# ENVIRON-MENTAL REPORT 2013

DSB

# Content

Environment and climate..... 3

Accounting policies..... 6

Environmental key figures..... 8

Annual statement for 2013..... 9

Declarations..... 14

# Environment and climate

Train operations are responsible for approx. 85 percent of DSB's total energy consumption and trains are an energy-friendly mode of transport.

**Fig. 1: $CO_2$ emissions (Aalborg - Copenhagen)**

Kg per person

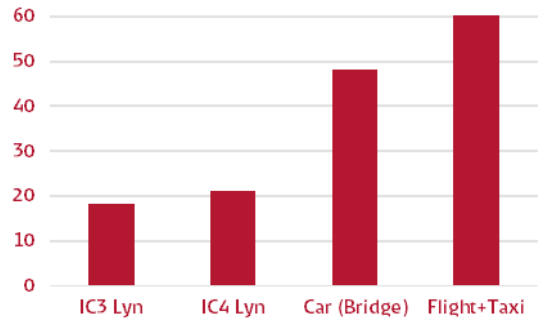
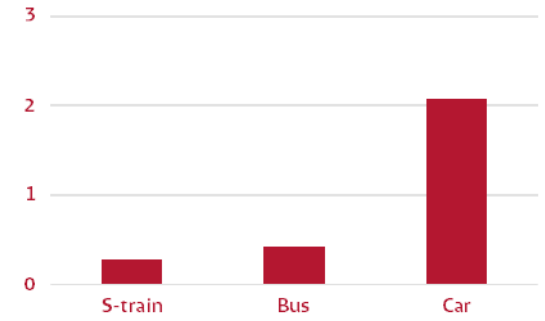



**Fig. 2: $CO_2$ emissions for a 12-km trip in the Copenhagen area**

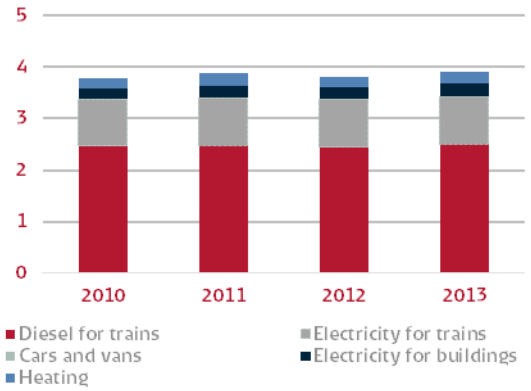
Kg per person




Nevertheless, DSB wishes to increase efficiency through a reduction of its energy consumption per passenger kilometre. In the long term, the adopted electrification of the main network in Denmark will make it increasingly possible to operate on renewable energy.

**Fig. 3: Direct and indirect energy consumption**

GJ (million)




DSB's total energy consumption for trains rose by 2 percent in 2013 compared with 2012. DSB's diesel operations are responsible for the increase, while electric operations produced minor reductions. The energy consumption for the corporation in the form of electricity for buildings and employee transport to and from work increased.

DSB's total $CO_2$ emissions rose by approx. 25 percent in 2013 compared with 2012, primarily due to the fact that DSB in 2013 chose no longer to purchase RECS certificates for its electricity consumption for train operations. This means that $CO_2$ emissions are stated for the electricity consumption again from 2013.

For S-trains the energy consumption per seat kilometre fell by 3 percent. This fall was obtained through growth in the number of passenger kilometres of 1.3 percent and a fall in the overall energy consumption of 1.7 percent. The falling energy consumption was realised through increased use of the short S-train sets compared with the long S-train sets plus a minor decline in the number of degree days and consequently a reduced energy consumption for heating.

**Fig. 4: Electricity and diesel consumption per passenger kilometre**

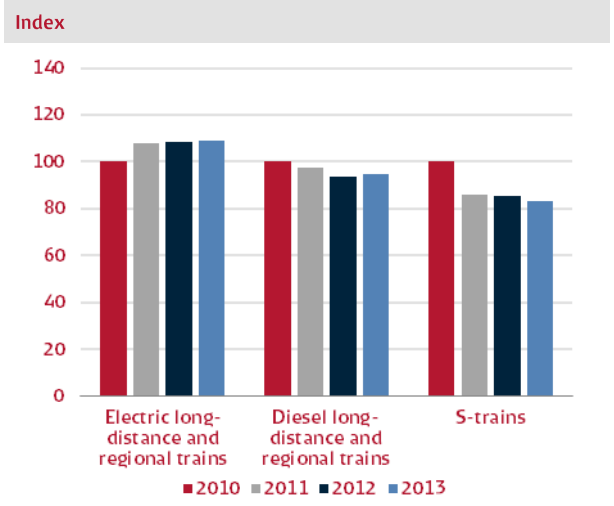



**Table 1: Energy consumption and $CO_2$ emission**

| Development | Energy consumption per seat kilometre | Energy consumption per passenger kilometre | $CO_2$ emission per passenger kilometre |
|---|---|---|---|
| Long-distance and Regional trains | | | |
| - Diesel trains | -1% | 1% | 1% |
| - Electric trains | 2% | 0% | |
| S-train | -1% | -3% | |

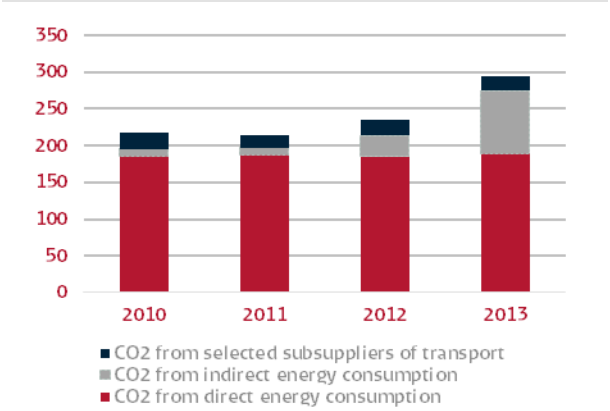
DSB makes a targeted effort to reduce the energy consumption in its buildings and fixed installations. The following measures are among those taken in 2013:

- Gathering of DSB's administrative staff in new domicile in Taastrup.
- Energy review of DSB's fixed installations.
- Replacement of lighting by LED at a number of addresses; expected annual savings of 800 MWh.
- Gathering of workshops and insulation of buildings.

$CO_2$ emissions from selected suppliers of transport fell by 9 percent compared with 2012. The reason is that replacement bus services in connection with track improvement work were reduced by 36 percent. At the same time $CO_2$ emissions from school trips fell by 5 percent compared with 2012.

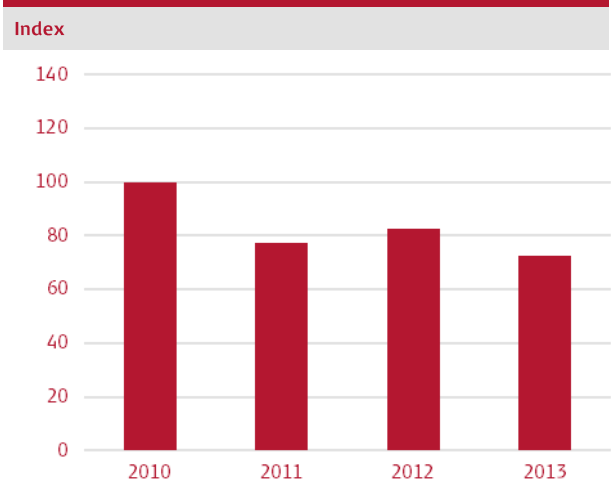
$CO_2$ emissions from transport relating to the corporation increased by 14 percent, primarily because of changed employee commuting patterns due to the relocation of DSB's domicile to Taastrup.

**Fig. 5: $CO_2$ emission distributed on source**




Diesel rolling stock emits particles and also impacts the air quality in other ways as well.

**Fig. 6: Particle emission**




Total emission of particles from diesel trains fell by 12 percent compared with 2012. The reason is a marked change in the use of rolling stock; from MR train sets to the more environmentally friendly IC4 train sets. In addition, the fitting of the emission kit on the ME locomotive also contributed to the reduction.

In 2013 special focus was on the number of ultrafine particles in the double-decker coaches pulled/pushed by the ME locomotives. The measurements show a high level of ultrafine particles when the locomotive pulls the coaches. Measurements in DSB's other types of diesel rolling stock show a markedly lower level of ultrafine particles.

In 2013 DSB completed the fitting of emission kits in all ME locomotives. The emission kit lowers the locomotives' emission of nitrogen and carbon. The emission kit reduces emissions of $NO_x$ by 34 percent, while particle emissions fall by 37 percent. DSB has also fitted catalytic converters on an ME locomotive with the purpose of testing the technical and environmental advantages and disadvantages.

The number of noise and smoke complaints submitted by neighbours and customers rose from 40 in 2012 to 66 in 2013.

51 of the complaints concern noise, primarily from idling trains in connection with reversing and preparation and from running on flat wheels (worn wheels).

There were seven cases involving municipalities as authorities.

The decision to establish a railway to Aalborg Airport and consequently the decision not to move the preparation facilities at Lindholm station meant a re-opening of complaints from neighbours and from the City of Aalborg claiming that DSB is violating a current order from the City of Aalborg.

# Accounting policies

**Annual statement**
The annual statement includes data for DSB's activities as well as data for plants and buildings where DSB activities take place.

All Group companies in Denmark (wholly owned and DSB Øresund) are included in the calculations of DSB's energy consumption for and emissions from train operation, fixed installations and the mileage made by company cars and vans; they are also included in the calculations of selected chemical products and the waste volumes disposed of.

For the annual statement, DSB has decided to report on environmental impacts using the same groupings as in the "Greenhouse Gas Protocol", the GHG Protocol, in which energy consumption and emissions are reported in three categories: direct (scope 1) and indirect (scope 2) energy consumption and emissions as well as emissions relating to selected suppliers of transport (scope 3).

**External suppliers**
As a main rule, the consumption and emissions undertaken by external suppliers on contracts with DSB are not included. An exception is the consumption of chemical products and $CO_2$ emissions relating to selected suppliers of transport. This applies to replacement journeys by bus and taxi, school trips undertaken by bus and ferry, employee transport by aeroplane, taxi and car as well as employees' mileage to and from work. Official journeys by train outside Denmark are not included.

**DSB as supplier**
Consumption and emissions from buildings that are owned by DSB but are rented out are not included.

**Compiling and processing data**
The data in the annual statement is compiled via DSB's registration systems and on the basis of figures provided by DSB's external suppliers. Procedures for the compiling of data and quality control are described in the "Manual for Compiling Environmental Data". The manual describes the distribution of roles and responsibilities between central and decentralised environmental employees during the preparation of the environmental report.

The process starts with the compiling and assessing of environmental data in the business units, and then the units' contributions to data and text are processed and gathered into one entity for DSB. The quality control of the data is undertaken both in the units and centrally in DSB.

**Energy consumption for train operation**
The consumption of diesel is registered automatically when topped up. Add to this the wastage from stationary tank installations which is also included in the calculations. DSB pays for the traction current based on invoices received from Banedanmark. The electricity consumption is distributed on the trains according to the meter readings on the trains. A loss of traction current is added to the recorded values.

Energy consumption for non-revenue kilometres for long-distance trains is accounted for separately for DSB without the Group companies' production of non-revenue kilometres and is not distributed on the products.

**Air emissions**
DSB's calculations of air emissions are compiled on the basis of key figures.

As of 2013, DSB decided against purchasing RECS certificates for power produced by renewable energy sources. This means that the emissions for 2013 are not comparable with the data from previous years. Since 2008, DSB has used power produced by renewable energy sources for train operations. Until and including 2011, DSB also used power from renewable energy sources in buildings. Therefore, the emission data from electrical train operation is not included in the statement until and including 2012 and from buildings during the period 2010–2011.

The key figures for the emissions from diesel consumption are based on readings of the emissions' dependency on engine performance as well as readings or simulations of engine per-

formance at different driving patterns. Emissions from non-revenue kilometres and shunting rolling stock are not included in the statement, as DSB does not have any exact knowledge about the emissions and they would account for such a tiny proportion of the overall figures. However, an exception is $CO_2$ and $SO_2$ emissions from non-revenue kilometres which are included in the statement.

Key figures for emissions from cars and vans are collected from TEMA2010. The emission levels of $SO_2$ are corrected according to the sulphur contents of petrol and diesel, respectively.

Key figures for $CO_2$, $SO_2$ and $NO_x$ from district heating used in buildings are calculated on the basis of the statement from Energinet.dk for emissions and thermal production in Denmark. A mean value is used for 2011 and 2012. The thermal production covers 73 percent of the overall Danish district heating production. The key figure has been calculated on the basis of the energy content method and is corrected for a 20 percent net loss in the distribution network.

Key figures for $CO_2$, $SO_2$ and $NO_x$ from buildings are based on 2012 data from the Danish Centre for Environment and Energy (DCE) with regard to gas and fuel oil. Data may be found on the website under the subject of "Air", Emission Inventories, Emission Factors for LPG, natural gas and gas oil in the category "residential plants". The electricity key figure for traction current is used in the calculation of the emissions from the energy consumption in buildings, and the figure is corrected for a 5 percent net loss in the distribution network.

**Indexation**
In the annual statement, the consumption and emissions for 2013 are calculated in absolute quantities. 2010 is the base year for indexation. Notes 6 and 7 list a few deviations from the indexation in relation to 2010.

In some cases, it has been decided not to index the consumption and emissions on account of, for instance, different maintenance intervals between the years. This applies, for example, to a few chemical products.

**Environmental disclosures and comparisons with other forms of transport**
For the environmental disclosure for train products and comparisons between different forms of transport, we use the annual energy consumption and emissions as well as the annual average occupancy rate for our trains.

Key figures for cars are taken from the Danish Ministry of Transport model, the TEMA2010. There may be major variations in the result depending on the type of car. DSB has decided to use an average figure somewhere between a fairly small and a fairly large car, both with EURO III engines. This key figure is close to the average for the Danish fleet of cars.

To calculate the $CO_2$ emissions from aeroplanes, we use Scandinavian Airlines' $CO_2$ calculator. We use the default value for the most commonly used planes on the selected route.

The occupancy rates for cars are taken from the statistics produced by the Danish Road Directorate. We estimate that there is, on average, 1.54 passengers per car, and for rush-hour calculations, we calculate with an average of 1.1 passengers.

For environmental disclosures for types of rolling stock, we use the annual energy consumption and emissions as well as the number of seat kilometres covered by the rolling stock. The distribution on the different types of rolling stock is performed using the annual statement tool.

**External declaration**
In 2008, RISØ updated the professional assessment of the method of the annual calculation of the energy consumption and emissions of train travel which DSB uses as a declaration. The original declaration is from 2001 and it still applies, as the method and prerequisites remain unchanged in relation to the date of the declaration.

# Environmental key figures

**Environmental disclosures and statements for 2013**

The environmental disclosures include energy consumption and emissions of various types of air pollutants for product types and types of rolling stock.

The annual statements contains absolutte figures of consumption and emissions for 2013 as well as index figures for the period 2010-2013.

**Environmental disclosure for train products 2013**

| Train product | Energy consumption | $CO_2$ |
|---|---|---|
| Per passenger kilometre | MJ | g |
| S-trains | 0,31 | 23 |
| Regional trains | 0,92 | 64 |
| InterCity trains | 0,46 | 34 |
| Express trains | 0,43 | 32 |

The environmental disclosure for the train product shows the energy consumption and $CO_2$ emission per passenger kilometre from DSB's products in 2013.

**Environmental disclosure for types of rolling stock 2013**

| Train type | Energy consumption | $CO_2$ | CO | $NO_x$ | $SO_2$ | HC | Dust | Particles |
|---|---|---|---|---|---|---|---|---|
| Per seat kilometre | MJ | g | mg | mg | mg | mg | mg | mg |
| S-trains (electricity) | 0,07 | 5,2 | 2,4 | 3,7 | 0,78 | 3,1 | 0,13 | 0 |
| Desiro (diesel) | 0,29 | 21,7 | 97,6 | 170,7 | 0,14 | 26,8 | 0 | 3,66 |
| ME and double-decker coaches (diesel) | 0,28 | 21,6 | 39,7 | 315,0 | 0,13 | 16,8 | 0 | 9,95 |
| Øresund trains (electricity) | 0,12 | 8,6 | 3,9 | 6,1 | 1,28 | 5,1 | 0,21 | 0 |
| MR (diesel) | 0,32 | 23,0 | 96,5 | 360,4 | 0,15 | 52,6 | 0 | 20,1 |
| IR4 (electricity) | 0,12 | 8,6 | 3,9 | 6,1 | 1,28 | 5,1 | 0,21 | 0 |
| IC3 (diesel) | 0,29 | 21,2 | 13,4 | 121,5 | 0,13 | 6,4 | 0 | 0,95 |
| IC4 (diesel) | 0,35 | 25,8 | 18,1 | 146,1 | 0,16 | 8,4 | 0 | 1,25 |

The environmental disclosure for train types shows the energy consumption and emissions per seat kilometre from DSB's train types in 2013.

# Annual statement for 2013

## Consumption

| | Note | Index 2010 | Index 2011 | Index 2012 | Index 2013 | Volume 2013 | Unit |
|---|---|---|---|---|---|---|---|
| **Energy consumption** | | | | | | | |
| **The Product, total** | | | | | | | |
| Electricity | | 100 | 101 | 100 | 99 | 251.777 | MWh |
| Diesel | | 100 | 101 | 99 | 101 | 69.515.809 | Litre |
| **The Corporation, total** | | **100** | **114** | **111** | **119** | **131.672** | **MWh** |
| Electricity | | 100 | 118 | 118 | 137 | 72.504 | MWh |
| Heating (adjusted for degree days) | | 100 | 111 | 104 | 103 | 59.168 | MWh |
| **Direct energy consumption** | | | | | | | |
| **The Product (L&R) (diesel)** | | **100** | **101** | **99** | **101** | **69.515.809** | **Litre** |
| Train operation | | 100 | 100 | 98 | 102 | 67.891.202 | Litre |
| Shunting | 1 | - | - | - | - | 32.277 | Litre |
| Non-revenue kilometres | 2 | 100 | 133 | 145 | 87 | 1.592.329 | Litre |
| **The Corporation** | | | | | | | |
| Cars and vans | | | | | | | |
| Diesel | 3 | 100 | 97 | 102 | 156 | 418.032 | Litre |
| Petrol | 3 | 100 | 83 | 60 | 53 | 19.157 | Litre |
| Heating (adjusted for degree days) | | 100 | 120 | 106 | 96 | 11.278 | MWh |
| Heating oil | | 100 | 82 | 78 | 107 | 660 | MWh |
| Gas | | 100 | 123 | 107 | 96 | 10.617 | MWh |
| **Indirect energy consumption** | | | | | | | |
| **The Product (electricity)** | | **100** | **101** | **100** | **99** | **251.777** | **MWh** |
| S-trains | | 100 | 96 | 97 | 96 | 125.099 | MWh |
| The Coastal line (operated by DSB Øresund) | | 100 | 111 | 111 | 114 | 67.230 | MWh |
| Long-distance and Regional trains | | 100 | 102 | 97 | 93 | 58.370 | MWh |
| Non-revenue kilometres (L&R) | 2 | 100 | 64 | 55 | 59 | 1.077 | MWh |
| **The Corporation** | | **100** | **113** | **112** | **122** | **120.395** | **MWh** |
| Electricity | 4 | 100 | 118 | 118 | 137 | 72.504 | MWh |
| District heating incl. steam (adjusted for degree days) | | 100 | 108 | 104 | 104 | 47.891 | MWh |
| **Water consumption** | | **100** | **108** | **78** | **73** | **146.173** | **$m^3$** |
| **Chemical products (selected)** | | | | | | | |
| Nitrogen content in slippery surface prevention agents | | - | - | - | - | 42 | Tonnene |
| Herbicides | | - | - | - | - | 176 | kg active substance |

Base year for indexation is 2010 = 100.

| Emissions ($CO_2$) | Note | Index 2010 | Index 2011 | Index 2012 | Index 2013 | Volume 2013 | Unit |
|---|---|---|---|---|---|---|---|
| **Air emissions, calculated** | | | | | | | |
| **$CO_2$** | | **100** | **98** | **108** | **135** | **293.743** | **Tonne** |
| The Product | | 100 | 98 | 98 | 129 | 256.592 | Tonne |
| The Corporation | | 100 | 100 | 215 | 208 | 37.150 | Tonne |
| **Direct energy consumption (GHG* scope 1)** | | **100** | **101** | **99** | **101** | **189.013** | **Tonne** |
| **The Product** | 5 | **100** | **101** | **99** | **101** | **185.497** | **Tonne** |
| Long-distance and Regional trains (diesel) | | 100 | 101 | 99 | 101 | 185.497 | Tonne |
| **The Corporation** | | **100** | **114** | **104** | **109** | **3.517** | **Tonne** |
| Cars and vans (petrol and diesel) | 3 | 100 | 95 | 97 | 145 | 1.154 | Tonne |
| Heating (heating oil and gas) | | 100 | 120 | 106 | 97 | 2.362 | Tonne |
| **Indirect energy consumption (GHG* scope 2)** | | **100** | **96** | **315** | **929** | **85.605** | **Tonne** |
| **The Product** | 5 | **0** | **0** | **0** | **100** | **58.999** | **Tonne** |
| S-trains (electricity) | 6 | 0 | 0 | 0 | 100 | 29.314 | Tonne |
| The Coastal line (electricity) | 6 | 0 | 0 | 0 | 100 | 15.754 | Tonne |
| Long-distance and Regional trains (electricity) | 6 | 0 | 0 | 0 | 100 | 13.930 | Tonne |
| **The Corporation** | | **100** | **96** | **315** | **289** | **26.606** | **Tonne** |
| Electricity, fixed installations | 7 | 0 | 0 | 100 | 86 | 17.884 | Tonne |
| District heating incl. steam | | 100 | 96 | 90 | 95 | 8.722 | Tonne |
| **Selected transport sub-suppliers (GHG* scope 3)** | | **100** | **76** | **96** | **88** | **19.125** | **Tonne** |
| **The Product** | | **100** | **68** | **91** | **74** | **12.097** | **Tonne** |
| Replacement busses | | 100 | 29 | 109 | 70 | 4.117 | Tonne |
| S-trains | | 100 | 3 | 3 | 1 | 26 | Tonne |
| L&R | | 100 | 57 | 223 | 145 | 4.092 | Tonne |
| Taxa | | 100 | 78 | 54 | 56 | 10 | Tonne |
| School journeys | | 100 | 91 | 80 | 77 | 7.970 | Tonne |
| Busses | | 100 | 138 | 91 | 112 | 365 | Tonne |
| Ferries | | 100 | 89 | 80 | 75 | 7.605 | Tonne |
| **The Corporation** | | **100** | **99** | **112** | **129** | **7.028** | **Tonne** |
| Service travel by airplane | | 100 | 98 | 272 | 83 | 332 | Tonne |
| Servicetravel in own car | | 100 | 96 | 73 | 92 | 127 | Tonne |
| Taxa | | 100 | 172 | 157 | 129 | 62 | Tonne |
| Employee transport to and from work | | 100 | 98 | 100 | 133 | 6.508 | Tonne |

Base year for indexation is 2010 = 100.
* GHG = Greenhouse Gas Protocol

## Emissions (other emissions)

| | Note | Index 2010 | Index 2011 | Index 2012 | Index 2013 | Volume 2013 | Unit |
|---|---|---|---|---|---|---|---|
| **Air emissions, calculated** | | | | | | | |
| **$NO_x$** | | | | | | **1.782** | **Tonne** |
| **The Product** | 5 | **100** | **86** | **86** | **85** | **1.754** | **Tonne** |
| Long-distance and Regional trains (electric and diesel) | 6 | 100 | 86 | 86 | 84 | 1.723 | Tonne |
| The Coastal line (electricity) | 6 | 0 | 0 | 0 | 100 | 11 | Tonne |
| S-trains (electricity) | 6 | 0 | 0 | 0 | 100 | 21 | Tonne |
| **The Corporation** | | **100** | **85** | **161** | **162** | **28** | **Tonne** |
| Cars and vans (petrol and diesel) | 3 | 100 | 87 | 88 | 133 | 3,6 | Tonne |
| Heating (district heating, heating oil and gas) | | 100 | 84 | 78 | 80 | 12 | Tonne |
| Energy consumption, fixed installations | 7 | 0 | 0 | 100 | 91 | 13 | Tonne |
| **$SO_2$** | | | | | | **15** | **Tonne** |
| **The Product** | 5 | **100** | **101** | **99** | **667** | **10** | **Tonne** |
| Long-distance and Regional trains (electric and diesel) | 6 | 100 | 101 | 99 | 289 | 3,2 | Tonne |
| The Coastal line (electricity) | 6 | 0 | 0 | 0 | 100 | 2,2 | Tonne |
| S-trains (electricity) | 6 | 0 | 0 | 0 | 100 | 4,4 | Tonne |
| **The Corporation** | | **100** | **67** | **122** | **118** | **5,3** | **Tonne** |
| Cars and vans (petrol and diesel) | 3 | 100 | 95 | 97 | 145 | 0,0073 | Tonne |
| Heating (district heating, heating oil and gas) | | 100 | 67 | 54 | 58 | 2,6 | Tonne |
| Energy consumption, fixed installations | 7 | 0 | 0 | 100 | 87 | 2,7 | Tonne |
| **HC** | | | | | | **158** | **Tonne** |
| **The Product** | 5 | **100** | **89** | **95** | **104** | **158** | **Tonne** |
| Long-distance and Regional trains (electric and diesel) | 6 | 100 | 89 | 95 | 92 | 132 | Tonne |
| The Coastal line (electricity) | 6 | 0 | 0 | 0 | 100 | 8,9 | Tonne |
| S-trains (electricity) | 6 | 0 | 0 | 0 | 100 | 17 | Tonne |
| **The Corporation** | | **100** | **85** | **52** | **78** | **0,14** | **Tonne** |
| Cars and vans (petrol and diesel) | 3 | 100 | 85 | 52 | 78 | 0,14 | Tonne |
| **CO** | | | | | | **296** | **Tonne** |
| **The Product** | 5 | **100** | **80** | **84** | **82** | **295** | **Tonne** |
| Long-distance and Regional trains (electric and diesel) | 6 | 100 | 80 | 84 | 78 | 274 | **Tonne** |
| The Coastal line (electricity) | 6 | 0 | 0 | 0 | 100 | 6,9 | Tonne |
| S-trains (electricity) | 6 | 0 | 0 | 0 | 100 | 13 | Tonne |
| **The Corporation** | | **100** | **81** | **42** | **62** | **1,5** | **Tonne** |
| Cars and vans (petrol and diesel) | 3 | 100 | 81 | 42 | 62 | 1,5 | Tonne |
| **Particles (TSP)** | | | | | | **50** | **Tonne** |
| **The Product** | 5 | **100** | **77** | **83** | **73** | **50** | **Tonne** |
| Long-distance and Regional trains (diesel) | | 100 | 77 | 83 | 73 | 50 | Tonne |
| **The Corporation** | | **100** | **74** | **68** | **102** | **0,14** | **Tonne** |
| Cars and vans (petrol and diesel) | 3 | 100 | 74 | 68 | 102 | 0,14 | Tonne |
| **Dust** | | | | | | **1,4** | **Tonne** |
| **The Product** | 5 | **0** | **0** | **0** | **100** | **1,4** | **Tonne** |
| Long-distance and Regional trains (electricity) | 6 | 0 | 0 | 0 | 100 | 0,34 | Tonne |
| The Coastal line (electricity) | 6 | 0 | 0 | 0 | 100 | 0,38 | Tonne |
| S-trains (electricity) | 6 | 0 | 0 | 0 | 100 | 0,71 | Tonne |
| **Ozone-depleting agents** | | | | | | **1,8** | **Tonne** |
| HFC | 8 | - | - | - | - | 1,7 | Tonne |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| HCFC | 9 | - | - | - | - | 0,1 | Tonne |

## Emissions (other emissions)

| | Note | Index 2010 | Index 2011 | Index 2012 | Index 2013 | Volume 2013 | Unit |
|---|---|---|---|---|---|---|---|
| **Waste** | | | | | | **8.303** | **Tonne** |
| **Waste (excl. building waste)** | | **100** | **106** | **103** | **110** | **7.985** | **Tonne** |
| For recycling | | 100 | 115 | 114 | 135 | 2.820 | Tonne |
| For incineration | | 100 | 105 | 102 | 102 | 4.487 | Tonne |
| For special treatment | | 100 | 88 | 70 | 83 | 621 | Tonne |
| For depositing | | 100 | 196 | 193 | 183 | 58 | Tonne |
| **Building waste** | | - | - | - | - | **318** | **Tonne** |
| For recycling | | - | - | - | - | 218 | Tonne |
| For incineration | | - | - | - | - | 79 | Tonne |
| For special treatment | | - | - | - | - | 6 | Tonne |
| For depositing | | - | - | - | - | 15 | Tonne |

Base year for indexation is 2010 = 100.

## Note 1: Shunting

DSB does not calculate emissions from shunting.

## Note 2: Non-revenue kilometres

The non-revenue kilometres of the affiliated companies is not included in the statement of non-revenue kilometres.

## Note 3: Cars and vans

The diesel consumption for cars and vans rose markedly in 2013 due to an increased number of diesel cars and vans. At the same time the number of cars using petrol as a fuel has declined.

## Note 4: Energy and water consumption for fixed systems

The energy consumption rose markedly in 2013 due to an increase of production at the workshops.

## Note 5: Product

The statement on air emissions is compiled on the basis of key figures. For further information look at the part "Accounting policies".

## Note 6: RECS certificates for trains

In the period 2008-2012 DSB has used power produced via renewable energy sources for train operations. In 2013 DSB has compiled emissions for the electricity consumptions for trains again. The reason is that for 2013, DSB did not purchase RECS certificates for the electricity consumption for trains.

## Note 7: RECS certificates for fixed systems (buildings)

In the period 2008-2011 DSB has used power produced via renewable energy sources in its fixed systems (buildings). In 2012-2013 DSB has compiled emissions for the electricity consumptions in its buildings again. The reason is that for 2012-2013, DSB did not purchase RECS certificates for the electricity consumption in its fixed systems.

## Note 8: HFC

Since 2005 the acquisition of new systems with HFC and the use of HFC have been prohibited, except for the purpose of servicing existing systems. Another exception is for air conditioning systems in vehicles, meaning that DSB still uses HFC.

## Note 9: HCFC

According to legislation HCFC is required to be phases out by 1 January 2002, but it is legal to fill tanks with reclaimed (recycled) HCFC.

# Declarations

**Independent auditors' declaration**

**To DSB's stakeholders**
We have made an assessment of environmental data for 2013 in **DSB Environmental report 2013**.

DSB's Management is responsible for the data in **DSB Environmental report 2013**. Our responsibility is to express an opinion on the data in the mentioned environmental report.

**Basis of opinion**
We conducted our work in accordance with International Standards on Auditing on other assurance engagements and additional requirements in accordance with Danish audit regulation to obtain limited assurance for our opinion.

Our work has, based on an assessment of environmental materiality and risk, included analyses, inquiries to the Management of the department for environment and control of whether data has been compiled, assessed, and quality controlled as provided in DSB's manual regarding compiling of environmental data. We have, on a test basis, reconciled the calculation of energy consumption with reporting from data suppliers. Also, we have assessed whether the accounting policies chosen by Management are appropriate and whether the estimates made by Management are reasonable.

An examination is limited primarily to inquiries of company personnel and analytical procedures applied to environmental data and thus provides less assurance than an audit.

We have used both audit and environmental specialists in performing our work. We believe that our work provides a reasonable basis for our opinion.

**Opinion**
Based on our work, nothing has come to our attention that causes us to believe that the environmental data for 2013 in **DSB Environmental Report 2013** has not, in all material respects, been prepared in accordance with the accounting policies described.

Taastrup,28. februar 2014

**KPMG**
Statsautoriseret Revisionspartnerselskab

Torben Bender
State Authorised
Public Accountant

Michael N. C. Nielsen
State Authorised
Public Accountant

**External assessment of methodology for the annual statement of the energy consumption and emissions of train operations (update of assessment from 2001)**

In the assessment of the methodological basis for the Annual Statement Tool I made in 2001, there was one minor reservation in that the data basis for the energy and emission factors for electric trains - freight trains, passenger trains and Strains - was relatively poor. At that time, this was far more aggregated than for diesel trains as it was only divided into S-trains and long-distance trains of which the latter was not broken down into freight and passenger trains, let alone into different types of passenger trains.

These reservations have now been eliminated. First, freight trains are no longer included in the green accounts of DSB. Second, the data basis for electric long-distance trains is far better today and allows for an easy description of the main types of electric long-distance trains (train sets, engine powered). Third, S-trains are now a much more homogenous group in that the latest S-train generation is now dominant. As a result, the fact that only overall measurements of electricity consumption for S-trains exist is of far less significance today than it was before.

Overall this means that the data quality for electric trains is now at a level that allows it to be used without reservation for the green accounts.

February 2008
Kaj Jørgensen, research fellow
Department of Systems Analysis,
Risø DTU

**Assessment of the methodological basis for the annual statement tool (2001)**

In 2001 DSB asked Kaj Jørgensen from the Department of Systems Analysis at the Research Centre in Risø to make a professional assessment of DSB's method for data handling of the energy consumption and calculation of emissions for the individual train types in connection with the annual statement. The following is the general conclusion of the assessment: "The purpose of this assessment is to provide a professional assessment of the methodology - the so-called "Annual Statement Tool" - used by DSB to state energy consumption and emissions from train operations in Denmark. The method is used for the preparation of DSB's green accounts. (Environmental report)

**Overall conclusion**

It is estimated that the methodological basis for the Annual Statement Tool is entirely appropriate and that its application for the current purposes is acceptable from a technical perspective. The uncertainties that necessarily exist are at an acceptable level. The greatest uncertainty is associated with an unavoidable principle factor, i.e. the calculation convention for determining the environmental impact from electricity consumption. The calculation principles chosen can be defended, although they are not, and never can be, beyond discussion.

Generally, the values used are reasonable in comparison with the values used by others and results for similar statements, pursuant i.a. to Schipper et al.: "Energy Use in Denmark: An International Perspective", Lawrence Berkeley Laboratory, Berkeley, California, 1992; OECD: "The Environmental Effects of Freight", Paris, 1997; IEA & Lawrence Berkeley National Laboratory: Data for IEA/LBNL undersøgelse af transportenergiforbrug, 1998; Ilgmann: "Gewinner und Verlierer einer CO2-Steuer im Güter- und Personenverkehr", Ludwig Bölkow Stiftung, Ottobrunn, 1998; Ekman: "Transportsektorens energiforbrug og emissioner. Dokumentationsnotat", memorandum no. 76, The Danish Road Directorate, Copenhagen, 2000.

This applies to the assumptions employed and to the results as well as to specific figures (for example, unit consumption and emissions per unit of traffic) and to the overall results. Finally, it applies to both the underlying documentation and - as far as can be judged - to the application in the model tool. The fact that the data basis for the energy and emission factors of electric trains - freight trains, passenger trains and S-trains – is relatively poor is a weakness. This shortcoming, however, does not prevent the preparation of the environmental assessments which, for example, are included in the green accounts. Nevertheless, it would definitely be an improvement to have more disaggregated material."

Kaj Jørgensen
Department of Systems Analysis,
Risø National Laboratory, 2001