integrate environmental specifications into all contracts, tenders and purchasing templates by January 2020.

Create a culture of reducing our environmental footprint

Target to meet this objective:

    9) Include sustainability in all new and revised position descriptions by June 2020

Glossary

A

Absolute GHG Emissions Target
A target defined by a reduction in absolute (or total) emissions over time (e.g., reduce total greenhouse gas emissions by 20% below 2008 levels by 2020).

Additionality
A key criterion applied to emissions reduction projects for the purposes of offset development, additionality indicates that the project would not have occurred under the 'business as usual scenario'.

Anthropogenic
Made by people or resulting from human activities. Commonly used in reference to greenhouse gas emissions that are produced as a result of human activities.

Baseline GHG Emissions Inventory
A comprehensive, quantified list of an organization's greenhouse gas emissions and sources for the initial reporting year (base year). The baseline GHG inventory is the level of greenhouse gas emissions against which future GHG inventories are compared.

B

Boundaries
The inventory boundaries determine which emissions are accounted for and reported by the division. Boundaries can be determined by organizational structure, operational control, or geography.

C

Carbon Dioxide
A naturally occurring gas, and also a by-product of burning fossil fuels and biomass and a by-product of land-use changes and other industrial processes. It is the principal greenhouse gas resulting from human activities that affects the Earth's radiative (heat) balance. As such, it is also the reference gas against which other greenhouse gases are measured, and therefore has a global warming potential of 1.

Carbon Dioxide Equivalent (CO_2e)
The universal unit for comparing the emissions from various greenhouse gases. The carbon dioxide equivalent for a gas is derived by multiplying the mass of the gas by the associated GWP. For example, the global warming potential for methane is 21. This means that emissions of one metric tonne of methane are equivalent to the emissions of 21 metric tonnes of carbon dioxide. (Emissions are commonly reported in metric tonnes)

Carbon Intensity
The amount of carbon by weight emitted per unit of energy consumed. A common measure of carbon intensity is metric tonnes of carbon emitted per Megawatt hour (MWh) of energy used.

Carbon Neutral

A state of zero net greenhouse gas emissions within a predefined system with clear boundaries. Carbon neutral companies commit to measuring their GHG emissions annually, reducing emissions as much as possible within their own operations, then purchasing enough carbon offsets (certified emission reductions made by another entity) to account for all emissions that they couldn't reduce. Credible carbon neutral claims must be based on an inventory that includes all material direct and indirect greenhouse gas emissions and the organization must continually offset all emissions accounted for in its inventory (i.e., annually).

Carbon Offset

A project or activity that results in a given amount of greenhouse gases being avoided or reduced in one place, that is used to 'balance out' another's total GHG emissions. Emission reductions that are real, additional (beyond business as usual), measurable, permanent, and verified can generate offset credits. Credits are tradable certificates that can be purchased to help achieve a carbon neutral status, meet voluntary emission reduction goals, or, under certain climate policy approaches, to meet mandatory emission reduction requirements.

Climate Change

A significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change can result from both natural changes (such as changes in the sun's intensity or oceanic circulation) and human activities that alter the gaseous composition of the atmosphere (such as fossil fuel burning or deforestation).

Control

A company's ability to direct the policies of another operation. More specifically, a company is said to have operational control over a space if the company has the full authority to introduce and implement its operating policies at that facility.

Control Approach

An emissions accounting approach for defining organizational boundaries in which the company/ organization reports 100 percent of the GHG emissions from operations under its financial or operational control.

D

Direct Emissions

GHG emissions from sources that are owned or controlled by the reporting company or organization.

E

Emission Factor

A factor that converts activity data to GHG emission values. (e.g., kg of carbon dioxide emitted per litre of fossil fuel consumed).

F

Fugitive Emissions
Uncontrolled emissions including emissions from the production, processing, transmission, storage, and use of fuels and other substances, not emitted through an exhaust pipe, stack, chimney, vent or other functionally equivalent opening. Examples include releases of sulfur hexafluoride (SF_6) from electrical equipment, hydro fluorocarbon (HFC) releases during the use of refrigeration and air conditioning equipment, process equipment leaks, etc.

G

Global Warming Potential (GWP)
The ratio of radiative forcing (degree of warming to the atmosphere) that would result from the emission of one unit of a given GHG relative to one unit of CO_2. The global warming potential of CO_2 is one, with the GWP of all other greenhouse gases provided in reference to CO_2. For example, GWP of methane is 21, meaning that a given mass of methane is approximately 21 times more damaging to the atmosphere than an equivalent mass of CO_2.

Greenhouse Gas (GHG)
Naturally occurring and human-made gases that trap infrared radiation as it is reflected from the earth's surface, trapping heat and keeping the earth warm. The six main GHGs whose emissions are human-caused are carbon dioxide (CO_2), methane (CH_4), nitrousoxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphurhexafluoride (SF_6).

GHG Protocol
A set of common standards and calculation tools for measuring and reporting corporate GHG emissions. Developed by a multiple-stakeholder group convened by the World Resources Institute and the World Business Council for Sustainable Development.

GHG Source
Any physical unit or process that releases GHGs into the atmosphere.

GHG Target
The level of emissions that a company intends to reduce by a specific date as part of its commitment.

H

Hydrofluorocarbons (HFCs)
Compounds containing only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone depleting substances in serving many industrial, commercial, and personal needs. HFCs are emitted as byproducts of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are powerful greenhouse gases with global warming potentials ranging from 140 (HFC-152a) to 11,700 (HFC-23).

I

Indirect Emissions
GHG emissions that are a consequence of the reporting company's operations but occur at sources owned or controlled by another company.

Intensity-Based GHG Target
A target defined by a reduction in GHG emissions relative to a measurement of business activity, for example, reduce CO_2 per square foot of office space by 8% between 2008 and 2012.

M

Methane (CH_4)
A hydrocarbon that is a greenhouse gas with a global warming potential approximately 21 times higher than carbon dioxide (CO_2). Methane is produced through anaerobic (without oxygen) decomposition of waste in landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

Metric Tonne Carbon Dioxide Equivalent ($MTCO_2e$)
Common international measurement for a quantity of greenhouse gas emissions.

N

Nitrous Oxide (N_2O)
A powerful greenhouse gas with a global warming potential of 296 times that of carbon dioxide (CO_2). Major sources of nitrous oxide include soil cultivation practices, especially the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning.

P

Perfluorocarbons (PFCs)
A group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly CF_4 and C_2F_6) were introduced as alternatives, along with hydrofluorocarbons, to the ozone depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are also used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they are powerful greenhouse gases: CF_4 has a global warming potential (GWP) of 5,700 and C_2F_6 has a GWP of 11,900.

S

Scope 1 Emissions
The reporting division's direct emissions (e.g. Petrol, Diesel & HFO).

Scope 2 Emissions
The reporting division's indirect emissions from purchased electricity, heat, and steam.

Scope 3 Emissions

The reporting division's indirect emissions other than those covered in scope 2. Examples include upstream and downstream emissions, emissions resulting from the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, use of sold products and services, outsourced activities, recycling of used products, waste disposal, etc.

Sulfur Hexafluoride (SF_6)

A very powerful greenhouse gas used primarily in electrical transmission and distribution systems and as a dielectric in electronics. The global warming potential of SF_6 is 22,200.

About completing your Action Plan

Note that the number in the Target column relates to the Targets identified above in the Objectives and Targets section.

Example Action Plan

The Action Plan should have a clear timeframe (e.g. 2 years)
Action plans with suggestions for actions for the following aspects are presented below:

- ➢ **Organisational Impacts:** sustainability in your core business
- ➢ **Management and communications**: walk the talk and tell others
- ➢ **Education and training:** teach others to think and act sustainably
- ➢ **Waste**: reduce, reuse and recycle
- ➢ **Energy**: switch off, save energy and cut greenhouse gases
- ➢ **Transport**: travel smart for a healthy environment
- ➢ **Water**: save water, harvest and recycle
- ➢ **Purchasing choices**: think sustainably before purchasing
- ➢ **Operational activities**: sustainability in action
- ➢ **Biodiversity and water quality**: caring for your local environment
- ➢ **Planning and infrastructure**: plan for sustainability and build sustainably.

These will be monitored and reviewed at quarterly environment team meetings.

-

Organisational impacts	Target	Timeframe	Responsibility	Progress
	Refers to targets listed above	*When will this action be completed?*	*Which position will complete this action?*	*Is this action on schedule?*
Example action - Complete an environmental audit of core business activity to identify impacts.	*1*	*January 2020*	*Sustainability Manager/ coordinator*	*In progress*
Incorporate sustainability messaging into formal/ information material developed.				
Incorporate minimum sustainability considerations or requirements into funding or grant schemes (Section 12L)				
Ensure that environmental sustainability considerations are incorporated into the planning of your divisional infrastructure (both in terms of the physical buildings as well as the location, lay out and connectivity of sites).				
Integrate sustainability concepts and procedures into the risk management process.				
Insert your own actions based on impacts identified in your Impacts and Aspects Register (appendix 2 of the strategy template) here				

Management and communications	Target	Timeframe	Responsibility	Progress
Develop climate change and environment policy and have endorsed by the EXCO/Board				
Review climate change and environment policy every 2 years.				
Review targets for: ➢ Reducing greenhouse emissions from energy consumption and fleet vehicles ➢ Reducing waste disposal ➢ Water and paper consumption ➢ Increasing green procurement.				
Review existing decision-making procedures and amend to ensure environmental assessment is reflected.				

Management and communications	Target	Timeframe	Responsibility	Progress
Incorporate the Logistics Sustainability Management System responsibilities for this Action Plan into work plans of responsible staff				
Identify and establish staff 'champions' to assist with suggestions and actions.				
Develop environment team scope of activities, responsibilities and timetable for monthly meetings.				
Investigate the potential for carbon emissions offsets.				
Ensure environmental sustainability issues (i.e. greenhouse gas emissions and climate change) are considered in reviews of the divisions or strategic plans.				
Implement a staff behaviour change program focused on reducing energy consumption, including an intranet portal demonstrating what personal actions staff may take at work and at home.				
Communication				
Promote sustainability achievements at external events, networks, forums, and websites and make nominations for related awards.				
Improve education and awareness of contractors and staff regarding the use of green products and waste disposal procedures through including sustainability as a standing item on all teams and meetings				
Promote sustainable practices and initiatives at internal events and open days to include environmental considerations				
Introduce a reward and recognition programmes for champions, subject to management approval.				

Education and training	Target	Timeframe	Responsibility	Progress
Run workshops for all staff to inform them of the Climate Change and Environmental Sustainability Action Plan, objectives, targets and timeline of activities.				
Incorporate Sustainability programmes into induction program for new staff and contractors.				
Develop and implement a sustainability training program for staff to include coverage of energy efficiency, climate change, greenhouse gas issues, waste minimization, environmental procurement and water conservation.				
Provide change agent training to environmental champions to ensure effective delivery of behaviour change programs.				
Undertake a needs analysis for key staff involved in implementing the action plan.				

Waste	Target	Timeframe	Responsibility	Progress
Reduce				
Develop and implement a printing policy including setting all machines to duplex, rationalising printers/copiers, phasing out non duplex machines and guiding what should be processed electronically.				
Institute "think before you print" policy aimed at eliminating unnecessary printing. Reduce font sizes/use word processing software to fit more text onto paper.				
Require suppliers to use returnable/reusable cartons instead of cardboard boxes.				
Review bulk purchasing agreements for ICT equipment with a focus on minimising waste (i.e. excess packaging, packaging take-back, excess cords, software and post use collection).				
Encourage the use of electronic communications in place of hard copies. Review the records management policies and processes to accommodate electronic records.				
Review customer transaction service with consideration of introducing electronic billing and payment (EFT). Provide incentives (discount) for use.				
Reuse				
Conduct trial of recycled cartridges to determine quality and suitability for existing equipment.				
Donate to charities, or sell at auction old computer/electrical equipment, furniture, fittings that are still in good condition.				

Waste	Target	Timeframe	Responsibility	Progress
Provide staff with reusable water bottles and/or reusable mugs that can be filled at dispensers.				
Reuse incoming cartons for outgoing goods or for storage internally.				
Reuse scrap paper that has been printed on only one side for note-taking. Donate non-confidential scrap office paper to local schools for projects, etc.				
Recycle				
Introduce recycling systems for major waste streams including: ➢ Paper and cardboard ➢ Bottles and cans ➢ Packaging and plastics				
Recycle or ensure safe disposal of light bulbs and tubes.				
Arrange dedicated cardboard recycling skip or, if there are only small quantities, combine with office paper recycling (if recycler will accept mixed cardboard and paper)				
Arrange for collection and recycling of printer cartridges (if reuse option not available).				
Conduct quarterly visual inspections of bin contents to assess contamination. Update staff of outcomes and successes.				
For non-working equipment, send for repair or arrange for proper disassembly and recycling.				
Modify/refresh signage on recycling bins to promote correct recycling practice.				
Provide information and education to staff on appropriate usage and recycling of mobile phones.				
Remove individual landfill bins at desks and replace them with recycling bins (this results in very high rates of recycling since paper is by far the major component of office waste).				
Recycle or reuse all electronic and IT equipment following replacement.				
Monitoring and assessment				
Include requirement for waste contractor to provide monthly data on the weight and contamination rate of the waste and recycled collected.				

Waste	Target	Timeframe	Responsibility	Progress
Conduct waste audit/assessment of offices/warehouses to measure amount of material being recycled and land filled, quantify types of contamination in landfill and recycling streams,				
Report audit/assessment findings to senior management team and staff, especially waste minimisation objectives and targets, and seek feedback on planned initiatives.				
To promote paper recycling, eliminate recyclable paper from landfill waste bins through the office recycling program.				
Set up a printer cartridges recycling system (if reuse option not available).				
Set up a used battery recycling system (if reuse is not an option available).				
Donate office equipment, furniture, etc. at end of life to charity				
Public Place Infrastructure				
Install public recycling facilities and programs in public access areas.				
Establish a designated smoking area for staff and install appropriate butt litter containers.				
Install appropriate waste bins at building entrances, leisure spaces and areas where staff congregate.				
Investigate the potential for diverting green waste from buildings used by the public or stakeholders.				

Energy	Target	Timeframe	Responsibility	Progress
Undertake an energy audit of the office space/facility to benchmark performance and identify key opportunities for improvement across HVAC, lighting, IT and office equipment.				
Lighting				
Undertake light audit to identify energy efficient lighting opportunities (utilise lux meter to identify opportunities for de-lamping etc., consistent with SABS/European Standards.				
Replace lighting with more efficient technology (fittings and lamps) where appropriate.				
Install motion and light sensors to control lighting in all areas, including automatic switch off system after normal working hours.				

Energy	Target	Timeframe	Responsibility	Progress
Ensure replacement lamps are energy efficient, and that maintenance staff understand what technologies must be used when conducting reactive maintenance.				
IT and office equipment				
Install automated computer system switch off.				
Install adjustable time delay switch to control all portable air conditioners.				
Continue IT rollout of electronic document management system, flat screens and electronic access to information.				
Install timers on all relevant equipment (i.e. printers, copiers, kitchen boiling water units) to ensure they only operate during business hours.				
Ensure energy efficiency settings (i.e. energy star) are enabled on all relevant office equipment (i.e. computers, monitors, printers, photocopiers, etc.).				
Conduct a printer rationalisation review with a view to maximising the efficiency of internal printing and copying services. (This should include consideration of multi-function				

Use Smart Meter technology to monitor the energy consumption of key office equipment to inform the rationalisation of use or replacement of equipment. Key equipment to monitor:
  ➢ fridges
  ➢ photocopier
  ➢ computer
  ➢ shredder
  ➢ coffee machine
  ➢ multi-function devices
Use Smart Meter technology to evaluate and communicate the outcomes of activities including 'turn-off' policy and equipment replacement program to ensure all new equipment meets high energy performance standards.				

Install 7-day time switches for hot water and other appropriate appliances to turn-off outside of operating hours. (already listed above)				
Install Smart Meter (and sub meters where appropriate) on large facilities to measure and manage power consumption.				
Adopt shut down procedures for outside operational hours.				
Heating Ventilation and Air Conditioning (HVAC)				
Install timer system to ensure HVAC switched off after business hours.				

Energy	Target	Timeframe	Responsibility	Progress
Review building insulation levels and increase if appropriate				
Annually review operation of HVAC machinery to ensure that it is performing efficiently.				
Adjust temperature settings to limit heating to 24°C and cooling to 18-20°C and ensure thermostats are appropriately located.				
Energy supply and generation				
Investigate potential for localised renewable energy generation at facilities (solar, wind power).				
Purchase Renewable energy for 15% (or more) of total electricity consumption by 2025				
Incorporate a requirement in contract with Smart Meter supplier for them to provide an electronic, monthly summary of electricity consumption.				
Investigate the use of solar hot water heating on Imperial's sites to reduce electricity consumption				

Transport	Target	Timeframe	Responsibility	Progress
Fleet operation				
Continue to improve the fuel efficiency of the fleet by reviewing ghg emissions per km (including 4-cylinder vehicles, hybrid and diesel technology) and investigate the introduction of bicycles (electric and push) into the fleet mix.				
Continue to monitor fleet fuel consumption and regularly report on vehicle efficiency in terms of CO_2-e emissions per 1,000 000km travelled.				
Provide information and education on fuel efficient driving.				
Transport				
Investigate technological alternatives to air travel (i.e. teleconference and video conference).				
Fuels				
Investigate use of biofuels in fleet or operations (ethanol petrol, biogas and biodiesel).				
Monitor and report fuel efficiency of fleet vehicles to staff and encourage staff to use vehicles that are 'fit for purpose'.				

Water	Target	Timeframe	Responsibility	Progress
Reduce				
Purchase water-efficient appliances that meet energy efficiency ratings.				
Install check meters, where possible, to enable accurate monitoring. Conduct a water balance to identify major uses of water and leaks.				
Install and retrofit water-efficient plumbing at all facilities including: ➢ flow restrictors ➢ low-flow shower heads ➢ dual-flush toilets ➢ waterless urinals ➢ shower timers.				
Review fire equipment testing regime for potential opportunities to reduce associated water consumption.				
Review cleaning practices to identify opportunities to reduce water consumption (i.e. high pressure cleaning equipment and low water cleaning products).				
Undertake an annual check of water meters over night to identify water leaks.				
Implement a system for reporting and repairing of water leaks.				
Recycling and reuse opportunities				
Investigate the possibility of installing water tanks at facilities for capture and reuse of rainwater for toilet flushing where possible.				
Plan and implement a storm water capture/reuse scheme (i.e. reuse for vehicle wash down or irrigation).				
Investigate a grey water system to recycle water within office buildings.				
Open space irrigation and landscaping				
Water	**Target**	**Timeframe**	**Responsibility**	**Progress**
Develop a policy for the use of local and drought tolerant vegetation for non-irrigated landscaping				
Utilise drip irrigation and weather sensitive computerised irrigation systems in open space where practical.				

Purchasing choices	Target	Timeframe	Responsibility	Progress
Internal policies and procedures				
Create a spend profile for the division to assist in prioritising areas to focus green procurement programs.				
Liaise with other divisions that have implemented such policies to identify their barriers and keys to success.				
Develop or review purchasing strategy (including buy recycled policy) to include consideration of: ➢ green purchasing ➢ minimising volume purchased ➢ packaging waste ➢ storage of stock				
Develop standard environmental questions on how contractors are addressing their environmental impacts for incorporation into all tenders and contracts				
Ensure that environmentally sustainable development (ESD) considerations are incorporated into purchasing specifications for information technology equipment.				
Increase the use of recycled materials (and materials able to be reused at end of life) in infrastructure projects.				
Through your division's procurement program, implement improvements to the purchasing system to ensure efficient use of resources, a strategic procurement focus and a focus on both economic and environmental sustainability.				
Meet or exceed minimum energy and water efficiency standards when purchasing new white goods, IT peripherals and other appliances				
Engagement with suppliers				
Review supplier agreements to determine potential for switching to products with higher recycled content levels.				
Form a Sustainable Buy procurement programme for your division.				
Ensure environmental specifications are incorporated into key services contracts including cleaning.				

Biodiversity and water quality	Target	Timeframe	Responsibility	Progress
Implement Water Sensitive Urban Design policy and guidelines for building sites, retrofit and new sites as per government regulations (SABS/Euro Standard)				
Improve containment of water and materials on construction/building sites to reduce storm water pollution.				
Ensure all waste receptacles effectively prevent waste escaping, becoming windblown and scavenging by animals.				
Conduct initial and periodic audits to identify litter 'hot spots' (locations) and highly littered items, and measure changes in littering behaviour to identify further opportunities to reduce littering.				
Install or upgrade cigarette butt bins in designated smoking areas as per the Tobacco Products Control Act 83 of 1993				
Consider installing drainage filtration devices (gross pollutant traps or triple interceptors) to prevent litter and oils from entering waterways.				
Introduce or continue the use of ecologically sustainable weed control and removal methods.				
Biodiversity issues to be considered in design and maintenance in infrastructure, i.e. construction of roads, drains and buildings.				
Utilise drought tolerant and indigenous vegetation in plantings/open space.				
Install interpretative signage in open spaces to assist awareness of indigenous species.				
Educate relevant staff on the impacts of herbicide, fertiliser and pesticide use as well as the appropriate handling and spill response.				
Review use of and alternatives to using herbicides, pesticides and fertilisers along drainage and waterways.				
Develop and implement erosion and sediment control guidelines based on best management practices for staff and contractors on all construction sites.				
Contain stockpiles of 'loose materials (i.e. mulch, gravel and soil) within bundled areas to prevent run off.				
Develop and implement re-vegetation guidelines that protect vegetation and stabilise the property relating to wetlands adjacent to rivers and streams environments along waterways on the divisions property.				
Investigate the capture of storm water to reduce the impact of storm events on riparian environments.				

Planning and infrastructure	Target	Timeframe	Responsibility	Progress
Undertake and progressively implement the key actions and recommendations from water and energy audits, such as flow restriction valves, AAA shower heads, dual-flush toilets, energy efficient lights and solar hot water.				
Develop and or implement 'Green Building' standards for sites and undertake an audit to test compliance and identify implementation strategy.				
Establish programs to ensure all sites operate at best practice environmental standards (i.e. flow restrictors, dual flush, energy efficient lighting).				
Install environmental efficiency improvements when conducting scheduled upgrade/maintenance of sites (i.e. flow restrictors, insulation, weather strips, low energy lighting).				
Develop specifications to ensure materials used in infrastructure development take into consideration Design for Environment principles (i.e. low energy manufacturing, recycled content, ability for reuse or recycling at end of life, non-toxic).				
Design contract and tendering processes to ensure Environmental Sustainable Development considerations are including in selection criteria for capital works projects.				
Ensure sustainability principles are articulated in all maintenance contracts and procedures, reflected by minimum standards, comprehensive checklists and guidelines.				
Develop process to ensure life cycle costs are factored into project planning and design phase (with specific consideration of maintenance costs and end of life costs).				
Ensure water capture, recycling and reuse opportunities are considered and where possible included in the design and development of new and retrofitted sites.				
Ensure minimum environmental performance standards are included in leasing contracts and arrangements when renewing or developing leasing or tenancy agreements.				
Ensure adequate waste and recycling bins for staff and smokers are included in any new plans and infrastructure development for recreational areas.				

Monitor, review and continuous improvement	Target	Timeframe	Responsibility	Progress
Resource usage				
Review baseline energy use data to identify areas of significant energy consumption.				
Work with Sustainability manager and/or Smart Meter electricity supplier to establish a process to capture energy use monthly for areas of high energy use.				
Identify typical operating range of energy use for key sites.				
Review energy use of key facilities to identify significant fluctuations (5 - 10% above typical) in energy use. Investigate fluctuations.				
Install smart meters to allow for zoned monitoring of energy use at a key sites.				
Monitor energy consumption using data from smart meters. Investigate significant fluctuations in use.				
Review smart meter energy use data for outside operating hours (nights, weekends, non- function times).				
Procurement				
Identify the purchasing information captured by the finance system Hyperion, SAP (i.e. cost codes, descriptions, units, rand amounts).				
Develop a 'spend profile' of the division to identify where the division spends its money.				
Develop a plan to target specific areas of high consumption. (Informs targeting of specific suppliers).				
Produce and regularly review spend map, tracking the divisions spending with a view to track spending on 'green goods'.				
Investigate potential of capturing green procurement information in finance system Hyperion, SAP (i.e. via cost/item code).				
Contact top ten key suppliers to identify an agreed method that they can provide you with purchasing information.				
Contact top 11 - 20 key suppliers to identify an agreed method that they can provide you with purchasing information.				

Monitor, review and continuous improvement	Target	Timeframe	Responsibility	Progress
Waste				
Undertake annual waste audit of key operations.				
Request monthly waste production data from waste contractors across all waste streams (including information on contamination).				
Undertake weekly contamination checks of key office and non-office waste streams over a two month period.				
Record and track findings of contamination checks to identify problem items or areas.				
Develop and implement behaviour change program to address the identified problem items or areas.				
Undertake regular audits to identify any litter hotspots or measure progress on any litter prevention interventions and to ensure bins are not overflowing or damaged.				
Review and reporting				
Establish regular (monthly) environment team meetings as a forum to monitor progress of program including: ➢ progress of the action plan ➢ progress toward targets ➢ issues and opportunities arisen in the last period.				
Ensure the environmental program is a standing agenda item on senior management and divisions or work area team meetings.				
Report against key indicators quarterly to senior management including reference to targets and progress on actions undertaken and future areas of focus for the next period.				
Communicate quarterly environmental performance (including reference to targets) information to all staff via a range of methods including noticeboards, email, and intranet site.				
Report environmental performance, targets and achievements in annual integrated report.				
Continuous improvement				
Develop a program or process for capturing ideas from staff on how the organisation can reduce its environmental impacts.				
Investigate the potential to provide rewards to encourage staff to come up with innovative ideas on how Imperial can reduce its environmental impacts.				
Establish a process to allow key staff access to professional development to further advance the environmental program, i.e. industry associations, industry briefings, internal and external training.				

Monitor, review and continuous improvement	Target	Timeframe	Responsibility	Progress
Review implementation of the Action Plan.				
Review targets and update when performance is significantly above or below targets, or when the target date is met.				
Conduct workshops with key managers and operational staff across the division to: ➢ review past performance and successes ➢ identify challenges faced ➢ identify opportunities and future actions.				
Utilise information gathered in workshops to draft objectives and action plan for next period.				
Seek feedback from staff and management on draft objectives and actions.				
Finalise objectives and action plan for next strategy and seek endorsement from senior management.				

Review and progress reporting on the progress of the action plan

Provide detail here on how the progress of the actions will be reviewed and reported.

For Example:

> *Progress of the strategy implementation will be assessed at environment team meetings held monthly.*
> *An environmental sustainability progress report will be included in quarterly management meetings.*
> *Strategy to be reviewed annually. Performance progress and key achievements to be reported publicly through annual integrated report.*
> *Strategy and targets to be reviewed and updated every two years.*

Communications plan

An example communications plan structure is presented here as a guide, that can be freely adapted to suit the needs of your division. Some things to consider when completing this section:

It is preferable to have both an internal and external communications plan, especially if your operations have a large external focus.

There needs to be clear responsibility allocated for the actions in the Communications plan – eg. Manager, Communications Department – and these need to be incorporated into work plans etc.

There are a number of communications actions listed in the action plan above, so ensure completion of this section does not duplicate any above actions.

Background

Provide brief background information on why a communications plan has been prepared:
- *history in environmental performance*
- *commitments going forward*
- *what continued success is based on*
- *what the communication plan covers and how it will be delivered.*

Objectives

Why are we communicating? What are the objectives we wish to achieve? This plan will <insert details>......

This communications support aims to <insert details> …
- *communications plan objectives*

Target audience
- *All staff across the division.*
- *Stakeholders such as visitors to a facility.*
- *Contractors and temporary staff.*
- *Visitors to our sites*

Key messages - examples
- *Reduce, reuse, recycle… Relax.*
- *Let's rain in our water use. Save water.*
- *Play your part. Save paper.*
- *Shut it down whilst not around. Save energy.*
- *Reducing our environmental footprint.*
- *Walk, ride and take public transport. Travel smart.*

Communications Action plan – Example

In this section outline the activities you will undertake to communicate your environment program. The activities listed are examples only.

Theme	Activities	Responsibility	Timeframe	Progress
All	Hold a launch to introduce policy, strategy and staff communications campaign at January staff meeting.	*Communications Manger*	*January*	
All	Introduce campaign article into each staff newsletter – distributed quarterly.			
All	**Website**: promote environment policy and achievements. **Intranet**: inform staff of who's who on environment team, positive results obtained, and upcoming activities, practical actions they can take at work and home and where they find more information.			
Waste and paper	**Waste activities:** ➢ Visual audit of your bins – what's the biggest problem? Focused campaign. ➢ Get a spot at your 'team meeting' and do a one minute "What waste goes where" demo. ➢ Stick CDs and corks to your Green Collections box. ➢ Take photos of each bin on the floor and what it's for, compile and email around. **Paper activities:** ➢ Support the IT rollout of mandated default to duplex.			
Water	**Water activities:** ➢ Change water signs to blue. ➢ Inform staff on water achievements and at home tips.			

Theme	Activities	Responsibility	Timeframe	Progress
Purchasing and energy	**Energy activities:** ➢ Reward energy saving behaviours. ➢ Switch off signs. ➢ Inform staff of impact of lights off and de-lamping. **Purchasing activities:** ➢ Switch to more green products. ➢ > Inform staff of green purchasing options.			
Waste and paper	**Waste activities:** ➢ Send out email on what the signs mean and printing instructions. ➢ Maximising recycling at home. **Paper activities:** ➢ Default staff to duplex ➢ Get your managers to request all documents given to them be supplied in duplex format. ➢ > Get your managers to run an "email it to me" campaign and commit publicly to editing on screen for a week/month.			
Litter prevention	**Litter activities:** ➢ Highlight the potential for discarded butts to start bush and grass fires. ➢ Update signage on cigarette butt bins in outside staff areas. ➢ Inform staff of outdoor smoking areas.			

Evaluation – Example

In this section outline the indicators you will use to measure the effectiveness of your communications and behaviour change activities. Example indicators could include:

- ➢ *Number of activities:*
  - *Newsletters*
  - o *Staff presentations*
  - o *Campaign rollout.*

- ➢ *Number of staff reached and penetration across all departments.*

- ➢ *Staff feedback:*
  - o *Queries*
  - o *Suggestions contributing to the program*
  - o *Negative feedback.*

An initial internal survey on awareness and action on sustainability should ideally be undertaken prior to the implementation of the plan and repeated appropriately to enable changes in staff attitudes towards the program to be measured. A similarly focused survey may be appropriate for external communications for some organisations.

Appendix 1: Organisational Engagement Plan

This program requires the participation of all levels of your division in order to be effective.

The table below shows the different components of the Sustainability Strategy that require significant engagement with the division. For each area document:

➢ *the business unit in your division that needs to be engaged*
➢ *the key contact you have in that business unit*
➢ *specific areas that need to be covered with each business unit.*

Component of strategy		Role of the Executive*	Business units to engage with	Business units contacts	Specific areas to cover	Comments
Scope						
Achievements to date						
Environment policy						
Baseline data						
Environmental objectives and targets						
Action plan	Management and communications					
	Waste					
	Energy					
	Transport					
	Water					
	Purchasing choices					
	Operational activities					
	Biodiversity and water quality					

	Planning and infrastructure				
Communications plan					
Monitoring, review and continuous Improvement					

Appendix 2: Organisational Impacts Register

For each functional area/business unit of your division discuss:
- ➢ *their activities*
- ➢ *the impacts of their activities*
- ➢ *the significance of the impacts*
- ➢ *the data available to measure the impacts*
- ➢ *note who you have discussed this with.*

Activity (examples)	Impacts (examples)	Significance (high, medium, low)	Data available to measure impact	Reviewed by
➢ Site visits ➢ Interaction with Stakeholders	➢ Depletion of non-renewable resources ➢ Water quality impacts ➢ Biodiversity impacts ➢ Greenhouse gas emissions ➢ Air quality ➢ Regulatory landscape			

Appendix 3: Data Collection Plan

Keeping track of all the different data you need to collect, where it comes from, what it's for and what you've got at any particular time can be a daunting task.

Two data collection plans are presented here and each is designed to reduce the effort required for data collection and keep track of where you're at in the data collection process. Having this process documented can also assist in delegating responsibilities and transferring knowledge to others.

Plan 1

The key areas to document are explained below, but you may choose to add others that are more appropriate to your organisation:

- ➢ *Indicator – what is the exact indicator you have to report against?*
- ➢ *Method – how do you collect or calculate the indicator?*
- ➢ *Frequency – how often do you have to collect the data?*
- ➢ *Data recording – what format does the data come in?*
- ➢ *Responsibility – whose role is it to collect the data?*
- ➢ *Report to – where does the data get reported to?*
- ➢ *Status – when was the latest data received, what action has been taken to collect data?*

Indicator	Method	Frequency	Data recording	Responsibility	Report to	Status
Transport (data required for pool, dedicated and car hire vehicles) Fuel consumption (litres) Kilometres travelled	Data from fleet coordinator (internal)	Monthly	Listing of km and fuel usage by business unit	Sustainability Manager/ coordinator, fleet coordinator	LSMS Annual Integrated report	
Greenhouse gas emissions (tonnes CO_2- e)	Conversion of km and fuel use data LSMS	Monthly	Included in report with above item	Sustainability Manager/ coordinator	LSMS Annual Integrated report	

Indicator	Method	Frequency	Data recording	Responsibility	Report to	Status
Energy Total use (kWh) Use per square meter (kWh) Greenhouse gas emissions(tonnes CO^2- e)	Data from property managers, utility bills and suppliers	Monthly	Spreadsheet of use and cost data by building	Sustainability Manager/ coordinator, property managers	LSMS Annual Integrated report,	
Paper Total use (reams of A4 or equivalent) % total A4 paper purchased with recycled content	Report from stationery supplier via purchasing manager	Monthly	Listing of A4 purchases and % recycled content by work unit	Sustainability Manager/ coordinator and purchasing manager	LSMS Annual Integrated report	
Water Consumption (litres) Water per FTE Water per square meter	Data from property managers, utility bills and suppliers	Monthly	Spreadsheet of use and cost data by building	Sustainability Manager/ coordinator and property managers	LSMS Annual Integrated report	
Waste Waste generated per FTE (kg)	Waste audit report. Sum of landfill and recycling data	Monthly	Waste audit report and template	Sustainability Manager/ coordinator	LSMS Annual Integrated report	
Landfill per FTE (kg)	One central and one regional office waste audit	Monthly	Waste audit report and template	Sustainability Manager/ coordinator in liaison with waste auditors	LSMS Annual Integrated report	

Indicator	Method	Frequency	Data recording	Responsibility	Report to	Status
Total recycled (kg)	Waste audits, report from secure document shredding, toner cartridge recycling	Monthly	ISMS	Sustainability Manager/ coordinator in liaison with waste auditors	ISMS Annual Integrated report	
FTE	Report produced by Human Resources Department/payroll , Employee Workforce	Quarterly		Sustainability Manager/ coordinator and HRD	Basis for relevant reports above	

Plan 2

Monitoring, review and continuous improvement

The table below outlines the environmental monitoring plan to ensure that the key environmental performance indicators are continually being measured throughout the year. The task of monitoring each aspect may be delegated, however the responsibility and accountability rests with the identified person.

Monitoring schedule

What	How	How often	Historical data found in	Reported to	Collected by
Energy use	Smart meters to monitor energy usage	Monthly	Utility bills; Smart meter data	Executive Team (ET)	Environment coordinator/ Contributor
Water use	Sub meters to monitor peaks	Monthly	Utility bills; Sub meter reports	ET	Environment coordinator/ Contributor
Paper use	Purchasing records	Monthly	Reports from invoice system	Office Manager, ET	Finance department

What	How	How often	Historical data found in	Reported to	Collected by
Fuel use	Monthly bills and vehicle fleet log records	Monthly	Fleet software ; Spreadsheet	ET	Fleet Controller/ Contributor
Green purchasing	Recorded through purchase order forms	Monthly	Spreadsheet of % of total purchase	CFO, ET	Procurement officer
Office waste	Waste audits	Monthly	Spreadsheet of weighed waste & Recycling from waste management service provider	Office Manager, ET	Environment team
Staff culture	Eco footprint survey	Annually in September	Eco footprint report	HR Manager, ET	Environment coordinator
Trees planted	Site reports	Annually	Spreadsheet	ET	Operational manager
Air quality	Operational records	Annually	Reports from service provider	ET	Operational manager
Air travel	Flight invoices	Monthly	Reports from travel service provider	Finance Manager , ET,	Finance department
Gas consumption	Monthly utility bill; Retailer invoices	Monthly	Reports from invoice service provider	Office Manager, ET	Finance department

Annexure A - Additional Resources

For additional information on developing greenhouse gas reduction plans please refer to these commonly used information resources.

Carbon Trust

http://www.carbontrust.co.uk/cut-carbon-reduce-costs/pages/default.aspx

Energy Saving Trust

http://www.energysavingtrust.org.uk/business/Business/Information-centre

Pew Business Environmental Leadership Council

http://www.pewclimate.org/business/belc

WWF Climate Savers

http://www.worldwildlife.org/climate/climatesavers2.html

EPA Climate Leaders

http://www.epa.gov/stateply/