



Annual monitoring report

Results of the first period (05/2013-04/2014)

Three annual monitoring reports are released in the project GPP 2020 that provide information on the uptake of the project. They include facts, figures and results of

- a) the low-carbon tenders,
- b) the training seminars and
- c) the support activities

aiming to establish permanent support structures on low-carbon procurement across Europe. This first period was dedicated to the tendering, the planning of training seminars and support activities.

1. The GPP 2020 project

In recent years, awareness of green public procurement (GPP) has increased considerably. Tools, guidance and GPP criteria are now widely available in many countries. Yet, the vast majority of public tenders in Europe still do not incorporate effective environmental criteria and do not result in the purchase of sustainable solutions. The project GPP 2020 aims to mainstream low-carbon procurement across Europe through the following activities:

- Project partners will implement more than 100 low-carbon tenders to achieve a significant amount of CO₂ emission reductions.
- Training and networking events – both for procurers and procurement training providers – on the implementation of energy-related GPP in the eight target countries Austria, Croatia, Germany, Italy, the Netherlands, Portugal, Slovenia and Spain.
- Enhancing permanent GPP support structures in the same eight target countries.

Through this, GPP 2020 will contribute to the EU's target to reduce greenhouse gas emissions by 20 percent, increase the share of renewable energy by 20 percent and increase energy efficiency by 20 percent by 2020.

GPP 2020 is co-funded by the Intelligent Energy Europe programme of the European Commission.



2. Overview of the low-carbon tenders in the first project period

Ten low-carbon tenders awarded and evaluated

In the first period of the project GPP 2020 (05/2013-04/2014), 20 low carbon tenders were published. Until now 10 of these tenders were already awarded and evaluated. These tenders will be described in detail in the monitoring report at hand. More low carbon tenders will be part of the next annual monitoring report foreseen for 2015.

The 10 low-carbon tenders described in this report are tenders for information and communication technologies (ICT) (4), vehicles (3), electricity (1), paper (1) and infrastructure (1).

Procurement approach

The procurement approach taken in the ten low-carbon tenders can be summarized as follows:

- Open procedures.
- Low-carbon tenders for recycled paper and ICT-solutions were awarded to the bids with the lowest price. The other low-carbon tenders were awarded to the most economically advantageous tender.
- While the procurement approaches taken in the low-carbon tenders can be seen as conventional – with energy efficiency criteria included as technical specifications and sometimes also as award criteria, the approach used in one tender is uncommon and shall be highlighted below (see page 10): the approach taken in the tender for infrastructure (Netherlands).

Reduction of CO₂-emissions and energy consumption

The solutions procured by the low-carbon tenders are going to emit **67,795 t CO₂eq¹** less during the time they belong to the public authorities compared to a baseline or reference value. The CO₂eq-reductions achieved in each tender are shown in the following figure.

¹ For some product groups, CO₂-emissions were calculated, for some, CO₂-equivalents were taken. Furthermore, with the exception of infrastructure, only those emissions that occurred during the use phase of the life cycle were included. Emissions from the production and disposal were neglected. The detailed methodology how GPP 2020 calculates energy and CO₂-savings is described here: <http://www.gpp2020.eu/low-carbon-tenders/measuring-savings>.

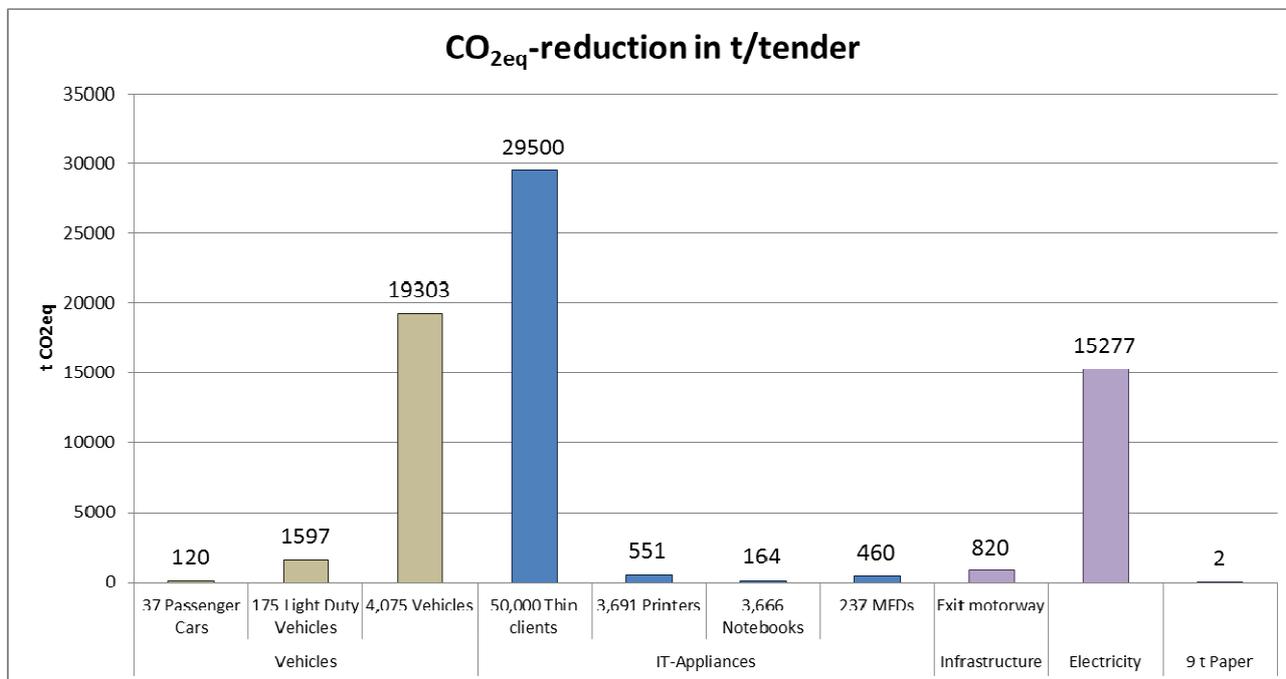


Fig. 1: CO₂eq-reduction realised by the 10 low-carbon tenders

The highest reduction was achieved by the low-carbon tender for thin clients. This tender combined a high number of devices (50,000) with a considerable room for improvement as thin client technology replaced Desktop-PCs. Furthermore, the devices are going to be used in a country with relatively high carbon electricity.

The CO₂eq-reduction achieved by the low-carbon tenders can also be expressed in percent (ratio of CO₂eq-reduction and amount of CO₂eq of the baseline). These percentages are shown in figure 2. According to this figure, the highest reductions in percent were achieved by the tenders for multi-functional devices (MFDs) and for thin clients. The figure also shows that in each low-carbon tender at least 21 % of CO₂eq-reduction was achieved. While this is a respectable figure, it is at the same time connected to a lesson learned by project partners in the first period: that some low-carbon tenders could have been designed even more ambitious, by e. g. using award criteria on energy consumption. The market seems to be ready to provide low carbon solutions and thus, we are looking forward to see highly ambitious low-carbon tenders in the second and third project period.

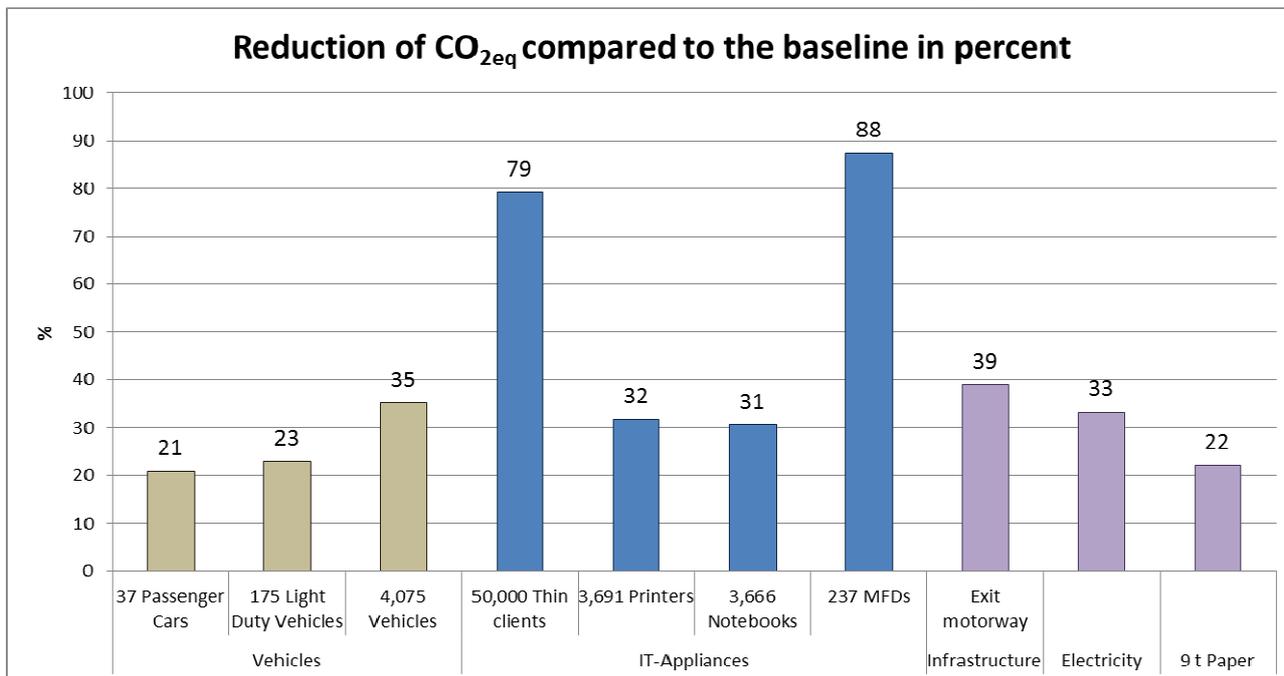


Fig. 2: Percentage of CO_{2eq}-reduction achieved by the low-carbon tenders

The following figure shows the amount of energy reduction achieved in the tenders over the duration of the tender. The solutions procured by the low-carbon tenders are going to consume **11,926 TOE** less during the time they belong to the public authorities compared to a baseline value. The figure shows that the low-carbon tender of 4,075 vehicles achieved the highest reduction of energy consumption even if it didn't achieve the highest reduction of CO₂-emissions (see figure 1). The reason for this is the relatively high carbon electricity of the country where the thin clients are going to be used.

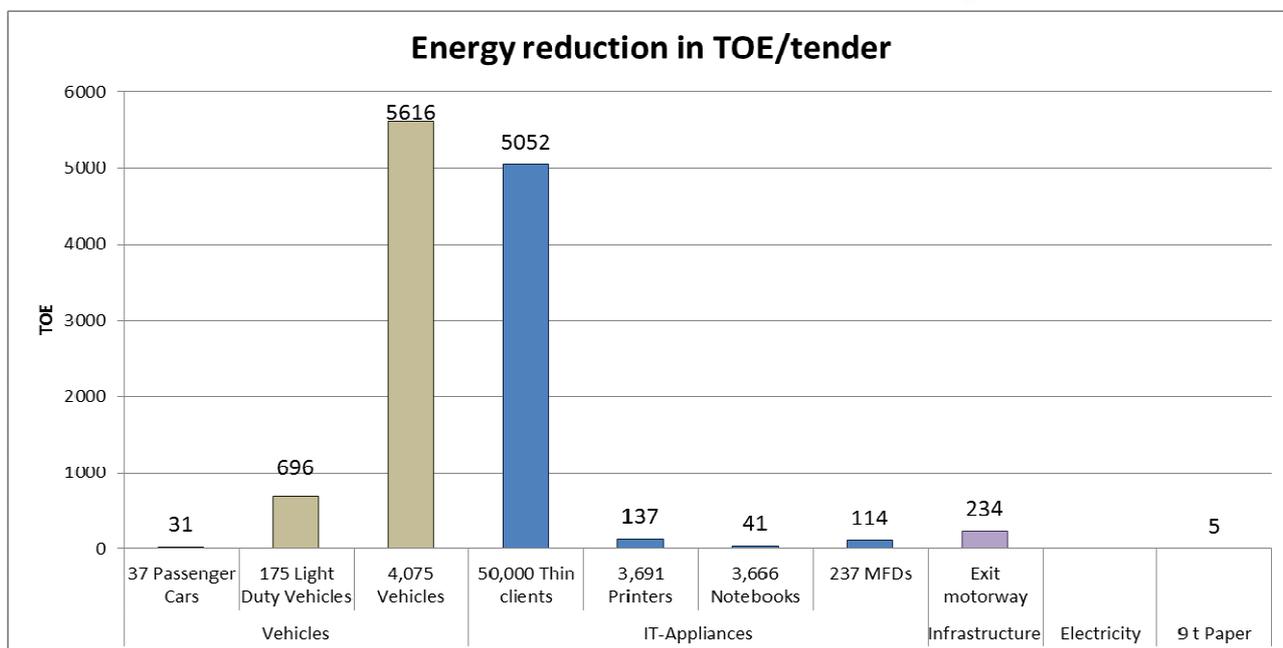


Fig. 3: Energy reduction per tender (energy reduction of the infrastructure tender isn't available)

For the calculation of CO₂eq- and energy-reduction of low-carbon tenders, a baseline or reference solution had to be estimated. We decided that different kinds of reference solutions/baselines could be chosen:

- Solution awarded in the last tender
- Average product or design available on the market
- Worst product or design available on the market
- Any reference product or design available on the market

It can be argued that most solutions offered on the market became more energy efficient since the last tender was published and thus, that the last tender isn't the right baseline to choose. But while it is difficult to define the average/worst product or design on the market or to justify why a certain reference product or design was chosen, the solution awarded in the last tender is definite and might offer robust results especially if it was awarded in the last years.

It isn't reasonable to choose the same reference value for each product group in order to present robust results because the reference value has to take into account among others the state of the national market and the dynamics of the market development.



3. The tenders in detail

The following chapter offers facts and results of the 10 low-carbon tenders, among others the savings of CO₂eq-emissions and energy consumption achieved. These savings are also presented “per year”. The term “per year” refers to the duration the solutions of the low-carbon tenders belong to the public authorities and not to the duration of the contract.

ICT-appliances²

Overview of the tenders

- Tender 1: 50,000 Thin clients (30,000 smart thin clients, 20,000 full thin clients)
- Tender 2: 3,691 Printers
- Tender 3: 3,666 Notebooks
- Tender 4: 237 Multifunctional devices (MFDs)

Similarities of the tenders

- Framework contracts
- Awarded to the bid with the lowest price
- Each of the ICT-appliances is envisaged an operating time of 5 years by the public authority

Differences of the tenders

- The ambition level of the energy efficiency criteria differs. In some tenders, the technical specifications only asked for an energy star certification (that outdates fast), in some cases for a relatively ambitious value for the energy consumption.
- Duration of the tenders varies between 2 (possibility for 2*12 months extension) and 5 years
- Some framework contracts arrange the bids according to their price; every 4-12 months, a new competition between these bids take place to redefine the order of bids, thus offering a chance for the inclusion of more ambitious low-carbon criteria.

Energy- and CO₂-savings³ per tender and results

Tender 1, Thin clients (2+1+1 years)

- **Smart thin client: 9.1 Watt, full thin client: 12.4 Watt**
- Energy savings: **5,052 TOE/tender or 1,010 TOE/year**

² The calculation was conducted with the calculator designed in the project.

³ The calculation was conducted with the calculator designed in the project.



- CO₂-savings: **29,500 t CO₂/tender** (reduction: 79 %) or **5,900 t CO₂/year**
- Baseline: average solution on the market

Tender 2, Printers (5 years):

- Energy savings: **137 TOE/tender** or **27 TOE/year**
- CO₂-savings: **551 t CO₂/tender** (reduction: 32 %) or **110 t CO₂/year**
- Baseline: average solution on the market

Tender 3, Notebooks (5 years):

- **Idle: 9.9 W, Sleep: 0.9 W; Off: 0.4 W**
- Energy savings: **41 TOE/tender** or **8 TOE/year**
- CO₂-savings: **164 t CO₂/tender** (reduction: 31 %) or **33 t CO₂/year**
- Baseline: average solution on the market

Tender 4, MFDs (5 years):

- Energy savings: **114 TOE/tender** or **23 TOE/year**
- CO₂-savings: **460 t CO₂/tender** (reduction: 88 %) or **52 t CO₂/year**
- Baseline: average solution on the market

Vehicles



Overview of the tenders

- Tender 1: 37 Passenger cars
- Tender 2: 175 Light Duty Vehicles
- Tender 3: 4,075 vehicles (passenger cars, light duty vehicles and heavy duty vehicles)

Similarities of the tenders

- Division into several lots, framework contract.
- Contracts about leasing of vehicles (in part with the option of purchase).
- Limits for CO₂-emissions and fuel consumption as technical specifications.
- CO₂-emissions and fuel consumption also as award criteria (weighting less than 10 %).
- Diesel-/petrol-vehicles with the highest share; a smaller share of vehicles with new gears like electric, hybrid and bifuel.
- Similar results for the fuel consumption and the CO₂-emissions for diesel-passenger-cars in two member states: 3.9 l/100 km & 99 g CO₂/km as well as 4.0 l/100 km & 102.9 g CO₂/km.



- The supposed kilometres travelled are much smaller for electric vehicles: around 40.000 km for electric vehicles versus around 100,000 km for conventional vehicles.

Differences of the tenders

- Supposed duration of the contracts vary between 2 and 7 years.
- The supposed kilometres travelled over the contract-period per vehicle vary: in tender 1 120,000-140,000 km, in tender 2 up to 210,000 km, in tender 3 80,000-95,000 km.
- Differences in the assumed energy consumption of electric passenger cars in two member states: 17.3 kWh/100 km (tender 1) versus 10.6 kWh/100 km (tender 3).
- In one tender, the main reduction of CO₂-emissions and energy consumption was achieved by upgrading the size range of vehicles (e. g. define cars with smaller engines already as “bigger”-sized vehicles).

Energy- and CO₂-savings⁴

Tender 1, 37 vehicles (4 years):

- Energy savings: **31 TOE/tender** or **8 TOE/year**
- CO₂-savings: **120 t CO₂/tender** (reduction: 21 %) or **30 t CO₂/year**
- Baseline: last tender in 2008 & average distance of around 130,000 km per vehicle

Tender 2, 175 vehicles (between 6 and 7 years):

- Energy savings: **696 TOE/tender** or **174 TOE/year**
- CO₂-savings: **1,597 t CO₂/tender** (reduction: 23 %) or **399 t CO₂/year**
- Baseline: last tender in 2008 & average distance of 190,000 km per vehicle

Tender 3, 4,075 vehicles (between 2 and 6 years):

- Energy savings: **5,616 TOE/tender** or **1,123 TOE/year**
- CO₂-savings: **19,303 t CO₂/tender** (reduction: 35 %) or **3,861 t CO₂/year**
- Baseline: average solution on the market & distance of around 81,000 km per vehicle

⁴ The calculation was conducted with the calculator designed in the project.



Electricity



The tender

Tender 1: 442,810 MWh for 4 years (80 % of renewable electricity or Combined Heat and Power)

Characteristics of the tender

- Framework contract for 4 years with a competition between contractors after 2 years
- Higher amount of electricity made of renewable resources or Combined Heat and Power as award criteria (weighting of 2.8 %)

Energy- and CO₂-savings⁵

We suppose that the 10 % more electricity made of renewable sources or CHP have a direct impact on the production of electricity (the procurement of green electricity mustn't lead to a reduction of CO₂-emissions if the bidder buys certificates or if the bidder has enough energy from renewable resources in his portfolio that are sold separately).

- Energy savings: none
- Renewable energy production triggered: **3.807 TOE/tender** or **952 TOE/year**
- CO₂-savings: **15,277 t CO₂/tender** (reduction: 33 %) or **3,819 t CO₂/year**

Paper



The tender

3.500 packages of A4 and 60 packages of A3 recycled paper (= 9,05 t of paper)

Characteristics of the tender

- Framework contract for 1 year
- Awarded to the bid with the lowest price
- 100 % recycled paper as technical specifications

Energy- and CO₂-savings and result

- Energy savings: **5 TOE/tender** or **5 TOE/year**
- CO₂-savings: **2 t CO₂eq/tender** (reduction: 22 %) or **2 t CO₂eq/year**
- Baseline: average paper made of virgin fibres

⁵ The calculation was conducted with the calculator designed in the project.



Infrastructure



The tender

Extension of a motorway-exit (including a bridge across a canal)

Characteristics of the tender

- The bidders get a fictional deduction on their bidding price according to their efforts to reduce CO₂-emissions in their working processes. The bidders choose their efforts with the help of the tool “CO₂ Performance Ladder” (see www.skao.nl). This tool offers 5 steps with increasing efforts to reduce CO₂-emissions. Every step of the ladder yields an extra 1 % fictional deduction of the bidding price. In the tender “extension of a motorway exit”, the winner offered a bidding price of 2.987.000 €. He also offered to perform the work under the regime of step 5 of the CO₂ Performance Ladder and thus earned a fictional deduction of 5 % * 2,987,000 € = 149,350 €.
- The bidders get another fictional deduction on their bidding price according to the environmental impact of their offers. The lower the impact, the higher the deduction. The tool “DuboCalc” is used to calculate the impact and the deduction. DuboCalc is based on a life cycle analysis of all materials involved. The results of the calculation are expressed in “Environmental Costs Indicator Units” (ECI Value) (www.youtube.com/watch?v=cAaL4FfBQnc). To calculate the deduction, the contracting authority makes a reference design, estimates the quantities of materials applied and calculates the ECI Value. For the tender “extension of the motorway-exit” a reference design with an ECI Value of 240,000 was made. The contracting authority expected that the best design could reach an ECI Value of 170,000 and decided that a maximum deduction of the bidding price of 400,000 € would be applied to such a bid. (A design that scored 240,000 would get no deduction; a design that scored between 240,000 and 170,000 would result in an aliquot deduction). In the tender “extension of a motorway-exit”, the winner offered an even better ECI Value of 144,000. This got him a fictional deduction of 400,000 €.
- The contracting authority provides organisations that expressed their interest in making a bid with the functional requirements and technical framework conditions. These organisations make a design and calculate the price and the ECI Value. They also state their efforts to reduce their CO₂-emissions by choosing a step on the CO₂ Performance Ladder.
- The bidding price, CO₂ Performance Ladder step and ECI Value are offered to the contracting authority which calculates the benefits and deducts these from the bidding price. The bidder with the lowest fictional price wins the tender. In the tender above, the lowest bidding price corrected with the fictional deductions was: 2,987,000 € - 400,000 € - 149,350 € = 2,437,650 €.

Energy- and CO₂-savings

- CO₂-savings: **820 t CO₂eq/tender** (reduction: 39 %) or **16 t CO₂eq/year**



- Energy savings: **234 TOE/tender** or **5 TOE/year**
- Baseline: reference design made by the contracting authority

4. Training and capacity building

During the first year of the project, a design for **train-the-trainer-** and **train-the-procurer-seminars** was developed together with training and evaluation materials. Until now, 1 seminar for trainers and 2 for procurers have been conducted. After the training a questionnaire was handed out to the participants to evaluate the training (content, strengths and weaknesses, trainer, an overall assessment and further comments). The evaluation forms of the 3 trainings show the following results:

Average assessment on a 6-stage scale⁶ of **“training objectives fully achieved”**:

- Train-the-trainer-seminar: Very good
- Train-the-procurer-seminar 1: Very good
- Train-the-procurer-seminar 2: Very good

The **strengths of the trainings** highlighted the most were:

- Train-the-trainer-seminar:
 - The level of activity, exercises and examples of GPP from other partners
 - The level of exchange, interaction, discussions and involvement
- Train-the-procurer-seminar 1:
 - The level of activity, exercises and practical examples of GPP
 - Exchange of experiences between the procurers

The **weaknesses of the trainings** highlighted the most were:

- Train-the-trainer-seminar:
 - Bad simultaneous translation
 - More time to work on the practical exercises
 - More examples of GPP from the country
- Train-the-procurer-seminar 1:
 - It would be useful to conduct a training with the examples of tenders that are going to be carried out in the GPP 2020 project
 - Insufficient number of examples

⁶ The scales are: bad, insufficient, reasonable, good, very good, excellent.



5. Support activities

Each national support partner developed a plan with support activities to be implemented in the project, the “National GPP Support Function Implementation Plan”. Furthermore, the leader of the work package proposed a list of indicators to monitor the implementation of activities, like for example number of monthly inquiries, of uploaded green tenders or of monthly published articles. The results of the monitoring of support activities will be presented in the next annual monitoring report.

6. Conclusions

The targets of the project within the 1st year were:

a) Low-carbon-tenders

At least 8 tenders leading to the following:

- 15,945 t CO₂eq/year reduction of greenhouse gas emissions
- 3,312 TOE/year primary energy savings

b) Trainings

- No targets for year 1. For the whole project the target is: 13 train-the-trainer-seminars with at least 130 trainees and 36 train-the-procurer-seminars with at least 540 procurers

c) Support activities

- 90 % of the public procurers using the help desk are better informed

At the end of the first project period, the following results were reached:

a) Low-carbon-tenders

10 tenders were awarded and evaluated that ensured:

- 14,263 t CO₂eq/year reduction of greenhouse gas emissions = **89,5 % of the target reached**
- 2,384 TOE/year primary energy savings = **72,0 % of the target reached**
- 952⁷ TOE/year production of renewable energy triggered

⁷ Bio-fuel that might be used for the vehicles isn't included.



b) Trainings

- 1 train-the-trainer-seminar with 31 participants
- 2 train-the procurer-seminars with 37 participants

c) Support activities

Until now, the support activities have been planned but not implemented.

The first year of the project is now over and some encouraging results were achieved. Nevertheless, the figures above show that in the coming two years additional efforts have to be taken to make sure that the targets of the project are going to be reached.

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