Authors

MARIE ERNST BA
Energy care coordinator

T +31642185694
M +31642185694
E marie.ernst@arcadis.com

Arcadis Nederland B.V.
Postbus 4205
3006 AE Rotterdam
Nederland

THOMAS DE GROOT MSC.
Energy & Reporting manager

T +31-6-22961830
E thomas.degroot@arcadis.com

Arcadis Nederland B.V.
Postbus 1018,
5200 BA ‘s-Hertogenbosch
Nederland
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MANAGEMENT SUMMARY

Arcadis Nederland BV (ANL) publishes an energy efficiency report every six months. These reports describe the energy consumption and CO₂ emissions of ANL of the previous (half) year. It describes what energy saving measures were implemented and what other influences had an impact on energy use. In addition to that, it is analyzed whether ANL met its energy reduction targets mentioned in the energy policy plan.

The ambition of ANL for 2020 is a CO₂ footprint reduction of 40% of the scope 1 and 2 emissions in relation to the reference year 2010. This comes down to a reduction of 4% per year.

Between the reference year of 2010 and 2016 large efforts have been made in implementing ‘quick-wins’ in energy consumption of assets. Hence the focus of the Energy Policy plan 2016-2018 was set on mobility, as it represents 91% of the remaining carbon footprint.

An overall target was set at 30% reduction for scope 1 and scope 2 emissions per fte, which translates down to a targeted reduction of 3% per year, in relation to the reference year. This document discusses the progress of these objectives. Regarding a reduction of 30% is targeted as a minimum. Furthermore, to stimulate progress, an ambition of 40% of reduction was set in line with Energy policy plan, for scope 3 emissions related to urban traffic (e.g. commuting), the only objective was formulated that the emissions should not increase in comparison to the 2010 benchmark. For other scope 3 emissions such as fuel consumption of commercial traffic, air travel and public transport no goals have been set so far.

Looking at the numbers of the scope 1 and 2 emissions for this semi-annual report, the ambitions for 2020 have already been realized in the current reporting year, with an overall saving of 40% compared to 2010 for scope 1 and 2 together (see figure 1). Furthermore, scope 3 emissions (commuting) have not increased and hence this objective was met.

![Figure 1: Progress scope 1 and 2.](image)

However, if we look at the Arcadis’s reduction ambition from 30% up to maximum 40% in respect to the sum of all reported emissions for the performance loader (scope 1, 2 and 3 combined), then another image will emerge. For the period 2010-2016, the same decrease of scope 1 and scope 2 emissions, respectively, is visible. But there is a sharp increase of 68.7% in the scope 3 emissions. In total, this means a decrease of -23.0% in emissions per fte for the period 2010-2016. Still, a great result, but to achieve the ambitions a decrease of 24% is necessary. Also, we conclude that we have already taken most of the measures regarding scope 2. Additional measures will therefore need to be taken in scope 1 (the fuel consumption of lease cars and gas consumption in offices) or scope 3 (flying, travel by train, private use cars).
1 INTRODUCTION

Sustainability is a fundamental business principle of Arcadis. At Arcadis we have been working on improving our living environment as far back as 1888. We endeavor to create opportunities for improvements and economic growth that are in balance with this living environment and with the natural environment. Together with our clients we do our utmost best to improve the living environment and to protect it for future generations.

We make sustainability explicit by providing a program-based framework for sustainability (according to three program lines), as depicted in the figure below:

1. **Sustainable solutions**: our ambition is to seek the most sustainable solutions within project frameworks for all our client and partner projects.
2. **Sustainable operations**: we constantly aim to improve the sustainability of our operations further throughout the organization.
3. **Corporate Social Responsibility (CSR)**: initiatives Arcadis takes to contribute to a sustainable society.

![Figure 1: The three sustainability program lines](image)

In our operations, we aim to act ‘sustainability-aware’. The focus within that approach is on sustainability awareness amongst our employees, efficient use of materials, energy saving and the use of renewable energy.

Arcadis produces an energy efficient semiannual report aiming to give third parties insight into the impact of Arcadis Nederland on the environment and the effect of its activities on the issue of CO₂. The report describes the actions taken and progress made by Arcadis to achieve its CO₂ reduction targets.

Arcadis Nederland BV (ANL) publishes an energy efficiency report every six months. The report describes ANL’s CO₂ emissions during the preceding (half) year, together with the energy-saving measures that have been implemented and other influences that have had an impact on energy consumption. In addition, an analysis is provided of the extent to which ANL has succeeded in meeting its energy-reduction targets as identified in the Energy Policy Plan.

The energy consumption is converted into CO₂ emissions in order to be able to measure and analyze. These emissions are subdivided into three scopes according to the GHG protocol. The scopes are distinguished by the degree to which the company is able to influence the emission.

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1 The manner of reporting has changed since the preparation of the Energy Policy Plan (scope definition according to NEN-EN-ISO 14064-1 rather than CO₂ Performance Ladder). The targets therefore appear to deviate, however, they have in fact remained the same, as contained in the Energy Policy Plan 2016-2018.
• **Scope 1**: direct CO₂ emissions that ANL can influence directly. For example: natural gas is consumed and CO₂ is emitted as soon as the heating is switched on.

• **Scope 2**: indirect CO₂ emissions that ANL can influence but where the emission occurs at a different location. For example: when the lights are switched on the power comes from the power station at which the ultimate emission occurs.

• **Scope 3**: indirect CO₂ emissions over which ANL can exercise a limited amount of influence. For example: ANL employees can decide for themselves the way in which they commute to and from work. ANL is responsible for the emission but not for the choice made.

The figure below provides a graphic representation of the scopes.

![Figure 2: Scope 1, 2 and 3 classifications (according to GHG Protocol)](image-url)

This is the first year the energy consumption is displayed in the amount of primary energy (GJ<sub>prim</sub>) used. ANL has not yet defined ambitions and goals regarding the reduction of energy consumption. Ambitions and goals only have been defined in respect to the CO₂ emissions. Nevertheless, in the following Energy Policy Plan ambitions and goals to reduce the energy consumption will be set.

The following sections describe the CO₂ emissions and the related measures for each scope and the respective influence factors and targets. The subsequent section contains additional information about ANL’s business travel and the planned shift in that in the coming period. Finally, the last section shows the ANL’s CO₂ emissions again but this time calculated according to the scope definitions of the CO₂ Performance Ladder.
2 DIRECT CO\textsubscript{2} EMISSIONS & ENERGY CONSUMPTION: SCOPE 1

ANL’s Scope 1 emissions consist of natural gas consumption by buildings and the fuel consumed by lease cars.

The measures and influence factors that have had an impact on these energy consumptions are described and, finally, the progress towards meeting the Scope 1 target is shown.

2.1 Goal scope 1

The ANL targets for CO\textsubscript{2} reduction are recorded in the Energy Policy Plan 2016-2018:

*The total planned saving on Scope 1 emissions in the period until 2018 is 665 tonnes of CO\textsubscript{2}. This corresponds to 8.0% regarding to the Scope 1 emissions in the reference year. The saving is 0.301 tonnes of CO\textsubscript{2} per fte.*

Regarding the primary energy consumption, no goals have yet been set in the Energy Policy Plan 2016-2018. Therefore, no specific measures have been taken to reduce the primary energy consumption.

2.2 CO\textsubscript{2} emission & energy consumption scope 1

ANL’s direct CO\textsubscript{2} emissions in 2016 are the natural gas consumption by our buildings, commuting to and from work and business travel by lease cars. The table below shows the energy consumptions and the CO\textsubscript{2} emissions of these.

To create a comparable picture with the reference year (2010) the CO\textsubscript{2} emissions are shown corrected in the bottom row for fte. This row contains the calculations of what the CO\textsubscript{2} emission would have been if the number of fte in 2016 had been the same as the number of fte in 2010.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Consumption</th>
<th>Primary energy</th>
<th>CO\textsubscript{2} emissions</th>
<th>Consumption</th>
<th>Primary energy</th>
<th>CO\textsubscript{2} emissions</th>
<th>Consumption</th>
<th>Primary energy</th>
<th>CO\textsubscript{2} emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit</td>
<td>2010</td>
<td>2015</td>
<td>2016</td>
<td>Corrected for fte</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural gas</td>
<td>314.721 Nm\textsuperscript{3}</td>
<td>143.920 Nm\textsuperscript{3}</td>
<td>118.043 Nm\textsuperscript{3}</td>
<td>54.668 GJ\textsubscript{prim}</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gasoline</td>
<td>408.933 ltr</td>
<td>281.376 ltr</td>
<td>185.207 ltr</td>
<td>12.955 GJ\textsubscript{prim}</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diesel</td>
<td>1.052.281 ltr</td>
<td>955.812 ltr</td>
<td>888.934 ltr</td>
<td>37.743 GJ\textsubscript{prim}</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LPG</td>
<td>305.266 ltr</td>
<td>2.434 ltr</td>
<td>973 ltr</td>
<td>1.121 GJ\textsubscript{prim}</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hybrid gasoline</td>
<td>0</td>
<td>45.414 ltr</td>
<td>55.539 ltr</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hybrid diesel</td>
<td>0</td>
<td>36.975 ltr</td>
<td>34.988 ltr</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>67.696 GJ\textsubscript{prim}</td>
<td>47.808 GJ\textsubscript{prim}</td>
<td>44.525 GJ\textsubscript{prim}</td>
<td>5.663 Ton CO\textsubscript{2}</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.663 Ton CO\textsubscript{2}</td>
<td>4.134 Ton CO\textsubscript{2}</td>
<td>3.868 Ton CO\textsubscript{2}</td>
<td>4.727</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Scope 1 energy consumption and CO\textsubscript{2} emissions by ANL

Table 1 shows a decrease of nearly 20% in CO\textsubscript{2} emissions and energy consumption, corrected for fte, compared to the reference situation.

2.3 Measures and influence factors

At Arcadis we distinguish between measures (planned actions aimed at energy saving) and influence factors (external influences that result in a decrease or increase in energy consumption). This paragraph explains the measures and influence factors relating to Scope 1.
2.3.1 Measures

Annual and long-term measures are implemented to meet the planned targets. A number of these are “planned” when setting the targets. The remainder are “additional” due, for example, to changing insights or developments in the market / in our organization. In 2016 the following measures were implemented regarding Scope 1.

2.3.1.1 Planned measures

Enforcing the mobility scheme

Data from the leasing company shows that the average CO₂ emission per kilometer for the new lease cars has reduced in recent years. In 2016 the average emission per kilometer travelled in the new lease cars was 137.14 grams of CO₂ (146.56 grams of CO₂). This comes down to a reduction of nearly 6.5%.

This improvement generated a saving of 18.74 tonnes of CO₂ emission compared to 2015 (and 0.92 TJPₚᵦₑnergy).

Hybrid/ electric lease cars

Since the end of 2015, it is possible to drive a (semi)electric lease car. Due to the amount of unknown technical limitations, this measure has not been enforced for all employees of Arcadis. An increase of 10 electrical cars per year until 2018 is targeted. In 2016 9 ((plug in) hybride) electrical lease cars (total amount: 70) have been added to the fleet. This results in a CO₂ reduction of 13,33 tonnes or 1,91 TJPₚᵦₑnergy.

Use of fuel-efficient sharing cars

10 fuel-efficient sharing cars have been put in place at our offices, which people can use to attend appointments that cannot be reached using public transport. Even an electric share car is now in use. These cars have a very low CO₂ emission compared to the ‘standard’ lease cars. In 2016 this generated a saving of 37.57 tonnes of CO₂ or 1.58 TJPₚᵦₑnergy.

Communication / awareness of travel behavior

In 2016 various actions were taken regarding communication / awareness concerning travel behavior:

- The continued development of the carpool-tool ‘CARS’ (Collega’s Arcadis Reizen Samen) [Arcadis Colleagues Travel Together].
- Encouraging the use of the NS (Dutch Railways) Business Card for business travelers, including for lease car drivers.
- (New) electric car charging points at various Arcadis offices.
- The Low Car Diet, where 117 colleagues sparingly used their lease car for a period of one month. Arcadis is the winner of this campaign in 2016. With about 9 tonnes of CO₂ emissions, Arcadis saved the most.
- The new electric charging points at a number of Arcadis office sites.
- The Mee! Program, a competition especially for owners of lease cars to not use the car for one month as much as possible. Instead of the car, the participants use more sustainable options. Furthermore, a personal coach to assist in the choice on how to travel is supporting the employees.
- High speed pedelecs are available at three offices (Den Bosch, Amersfoort, Arnhem).
- Continuing the program Fuelmonitor. Employees are receiving a monthly update on their fuel consumption and are stimulated to participate in a 3-monthly follow-up training.
- Various news reports on the Intranet (Portal) and status updates on Yammer concerning sustainable mobility.

The effect of these communication measures is not always (immediately) measurable.
2.3.1.2 Additional measures

_Tightening the allocation of lease cars_

The mobility policy for lease cars was amended at the beginning of 2014. The threshold for requesting a lease car was increased from 15,000 to 17,500 business kilometers per year. Compliance with the terms and conditions of the ANL’s mobility policy has also been supervised more strictly regarding the allocation of lease cars. In 2016 this generated a saving of approximately 71.84 tonnes of CO₂ emission or 1.04 T Jennings energy.

2.3.2 Influences

In addition to the saving measures there are always a number of influence factors that have an impact on ANL’s CO₂ emissions. These are factors that are outside the control of ANL and which have had an impact on the energy consumption, such as the effect of the climate (cold winter).

_Change to the use of building floor area_

The use of ANL’s building floor areas changes with a certain degree of regularity. This is partly due to circumstances and partly due to a change in policy as a result of which less office space is required.

At the end of 2016 ANL the total floor area had reduced by 2,314 m² compared to 2012. This explains a decrease of 16,9 tonnes of CO₂ in the total CO₂ emission for 2016 compared to the previous reporting year (2015).

_Climate effect_

The climate has a major effect on the volume of natural gas that ANL uses. The climate is a constantly changing factor therefore degree days are used for calculating this effect.

In 2016 there were a total of 2,784.5 degree days at De Bilt. In 2015 this number of degree days at De Bilt was 2,685.5. This increase in the number of degree days means that 2016 was colder than 2015.

This influence factor explains an increase of 10 tonnes of CO₂ in the total CO₂ emission in 2016 compared to the CO₂ emissions in 2015.

2.4 Progress of the set goal

To obtain a picture of the savings achieved, Table 2 below shows the measures and influence factors in a column. There are no ambitions or goals set yet to reduce the primary energy consumption. Therefore, no progress can be calculated regarding primary energy consumption. The focal point of the Energy Policy Plan 216-2018 is the reduction of CO₂ emissions. The progress towards our goals for the reduction of CO₂ emissions are depicted below.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Dissaving effect compared to 2013 [tonnes CO₂]</th>
<th>Saving effect compared to 2013 [tonnes CO₂]</th>
<th>Net effect [tonnes CO₂]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tightening the allocation of lease cars</td>
<td>-18,74</td>
<td>-18,74</td>
<td>-18,74</td>
</tr>
<tr>
<td>Use of fuel-efficient share cars</td>
<td>-37,57</td>
<td>-37,57</td>
<td>-37,57</td>
</tr>
<tr>
<td>Hybrid/electric lease cars</td>
<td>-13,33</td>
<td>-13,33</td>
<td>-13,33</td>
</tr>
<tr>
<td>Communication/awareness of travel behavior</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Enforcing the mobility scheme</td>
<td>-71,84</td>
<td>-71,84</td>
<td>-71,84</td>
</tr>
<tr>
<td>Change to the use of building floor</td>
<td>-16,90</td>
<td>-16,90</td>
<td>-16,90</td>
</tr>
</tbody>
</table>
### Table 2: Overview of measures and influence factors – Scope 1

<table>
<thead>
<tr>
<th>area</th>
<th>Dissaving effect compared to 2013 [tonnes CO$_2$]</th>
<th>Saving effect compared to 2013 [tonnes CO$_2$]</th>
<th>Net effect [tonnes CO$_2$]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate effect</td>
<td>10,00</td>
<td>10,00</td>
<td>-148,40</td>
</tr>
</tbody>
</table>

The Scope 1 emission in the reference year was 2.56 tonnes of CO$_2$/fte$^2$. To be on track for achieving this target the emission in 2016 must be 2.38 tonnes/fte.

The Scope 1 CO$_2$ emission in 2016 was 2.05 tonnes/fte. This is a decrease of 20% compared to the reference year.

Figure 3: Ambition and realized reduction scope 1 2010-2020

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$^2$ Previously the emissions in the reference year were divided by the number of employees as at 31 December 2010. Due to major changes in employee numbers, the flow is now used. That is the reason why the target has been amended from 2.58 tonnes of CO$_2$/fte to 2.52 tonnes of CO$_2$/fte.
3 INDIRECT CO₂ EMISSIONS DUE TO ENERGY GENERATION: SCOPE 2

This section describes the scope 2 emissions and the energy consumption reduction target of ANL in 2016. ANL’s Scope 2 emissions consist of electricity consumption and the use of heat and cold. The measures and influence factors that have influenced the energy consumption are described and, finally, the progress towards achieving the Scope 2 target is also shown.

3.1 Scope 2 target

ANL’s targets regarding energy saving are set out in the Energy Policy Plan 2016-2018:

The total planned saving on Scope 2 emissions in the period until 2018 is 1,337 tonnes of CO₂ or 0.604 tonnes of CO₂ per fte. This corresponds to 16.0% regarding to the Scope 2 emissions in the reference year.

Regarding the primary energy consumption, no goals have yet been set in the Energy Policy Plan 2016-2018. Therefore, no specific measures have been taken to reduce the primary energy consumption.

3.2 Scope 2 energy consumption

ANL’s indirect energy consumption due to power generation in 2016 are the consumption of electricity and the use of heat and cold. The table below shows the energy consumptions and the associated CO₂ emissions.

To create a comparable picture with the reference year (2010) the CO₂ emissions in the bottom row are corrected for fte. This row contains the calculations of what the CO₂ emission would have been if the number of fte in 2016 had been the same as the number of fte in 2010 (insofar as possible).

<table>
<thead>
<tr>
<th>Activity</th>
<th>2010 Consumption</th>
<th>2010 Primary energy CO₂ emissions</th>
<th>2015 Consumption</th>
<th>2015 Primary energy CO₂ emissions</th>
<th>2016 Consumption</th>
<th>2016 Primary energy CO₂ emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>4.689 MWh</td>
<td>42.201 GJ Ton CO₂</td>
<td>3.129 MWh</td>
<td>26.165 GJ Ton CO₂</td>
<td>3.139 MWh</td>
<td>28.254 GJ Ton CO₂</td>
</tr>
<tr>
<td>Residual oil</td>
<td>15.663 ltr</td>
<td>765 GJ</td>
<td>0 ltr</td>
<td>0 GJ</td>
<td>0 ltr</td>
<td>0 GJ</td>
</tr>
<tr>
<td>Electricity for GSHP</td>
<td>288 MWh</td>
<td>2.593 GJ</td>
<td>148 MWh</td>
<td>1.336 GJ</td>
<td>159 MWh</td>
<td>1.434 GJ</td>
</tr>
<tr>
<td>District heat</td>
<td>793 GJ</td>
<td>881 GJ</td>
<td>1.133 GJ</td>
<td>1.258 GJ</td>
<td>1.241 GJ</td>
<td>1.378 GJ</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>46.439 GJ</td>
<td>-</td>
<td>30.759 GJ</td>
<td>-</td>
<td>31.066 GJ</td>
</tr>
<tr>
<td>Corrected for fte</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 3: ANL’s Scope 2 energy consumption and CO₂ emissions

The table above shows a decrease in the CO₂ emissions compared to the reference year (2010). The largest saving was achieved by buying ‘green’ power. When calculating the primary energy consumption, no difference has been made between green (sustainable) and grey electricity. That results in an overall decrease of the CO₂ emissions and nearly no decrease of the primary energy consumption (even a minor increase 2015-2016 is visible).

3.3 Measures and influence factors

At Arcadis we distinguish between measures (planned actions aimed at energy saving) and influence factors (external influences that result in a decrease or increase in energy consumption). This paragraph explains the measures and influence factors relating to Scope 2.

3 Ground-source heat pump.
4 Stichting milieukeur (SMK)-certified, a Dutch certification body for renewable electricity.
3.3.1 Measures

Measures are implemented annually in order to achieve the planned target. In 2016 the following measures were implemented regarding to Scope 2.

Green power

A total of 80% (excluding own generated electricity through solar power) of the purchased electricity in 2016 was SMK-certified. In addition, ‘green’ power was generated at the Amersfoort office using solar panels. In 2016, also the offices in Amersfoort and Maastricht switched to green electricity, certified by Garantie-van-Oorsprong (GvO) certificates. The purchase and generation of ‘green’ power saved 579.00 tonnes of CO₂ in 2016 in comparison to 2015.

In addition to the purchase and generation of SMK-certified ‘green’ power, ANL also purchases ‘green’ power which is not SMK-certified. This power is included in the footprint as ‘grey’ power because the origin of this power is not always clear.

Reason for the intensification of reduction during 2016 is the change in percentages of green and gray electricity. The percentage of green electricity has increased due to the move of certain offices. This caused a shift. Also, the transfer to green electricity, including a certificate, at the office in Amersfoort provides a substantial saving in CO₂.

A reduction in emissions of CO₂ is visible, but no reduction on primary energy has been realized.

Closing the 5th floor in Rotterdam Lichtenauerlaan (electricity and heat)

Most of the offices of Arcadis are structured according to the OpenUp principle. However, there are a few offices where the OpenUp principle is not yet (fully) adapted. By implementing this principle, the 5th floor of the office in Rotterdam could be shut down and electricity consumption and heat consumption savings have been realized. This resulted in a decrease of 2.66 tonnes CO₂ for heat and 14.42 tonnes CO₂ for electricity in 2016 (or 0.33 Tjₚᵣᵢₜₑnergy in total).

3.3.2 Influence factors

In 2016 there were also a number of factors that influenced ANL’s energy consumption. Regarding to the Scope 2 emissions there were the following influence factors.

Change to the use of building floor area

In 2016 the floor areas in use were different compared to the previous reporting year (2015) and compared to the reference year. In total, the floor area in 2016 had reduced by 2,314 m² compared to 2015. This explains a decrease of 37 tonnes of CO₂ in the consumption of electricity and heat in 2016 compared to the previous reporting year (2015).

Floor area per fte

In 2016 the number of square meters per fte (14.9 m²/fte) reduced considerably compared to the previous reporting year 2015 (15.7 m²/fte). This is the result of our policy of further rolling out The New Way of Working in our offices. When ending and/or extending lease agreements we examine the possibility of surrendering square meters and introducing greater flexible working practices. This reduction in floor area explains a decrease of 27 tonnes of CO₂ emissions compared to 2015.

Climate effect

The climate has an effect (within the Scope 2 emissions) on ANL’s heat consumption. The weather is always a variable factor and therefore degree days are used for calculating this effect. In 2016 there were a total of 2,784.5 degree days at De Bilt. In 2015 this number of degree days at De Bilt was 2,685.5.
The increase in the number of degree days means that 2016 was colder than 2015. This influence factor explains an increase of 4 tonnes of CO$_2$ in the total CO$_2$ emission in 2016 compared to 2015.

### 3.4 Progress towards the target

The table below shows the measures and influence factors together with the associated effects. There are no ambitions or goals set yet to reduce the primary energy consumption. Therefore, no progress can be calculated regarding primary energy consumption. The focal point of the Energy Policy Plan 2016-2018 is the reduction of CO$_2$ emissions.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Dissaving effect compared to 2013 [tonnes CO$_2$]</th>
<th>Saving effect compared to 2013 [tonnes CO$_2$]</th>
<th>Net effect [tonnes CO$_2$]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closing the 5th floor in Rotterdam Lichtenauerlaan</td>
<td>-17.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green electricity</td>
<td>-579.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change to the use of building floor area</td>
<td>-36.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floor area per fte</td>
<td>-26.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate effect</td>
<td>4.58</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total effect</strong></td>
<td></td>
<td></td>
<td><strong>-656.16</strong></td>
</tr>
</tbody>
</table>

*Table 4: Effect of Scope 2 measures and influence factors*

The Scope 2 emissions in the reference year were 1.021 tonnes of CO$_2$/fte$^5$. To be on track to achieve this target, the emission in 2016 must be a maximum of 0.72 tonnes/fte.

The Scope 2 CO$_2$ emission in 2016 was 0.22 tonnes/fte, which means that ANL is well on track to achieve its target, see figure 4.

$^5$ Based on the new emission factors for the Energy Policy Plan 2016-2018 a re-calculation of the CO$_2$ emissions has been done in respect of the reference year. This differs from the emissions mentioned in the previous yearly report energy efficiency (1.21 tonCO$_2$/fte vs 1.05 tonCO$_2$/fte).
4 OTHER INDIRECT CO₂ EMISSIONS: SCOPE 3

This section describes the target and the energy consumption of ANL in 2016 regarding to the Scope 3 emissions. ANL has two types of Scope 3 emissions: upstream and downstream. ANL’s Scope 3 emissions consist of flights, business kilometers driven using private cars and commuting to and from work using private cars.

The measures and influence factors that have had an effect on the energy consumption are described and, finally, the progress towards achieving the Scope 3 target is also shown.

4.1 Scope 3 target

ANL’s targets regarding energy saving are set out in the Energy Policy Plan 2016-2018. A number of targets have been formulated with regard to Scope 3. Some of these concern emissions reported by ANL, which are upstream CO₂ emissions. In addition, a number of measures have been formulated about the ANL’s downstream Scope 3 emissions. No energy data is known about the downstream scope 3 emissions.

Upstream scope 3 target

The target for the CO₂ emissions concerning commutes to and from work using private cars is the same as for the period 2012-2015. The reference year is 2010, at which time the emissions for commutes to and from work using private cars were 1,766 tonnes of CO₂. This corresponds to 0.81 tonnes of CO₂ per fte.

The CO₂ emissions of scope 3 will be reported yearly in the CO₂-footprint. The emissions are:

- fuel consumption business travel private cars;
- fuel consumption business travel plane;
- fuel consumption business travel public transport.

For those emissions, no reduction goals have been defined for the period 2016-2020/Still, it is the ambition of Arcadis to not let the fuel consumption of those three categories increase. When possible, the fuel consumption should be decreased by 5% compared to the reference year.

Furthermore, measures should be implemented to keep the flight kilometers to a minimum.

The NS is also guaranteeing the purchase of only green electricity with a certificate starting from 2017.

Downstream scope 3 targets

General

- Developing the CO₂-tool 2016-2018 and use it in CO₂ reward projects

It is the ambition to further expand the CO₂ tool in the upcoming years, so that the construction of the rail roads (transport of materials, groundworks, etc.) and the operation of the rail roads can be included in the project. The expansion of the CO₂ tool will be based on the points of focus inertia, asset management and rolling resistance.

Rail-sector

- Understanding the CO₂ emission of an installation house

The aim is to gain insight into the CO₂ emissions of installation houses and opportunities to reduce the CO₂ emissions. Research showed that adjusting the concrete composition is a directly applicable solution if the goal is to reduce the CO₂ emissions. For a higher reduction of the emissions, the construction method of installation houses must change. Application of a wooden skeleton construction or innovative carbonized limestone requires further research.
Road sector

Point of focus 1 – Inertia in the design

- The goal is to gain insight into the CO₂ emissions in the period 2016-2018, and that the emissions can be reduced by a good road setting and application of dynamic traffic management (DTM). This will then be included in the CO₂ tool. Every quarter year, consultations will be held between the project leader CO₂ performance ladder and the responsible person for the CO₂ tool to ensure progress.

Point of focus 2 – Asset management

- The objective is to gain insight into the effects of measures that can be taken in the field of maintenance during the period 2016-2018 to reduce CO₂ emissions. Early consultancy is not only cost-effective and increases safety at work, but also reduces CO₂ emissions.

Point of focus 3 – Rolling resistance

- A point of focus for the upcoming years is to promote the choice for roads which are having a low rolling resistance.

4.2 Scope 3 energy consumption and CO₂ emissions - upstream

The other indirect energy consumption of ANL in 2016 concerned flights, business travel (BT) using private cars, commutes to and from work using private cars and business travel using public transport.

The table below shows the energy consumption and the associated CO₂ emissions.

To create a comparable picture with the reference year (2010) the CO₂ emissions in the bottom row are corrected for fte. This row contains the calculations of what the CO₂ emissions would have been if the number of fte in 2016 had been the same as the number of fte in 2010.

<table>
<thead>
<tr>
<th>Activity</th>
<th>2010 Consumption</th>
<th>2010 Primary energy</th>
<th>2010 CO₂ emissions</th>
<th>2015 Consumption</th>
<th>2015 Primary energy</th>
<th>2015 CO₂ emissions</th>
<th>2016 Consumption</th>
<th>2016 Primary energy</th>
<th>2016 CO₂ emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unit</td>
<td>Km</td>
<td>GJ</td>
<td>Ton CO₂</td>
<td>Km</td>
<td>GJ</td>
<td>Ton CO₂</td>
<td>Km</td>
<td>GJ</td>
</tr>
<tr>
<td>Business travel private car</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gasoline</td>
<td></td>
<td>2.637.627</td>
<td>6.963</td>
<td>591</td>
<td>2.209.566</td>
<td>5.833</td>
<td>495</td>
<td>2.326.215</td>
<td>6.141</td>
</tr>
<tr>
<td>Hybride</td>
<td></td>
<td>0</td>
<td>-</td>
<td>-</td>
<td>49.417</td>
<td>119</td>
<td>8</td>
<td>71.551</td>
<td>172</td>
</tr>
<tr>
<td>Diesel</td>
<td></td>
<td>2.417.982</td>
<td>5.936</td>
<td>515</td>
<td>1.640.551</td>
<td>4.028</td>
<td>349</td>
<td>1.605.175</td>
<td>3.941</td>
</tr>
<tr>
<td>LPG</td>
<td></td>
<td>260.328</td>
<td>625</td>
<td>51</td>
<td>152.207</td>
<td>365</td>
<td>30</td>
<td>190.752</td>
<td>458</td>
</tr>
<tr>
<td>Electric</td>
<td></td>
<td>0</td>
<td>-</td>
<td>-</td>
<td>18.264</td>
<td>38</td>
<td>2</td>
<td>75.876</td>
<td>159</td>
</tr>
<tr>
<td>Commuting private car</td>
<td></td>
<td>-</td>
<td>-</td>
<td>1.766</td>
<td>-</td>
<td>-</td>
<td>1.440</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Public transport</td>
<td></td>
<td>4.659.573</td>
<td>1.724</td>
<td>103</td>
<td>5.088.312</td>
<td>3.319</td>
<td>199⁷</td>
<td>5.802.473</td>
<td>3.785</td>
</tr>
<tr>
<td>Corrected for fte</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>23.931</td>
<td>4.123</td>
<td>-</td>
<td>25.714</td>
<td>4.323</td>
</tr>
</tbody>
</table>

Table 5: ANL’s Scope 3 energy consumptions and CO₂ emissions

⁶ In 2016 no new mobility poll has been conducted. To still be able to make an estimation, the emission factors per employee from 2015 has been used.

⁷ Differs from the data which has been reported in the past year. The new emission factor for train travel has been applied as well. This has been done to re-calculate the footprint from the past years.
The table above shows an increase in the CO₂ emissions compared to the reference year (2010) and the past year (2015). Compared to 2015 all categories increased with a severe increase of the emission caused by the use of public transport. This can be explained by taking a closer look at the decrease of lease cars and the increase of revenue. This increase public transport use can be interpreted as a rebound effect originating from decrease in scope 1 due to the new lease cars thresholds. It is very unlikely for the use of public transport to decrease. Nevertheless, given the current progress of NS to use green energy, a reduction in CO₂ emissions can be expected.

### 4.3 Measures and influence factors

At Arcadis we distinguish between measures (planned actions that aim for energy savings) and influence factors (external influences that result in a decrease or increase in energy consumption). This paragraph explains the measures and influence factors related to Scope 3.

#### 4.3.1 Measures

In 2016, no specific measures regarding scope 3 have been implemented. Nevertheless, there have been measures implemented that already discussed in the chapters regarding scope 1 & 2 with impact on scope 3. Unfortunately, the savings from these measures and their impact on scope 3 cannot be quantified but are likely to have a positive impact.

#### 4.3.2 Influence factors

In 2016 a number of factors also had an influence on ANL’s energy consumption:

**Increase in flights due to Arcadis Europe**

Arcadis Europe (AEU) has been established since 2013 and a number of ANL employees are involved in this. Many of these employees are now no longer employed by ANL but by AEU. Due to improved and increased collaboration, there are more flights than in previously years. In 2016, these employees emitted a total of approximately 126 tonnes of CO₂ from flights. This effect, compared to 2015 in which the employees emitted 122 tonnes of CO₂, comes down to a decrease of 4 tonnes CO₂.

**Changed emission factor train**

In 2016, a new emission factor has been introduced by SKAO regarding to rail traffic. Because Arcadis has no insight into the distribution of the train kilometers between stopping trains (sprinters) and intercity trains, until 2016 Arcadis has counted all trains to be stopping trains. This is a conservative assumption as stopping trains have the highest emission factor of 65 g CO₂/ km. Since 2016, there is a new emission factor for train traffic (train type unknown), which is more in line with the real-life situation. The effect of converting this emission factor results in a “saving” of about 151 tonnes of CO₂ in 2016.

### 4.4 Progress towards the target

The progress towards meeting the targets is described below for each type.

#### 4.4.1 Upstream scope 3 emissions

The table below shows the measures and influence factors and associated effects. Regarding the primary energy consumption, no goals have yet been set in the Energy Policy Plan 2016-2018. Therefore, no specific measures have been taken to reduce the primary energy consumption.

<table>
<thead>
<tr>
<th>Influence factor</th>
<th>Dissaving effect compared to 2015 [tonnes CO₂]</th>
<th>Saving effect compared to 2015 [tonnes CO₂]</th>
<th>Net effect [tonnes CO₂]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase in flights due to Arcadis Europe</td>
<td>4,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changed emission factor train</td>
<td></td>
<td>-151,00</td>
<td></td>
</tr>
<tr>
<td>Total effect</td>
<td></td>
<td>-147,00</td>
<td></td>
</tr>
</tbody>
</table>

*Table 6: Effect of Scope 3 measures and influence factors*
For the upstream scope 3 emissions, one single objective has been formulated on limiting commuting traffic by private cars. Possible targets regarding air traffic and business traffic originating from private cars are being analyzed.

### 4.4.2 Downstream scope 3 emissions

**Downstream scope 3 targets**

**General**

- **Developing the CO$_2$-tool 2016-2018 and use it in CO$_2$ reward projects**

The expansion of the CO$_2$ tool will be based on the points of focus inertia, asset management and rolling resistance. This step is scheduled for the second quarter of 2017. The results from these studies will be used as input for the new phases in road design. Every quarter there will be meetings between the project leader CO$_2$ performance ladder and the responsible person for the CO$_2$ tool to ensure the progress. The progress is reported in the Q reports for sustainability. The planning of the CO$_2$ performance ladder will be used to safeguard the process.

**Rail-sector**

- **Understanding the CO$_2$ emission of an installation house**

The completed graduation study showed that the adaptation of the concrete composition is a directly applicable solution for reducing CO$_2$ emissions. For a higher reduction of emissions, the construction method of installation houses must change. Implementation and application will take place in 2017. In addition, new initiatives will be taken in 2017 to ensure and extend sustainability in the rail sector. Therefore, a session will be organized to determine the points of focus for the upcoming years.

**Road sector**

**Point of focus 1 – Inertia in the design**

- Due to other priorities regarding sustainability and Arcadis, no progress has been made in 2016.

**Point of focus 2 – Asset management**

- Early consultancy is not only cost-effective and increases safety at work, but also reduces CO$_2$ emissions. To gain insight, a database for measures is drawn up. These measures can then be included into the CO$_2$ tool. The research began in September 2016. The establishment of the database management and maintenance, as well as the translation into the CO$_2$ tool will take place in 2017. Safeguarding this goal will take place the same way it takes place with point of focus 1. An initial analysis has already been carried out. Implementation will take place in the 2nd half of 2017.

**Point of focus 3 – Rolling resistance**

- A framework with parts of a UAV-GC contract has been established to reduce CO$_2$ reduction (and specific rolling resistance). The framework is expanded by requirements aimed at reducing emissions by vehicles using the system. As of September 2016, a trainee performs the research (completion during the second quarter of 2017). Conclusions will be presented and implemented. The analysis of best practices EMVI criteria on CO$_2$ reduction is currently being carried out.
5 BUSINESS TRAVEL

ANL’s business travel is spread across all three scopes and ANL has control of the CO₂ emissions to a greater or lesser degree depending on the scope.

Despite this, these different forms of transport have an influence on each other to a greater or lesser degree. The employee who decides to use the lease car less for travelling to work chooses the train as an alternative means of transport for example. As a result of this there is a shift in the energy consumption across the scopes.

But is this shift really the intention? A few shifts are of course required, for example the shift to using public transport (after all, a kilometer travelled using public transport has an emission that is approximately three times lower). These shifts are encouraged by ANL. In addition, it is also possible that an undesirable effect occurs. For example, a change in the leasing policy can mean that more kilometers are driven using private cars. These changes are identified by means of the analysis below.

The spread is as follows:
- Scope 1: Business travel using lease car (including commutes)  Control
- Scope 3: Business travel using private car (excluding commutes) Limited control
- Scope 3: Business travel using public transport (excluding commutes) Limited control

<table>
<thead>
<tr>
<th>Activity</th>
<th>Scope</th>
<th>CO₂ emission [tonnes/year]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business travel using lease cars</td>
<td>Scope 1</td>
<td>3.646</td>
</tr>
<tr>
<td>Business travel using private cars</td>
<td>Scope 3</td>
<td>921</td>
</tr>
<tr>
<td>Business travel using public transport</td>
<td>Scope 3</td>
<td>226</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>4.793</strong></td>
</tr>
</tbody>
</table>

Table 7: CO₂ emissions related to business travel in 2016

Figure 5 shows the spread across the three different scopes.

Figure 5: Total spread of business travel
ANL encourages its employees to travel less. When travel is necessary, the employees are encouraged to travel using public transport. Table 8 shows the number of kilometers travelled in 2016.

<table>
<thead>
<tr>
<th>Means of transport</th>
<th>Total distance [km]</th>
<th>Distance per fte [km/ fte]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Train</td>
<td>5.610.246</td>
<td>2.965</td>
</tr>
<tr>
<td>Car</td>
<td>21.452.728</td>
<td>11.339</td>
</tr>
<tr>
<td>Total</td>
<td>27.062.974</td>
<td>14.304</td>
</tr>
</tbody>
</table>

*Table 8: ANL’s spread of travel in 2016*

Figure 6 below shows the number of business kilometers travelled using public transport. In 2015 this was 19% of the total of business kilometers. 2016 shows an increase to 21% of the kilometers travelled using public transport.

*Figure 6: Train vs. car 2015-2016*

In addition to the shift of 5% from the number of kilometers driven by car to the number of kilometers travelled by train, an absolute increase is also seen in the number of kilometers travelled by train. The number of kilometers travelled by train in 2014 has increased by 1.369.124 kilometers compared to 2013 (total 3.290.449 km).

Last year, ANL launched a number of extra campaigns to encourage the use of public transport. These included enforcing the mobility scheme, tightening the allocation of lease cars, communication and awareness regarding travel behavior, closure of offices and the use of share cars. The effect of these measures is shown in the figures above.
6 ENERGY CONSUMPTION BUILDINGS

The emission of the buildings of ANL is divided between scope 1 and 2. Yet, these energy streams have a potentially significant influence on each other. For example, when you are heating a property by a ground source heat pump working on electricity, the electricity consumption of this location is relatively high, while no natural gas or district heat is consumed.

In order to be able to assess the energy data per location, the figures below show the total of primary energy and CO\textsubscript{2} emission per square meter. However, it has been decided to exclude office Goes from the overview. The reason for this is the move of the office which has already been made. The old office was only occupied during a winter month (January 2016). This would only be a distortion of the natural gas consumption in 2016. The new office has not yet been taken into account because no trend is visible yet.

![Figure 7: Energy consumption primary energy (m²)](image)

The figure above shows the energy consumption in primary energy per square meter per location of Arcadis. The figure shows a relatively high energy consumption, compared to the other properties (Amersfoort, Arnhem Beau and Den Bosch MP). This also concerns some of the largest ANL locations in the Netherlands.

In addition to that, the location of Maastricht CLN has a relatively high energy consumption. Arcadis only is renting one part of one floor, the energy consumption is calculated based on the square meters rented. This means that changes in the energy use of third parties have a major influence on ANL’s energy consumption.
The figure above shows the CO₂ emission per location. In this figure, relatively large differences are visible, compared to figure 7. This is because in calculating the primary energy no different conversion factor is used for, for example, calculating green electricity vs. grey electricity (nevertheless, this does happen when calculating the CO₂ emissions).
7 CO₂ PERFORMANCE LADDER

ANL has been certified for the CO₂ Performance Ladder since 2009. Part of the CO₂ Performance Ladder is a CO₂ Footprint in which the scope definition differs from the scope definition from the NEN-EN-ISO 14064-1 norm.

This section shows the CO₂ emission according to the scope definition of the CO₂ Performance Ladder.

### 7.1 CO₂ emissions according to the CO₂ Performance Ladder

The CO₂ emissions according to the CO₂ Performance Ladder are shown in Table 9.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Scope</th>
<th>CO₂ [tonnes/year]</th>
<th>Percentage [%]</th>
<th>CO₂/ fte [tonnes/ fte]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direct CO₂ emissions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural gas consumption</td>
<td>Scope 1</td>
<td>223</td>
<td>3</td>
<td>0,12</td>
</tr>
<tr>
<td>Fuel consumption for business travel by lease car</td>
<td>Scope 1</td>
<td>3.646</td>
<td>56</td>
<td>1,93</td>
</tr>
<tr>
<td><strong>Indirect CO₂ emissions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity consumption</td>
<td>Scope 2</td>
<td>281</td>
<td>4</td>
<td>0,15</td>
</tr>
<tr>
<td>Electricity consumption of lease cars</td>
<td>Scope 2</td>
<td>5</td>
<td>0</td>
<td>0,00</td>
</tr>
<tr>
<td>Heat and cold consumption</td>
<td>Scope 2</td>
<td>128</td>
<td>2</td>
<td>0,07</td>
</tr>
<tr>
<td><strong>Other indirect CO₂ emissions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel consumption for business travel by private car</td>
<td>Scope 2</td>
<td>921</td>
<td>14</td>
<td>0,49</td>
</tr>
<tr>
<td>Fuel consumption for business travel by plane</td>
<td>Scope 2</td>
<td>1.095</td>
<td>17</td>
<td>0,58</td>
</tr>
<tr>
<td>Fuel consumption for business travel by public transport⁸</td>
<td>Scope 2</td>
<td>227</td>
<td>3</td>
<td>0,12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>6.525</td>
<td>100</td>
<td>3,45</td>
</tr>
</tbody>
</table>

| Table 9 CO₂ emission for 2016 according to the CO₂ Performance Ladder |

### 7.2 Allocating emissions to projects portfolio

Arcadis partly allocates the emissions made by the company to the projects portfolio and partly to the ‘overhead’ (such as heating and electricity for the offices). At Arcadis there is a causal relationship between the offices and the service provision and that is why an allocation formula is used for the office-related emissions based on fte’s and which takes into account the percentage of employees who are ‘supporting’.

The spread is as follows:
- Staff employees (indirect employees): 15%.
- Non-staff employees (direct employees): 85%.

⁸ On the basis of the scope change in the CO₂ Performance Ladder Handbook 3.0 (2015), the CO₂ emissions associated with business travel by public transport are part of Scope 2. A further explanation about the scope change based on the Handbook can be found in the Arcadis NL CO₂ Footprint.
Because some of the direct employees often work from home or work at different locations (flexible working), we estimate that 25% of the office-related emissions can be allocated to ‘overhead’, and 75% to the projects portfolio.

This gives the following spread per emission category:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural gas consumption</td>
<td>25%</td>
<td>56</td>
<td>75%</td>
<td>167</td>
</tr>
<tr>
<td>Fuel consumption for business travel by lease car</td>
<td>0%</td>
<td>0</td>
<td>100%</td>
<td>3.646</td>
</tr>
<tr>
<td>Electricity consumption</td>
<td>25%</td>
<td>70</td>
<td>75%</td>
<td>211</td>
</tr>
<tr>
<td>Heat and cold consumption</td>
<td>25%</td>
<td>96</td>
<td>75%</td>
<td>32</td>
</tr>
<tr>
<td>Fuel consumption for business travel by private car</td>
<td>0%</td>
<td>0</td>
<td>100%</td>
<td>921</td>
</tr>
<tr>
<td>Fuel consumption for business travel by plane</td>
<td>100%</td>
<td>1.095</td>
<td>0%</td>
<td>0</td>
</tr>
<tr>
<td>Fuel consumption for business travel by public transport</td>
<td>0%</td>
<td>0</td>
<td>100%</td>
<td>227</td>
</tr>
</tbody>
</table>

Table 10 Spread per emission category

7.3 Progress towards the target

This other scope definition has no other consequences for ANL’s Scope 1 or Scope 2 targets. Please refer to the earlier section for details of the progress towards the Scope 1 targets.

The Scope 2 emission in the reference year was 1.68 tonnes of CO₂/fte. ANL’s target is to achieve a saving of 1,167 tonnes of CO₂, which in this scope definition corresponds to a saving of 31% on the CO₂ emissions.

To remain on track to achieve this target the emission in 2016 must be a maximum of 1.43 tonnes/fte. In 2016 the Scope 2 CO₂ emission was 1.40 tonnes/fte, which means that ANL is well on track for achieving the target.
ANNEX 1: SCOPE 3 ANALYSIS PROGRESS

Each year we evaluate whether it is possible to achieve improvements in the Scope 3 analysis in the next reporting year. If this does not appear to be possible a new Scope 3 chain is selected for analysis and to which targets are linked.

This paragraph states the way in which the analyses have been improved in the past year and the way in which they will be improved next year.

Commuting to and from working using private cars
ANL is currently in the process of drawing up a new mobility vision 2025. Arcadis’s mobility needs will grow steadily in the upcoming years due to crowded trains and roads. At the moment, an extensive mobility regulation is in order, still with many exceptions and details. An important element is the behavioral change of the employees.

The new mobility vision focuses on three topics:
- Honest (for individual employees and Arcadis).
- Flexible (appropriate choice of mobility at any time for both employee and Arcadis).
- Sustainable (better for human, environment and organization).

The mobility vision allows colleagues to travel with the most suitable means of transport (business and private), which continuously improves the impact on the health and safety of our employees and the impact on our environment.

Downstream Scope 3 emissions
In addition to the analysis of the upstream emissions, ANL also wishes to understand its downstream emissions. We believe it is important to study the impact of our activities in the chain and how we are able to reduce the associated CO₂ emissions. See above on the state of progress regarding to the scope 3 emissions downstream.
ANNEX 2: ENERGY MANAGEMENT

In 2009, ANL started introducing Energy Management in its organization. Energy Management consists of implementing organizational, technical and behavioral measures in a structural and economically-responsible way to minimize the consumption of energy (including energy to produce raw materials and additives).

At the end of 2016, ANL's energy management system is certified for ISO 50001. This means that ANL has a fully developed energy management system (EnMS) according to the Plan-Do-Check-Act cycle. An internal audit is conducted once a year to assess the structure, content and operation of the energy management system. The results of the internal audit are used to improve the EnMS. Once a year, a management review will be put together, which will be presented to the management to clarify shortcomings and points of improvement. The current energy consumption and progress in regard of the energy goals are discussed with the management as well.

Finally, the EnMS is going to be re-evaluated at the end of 2017 (audit and certification).