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Minimising the environmental footprint



WHY THIS IS A PRIORITY

Our ability to minimise our environmental footprint contributes to our competitiveness. Firstly, environmental considerations are a growing feature of tender requirements and secondly, fuel consumption is a major driver of logistics costs and emissions tax in countries where this is legislated. In addition, there is increased focus on environmental performance by various stakeholders.

Our biggest environmental impact is the CO₂ emissions associated with our road transportation and manufacturing businesses, with goods transported by inland waterway being less harmful. Our transportation of hazardous goods such as liquids and gases, is also key as it raises the risk of spillages which can contaminate water and soil.

Beyond our control, are the direct impacts of extreme weather conditions on our operations. We look for ways to guard against these risks, by either diversifying our product mix to mitigate against poor harvests or using flexible transportation options. For example, our mix of owned and sub-contracted shipping vessels in Europe enables flexibility during times of lower volumes and, in South America, our shipping fleet consists of boats able to operate in most weather conditions, which has provided us with the additional opportunity to service competitors that are unable to operate due to extreme weather.

The increasing costs associated with fuel and energy are material to both our transport and manufacturing operations. All large companies in Europe are required to implement energy management systems and improve their energy performance to enable the European Union to achieve its energy targets. Other aspects such as the European emissions standards which limit the exhaust emissions of passenger cars and trucks, and energy taxes, also contribute to our input costs. However, in some African countries our ability to reduce resource consumption and costs is curtailed by a lack of suitable infrastructure, which means that we need to use fuel-driven generators and access water from boreholes.

RISKS AND CHALLENGES

ALL REGIONS

- > **Costs** associated with energy consumption.
- > **Country-specific environmental legislation.**
- > **Direct impact of climate change** on day-to-day operations.

AFRICAN REGIONS

- > **Lack of suitable infrastructure.**

INTERNATIONAL

- > **Increasing environmental regulations** and new laws.

ENVIRONMENTAL COMPLIANCE AND AWARENESS

Where companies have their own environmental policies and procedures, these align to the overarching divisional policy and in certain operations the performance of dedicated sustainability managers is linked to environmental performance. The setting of targets, with the exception of waste management, is devolved to individual companies. For companies such as Imperial Retail Logistics (IRL), consumption of energy is heavily dependent on volumes from principals which are in turn impacted by market pressures, making it difficult to forecast resource consumption. Our focus in these companies is therefore less on target setting and more on controlling usage spikes, ensuring the integrity of data, implementing effective and efficient environmental management processes and making use of innovative technologies.

In Europe, we are ISO 50001 certified in energy management and a number of our sites are certified in accordance with the ISO 14001 environmental management standards.

We use awareness campaigns to drive new technologies and the acceptance of environmental performance as a key performance indicator and to influence employee behaviour.

Our driver training programmes include lessons on how to achieve optimum fuel efficiency from vehicles. Skippers are trained to read the geometry of the river bed and the hydrodynamic effects of the river and use these to save energy. Fuel consumption meters are installed in most wheelhouses and measure the separate consumption of the main engines. This keeps our skippers constantly informed and able to work out the ideal ratio between speed and fuel consumption.

Our environmental framework and policy standards set out our commitment to reducing our environmental impact and complying with environmental legislation in all countries of operation. Our environmental data is tracked by Imperial Holdings using an internationally accredited sustainability management system which is supported by a guideline for data collection.



ENERGY CONSUMPTION AND EMISSIONS EFFICIENCY

IMPERIAL LOGISTICS AFRICA

Fuel

Our vehicle replacement policies require that, where feasible, we purchase new trucks for our transportation fleets that are the highest Euro-rated vehicles available. In South Africa, this is limited to Euro 3 trucks due to a lack of refineries able to meet Euro 6 fuel specifications. All new vehicles are tested for their suitability and fuel consumption.

We use route optimisation software to enable efficient fleet planning and optimal travelling distances; and to reduce fuel usage, carbon emissions and delivery times. More broadly, these practices ease road congestion and reduce the potential for road traffic accidents. Route planning is tightly managed to ensure that we use the appropriate vehicles to transport goods and that ideal route plans are adhered to as precisely as possible.

We further conserve fuel by fitting aerodynamic streamlining kits to certain trucks.

Purchased electricity

Lighting and cooling are the two largest consumers of energy in a logistics warehouse. We use energy meters, installed at warehouses and depots, to measure consumption in real time and identify usage trends which inform our conservation measures. Our energy saving initiatives include energy saving lighting systems, motion sensors and photovoltaic (solar) installations.

In Nigeria, we have insulated Worldwide Healthcare's warehouses to reduce its generator load and our new Imperial Health Sciences warehouse in Kenya makes use of thermo-shield coating on the roof, energy efficient air-conditioning systems and a photovoltaic system to reduce electricity consumption.

IMPERIAL LOGISTICS INTERNATIONAL

In Europe, energy consumption is reported to the Imperial Logistics International management board and a central energy management team is located in the QEHS and sustainability department to continuously monitor and improve efficiencies.

Our road transport fleet consists of Euro 6 compliant trucks which emit 67% fewer particles and 80% less nitrogen oxide than Euro 5 vehicles, and benefit from lower toll charges. Our staff car policy regulates the engine power and emissions criteria of all our staff vehicles, and our company car fleet includes a plug-in hybrid.

Our fleet of eco-trailers is used to transport the heavy engine components of a large German automobile manufacturer. The reduced weight of these trailers enables us to transport up to three tonnes more cargo without exceeding maximum permissible total weight. If used optimally, operating costs are reduced due to fewer haulages and fuel savings on return journeys when the vehicle load capacity is lower.

Our shipping fleet consists of a combination of push boats and motor vessel barges to enhance efficiency and conserve fuel. The Imperial Freight Management System provides further fuel efficiency through dynamic route planning in real time. Our clients benefit from lower costs, shorter delivery times and quick access to information.

Purchased electricity

Our energy efficiency projects include LED lighting systems in our warehouses, lighting control systems, renewable energy sources and energy-saving enhancements to our IT infrastructure. Our move away from traditional personal computer (PC) workstations to slim-line terminal points, which access a central server, has saved up to 75% in energy and we have adapted the software application to save energy overnight. The terminal points also have a higher operating life than conventional PCs and they are 30% cheaper. Administration and support is also more efficient as terminals are managed from a central point from which all applications can be updated.

In addition, we have switched our data centre to up-to-date, energy efficient storage technology and equipment which has resulted in less power consumption, faster access to information, greater storage capacity and hardly any mechanical faults. Space required for servers has reduced by up to 70%.

The division's technical team is responsible for researching new and emerging technologies relating to fleet and warehouse management, fuel efficiency and fuel reduction technology, and energy efficiency.

In South Africa we use a vehicle management system in the Mercedes-Benz truck fleet to measure mileage, operational status and consumption, as well as to evaluate driving style. Used optimally, FleetBoard can result in a 10% reduction in fuel consumption.

In Europe, our fleet of prime movers is equipped with systems to adjust gear selection and cruise control settings, delivering savings in fuel consumption of up to 5%.

Using dry air climate control systems to reduce energy use

The logistics and supply chain management of chilled and frozen products is a high consumer of electricity which is required to refrigerate cold storage, receiving and dispatch areas. Where feasible, Imperial Cold Logistics uses dry air climate control systems to reduce electricity consumption and other overhead costs, as well as limit produce damage and waste. We have successfully implemented this technology in five Imperial Cold Logistics' operating sites.

Desiccant dehumidifiers use materials that attract and hold water vapour thereby removing moisture from the air. In refrigeration plants, the dry air climate control system can reduce electricity consumption by as much as 25% and less maintenance is required on the plant, facility walls, doors and shelving due to the absence of a wet and ice-laden environment. In addition, our employees are better protected from injury as their working environment is free of ice and water-covered floors. The system also removes the need for plastic strip curtains traditionally required to maintain temperatures in refrigerated spaces. The drier sterile environment helps to maintain compliance with food safety standards, as dry air protects products from ice damage, reducing product returns and waste.

A sustainable push for the environment

Together with Dutch company Van der Velden Marine Systems and the Veka shipyard, we developed an idea put forward by our Fleet Manager in the shipping business, to introduce two new generation pusher boats. Like an aeroplane that retracts its landing gear after take-off, the Hercules XVII and Hercules XVIII pusher boats operating in Paraguay are equipped with hydraulically retractable flanking rudders which enable them to travel faster, run more quietly and conserve fuel. Rudders are used to steer push boats and push convoys during special manoeuvres such as docking and embarkation. Our world-first flanking rudders are hydraulically retracted when they are not needed, smoothly closing against the body of the boat. Another benefit is that corrosion on the propellers, nozzles and main rudders is almost completely eliminated as the rudders are better protected against external and mechanical effects while on the move.

Initial trials proved that the boats are able to move six loaded barges with around 17 000 tonnes of cargo at increased distances of around 900 metres per hour. Depending on the depth of water, fuel consumption dropped between five and 7,5% which extrapolated over a year is at least 120 000 litres less fuel.

Other technologies used on the push boats include the real-time measurement of each engine's gas oil consumption. This is transmitted to our Asunción office over short time intervals for analysis and adjustment to driving behaviour. Our crews have received training on how to optimally operate the push boats.

Water from toilets and the greywater from showers and kitchens is cleaned and discharged into waterways, and river water is processed through an innovative drinking water treatment facility, securing the supply of drinking water and reducing the need for bottled water.

The travel comfort of our crew is also enhanced through sound insulation and vibration dampeners, and a double hull bottom ensures maximum safety. The boats also boast on-board gyms supporting the wellbeing of the crews.

New ways of working that support a client's sustainability drive

During the year, Imperial Automotive Logistics supported a major automobile manufacturer in switching its transport operations from trucking to rail service. In an agreement with a German railway infrastructure provider, we now load cargo using the railway sidings located at the manufacturer's spare parts warehouse. It is expected that up to four trains will transport cargo from the warehouse to the port every day. The switch improves service efficiency and reduces both the client's and our carbon footprint, with around 17 500 fewer truck journeys, saving around 88 tonnes of CO₂ every year.



WATER AND WASTE MANAGEMENT

We install water meters at our warehouses in South Africa to provide accurate data, identify usage patterns, highlight discrepancies in municipal bills and identify potential water leaks. Throughout Africa, wastewater recycling units, supplemented with rainwater harvesting systems, are used by certain companies in their wash bays to reduce demand on municipal water supplies and the amount of effluent discharged into sewers.

In the international operation, hazardous waste from the chemical manufacturing process is disposed of in accordance with the requirements of Germany’s Waste Management Act. Wastewater treatment plants are used to clean wastewater and re-use it for other industrial purposes at various sites, particularly those related to chemical production which is water intensive. Wastewater treatment plants are also used to improve the quality of water discharged by shipping vessels. Paperless systems or processes are also implemented where possible.

The nature of the products transported by Imperial Logistics Specialised Freight requires a key focus on guarding against spillages. Performance is monitored using technology systems and reviewed monthly by management committees. Internal assessments and independent audits are also undertaken. Pleasingly, hydrocarbon spillages have reduced year on year.

Building water vessels that support our sustainability drive

During 2017, Imperial Gas Barging purchased two new modern vessels, the hulls of which were designed together with universities to provide employees with better health and safety equipment and to minimise water pollution through on-board wastewater treatment. In addition, instead of one large engine, the vessels operate two smaller engines with technology that optimises fuel efficiency and reduces emissions.

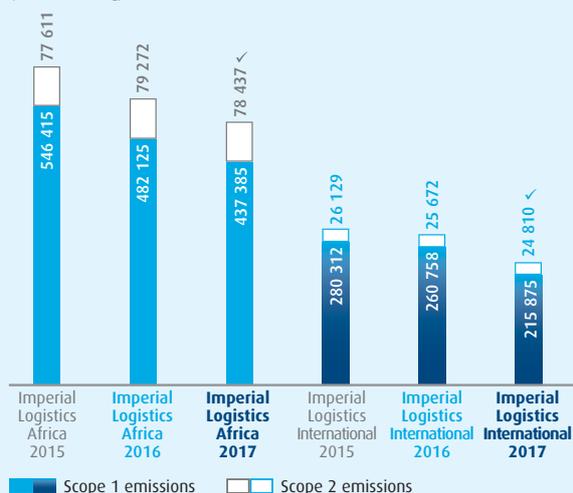
With their modern equipment, these vessels are attractive to clients and demonstrate our ability to develop sustainable solutions that are also cost effective. The vessels will be operational later in 2017, and health and safety statistics are expected to improve and the quality of the water discharged from the vessels should outperform the requirements set by European law.

2017 PERFORMANCE

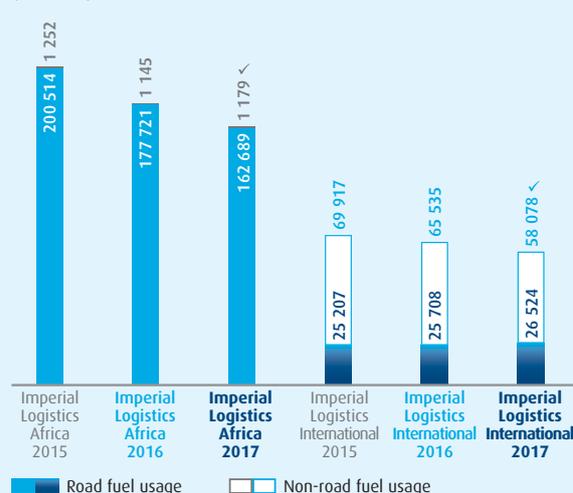
ENVIRONMENTAL FOOTPRINT	2017	% change	2016	2015
Africa				
Total Scope 1 and Scope 2 emissions (tonnes of CO ₂)	515 822✓	(8%)	561 397	624 026
Purchased electricity (megawatts)	83 031#	4%	79 989	79 644
Water consumption (kilolitres)	627 642✓	(8%)	679 727	680 215
Number of environmental incidents	53#	(7%)	57	80
Fines or penalties for environmental incidents	1#	100%	0	0
International				
Total Scope 1 and Scope 2 emissions (tonnes of CO ₂)	240 685✓	(16%)	286 430	306 441
Purchased electricity (megawatts)	54 111#	4%	52 194	56 890
Water consumption (kilolitres)	236 947#	3%	230 180	225 993
Number of environmental incidents	0	0	0	1
Fines or penalties for environmental incidents	0	0	0	0

✓ Satisfied with performance. # Area for improvement.

Breakdown of Scope 1 and Scope 2 emissions
(tonnes of CO₂)



Breakdown of fuel usage
(kilolitres)



Responsibly managing environmental performance following best practice standards and leveraging accurate data

During the year, Imperial Logistics Africa launched the following five environmental performance standards:

- > energy management;
- > greenhouse gas and climate change management;
- > waste management;
- > water and wastewater management; and
- > the prevention of soil and groundwater contamination.

Given our recent depot consolidations and closures, specifically in IRL and Imperial Cold Logistics in South Africa, we are relocating energy and water meters as required. We are also paying greater attention to accurate data capturing on management systems and IRL is working to automate energy, water and waste data capturing on an integrated platform to free up its employees to focus on business-critical processes.

2017 PERFORMANCE – continued

4% increase in electricity purchased in South Africa

During the year, Imperial Logistics Consumer Products moved into a new and larger warehouse, significantly increasing the electricity purchased for this business. In addition, economic pressures have impacted the rate at which we are able to deploy energy saving initiatives. Despite this, the following projects have been completed during the year or are underway:

- > The installation of motion sensors in Imperial Logistics Specialised Freight's offices.
- > A 112 kilowatt peak solar plant installed at Goldfields Logistics' Germiston office, as well as the installation of energy efficient lighting, light sensors and air-conditioning sensors at the Germiston and Bothaville offices.
- > A project by Imperial Logistics Consumer Products to position each of its depots in the most effective energy tariff band to access further cost savings.
- > Quarterly targets for energy consumption set by Imperial Cold Logistics.
- > The introduction at IRL of mobile alerts should an exceptional surge in electricity consumption occur.

Target: 80% of waste to be recycled by 2020

A medium-term target has been set to recycle 80% of our general waste in South Africa, reducing waste to landfill. Awareness training and procedures are being developed to assist companies to reach this target, and where feasible we will use the latest technology to ensure continuous improvement. We have formed strategic partnerships with two major waste companies and our agreements range from the responsible collection and disposal of waste to full onsite waste management (waste segregation, recycling and safe disposal) depending on the needs of each business.

Improving energy management

The successful implementation and certification of Imperial Logistics International's ISO 50001 energy management system is valid for three years and covers Germany, Luxembourg, Poland, Hungary and Sweden. The project required that we assess all energy sources to determine baseline consumption and working groups were formed within our business units to develop and implement energy efficiency measures. We have introduced a central energy management team and four sub-teams in business units, and we are developing an energy management manual.

To reduce double reporting, the ISO 50001 system and the Imperial sustainability management system will be integrated going forward. We will monitor data monthly and undertake an external audit annually. This will optimise data, ensure that our certification remains valid and will facilitate the re-certification process in 2019.

Target: reduce energy consumption in the international operation by 1,5% by the end of the 2017 calendar year.

Some of the initiatives undertaken during the year to achieve this target include:

- > The consolidation of our decentralised IT infrastructure into two global data centres and the introduction of new IT hardware that together have reduced energy consumption by 23% and provided an energy cost saving of €12 000 a year. In addition, the data centres provide standardised applications and improved systems performance that support future business growth, have simplified the monitoring of key performance indicators and reduced the number of IT support teams.
- > The conversion of 100 trucks to Euro 6, realising a toll fee saving of €111 510 a year and meeting our goal to increase this part of our fleet to 244 carbon-friendly Euro 6 trucks by 2018.
- > A new energy efficient LED lighting system installed in the Bishofsheim warehouse which has provided better working conditions for employees and realised an annual cost saving of just over €20 000 and an energy saving of 111 400 kilowatt hours a year.
- > A project to install new energy efficient charging stations and forklifts expected to realise a saving of up to 12 kilowatt hours and six kilograms of CO₂ a day and around €450 a year.

Testing new technologies to reduce harmful gases

We are testing a hydrogen unit which produces hydrogen energy from water, injecting hydrogen into the fuel system when it is needed. The system enhances the combustion process and reduces the emission of harmful gases. Initial tests, undertaken on a diesel-operated warehouse forklift, have provided positive results, reducing carbon monoxide emissions by 14%. Hydrocarbons reduced by 80% due to diesel consumption being replaced with hydrogen consumption. Going forward, the initiative will be rolled out to an active fleet of forklifts with our objective being to phase out the use of diesel-operated forklifts in most of our warehouses.

Using rainwater harvesting systems to reduce demand on municipal water supply

During 2017, Tanker Services Fuel & Gas installed a rainwater harvesting system at its Mobeni branch in Durban, South Africa. The system comprises seven 55 000 litre water tanks, pumps, rainwater gutters and filtration systems. The water is used to supply toilets, showers and basins and is purified through carbonised filters and ultraviolet (UV) filtration devices installed on all supply lines feeding to showers and basins. The UV filtration devices are inspected daily and a routine testing and maintenance programme ensures that gutters are clean and filters replaced. The system is designed to keep a three-month supply of water and an estimated 90% saving is expected on the municipal water bill, equating to around R12 700 a month. Tanker Services Fuel & Gas intends to roll out similar systems to its other company-owned sites with plans already underway for the Germiston branch.

A new warehouse in Dubai that has reduced shipping kilometres

Imperial Medical Solutions' newly built warehouse in Dubai enables our clients to benefit from this ideal location and has simplified the routing of products from our supplier in India to clients in Africa, which previously required that shipments were routed through the Netherlands. This has reduced freight and fuel costs, as well as emissions through reduced shipping kilometres. In addition, clients in Africa receive their orders earlier and medicines are delivered to customers sooner.

Reducing toxic waste

As a specialist in the shipping of gaseous substances, Imperial Gas Barging must use filters during the transfer of gases to and from the shipping vessel. We have shifted to new reusable gas masks instead of one-way gas filters and the change is expected to reduce the number of toxic filters we use by several thousands per year, reducing the amount of hazardous waste generated.



SDW: strengthening legitimacy; more information on Imperial group's environmental performance.



CDP: more information on how Imperial is managing its environmental impact.