



“As a global company, we have a special responsibility to the environment and need to set an example. In the Express division, that means using environmentally friendly solutions to meet customer expectations for fast and reliable services. For example, we are constantly improving how we utilize capacity, optimizing our flight routes and upgrading our aircraft to reduce fuel consumption as well as applying sustainable business practices to all aspects of our ground operations.”

**KEN ALLEN**

MEMBER OF THE BOARD OF MANAGEMENT EXPRESS



# ENVIRONMENT & SOLUTIONS

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## ENVIRONMENT & SOLUTIONS

### Management approach & targets ✓ PwC

As a leading logistics company we connect people around the world and are a significant driver of global trade. This generates opportunity and prosperity, but also impacts the environment through greenhouse gas emissions, local air pollutants and noise. We play a leading role in environmentally sustainable logistics and have gained worldwide recognition for our efforts in this area. Our CEO Frank Appel represents Deutsche Post DHL Group as a member of the UN High-Level Advisory Group on Sustainable Transport, which has issued recommendations for sustainable logistics. Our involvement has helped contribute to today's debate on sustainability and drive innovation in the area of sustainable transport.

In 2008 we became the first global player in the logistics industry to establish a climate protection target. This goal – to improve our carbon efficiency by 30% over the 2007 baseline by the year 2020 – was achieved in 2016, four years earlier than planned. Looking to the future, we

# 30%

**carbon efficiency achieved**

have now set our sights on another ambitious goal: By 2050 we want to reduce all transport-related emissions to net zero and

contribute to the two-degree goal established at the 2015 UN Paris Climate Conference (COP 21). Our plan to turn this vision into reality includes four interim targets for 2025:

- We want to increase our carbon efficiency by 50% compared to 2007 levels. This new target is based on the approach taken by the Science Based Targets initiative.
- We want to reduce local air pollution emissions by operating 70% of our own first and last mile services with clean pick-up and delivery solutions, including the use of bicycles and electric vehicles.
- We want more than 50% of our sales to incorporate Green Solutions, making our customers' supply chains greener.
- We want to train 80% of our employees to become certified GoGreen specialists and actively involve them in our environmental and climate protection activities. This includes joining partners to plant one million trees each year as part of our commitment to forest conservation.

In line with these objectives we continue to develop measures to reduce our own emissions, and we support our customers and subcontractors in reducing the impact of their business on the environment. We develop innovative efficiency measures tailored to specific regions and areas of activity; these measures are then implemented to improve fuel efficiency, optimize our networks and routes, and improve the energy efficiency of our buildings.

We are also involved in a number of initiatives to achieve greater transparency and comparability in the area of greenhouse gas emissions data collection and reporting.

Our efforts in the area of environmental protection are guided by the concept of "Shared Value" – the idea that we can create business value by contributing to society and the environment. One component of the Shared Value approach is the development of new environmentally-friendly logistics solutions, our GoGreen Solutions, with which we not only fulfill our customers' expectations and needs, but also contribute to the success of our own business. Due to their importance, our environmental protection activities are anchored in our corporate strategy.

## KPIs and targets ✓ PwC

Focus area	KPI	Target 2016	Status
Carbon efficiency	Carbon efficiency index (CEX)	Improve CEX by at least one index point over previous year	Achieved
Energy management system		Continue the implementation of an energy management system based on the ISO 50001 standard at sites within the EU	Achieved
		Expand our own 6-Step Approach to environmental management to include the aspect of energy management	Will be met in 2017
Local air pollution and noise		Give this area special attention with the goal of developing relevant targets and reviewing the applicability of existing KPIs	Achieved
Energy consumption and monitoring systems		Roll out smart metering technology at relevant sites throughout Germany	Achieved
Lighting systems		Upgrade all of our mail sorting centers in Germany to LED lighting by 2019	One-third of mail sorting centers fitted with LED lighting
Heating systems		Upgrade the heating systems in all of our parcel centers in Germany, replacing them with energy-efficient combined heat and power plants	20 out of 27 parcel centers upgraded
<b>Target 2017</b>			
Energy efficiency and climate change		We want to reduce all transport-related emissions to net zero by 2050.	
Carbon efficiency	Carbon efficiency index (CEX)	By 2025 we will increase our carbon efficiency by 50% compared to 2007 levels. <ul style="list-style-type: none"> <li>■ Interim target for 2017: Improve CEX by one index point</li> </ul>	
Local air pollution		By 2025 we will operate 70% of our own first and last mile services with clean pick-up and delivery solutions. <ul style="list-style-type: none"> <li>■ Interim target for 2017: Develop pick-up and delivery solutions, prepare sites for e-mobility</li> </ul>	
Green Solutions		By 2025, more than 50% of our sales will incorporate Green Solutions. <ul style="list-style-type: none"> <li>■ Interim target for 2017: Develop strategies and campaigns</li> </ul>	
Employee involvement		By 2025, train 80% of our employees to become certified GoGreen specialists and actively involve them in our environmental and climate protection activities. This includes joining partners to plant one million trees each year as part of our commitment to forest conservation. <ul style="list-style-type: none"> <li>■ Interim target for 2017: Plant one million trees together with partners</li> </ul>	

## Environment & climate protection ✓ PwC

GoGreen, our Group-wide environmental protection program, showcases our innovative strength in the area of sustainability. The GoGreen program includes a diverse range of innovative measures that make lasting contributions to improving our carbon efficiency and reducing air pollution and noise. In 2016 we achieved our efficiency goal set back in 2008. We have now begun working towards a new long-term aspiration: to reduce all transport-related emissions to net zero by 2050. Based on our 2050 aspiration, we have defined four strategic interim goals to be achieved by the year 2025. These interim goals cover four main aspects: global emissions, local emissions, green solutions and employee engagement.

When considering greenhouse gas emissions, we include not only the direct emissions generated by our own fleet and buildings, but also the indirect emissions from our transportation subcontractors, which account for the largest share of the Group’s overall emissions. The focus areas of our GoGreen program are identified together with our stakeholders and defined in our Group-wide Environmental and Energy Policy; our environmental management system, in turn, ensures implementation of this policy. These focus areas include fuel and energy efficiency, the Group’s environmentally-friendly products as well as raising awareness and training employees in the area of energy and environment.

We consider natural resource consumption and biodiversity to be lower-priority focus areas. Our business activity does not involve intensive use of water or wood, nor does it generate significant waste. Furthermore, our sites and activities do not have a significant impact on biodiversity. Independent of our environmental protection priorities and main action areas, we of course always act in accordance with existing environmental laws and regulations.

Our activities in the area of environmental protection have received top ratings from leading supplier evaluation platforms as well as from the largest and most influential CR rating agencies.

### Environmental issues anchored in Group policies ✓ PwC

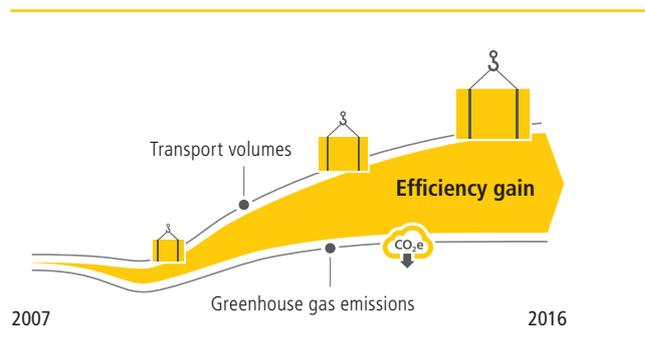
In addition to our Environmental and Energy Policy, we have also included environmental issues in other key Group policies. This puts us in position to achieve the ambitious goals set by our environmental protection program.

- Investment Policy: One of the functions of this policy is to ensure that any new acquisitions are more carbon efficient or environmentally-friendly than existing assets.
- Biofuel Policy: This policy prohibits the use of biofuels that negatively impact local food production in the countries where they are produced.
- Paper Policy: The Paper Policy requires us to purchase recycled paper whenever certified recycled paper is available on the local market. The full policy is available for download.

### Improving fuel and energy efficiency ✓ PwC

Our aspiration is to achieve net zero emissions in our transport operations by the year 2050. This means improving efficiency in the area of transportation and decoupling the link between emissions and transport volumes. Optimizing our routes and modernizing our air and road vehicle fleets are just two of the ways we do this.

#### Efficiency principle



A comparison of the various modes of transport – including air, road, rail and ocean – reveals that air transport produces the greatest share of both greenhouse gas emissions and the local air pollutant sulfur dioxide (SO<sub>2</sub>). In the case of road transport, greenhouse gas emissions and particulate matter (PM<sub>10</sub>) emerge as the most relevant factors. As part of our efforts to reduce local air pollutant emissions, one of our interim goals is to operate 70% of our own first and last mile services with clean pick-up and delivery solutions, including bicycles and e-mobility.

### Green products optimize our customers’ environmental performance ✓ PwC

Through our GoGreen Solutions customers benefit from our environmental protection expertise and – in

the spirit of Shared Value – receive valuable support in optimizing the environmental efficiency of their own business processes. More and more customers today request environmentally-friendly transportation services or award their business to providers who have environmental management systems and measures in place.

In line with our vision for net zero transport-related emissions by 2050, we want more than 50% of our sales to incorporate Green Solutions by 2025, making our customers' supply chains greener.

#### **Turning employees into multipliers** ✓ PwC

Our employees play a critical role in realizing our environmental goals, which is why one of our new interim goals focuses on training 80% of our workforce to become certified GoGreen specialists and actively involving them in our environmental and climate protection activities. This includes joining partners to plant one million trees each year as part of our commitment to forest conservation.

#### **Standardized energy and environmental management processes**

✓ PwC

We maintain over 12,000 sites worldwide – including office buildings, mail and parcel centers and logistics warehouses, as well as Packstations and drop-off points. Awareness with regard to the environment and climate is integral to all operational processes at our sites. As part of the Group's own internal environmental management process – the 6-Step Approach – we are engaged in a continuous improvement process, constantly developing and implementing improvement measures to help us achieve our environmental targets. The process steps are based on the ISO 14001 standard.

Of the 10,307 sites suitable for external certification, some 4,990 were certified according to ISO 14001 in the reporting year. This represents approximately 48% of our sites, eight percentage points fewer than in the previous year. This decrease is attributable to an 11% increase in the number of our sites, which were included in the year's calculations. An additional effect was our increased focus on the ISO 50001 energy management standard in Europe – in the reporting year we were able to certify 4,975 of our sites according to ISO 50001.

## Efficiency management

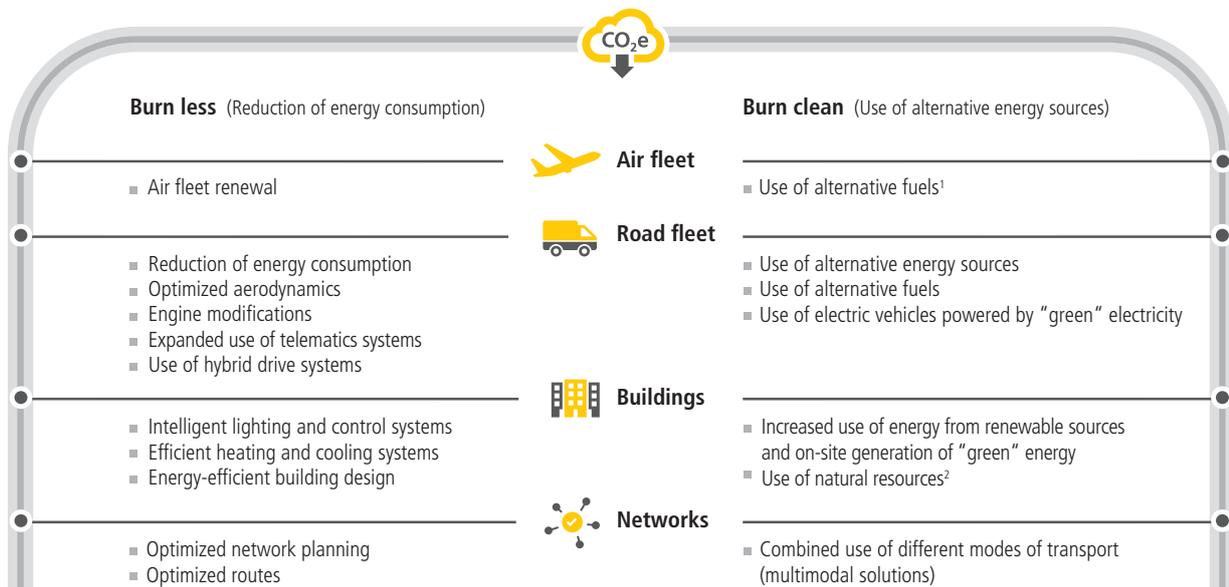
As a global logistics provider we maintain our own fleets and buildings and rely on additional capacity provided by subcontractors. In the area of ocean and rail freight, we work together with subcontracted shipping and rail companies.

We continuously improve the efficiency of our own fleets and buildings with the help of a comprehensive efficiency management system which includes the use of innovative technologies. The Group’s Investment Policy requires verification that any new acquisitions offer

greater carbon efficiency or be more environmentally friendly than existing assets, which is why advanced efficiency technologies are already standard equipment in many of our fleets and buildings.

All of our efficiency measures are guided by two basic principles: “burn less” and “burn clean”. “Burn less” measures help us reduce the energy and fuel consumption of our operations while “burn clean” measures allow us to tap additional potential for emissions reductions. This approach also has a positive impact on local air pollution and noise.

### Efficiency improvement approach



<sup>1</sup> Currently not possible. Participation in relevant Initiatives (aireg e.V.) <sup>2</sup> Daylight and rainwater harvesting

## OPTIMIZING AIR TRANSPORT EFFICIENCY

Deutsche Post DHL Group is one of the world’s leading providers of international express services. With our fleet of over 250 dedicated aircraft comprised of 190 cargo planes and a number of smaller feeder aircraft, we serve approximately 500 airports worldwide via 19 main regional hubs and three global hubs in Leipzig, Cincinnati and Hong Kong.

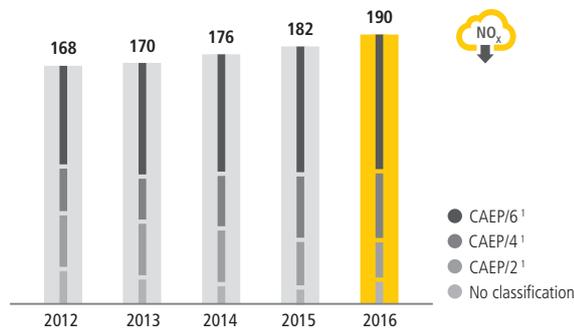
In the reporting year we again recorded growth in transport volumes; this resulted in increased kerosene consumption within our own fleet despite continued progress in route and network optimization. At 1,333

million kilograms, kerosene consumption in 2016 was slightly higher than the previous year. The greenhouse gas emissions from our air transport operations amounted to 4.23 tonnes of CO<sub>2</sub>e in 2016, accounting for approximately 70% of our direct greenhouse gas emissions (GHG Protocol, scopes 1 and 2). Air transport is also a significant source of the local air pollutant sulfur dioxide (SO<sub>2</sub>).

### Modernizing aircraft

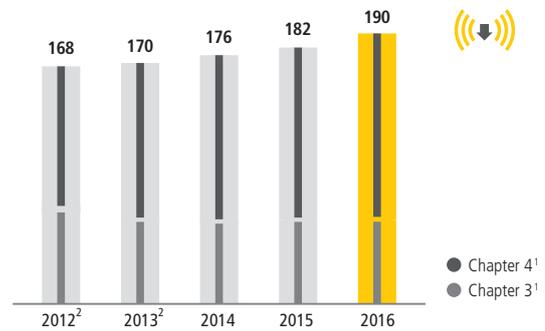
Air transport poses special challenges due to comparably high fuel consumption and emissions. We respond to these challenges with our “burn less” approach, which means continually investing in quieter and more efficient aircraft.

Aircraft by emissions class



<sup>1</sup> Classification issued by the Committee on Aviation Environmental Protection (CAEP). The higher the CAEP class, the more stringent the requirements.

Aircraft by noise standards



<sup>1</sup> International Civil Aviation Organization noise standard classification; <sup>2</sup> Chapter 3 includes one aircraft without classification.

In the reporting year we added additional Boeing 757 aircraft to our fleet after deploying the first tranche in 2015. These offer increased loading capacity, improved technology and are significantly more efficient than previous models. These aircraft are not only more environmentally-friendly, but also require fewer repairs and provide improved working conditions for flight personnel.

In the reporting year we also signed an agreement to convert four Airbus A330-300 from passenger to cargo aircraft. The converted aircraft will feature cargo capacity in the mid to high range, offering extra flexibility and increased fuel efficiency per kilo of air cargo.

In keeping with our “burn clean” approach, we also support the use of alternative aviation fuels. However, at present not enough is known about how these fuels impact air operations and the environment, ruling out their large-scale deployment. We are currently working together with other companies as part of the Aviation Initiative for Renewable Energy in Germany e.V. (aireg) to improve the viability of such alternative aviation fuels. In the reporting year, as part of the research partnership project airegEM, we measured alternative fuel emissions through a series of ground-based engine tests and then simulated emissions for our fleet using representative flight profiles. This allowed us to gain additional insight into biofuels and how they would impact the environmental performance of our air fleet.

Reducing noise pollution is another goal of our air fleet modernization efforts. Today, more than two-thirds of our fleet already meets the highest noise standards prescribed by the International Civil Aviation Organization (ICAO).

We are also involved in local noise abatement initiatives such as a pilot project carried out by the Leipzig/Halle airport to explore alternative landing procedures. It involves combining the Point Merge procedure and the Continuous Descent Approach as a possible measure for reducing local noise pollution.

MORE EFFICIENT ROAD TRANSPORT

With a fleet of more than 92,000 vehicles worldwide, we offer the full spectrum of transportation services – from short-range and medium-range delivery, to regional and long haul transport with heavy trucks. For more efficient and environmentally friendly transport we need to apply operationally suitable solutions that are tailored to the varying demands and requirements of our vehicles. We therefore depend on a diverse range of measures based on factors such as vehicle type, utilization and route to maximize potential efficiency gains.

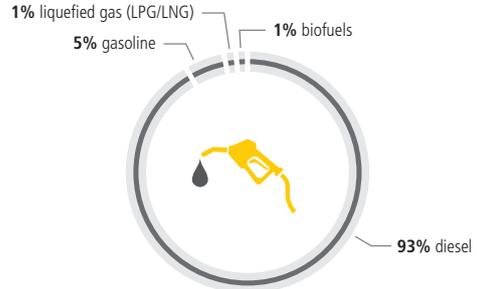
**Deutsche Post DHL Group vehicle fleet in 2016**

Total 92,328 vehicles



**Fuel use for road transportation<sup>1</sup> ✓ PwC**

Total 449.8 million liters



<sup>1</sup> Covers consumption data for our own vehicles only

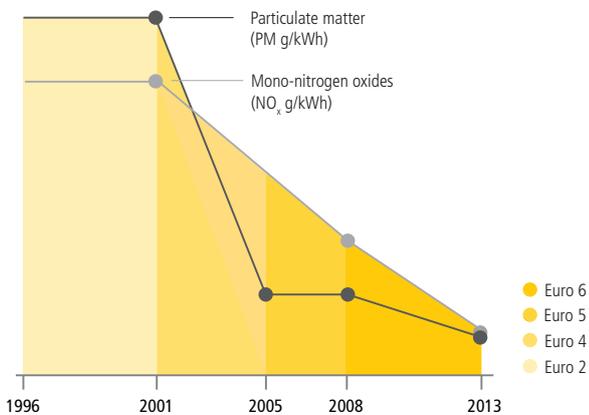
Despite a continued increase in transport volumes, at 1.15 million tonnes, the greenhouse gas emissions generated by our vehicle fleets in 2016 remained stable at the previous year's level. This positive development can be attributed to our efficiency measures. The consumption of liquid fuels totaled 449.8 million liters, remaining at the previous year's level; the consumption of gaseous fuels totaled 1.9 million kilograms.

For this reason we continuously upgrade and renew our fleet in accordance with the latest emission standards. Today, more than 48,000 of our road vehicles in Europe already meet Euro 5 or Euro 6 standards. Our use of electric

vehicles, natural-gas powered vehicles and fuel efficiency technologies also has a positive impact on the emission of local air pollutants.

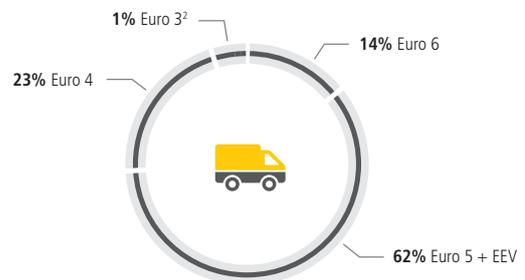
As a way to help improve local air quality, one of our goals for 2025 is to operate 70% of our own first and last mile services with clean pick-up and delivery solutions. This also includes fully or partially zero emission solutions, such as delivery on foot, by bicycle or by electric vehicle, with e-mobility solutions ranging from all-electric drives for short distances to plug-in hybrids and fuel cells for longer range operations. These measures also contribute to minimizing noise pollution in urban areas.

**Threshold limits for air pollutants**



**Vehicles by emission class in 2016**

Total 63,861<sup>1</sup>



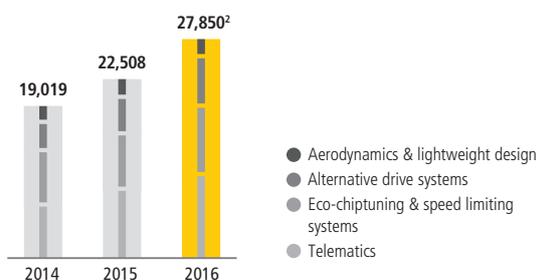
<sup>1</sup> Covers our largest vehicle fleets within scope of Euro emission classification;  
<sup>2</sup> Includes Euro 1 and 2 vehicles

### Efficiency projects for the road vehicle fleet

We implement a wide range of measures to improve the carbon efficiency of our road fleet – measures which also help reduce fuel consumption. Solutions here focus mainly on aerodynamics, eco-chiptuning technologies and light-weight vehicle design, but also include measures such as low-rolling resistance tires and telematics. All measures are first tested for their effectiveness before being rolled out on a larger scale.

Along with technical modifications made to conventional fuel vehicles, we have also increased our efforts to deploy alternative drive technologies and alternative fuels as a way to further reduce our greenhouse gas emissions.

#### Efficiency-enhancing technologies in the road fleet<sup>1</sup>



<sup>1</sup> One single vehicle can be modified with more than one optimization measure.

<sup>2</sup> Data includes 2,240 measures implemented on subcontractor vehicles.

This includes mainly electric and natural gas powered vehicles for short distances, as well as sustainably produced, advanced generation biofuels for long-haul transport. Out of about 92,000 of our own road vehicles deployed worldwide, we have already enhanced approximately 20,500 vehicles with over 25,600 technical modifications – with several different modifications often made to a single vehicle.

A detailed overview of individual efficiency measures as well as a multi-year overview can be found in the Annex of this report.

In the reporting year we tested and evaluated new technologies for future deployment. As in the previous year, one of our main focus areas was on deployment of low-emission drive technologies (“burn clean”) for our urban mail and parcel delivery services. We reached a number of milestones with our own electric delivery vehicle, the StreetScooter:

- Our subsidiary StreetScooter GmbH expanded its production capacity and, in August 2016, produced its one-thousandth StreetScooter vehicle. In all, we have already deployed more than 2,000 StreetScooters in our mail and parcel delivery operations in Germany. We will reach a production capacity of up to 10,000 units a year in 2017.
- In 2016 we also launched production of the “Work L” model – the long version of our tried-and-tested StreetScooter. The “Work L” features significantly greater load capacity with eight cubic meters of loading space (standard model: 4.3 cubic meters) and a maximum vehicle load capacity of 1,000 kilograms (standard model: 710 kilograms).
- StreetScooters are part of our operations in other European countries as well; additional StreetScooters were deployed in the Netherlands in the reporting year.

We also implemented a number of innovative measures in 2016 in line with our commitment to “burn less”:

- In Europe we established minimum technology standards for newly acquired trucks. These include maximum speed limiters, automatic motor switch-off when idling, tires with low roll resistance, as well as aerodynamically formed swap bodies.
- In the Express division we introduced a commitment to using electric vehicles for short hauls (up to 100 kilometers) and natural gas powered vehicles for long hauls in Europe whenever economically and operationally feasible. In addition to this, all newly acquired vehicles were fitted with speed limiting and engine shut-off systems, low-rolling resistance tires and telematics.
- The Supply Chain division in Asia Pacific fitted numerous vehicles with telematics systems, including 400 vehicles in Thailand, 75 in Japan, 40 in New Zealand and ten in China. The pilot phase was successfully completed in Australia (130 vehicles) and India (15 vehicles), with regular operations planned for 2017.

## CONTINUOUSLY IMPROVING NETWORKS AND ROUTE PLANNING

We achieve additional efficiency gains by optimizing our route and network planning, switching to other modes of transport and optimizing capacity usage. Here's a look at some of the projects implemented in the reporting year:

- **Alternative modes of transportation:** We expanded the use of bicycle couriers for express deliveries in the reporting year, with bike couriers now on the streets in 58 cities in twelve different European countries. The second generation DHL Cubicycle, a special cargo bicycle, was also rolled out in the Netherlands. The new model features electronic locks, a lighter cargo box, and a faster loading system.
- **Network optimization:** In Japan our Supply Chain division introduced a new transport solution which integrates all modes of transport and can be adjusted to suit the individual needs of customers. The centerpiece of this solution is a control tower housing more than 20 employees who centrally administer and optimize incoming orders. DHL's proprietary solution "ConnectedTransport" ensures not only maximum transparency for customers regarding their order status, but also helps optimize fuel consumption with improved capacity utilization and combined use of different modes of transport.

## INCREASING THE EMISSIONS AND ENERGY EFFICIENCY AT OUR SITES

To improve the efficiency of our buildings, we inspect and assess each and every site and, as part of our environmental and energy management system, develop appropriate efficiency strategies:

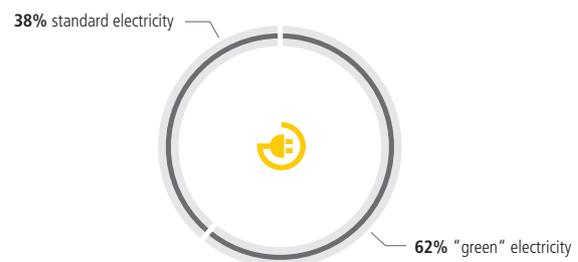
- Use of modern lighting technologies and heating and cooling systems with intelligent controls ("burn less")
- Use of electricity from renewable energy sources such as wind, hydropower, solar and biomass ("burn clean")

All solutions are designed to be commercially viable for the occupation period of each building, depending on whether the property is leased or owned by us. Technical measures

are just one element in our efforts to improve the efficiency of our buildings. The employees working at our sites also play a key role.

Energy consumption in our buildings and facilities in 2016 was 3,489 kWh – a 12% increase over the previous year. The share of electricity from renewable sources remains at over 60%. In Belgium, Germany, France, Ireland, Italy, the Netherlands, Norway, Sweden, the UK, and the US, we refrain almost entirely from using electricity from conventional energy sources and obtain over 90% of our energy needs from renewable sources. Through our use of renewable energy we were able to save 0.44 million tonnes of greenhouse gas emissions in 2016.

### Power consumption at Deutsche Post DHL Group in 2016<sup>1</sup> ✓ PwC



<sup>1</sup> Includes electric vehicles

The multi-year overview of the complete energy consumption data can be found in the Annex of this report.

In addition to reducing our greenhouse gas emissions and improving energy efficiency, we are also intent on reducing noise pollution. At sites located in or near residential areas, our local management works closely together with residents and other stakeholders to ensure that noise pollution caused by our business activity is reduced to an acceptable minimum.

### Major building management projects

Our building management focuses mainly on measures that reduce energy demand and thus greenhouse gas emissions ("burn less"). Major projects at our sites in 2016 included the following:

- **Energy consumption and monitoring systems**  
As planned we began introducing smart meter technology to sites in Germany in 2016; currently this

technology is already being used at over 300 sites. A total of some 320 sites are scheduled for the upgrade and we plan to complete this process by the end of 2017.

- Lighting systems

We conducted lighting analyses at 158 of our sites in Europe and Asia in the reporting year. As a result, more efficient solutions were rolled out or initiated at 55 of these sites. We continued to refit our mail sorting centers in Germany with more efficient and cost-effective LED technology as planned. Seventeen mail sorting centers were refitted with LED technology in 2016, which means that to date 28 out of a total of 86 mail sorting centers have already been equipped with LED lighting. We plan to upgrade an additional 22 mail sorting centers in 2017. The project will be completed in 2019.

- Energy-efficient heating systems

Twenty parcel centers in Germany were fitted with combined heating and power units – 25% of the electricity requirement at these sites is now generated by the combined heat and power systems. In addition, the thermal discharge (waste heat) generates up to 50% of the hot water needed at the respective sites. In 2017 we plan to convert the remaining seven parcel centers to combined heat and power.

#### Examples of construction projects

- Our new Express facility at London's Heathrow Airport was awarded a rating of "excellent" from BREEAM, a sustainability certification program in the UK, for its use of sustainable materials, optimization of energy and water efficiency, and resource saving measures. The certification also recognized other aspects, including noise abatement, air quality and the integration of charging stations for electric vehicles.
- In Obertshausen we launched operations at what is now Germany's largest parcel center. Fitted with a photovoltaic installation and combined heat and power unit coupled to a condensing boiler, the Obertshausen parcel center is capable of generating all of the electricity needed for its operation. Outdoor facilities, operational buildings, corridors and washrooms are all fitted with energy efficient LED lighting. In addition, free cooling technologies enable highly efficient air conditioning in server rooms.
- We also installed 3,000 solar panels at our new 24-hour South Asia Express hub at the Singapore Changi Airport. With an output of 950 megawatt hours per year, this on-site solar installation generates approximately 20% of the hub's total power requirements.
- In the reporting year we also conducted feasibility tests on new technologies for use in our sites. The first phase of our pilot project in Australia, which involved testing heat reflective paint at a logistics facility, was brought to a successful close in the reporting year. Applied to the roof, the special paint reflects a significant portion of incoming sunlight, reducing air conditioning costs as a result. The three-month pilot test cut cooling requirements by more than 20% and kept indoor temperatures from rising above 25°C. The second stage of the pilot will measure the paint's impact over the course of an entire year.

**Emissions** ✓ PwC

In the reporting year we met our climate target of improving our carbon efficiency by 30% over 2007 levels – this target was originally set for 2020. We have now set our sights on another ambitious goal: We want to reduce all transport-related emissions to net zero by 2050 and make

**30%**  
carbon efficiency achieved

an important contribution to the two-degree goal established at the 2015 UN Paris Climate Conference (COP 21). We have estab-

lished four strategic interim goals to help turn this vision into reality – two of these goals have a direct impact on our emissions. By 2025 we want to have increased our carbon efficiency over 2007 levels by 50%. We also want to reduce local air pollutant emissions by operating 70% of our own first and last mile services with clean pick-up and delivery solutions.

Our environmental reporting covers greenhouse gas emissions as well as local air pollutants. The reporting of both our emissions and efficiency improvements adhere to or are based on recognized and proven calculation methods.

- Our own greenhouse gas emissions are calculated based on guidelines provided by the Greenhouse Gas Protocol, the EN 16258 standard and the Global Logistics Emissions Council, as well as requirements outlined by the European Emissions Trading System (EU-ETS).
- Carbon efficiency, the central metric used to manage our global climate protection activities, is measured in our Carbon Efficiency Index (CEX).
- The emissions produced by our own fleet are also calculated using the methodologies of the European Environment Agency (EEA) and the United States Environmental Protection Agency (EPA), and are based on national and international fleet averages.

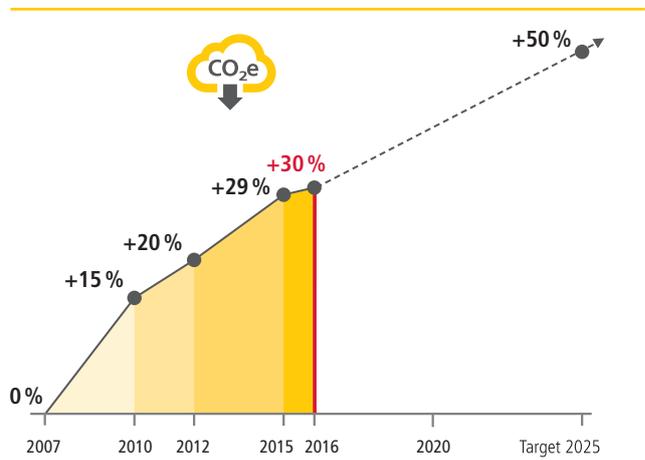
In contrast to greenhouse gas emissions, there are already extensive legal standards and requirements in place for air pollutants and noise, such as the European Union’s exhaust emissions standards or noise pollution regulations – standards which we always meet and often surpass.

In 2016 we were once again recognized for our strategic approach to sustainability and transparency regarding greenhouse gas emissions.

**CARBON EFFICIENCY TARGET MET AHEAD OF SCHEDULE** ✓ PwC

In 2016 we met our goal to improve our carbon efficiency index (CEX) by an additional index point. Each of the Group’s division contributed differently to our increased carbon efficiency. Improvements were driven primarily by continuous efficiency gains in the Global Forwarding, Freight division’s ocean freight operations, achieved through slow steaming and the use of ships with greater load capacity. Gains were also seen in our Express division, which used less fuel to transport more shipments in its pick-up and delivery operations.

**Development of carbon efficiency<sup>1</sup>** ✓ PwC



<sup>1</sup> Previous years adjusted; new weighting based on absolute carbon emissions adjusted for efficiency gains

In the reporting year, we adjusted the weighting of the respective divisional carbon efficiencies that are included in the CEX calculation. As before, the weighting is calculated using absolute carbon emissions, but emissions figures are now adjusted to reflect efficiency gains. In the past, because of these weightings, positive developments in the divisions were not appropriately reflected in the carbon efficiency performance indicator. As an example, over the past years the Global Forwarding, Freight division has been able to significantly reduce the carbon footprint of its ocean freight business. This development, however, reduced the division’s weighting in the carbon efficiency calculation. The figures from the base year 2007 until 2015 have been uniformly adjusted accordingly. For this period, the cumulative effect was four index points.

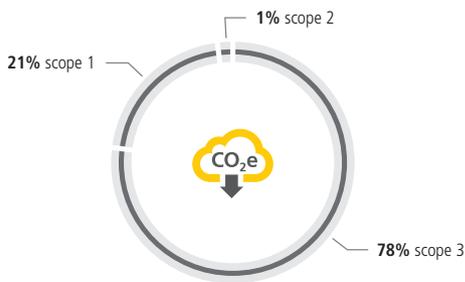
In 2016 our overall CEX value reached 30%. We have thus achieved our original climate protection goal ahead of schedule. Because our networks already operate at a high level of efficiency and our fleets and buildings already use state-of-the-art technologies, achieving significant efficiency gains year on year will be increasingly difficult. We nevertheless expect to improve carbon efficiency by one index point in 2017. As part of our vision for 2050, our goal is to increase our carbon efficiency by 50% compared to 2007 levels by 2025.

**Developments in greenhouse gas emissions** ✓ PwC

Our greenhouse gas emissions for 2016 totaled 26.92 million tonnes of CO<sub>2</sub>e, a slight decrease from the previous year. At 6.05 million tonnes of CO<sub>2</sub>e, our overall scope 1 and 2 emissions remained at the previous year’s level. The decrease in emissions occurred in our subcontracted transportation (scope 3), which accounted for 20.87 million tonnes of CO<sub>2</sub>e. This figure includes 0.08 million tonnes of CO<sub>2</sub>e from business travel. The decrease in scope 3 emissions is due in large part to efficiency gains in both our road transport and ocean freight operations.

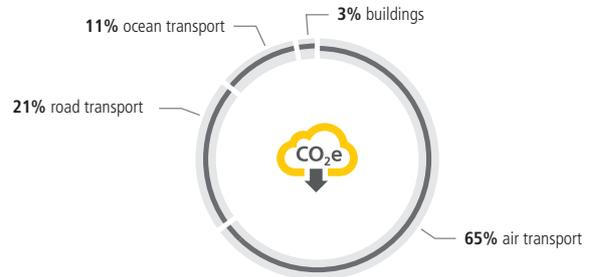
**Group CO<sub>2</sub>e emissions (Scopes 1, 2 and 3)** ✓ PwC

Total 26.92 million tonnes of CO<sub>2</sub>e



**CO<sub>2</sub>e emissions (total) by source** ✓ PwC

Total 26.92 million tonnes CO<sub>2</sub>e



A multi-year overview as well as a detailed presentation of the data can be found in the Annex of this report.

In order to offer one consistent set of financial and greenhouse gas related figures for Deutsche Post DHL Group, we are using the control approach as outlined in Note 2 to the consolidated financial statement.

**LOCAL AIR POLLUTANTS AND NOISE** ✓ PwC

Our transport-related activities in particular involve fuel combustion that generates not only greenhouse gas emissions but other local air pollutants as well, including mono-nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>) and particulate matter (PM<sub>10</sub>). We reduce these emissions by modernizing our fleet of aircraft and road vehicles and updating the heating systems in our buildings. In cities, the growing percentage of electric-powered vehicles used in our operations – as well as increased delivery by foot or bicycle – also contributes to lower levels of local air pollutants and noise.

Our vision of reducing transport-related emissions to net zero by the year 2050 also includes a strategic interim goal of operating 70% of our own first and last mile services with clean pick-up and delivery solutions, such as bicycles and e-mobility.

The local air pollutants from our own fleet are calculated using methodologies from the European Environment Agency (EEA) and the United States Environmental Protection Agency (EPA) and are based on national and international fleet averages.

**Emissions of all local air pollutants** ✓ PwC

Our total local air pollutant emissions in 2016 were nearly the same as in the previous year. While emissions increased slightly in the area of air transport, due primarily to the increased use of our own aircraft, road transport emissions continued to decrease slightly in 2016. This trend is reflected in the reduction of greenhouse gas emissions across the road transport business, which is largely a result of our ongoing efforts to modernize and upgrade our vehicle fleet based on the most current emissions standards.

In the reporting year already more than 48,000 of our road vehicles in Europe met Euro 5 or Euro 6 standards. Moreover, many of the efficiency measures for reducing greenhouse gas emissions – including the use of electric vehicles, natural-gas powered vehicles and fuel efficiency technologies – also have a positive impact on the emission of local air pollutants.

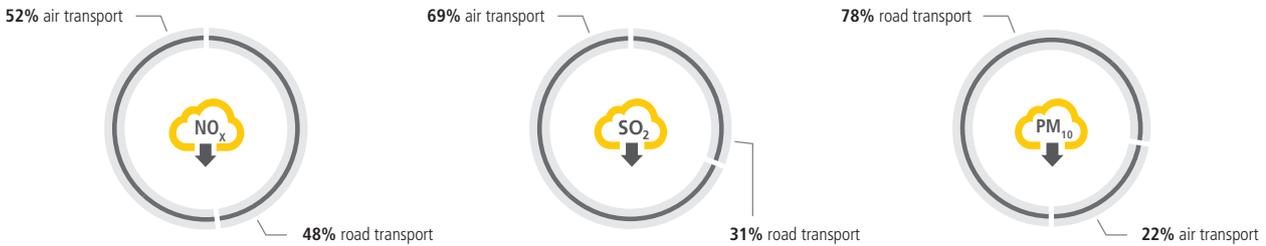
A multi-year overview as well as a detailed presentation of the data can be found in the Annex of this report.

**Emissions of local air pollutants in 2016<sup>1,2</sup>** ✓ PwC

Mono-nitrogen oxides (NO<sub>x</sub>): 32,255 tonnes

Sulfur dioxide (SO<sub>2</sub>): 1,922 tonnes

Particulate matter (PM<sub>10</sub>): 1,135 tonnes



<sup>1</sup> Emissions data covers our own aircraft and road vehicles only; <sup>2</sup> Emissions of local air pollutants from road transport are calculated based on actual consumption data; calculations of emissions from air transport are based on route profiles. Emission factors published in the EMEP/EEA Air Pollutant Inventory Guidebook (2013) as well as those published by the US Environmental Protection Agency were applied.

## Natural resources

Issues such as resource consumption, waste management and biodiversity are not among the focus areas of our environmental protection program. We do not consume a significant amount of resources, generate significant amounts of waste or significantly impact biodiversity, which is why these factors are not a high priority for our business and stakeholders. We nevertheless consider these issues to be socially relevant and choose to include them in this report.

### Wood and water

In accordance with our Group Paper Policy, we make sure that only recycled paper products are procured and used within the Group. Exceptions are permitted only if recycled paper does not meet certain technical requirements or cannot be procured on the local market.

We are also working to reduce the amount of paper we use, which helps lower demand for wood. This, in turn, helps reduce the consumption of energy and water associated with paper production and helps prevent the deforestation of tropical rainforests, primeval forests and ancient forests under protection. We also strive to reduce the amount of packaging materials used in our operations and are working closely with experts and our own customers to achieve this.

Due to the nature of our core business, we do not consume significant quantities of water. Water is mostly used for drinking and sanitation at our facilities; it is obtained primarily from municipal suppliers and discharged into public sewage systems. Water consumption and waste water disposal are therefore not considered significant environmental factors for the Group, which is why we do not record and report global water use data. However, we have included data on water consumption at our facilities in Germany, as provided to the Carbon Disclosure Project (CDP), in the Annex of this report. Nevertheless, sites with environmental management systems do work to implement measures to minimize water consumption. When constructing new buildings, we also look to install water recovery systems and water-efficient sanitary installations where possible.

### Packaging, waste and recycling

As a logistics provider, we use packaging such as pallets and other packing materials. Our offices also produce paper waste which can often be reduced or avoided all

together. Increasingly digitized processes are helping us do this. We are also committed to recycling used materials wherever possible, thereby making our own contribution to the circular economy.

Our aircraft, road vehicles and IT equipment must be maintained and ultimately disposed of. Since we lease most of our vehicles and aircraft, most of the time their maintenance and decommissioning or scrapping is handled by the manufacturer or other third-party providers. A similar approach is also applied to the maintenance and disposal of our IT equipment. Our maintenance and disposal contracts include explicit instructions for our partners to ensure compliance with responsible environmental practices and processes.

Waste is not a priority issue for the Group and is therefore not managed centrally. Waste separation, is standard procedure at many of our sites, however. Data on waste is collated and audited locally by the environmental management systems on site, allowing for a more effective tracking of measures and their savings effects.

## BIODIVERSITY

Because our sites are located mostly in urban areas or designated industrial/commercial zones, it is unlikely that our business operations would negatively impact protected areas or endanger protected plant or animal species. Nevertheless, our operations do have an impact on ecosystems – through our greenhouse gas emissions and local air pollutants, the use of natural resources or other operations-related factors. For this reason, our environmental management system accounts for biodiversity impacts when designing measures and initiatives. One such example is our Policy on the Usage of Liquid Biofuels, which considers biodiversity in the countries where biofuels are produced.

Another example is our terms and conditions, which expressly prohibits the use of our network to transport protected, threatened or endangered plant and animal species – a major issue around the world. We are a member of the United for Wildlife task force backed by Prince William, and in 2016 we joined with other logistics companies to sign a Buckingham Palace initiative against the trade in protected species of wildlife. Our joint objective is to shut down transportation channels used for illegal trade of protected animals. In the reporting year we

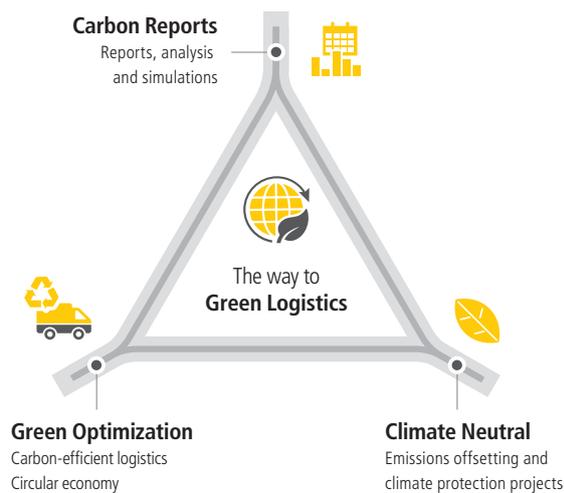
conducted an extensive range of activities in pursuit of this goal. We conducted a communications campaign to raise awareness among our employees and conducted trainings on the topic so that employees are able to recognize suspicious cargo and know which steps to take if they suspect illegal wildlife trafficking. Our employees also take part in workshops on the topic and volunteer their time to international animal-protection initiatives.

In the reporting year we handled the transport of a black rhinoceros from its place of birth in the Czech Republic to its natural habitat in Tanzania. The reintroduction of animals into a nature preserve is part of an ongoing project of the George Adamson Wildlife Preservation Trust, which champions the preservation and propagation of endangered species in their natural habitats.

## Green products

Our expertise in environmentally sustainable logistics also benefits our customers. We offer environmentally-friendly products and develop individualized logistics solutions for green optimization under the name GoGreen Solutions. As a logistics provider our green solutions not only contribute to the environment and society, but – in keeping with our Shared Value approach – also create value for our company and our customers. Driving growth through our portfolio of green products and solutions is one of the strategic goals along the way to realizing our vision of reducing our transport-related emissions to net zero by the year 2050. By 2025, we want more than 50% of our sales to incorporate Green Solutions, which make our customers' supply chains greener.

### Green products offered by Deutsche Post DHL Group



We differentiate between standardized and customized solutions. Customers can use our standardized products to calculate or offset their emissions:

- **Carbon Reports:** We help customers gain a deeper understanding of the environmental impact of their transport and logistics-related activities. Customer emissions are measured using the same carbon accounting standards applied to our own emissions calculations. The calculation methods regularly undergo a third-party verification process.
- **Climate neutral products:** Customers can offset their transport and logistics-related greenhouse gas emissions with our climate neutral products. Customer

emissions are measured using the same carbon accounting standards applied to our own emissions calculations. Methods used for calculating and offsetting emissions in relation to our climate neutral products are also subject to a regular third-party verification process.

Our portfolio of Green Optimization products complements our standardized products by providing individualized logistics solutions that help our customers reduce greenhouse gas emissions as well as other environmental impacts.

## STANDARDIZED PRODUCTS

### Carbon Reports for transparency on carbon footprint

Our Carbon Report products provide customers with detailed information about their transport and logistics-related greenhouse gas emissions. These calculations are based on the GHG Product Standard and verified annually by the external auditor SGS. In addition to standardized report formats, customers from our Express and Global Forwarding, Freight divisions also have the option of using the Carbon Dashboard, an interactive reporting tool that also allows customers to simulate efficiency scenarios.

In 2016 our Carbon Report products recorded a total of 4.4 million tonnes of greenhouse gas emissions. The greatest demand for these products is among customers in our Global Forwarding, Freight division, which showed a slight decrease in reported emissions in the reporting year. The amount of emissions reported in the Express division, on the other hand, increased.

In the reporting year we developed and verified a new product in line with our calculation standards and requirements. The DHL Carbon Calculator is a free online application that allows customers in the Global Forwarding, Freight and Supply Chain divisions to calculate transport-related emissions for almost all shipment sizes and modes of transport using real data.

### Climate neutral products offset emissions

With our climate neutral GoGreen products, customers can offset their transport and logistics-related greenhouse gas emissions. The methods used for calculating and offsetting emissions are also based on the GHG Product Standard and verified annually by the external auditor SGS.

We offset the emissions through external climate protection projects in the area of energy efficiency, renewable energy and reforestation – the majority of which are Gold Standard certified. This also includes our own climate protection project in Lesotho, which involves the distribution and use of efficient stoves that use up to 80% less firewood. In the reporting year our project was the first to be certified under the new Fairtrade Climate Standard. This additional certification also recognizes the social value of the project and includes an additional Fairtrade Premium of €1 per carbon credit, which is paid directly to the village communities to be invested in local climate adaptation initiatives. In the reporting year we were able to verify 4,000 cookstove users, successfully certifying 10,076 carbon credits under the Fairtrade Climate Standard.

We transported close to two billion climate-neutral shipments in the reporting year. The amount of emissions offset through climate neutral shipments and logistics services remained at the prior-year level of more than 253,000 tonnes of CO<sub>2</sub>e. The greatest demand for climate neutral products is among customers in our Post - eCommerce - Parcel and Express divisions.

A multi-year overview can be found in the Annex of this report.

## TAILOR-MADE SOLUTIONS

### Green Optimization for customized solutions

With Green Optimization we offer customized logistics solutions by analyzing every link of the customer's supply chain. We uncover opportunities for optimization that help reduce greenhouse gas emissions or minimize the environmental impacts of their logistics processes, enabling a circular economy.

### Reducing greenhouse gas emissions

We review the customer's entire logistics supply chain to identify potential environmental and economic efficiency levers – from network design and road freight to warehousing and subcontractor management. This results in tailored strategies for more efficient and environmentally sustainable logistics, which consider both green efficiency gains as well as savings potentials.

Examples (selection only):

- Our Green Danmar service, which is offered through our ocean freight business unit in the Global Forwarding, Freight division, has made us the first forwarder in the industry to offer an environmentally-friendly service that can be tailored to the exact requirements of the customer's supply chain. A rigorous selection process identifies ocean carriers who best meet the customer's operational requirements, offer the best value for money, and whose carbon efficiency is at least 5% above industry average.
- With Teardrop Trailers on the road in several countries already, we were pleased to introduce the first of these aerodynamically shaped trailers to Germany in the reporting year. One trailer is being operated by our Supply Chain division for a retail clothing company. The other is being deployed by our Global Forwarding, Freight division for transports between Cologne and southern Germany. The trailer can reduce fuel requirements by up to 10%.
- For the Olympic Games in Brazil, the Supply Chain division worked together with one of its major customers to develop a green supply chain solution. As part of this project, two electric vehicles were added to our fleet in Rio de Janeiro to handle delivery to the customer's premium stores. Delivery was also scheduled around rush hour to avoid congestion, which resulted in savings of some 1,200 tonnes of carbon emissions. Energy efficient lighting systems were used at the logistics warehouse operated on behalf of the customer, reducing energy consumption by 55%.
- An increasing number of customers in Germany are using our environmentally-friendly shipping service GoGreen Regional, helping to advance e-mobility. The more items customers send with this service, the more the Group invests in the use of electric vehicles for regional delivery. The GoGreen Regional service is already available to customers in Berlin, Bochum, Cologne, Essen, Duisburg and Hamburg.

### Enabling the circular economy

The circular economy can play a decisive role in breaking the link between economic growth and resource use. We are developing our own solutions to help support the transition from a linear economy to a circular economy. In the reporting year we joined forces with the Ellen MacArthur

Foundation's CE100 initiative and Cranfield University to publish a study on the significance of reverse logistics.

We develop solutions for reverse logistics, waste management and extended producer responsibility. These are available through our DHL Envirosolutions product portfolio, for example.

Examples (selection only):

- We operate an innovative biomass energy recovery facility in the vicinity of London Heathrow, where we recover reusable and recyclable materials from the catering waste of our customer British Airways. Waste that cannot be recycled and is subject to stringent requirements is processed into green energy. For our customer it means not only energy and cost savings, but also a projected reduction of carbon emissions of approx. 4,000 tonnes over the course of ten years. Another waste-processing facility at London's Gatwick Airport is scheduled to begin operations in 2017.
- For a customer in the USA, we implemented a packaging system that produces individually sized packaging for each individual product. The solution has helped us reduce the amount of empty space inside the packages as well as the number of shipments required and the amount of packaging materials used.
- Electroreturn, the logistics solution for the return of electronic waste for recycling, was expanded in Germany, allowing Deutsche Post customers to send their old electronic devices such as mobile phones to ALBA Group, our recycling service partner. As of 2016, customers can now send Electroreturn items weighing up to 31.5 kilograms through the DHL Retoure service.
- We piloted a reverse logistics solution in the US and UK for Cisco, one of our major customers. Cisco studies how to increase the percentage of returned equipment from its customers and partners to support remanufacture and reuse. Cisco's US and UK customers are testing a new "Send IT Back" process and mobile app. This application can be used to easily generate pick-ups by DHL. The returned products are either reused or recycled via Cisco's repair partners.



## INTERVIEW

» People are still one of our core assets, as they directly deliver the customer experience. «

**KEN ALLEN**  
MEMBER OF THE BOARD OF MANAGEMENT EXPRESS

## Interview with Ken Allen

**“Our success depends on everyone in our organization having a ‘network mentality’.”**

Mr. Allen, in the express business it all comes down to speed of delivery and reliability of service. On top you’ve got rising demand from the vast majority of players along the value chain for eco-efficient products and services. The goal, of course, is to provide time-definite delivery using efficient route planning and a fleet of energy-efficient, low-noise delivery vehicles – operated by a staff practiced in “green driving” techniques. What does the reality check say – are you close?

We are well on our way. We have sophisticated capacity and route planning systems in place that ensure we take the shortest and quickest aggregate route to our customers. We provide guidance to couriers on employing driving techniques that are safer and more environmentally-friendly, in a number of markets with the help of telematics systems. And we have accelerated our program to deploy greener delivery vehicles – including electric vans and cargo bicycles – as well as walking couriers, particularly in urban areas. These measures have contributed positively to the overall carbon efficiency improvements every year in our global network, despite the fact that the rapid growth of online retail is changing the pattern of last-mile deliveries – with more individual deliveries (and therefore more driver stops) over greater distances to private addresses. We recognize that there is of course still plenty that we can do to improve our efficiency in our ground operations, and we will therefore continue to renew our fleet, refresh our driver training approaches

and continuously review our routings to ensure that we are meeting customers’ expectations for eco-friendly delivery processes.

**To reach the Group’s long-term environmental targets there is a need to continue reducing emissions in the air cargo business. The Express division operates one of the largest air fleets in the world – what is your division doing to tackle the environmental dimension in the transport and aviation sectors? Which of these measures are most important for your business?**

We need aviation in order to deliver the speed and global connectivity that is at the heart of our service offering. At the same time, it is the single biggest contributor to our emissions, so it is an area of intense focus for our network operations team as we work to minimize our environmental footprint. Until someone develops an emissions-free aircraft – which would require a dramatic leap forward in technology from where we are today – the greatest impact we can achieve in reducing emissions will be through greater efficiency. For Express, this means a combination of using more modern aircraft with lower fuel burn per kilo carried, achieving better capacity utilization of our aircraft fleet and planning routes efficiently. Where we can achieve the same connectivity and service levels by using slower, cleaner modes of transport, we also take advantage of this.

**Employee engagement is a critical success factor in a business that has millions of customer contacts a day. The Certified initiative, the Group’s new employee development and engagement program, was rolled out not too long ago. Are you starting to see positive results at DHL Express? What does the cultural change look like?**

The Express division actually pioneered the Certified approach. The initiative has been built on the back of our hugely successful Certified International Specialist program, which we launched globally in 2010. We have seen positive impact on our business every year since its roll-out – from increased engagement and active leadership scores in our Employee Opinion Survey results and higher customer satisfaction scores to the productivity improvements that have contributed to our earnings performance over the last seven years. Despite the multi-billion Euro transportation and technology infrastructure that we operate, people are still one of our core assets, as they directly deliver the customer experience. I'm incredibly proud about how the Certified approach has shaped the 'can do' culture of DHL Express and to see the program expand into a Group-wide initiative within Strategy 2020. I'm also absolutely convinced that it will drive the Connect pillar of Strategy 2020 and allow our employees to harness the incredible power they have to further deliver great service and value as a team.

**Express employees often talk about the importance of team spirit in their daily work. How do you foster this sense of belonging and how does your management team keep in touch with its people on the ground?**

Our success depends on everyone in our organization having a 'network mentality'. One of my personal mantras is that a senior manager should be "in the field and on the ground" as much as possible. I encourage our managers around the world to spend the majority of their time in front of customers and walking the floor engaging with employees. This is the only effective way of ensuring that we can stay on top of the things that motivate our employees and build customer loyalty. The same applies to my senior executive team. We each spend more than 70% of our time visiting our country organizations, meeting customers and employees, conducting facility visits to identify improvement opportunities and reviewing performance from the ground up. Formally, we have embedded these leadership values within our culture through the Certified International Manager program. Our global management board personally facilitates CIM and CIS sessions, which underlines our commitment to the values. It also helps us to have a regular open exchange with people at all levels within the business about how we can strengthen our teamwork and improve performance.

**This year's Corporate Responsibility Report focuses on "Seeing the bigger picture". In your opinion, which innovations and trends will make the biggest waves in the express business in the years to come – and what will you be focusing on in 2017?**

The international express sector is well-established and highly competitive. The main players all have expansive infrastructure and the base level of service quality is relatively high across the overall industry. However, there are still plenty of inefficiencies to be found within global supply chains and international trade regulations, which means that we can deliver dramatic service improvements with the help of what I would call incremental innovation – relatively small changes within our networks and processes that have a big impact on our global service offering. For example, in 2016, we introduced a new automated sorting technology for heavier shipments at our European Hub in Leipzig, Germany. This significantly reduced processing times (as well as costs and the risk of handling errors) for these shipments, which translates into more value for customers. Over the longer-term, I am excited by the potential that automation has, for example, to make our network even more efficient and support growth. I also anticipate that we will take advantages of developments in electric vehicle and aircraft fuel technologies to make our global transport fleet even greener.