FLEAT

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All information can be found on **www.fleat-eu.org**, please register to stay updated on the results.

Contact: leen.govaerts@vito.be



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INTRODUCTION

FLEAT focuses on the reduction of energy consumption and CO_2-emissions of fleets. The share of fleet activities in total transport activities (mileage, number of vehicles, energy consumption) is increasing very rapidly.

'Private mobility' and 'fleet mobility' are very different: the decision process for purchasing and using vehicles in fleets is different from that of private vehicles. The fleet operator that is responsible for the purchase of the vehicle is different from the user of the vehicle, who does not carry the costs of driving his vehicle. This makes it more difficult to influence energy efficient purchase and mobility behaviour.

On the other hand, a fleet is managed centrally and this creates opportunities for more energy efficient fleet management. Fleets can play a role following the 'learn by lead' principle: effective actions for energy efficient fleets can inspire private vehicle users to energy efficient transport behaviour.

OBJECTIVES

- To build a network that will deliver input to the knowledge building, contribute to the implementation of pilot actions and benefit from FLEAT findings.
- To integrate the knowledge into a toolkit for fleet operators and a policy mix for different policy makers.
- To test the tools in practice for different types of fleets: public fleets of local administrations, public transport fleets and private company fleets.
- To assess the effectiveness of the tools in pilot actions to different types of fleets following a consistent approach and during a period that is sufficiently long to come with sound conclusions and reliable figures.

CONSORTIUM

VITO - Flemish Institute for Technological Research (Coordinator)
Austrian Energy Agency
TRT - Trasporti e Territorio Srl
SC IPA Sa CIFATT Craiova
B.A.U.M. Consult GmbH
SenterNovem
CRES - Centre for Renewable Energy Sources
Mobiel 21 vzw
BEMAG
RFOL - Örebro County Regional Development Council
Geonardo Environmental Technologies Ltd.

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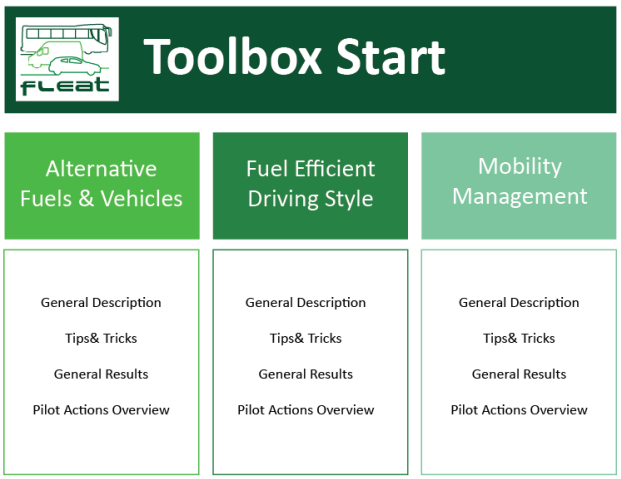
FLEAT TOOLBOX

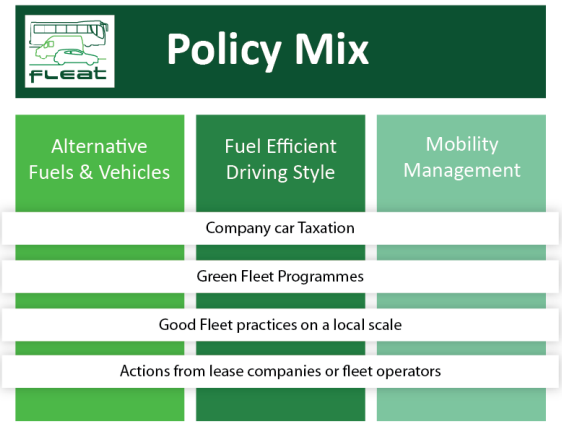
The Fleat Toolbox is an online resource for fleet owners and policy makers. In the toolbox various resources have been collected to simplify the process of finding information on possible actions to increase fleat performance and reduce fleet emissions.



POLICY MIX

During the project it became clear that policy support plays an important role to promote clean fleet management. In the FLEAT-project various policy measures were linked to the 3 main goals of the project:

- Greening the fleet: focus on energy efficient vehicles and alternative drives or fuel
- Energy efficient use of vehicles: how to drive in an environmental friendly way
- Mobility management of fleets: energy efficient planning and organization of transports.



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RESULTS ON PILOT ACTIONS

From our experience, the easiest way to reduce CO2 emissions of passenger car fleets is to adapt the car policy. The newly purchased vehicles in the FLEAT pilot actions had a 10,5 % lower fuel consumption than the other, 'older' vehicles in the fleet. This type of action does not require any additional costs for implementation, while the lower fuel consumption immediately leads to CO_2 savings and lower operating costs. The FLEAT pilot actions on car policy led to a direct CO_2 saving of 287 tons (for a period of 1 year), with a potential saving of 1429 ton if the pilot action would be extended to the total fleets.

When looking at costs, the next best option is to implement ecodriving schemes for all drivers in a fleet. Based on our FLEAT pilot actions, we estimate the costs of this type of measure to be between € 300 and € 1.000 per driver. This is including the trainer and loss of man hours, and is independent from the type of vehicle. Because of the higher yearly mileage and the higher fuel consumption, the possible profits are higher for busses and trucks than for passenger cars and small vans. In addition, the largest effect in terms of relative reduction was seen with trucks (-9,4%), followed by busses (-7,2%) and then light duty vehicles (-6,4%). From these numbers we can conclude that the payback period is shortest for trucks (1,3 to 4,3 months), and longest for light duty vehicles (1,6 to 5,2 years). The amount of CO2 saved in the FLEAT pilot actions on ecodriving amount up to 274 tons for passenger cars, 1680 tons for buses, and 1923 tons for trucks.

For light duty vehicles, switching from diesel to CNG (compressed natural gas) powered cars proved to be a viable option. The advantage of CNG light duty vehicles lies in the fact that the level of direct pollutant and CO_2-emissions is significantly lower than with petrol and diesel vehicles. If the well-to-wheel emissions are compared, the advantage of CNG is even greater since no energy intensive refinery process is needed. Results from 2 FLEAT pilot cases indicate well-to-wheel CO2 savings of 21 to 27%. The extra cost for a CNG vehicle when compared to the diesel version is approximately € 1200 for the type of cars used in these pilots. On the other hand, the fuel cost per kilometre driven is substantially lower for CNG than for diesel vehicles. Based on the numbers of the FLEAT pilot actions, the yearly savings in fuel costs amount up to € 564, leading to a payback time of 2,1 years. A total of 65 light duty vehicles running on CNG took part in the FLEAT project, leading to a savings of 51 tons of CO_2 over a period of 1 year.

Switching from diesel to CNG for heavy duty vehicles requires a longer payback time of 6,3 years. It should be noted that this number is based on the results of only one pilot case , including 8 CNG-busses. Therefore, the results should be seen as indicative. The direct CO_2-emissions of the diesel bus were lower than the CNG-bus on the same trajectory and with the same yearly driven distance. However, when comparing the well-to-wheel data, the CNG-buses emitted less CO_2 (-3.4%). Over a period of 1 year, a total of 9 tons of CO_2 was saved in the FLEAT action using these CNG-buses instead of diesel ones. Since these buses were driving in an urban area, maybe the highest

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environmental gain lies in the fact that CNG-busses have much lower levels of pollutant emissions (especially PM and NOx), since these busses already comply with euro 6 emission standards. The difference in purchase cost of € 30.000 is countered by the lower fuel costs during operation (yearly difference of € 4.745). For this particular case, the payback period would be 6,3 years.

Other FLEAT pilots on clean vehicle technology included energy consumption monitoring for electric vehicles (35,9 kWh/100km, leading to 79,2 g/km CO2 emission), fuel consumption monitoring for hybrid electric vehicles (123-145 g/km CO2 emissions), lightweight buses (savings of 178 g/km CO2 emissions), eco-chiptuning (savings of 38 g/km CO2 for heavy duty vehicles), and systems for optimization of fuel injection (no difference). Approximately 28 tons of CO_2 were saved using these technologies in the FLEAT pilot actions. Because of the limited number of vehicles involved, no further conclusions are given on these results.

The last type of pilot cases included actions on mobility management. These actions included different types of measures. The effect of these measures was hard to assess, and the fact that they were all different made it very difficult to compare them to one another. Pilot cases included new carpool systems, stop-on-demand for public transport buses, route optimisation for logistic operations, intelligent garbage collection and car-sharing for company cars. From the pilot case results, it is clear that mobility management measures can gain some positive effects on CO2-emissions with public and private fleets. Especially in those schemes where an intelligent system of avoiding trips or more efficient routing was used, impressive fuel savings could be made. Direct CO2 savings in the FLEAT pilot actions on mobility management amount up to 50 tons for the duration of the actions. It's important to mention that not only CO2-reduction is accomplished but that also a significant cost reduction is shown in the pilot actions. This seems to be an important driver or motivator for companies to implement mobility management measures.

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LESSONS LEARNED

After the completion of the project, it is possible to draw the following conclusions:

- The many pilots on ecodriving proved that these courses are cost effective, and the greatest benefit can be reached with heavy duty vehicles (trucks and busses). Fuel reduction and thus CO_2-reduction of more than 6% can be achieved for light duty, and this increases to more than 9% for trucks.
- Since no additional costs are related to implementing a green car policy, this is the most cost effective measure to implement in a company car fleet. In the FLEAT pilot actions on car policy, the new vehicles emitted 10,5% less CO_2.
- The use of CNG-vehicles is most beneficial in a light duty vehicle fleet (eg. vans). The technology is already in a mature state for light duty which means the additional cost for a CNG-vehicle is relatively low. This combined with a low usage cost, mainly due to the low fuel price of natural gas, makes it a competitive technology. The environmental benefit of CNG lies not only in a lower CO2-emission, but also in a very low emission of PM and NOx, which is of high importance in urban areas.
- When comparing fuels, it is important to not only consider the direct (or tank-to-wheel) emissions, but to consider the production process as well (well-to-wheel).
- The potential of a smart mobility management in order to reduce the number of kilometres driven is still underestimated. Our pilot actions proved that a reduction in CO_2-emissions can be achieved, but also a reduction in costs related to mobility.
- The fleet operators that participated in the FLEAT project were mainly middle sized companies. For larger companies the decision making structure is most of the time too heavy to participate in the project or at the other hand have already a lot of knowledge and experience available on energy efficient fleet management. Small companies on the other side lack personnel to support the implementation of the action, although they prove to be cost efficient.
- The support of the management to participate is essential, and some basic knowledge and interest also has to exist to convince them to invest further in energy efficiency actions.
- Monitoring the (long term) effect and costs of energy efficiency investments is necessary for the fleet itself to prove the cost effectiveness and support the implementation. Only in this way, best practices can be built up for policy makers and other fleet operators. Although agreements had been made with the pilot fleet operators, it was not always easy to get the monitoring data that were needed to make a sound cost benefit analysis of the actions. Especially the monitoring of actions on mobility measures proved to be difficult because of the wide variety of actions which makes it difficult to compare. Also cost data are sometimes difficult to receive from fleet operators.
- National governments and the European government have to create the appropriate framework in which energy efficient and environmental friendly vehicles are advantaged and should give information about efficient fleet management. The need for cost reduction and the creativity of companies will drive them towards cleaner fleets, within such a framework.
- Under influence of policy instruments like CO_2-based company car taxation, the market itself seems to react in promoting energy efficient vehicles in for example green lease programmes.

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FLEAT
Pilot Actions

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ATHLON CAR LEASE

Description
Athlon Car Lease is one of the major lease companies in Belgium.

Description of the pilot action
Athlon modified the car policy for their own vehicle fleet. The focus is now on fuel efficient cars.

The intention is to install our monitoring device (Ecocoach) in our own vehicles, and in this way encourage our own drivers to adopt a fuel efficient drive style

Result of the pilot action
Athlon initiated 21 new lease contracts for their own vehicle fleet, with an average CO_2-emission of only 126 g/km. With an average CO_2-emission of the original 2009 fleet of 152 g/km, this meant a decrease of 21%. This resulted in a yearly reduction of more than 6.000 liter of diesel, or more than 16 tons of CO_2, with a potential of nearly 24.000 liter diesel or 63 tons of CO_2 if the whole fleet would reach the average of 126 g CO_2/km.

Follow-up actions
The new car policy will be applied for every new contract that Athlon Car Lease initiates for their own vehicle fleet.

Quote of the fleet manager
"After the crisis of 2009 during which new initiatives were not that easily implemented, Athlon Car Lease will take even more action in 2010 regarding new vehicles but also regarding driving behavior. The intention is to install our monitoring device (Ecocoach) in our own vehicles, and in this way encourage our own drivers to adopt a fuel efficient drive style."

Name of FLEAT consortium partner, country
VITO, Belgium

AUSTRIAN FEDERAL RAILWAYS

The Austrian Federal Railways Group (ÖBB Holding AG) is the national railway carrier of Austria. The rail system is a climate-friendly mode of transport. ÖBB strengthens this benefit by consistently modernising its transport fleet, using a high share of hydropower (97%) for its energy supplies and operating an increased number of electric railcars with regenerative braking.
With roughly 43,000 employees and total revenues of EUR 5.7 billion ÖBB Group plays an important role as a major driver of the domestic economy.

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As comprehensive mobility provider ÖBB are responsible for the nationwide environmental-friendly transportattion of both passengers and goods.

Description of the pilot action

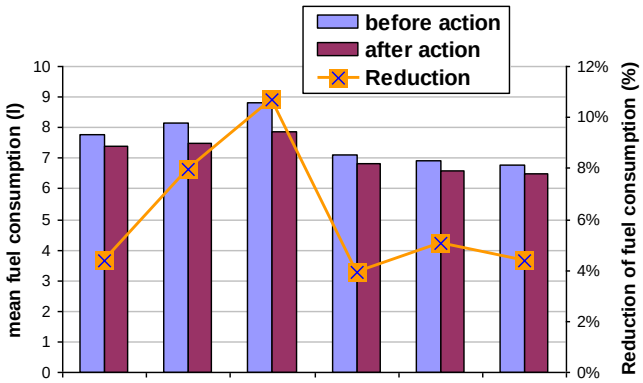
Austrian Railway Group (ÖBB) is running one of the biggest car fleets in Austria with approx. 4,000 passenger cars. Within the FLEAT project Ecodriving trainings for 151 passenger car drivers have been carried out. The trainings were conducted at different spots all over Austria.

Additionally ÖBB has carried out test programs for hybrid cars, CNG cars and an electric vehicle. This alternative vehicles or fuels respectively have been tested in daily practice and compared to ordinary cars.

With its focus on climate protection, ÖBB makes an active contribution to reducing greenhouse gas and to meeting the Kyoto objectives of Austria.

Result of the pilot action

Monitoring data have been continuously collected within six months before and after the Ecodriving trainings, which took place in September 2008. The average reduction of fuel consumption amounted to 6.1 %. (see figure below).



Follow-up actions

Ecodriving: ÖBB has already announced to train another 220 passenger car drivers in 2010.
Alternative vehicles: Several Hybrid and CNG car models were added to the list of available cars for ÖBB and can so be ordered now by the various departments. One electric vehicle was purchased.

Quote of the fleet manager

“Ecodriving has an enormous potential to reduce fuel consumption and CO2-emissions. The crucial thing is to keep the drivers motivated in the months and years after the training, which is a challenging task especially in a large fleet.”

Name of FLEAT consortium partner, country

Austrian Energy Agency, Austria

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BRISTOL MYERS SQUIBB GREECE

Bristol Myers Squibb is one of the world's leading pharmaceuticals company. The group's branch in Greece operates a fleet of more than 130 vehicles, mainly private vehicles.

Description of the pilot action

Initially there was the phase of data collection of fuel consumption data for the trainees, which lasted 4 months. At the end of this period, the ecodriving training took place, which lasted 1 day. Finally, there was a 4-month long post-training monitoring period, to assess the effectiveness of the ecodriving training.

The ecodriving training, as well as the whole monitoring period revealed a great potential for energy saving

Result of the pilot action

The ecodriving training, as well as the whole monitoring period revealed first of all a great potential for energy saving which is about 22% in the long term. During the training day, the energy saving was 13%- surprisingly lower than the savings of the long-term monitoring period. This may be explained from the fact that probably the route selected for the ecodriving training, could not allow the drivers to reveal their full potential on practicing the ecodriving rules. Besides the measured benefits on energy savings and the related environmental and financial savings, it was obvious during the training that the stress levels of the drivers were reduced due to the fact that surprisingly for them, the average speed was increasing instead of decreasing. For salesmen especially, speed is one of the most significant aspects of their job, therefore energy savings must be combined with no speed reduction. It is also obvious that in order to fully benefit from ecodriving, the management of the company must set a comprehensive training program for all drivers as well as an incentives program to motivate drivers on continuing practicing ecodriving.

Follow-up actions

No specific plans currently on further deployment of ecodriving trainings for BMS employees but overall very good impression on the effectiveness of ecodriving as a tool to increase energy efficiency.

Name of FLEAT consortium partner, country

CRES, GREECE

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MUNICIPALITY OF CRAIOVA, DEPARTMENT FOR LOCAL TRANSPORT

FLEAT project through the pilot actions demonstrated that the peak efficiency can be obtained not only by eco-driving but through an efficient management of the fleet also.

Description of the pilot action
Eco-Driving training.

Result of the pilot action
The table bellow is the difference CO2-reduction between the fuel consumption before and after the pilot action.

Identification	Vehicle Type	Vehicle Brand	Vehicle Model	Fuel Type	% Difference CO2 emission and fuel consumption
RO - DJ 08 UVP	LBUS	MAN	Lion's City T	DSL	-15.35
RO - DJ 08 UVR	LBUS	MAN	Lion's City T	DSL	-15.72
RO - DJ 08 UVC	LBUS	MAN	Lion's City T	DSL	-15.80
RO - DJ 08 UVM	LBUS	MAN	Lion's City T	DSL	-16.78
RO - DJ 08 UVN	LBUS	MAN	Lion's City T	DSL	-15.80
RO - DJ 08 UVT	LBUS	MAN	Lion's City T	DSL	-15.66
RO - DJ 08 UVL	LBUS	MAN	Lion's City T	DSL	-15.55
RO - DJ 08 UVD	LBUS	MAN	Lion's City T	DSL	-17.30

For now the fleet that has been in the pilot action is steel being monitored monthly to see how the drivers will do in the long term and if the fuel reduction is maintaining after the cars in the pilot action are not monitored weekly and in some cases daily as done for the duration of the pilot action.

Follow-up actions
For now there are not any follow-up scheduled.

Quote of the fleet manager
"Local department for local transport of the Craiova Municipality, as one of the few firms of public transport running in Craiova, needs to maintain the fleet at the peak efficiency and for that the fleet needs permanent repairs. FLEAT project through the pilot actions demonstrated that the peak efficiency can be obtained not only by eco-driving but through an efficient management of the fleet also."

Name of FLEAT consortium partner, country
S.C. IPA S.A Romania

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DATEV AG

DATEV is a software provider with about 630 company cars. The environmental manager Harald Oelschlegel gets involved with reduction of CO2-Consumption via green car policy.

Green car policy is cost effective but it is a hard job to implement it in a company

Description of the pilot action

Optimizing of Green Car policy via benchmarking, Reduction of fuel consumption 1 l/100km, incentives (bonus / malus for CO2-effects):

		Dieselfahrzeuge CO_2-Wert	Dieselfahrzeuge CO_2-Wert	Benzinfahrzeuge CO_2-Wert
		bis 30.04.2008	**ab 01.05.2008**	
Zuschuss I	**60 Euro**	bis 170 g	bis 140 g	- / -
Zuschuss II	**30 Euro**	171 - 180 g	141 - 165 g	bis 140 g
Neutral	**0 Euro**	181 - 225 g	166 - 195 g	141 - 165 g
Abschlag I	**60 Euro**	226 - 245	196 - 220 g	166 - 195 g
Abschlag II	**90 Euro**	ab 246	ab 221 g	ab 196 g
		Benzinfahrzeuge eine Stufe darunter		

Result of the pilot action

With the new green car policy we reduced our fuel consumption about a half of liter/100km. The pilot action in our company fleet reduces 200 t CO2 per year.

Follow-up actions

DATEV AG will intensify their CO2-conditions in our policy.

Quote of the fleet manager

"Green car policy is cost effective but it is a hard job to implement it in a company, because company cars are a status symbol for the employees. "

Name of FLEAT consortium partner, country

B.A.U.M. , Germany

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DHL EXPRESS

DHL Express is one of the major delivery services in Belguim.

Description of the pilot action

DHL decided to substitute 5 of the conventional diesel vans that were used for distribution purposes in the City of Antwerp, by CNG vans. This project fits in the broader 'GoGreen' Program from the DHL group that aims to increase the energy efficiency of its own operations and its subcontractors.

Result of the pilot

When biogas becomes commercially available, we will use this renewable fuel and thus reduce our CO_2-emissions

Due to the replacement of 5 diesel vehicles by natural gas vehicles, DHL managed to lower their direct CO_2-emissions by 6,3 ton per year (these are tailpipe~, or tank-to-wheel emissions). If we take the refinery of the fuels into account (well-to-tank), the reduction is even higher: almost 10 tons of CO_2. The 5 CNG-vehicles performed very good, not only in terms of environmental benefit but also in terms of technical maturity and reliability. The vehicles were used for urban distribution, and this meant an intensive start-stop driving profile, with engine shut down on average every 800m. No technical problems resulted from this driving profile. Also the drivers, however initially a bit resilient, were very satisfied. In economic terms, the CNG-test proved that CNG is a competitive fuel when used for the right purposes (eg. intensive start-stop driving profile and lower daily mileage).

Follow-up actions

Due to the success of the initial CNG-fleet, DHL Express decided to increase their fleet of CNG-vehicles including also larger vans. DHL is also looking into the possibility to install their own refueling station on their premises, so vehicles can be refilled in the depot, at night.

Quote of the fleet manager

"When biogas becomes commercially available, we will use this renewable fuel and thus reduce our CO_2-emissions by 80%.But the good thing of CNG is that not only CO_2-emissions are lower than diesel vehicles, but also NOx- and PM-emissions are reduced with more than 80%. And this is perhaps even more important than CO_2 when driving in an urban environment."

Name of FLEAT consortium partner, country

VITO, Belgium

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S.C. ELPRECO S.A.




FLEAT project through the pilot action put the basis for an better information database

Description of the pilot action
Eco-Driving training

Result of the pilot action
The table bellow is the difference CO2 reduction between the fuel consumption before and after the pilot action.

Identification	Vehicle Type	Vehicle Brand	Vehicle Model	Fuel Type	% Difference CO2 emission and fuel consumption
B - 54 – RYR	LTRU	Renault	Premium	DSL	-47.41
B - 54 – YEU	LTRU	Renault	Premium	DSL	-47.34
DJ - 08 – AUJ	LTRU	MAN	Premium	DSL	-47.08
DJ - 08 – AUK	LTRU	MAN	Premium	DSL	-46.38
DJ - 08 – AUL	LTRU	MAN	Premium	DSL	-47.40
DJ - 08 – AUW	LTRU	MAN	Premium	DSL	-44.00
DJ - 99 – KWI	LTRU	Iveco	Premium	DSL	-42.92

For now the fleet that has been in the pilot action is steel being monitored monthly to see how the drivers will do in the long term and if the fuel reduction is maintaining after the cars in the pilot action are not monitored weekly and in some cases daily as done for the duration of the pilot action.

Follow-up actions
For now there are not any follow-up scheduled.

Quote of the fleet manager
"FLEAT project through the pilot action put the basis for an better information database (information about cars, consumption, CO2 emissions, etc.) for the fleet and made possible to see how a reduction in fuel consumption can make a big difference on the cost per kilometer."

Name of FLEAT consortium partner, country
S.C. IPA S.A Romania

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FEISTRITZ-WERKE, AUSTRIA

FEISTRITZWERKE STEWEAG GmbH

We focus on solar energy industry. Our offers include environmental power, eco-friendly vegetable oil fuel and environmentally oriented innovative services.

Description

Feistritzwerke STEWEAG GmbH is an Austrian regional utility based in Gleisdorf, Styria and supplies approx. 30.000 customers with electricity.

Description of the pilot action

Feistritzwerke STEWEAG GmbH employs a GIS and GPS supported route optimisation programme to reduce the number of trips and the average number of kilometres driven by company vehicles used for maintenance and repair work. The software which was used has been tailor-made according to the requirements and needs of Feistritzwerke STEWEAG GmbH.

Result of the pilot action

The total distance driven by the vehicles for maintenance and repair work decreased by 9 % or almost 50,000 km after the introduction of the route optimisation programme. A comparison of the mean consumption of the 45 vehicles shows that additionally the mean consumption per vehicle decreased by 3 %.

Follow-up actions

The route optimisation programme is running accurately so no follow-up actions in this field are planned.

Quote of the fleet manager

“The route optimisation programme is just one pillar of our environmentally sound product philosophy. Our services include marketing and construction of photovoltaic facilities, energy management of buildings and energy-saving electrical planning.”

Name of FLEAT consortium partner, country

Austrian Energy Agency, Austria

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CITY OF GLEISDORF

Description of the pilot action

The municipal utility of the city of Gleisdorf in the Austrian province of Styria (approx. 5,500 population) employs a technology-driven recording system which optimises the frequency of collecting private and company-owned waste containers in line with customer needs. By means of an electronic information system, customers can inform the municipal utility when they want to have their waste containers emptied and will be billed accordingly. This results in cost savings for costumers, an overall decrease in collecting trips, the average trip distance and number of unloaded trips of collection vehicles.

Result of the pilot action

The introduction of the concept 'Intelligent Waste Container' managed to decrease the distance driven by the waste collection vehicles by more than 1,100 km or -260 % within the 3,5 months long monitoring period. This corresponds with a reduction of diesel consumption by 575 litres.

Follow-up actions

For now there are not any follow-up scheduled.

The 'Intelligent Waste Container' is an innovative approach to considerably reduce the number of trips by communal vehicles and could serve as an example for thousands of communities worldwide.

Quote of the fleet manager

"The 'Intelligent Waste Container' is an innovative approach to considerably reduce the number of trips by communal vehicles of and could serve as an example for thousands of communities worldwide."

Name of FLEAT consortium partner, country

Austrian Energy Agency, Austria

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HAMBURG WASSER

Hamburg Wasser is the public water supply and sewerage company of the city of with about 800 vehicles. The fleet manager Helge Raddatz arranges different measures to reduce CO2.

Best practice and practical advices are more helpful than theory."

Description of the pilot action

Reduction of CO2-emission with CNG/BNG Procurement and assessment of 80 CNG-Vehicles instead of diesel vehicles.

Result of the pilot action

We participate with two pilot actions: to procure 80 vehicles in one strike gives us a good public awareness and full acceptance by our drivers. We lower our CO2-Emission about 25% per each Car.

Our assessment of our two pool car managements (manual and with a program) shows no differences, but we need the human factor for the controlling. Anonymous systems could slightly misused.

Follow-up actions

We will continue to procure CO2-friendly vehicles, for the CNG-vehicles we will try to produce our own fuel CBG from our sludge. Some use cases are suitable to replace with e-cars.

Quote of the fleet manager

"It is interesting to share experiences with other experts from comparable companies. Best practice and practical advices are more helpful than theory."

Name of FLEAT consortium partner, country

B.A.U.M. , Germany

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S.C. HELCO SRL

Description of the pilot action
Eco-Driving training

Result of the pilot action
The table bellow is the difference CO2 reduction between the fuel consumption before and after the pilot action.

FLEAT project pilot action helped to reduce the cost per kilometer for the cars in the pilot action.

Identification	Vehicle Type	Vehicle Brand	Vehicle Model	Fuel Type	% Difference CO2 emission and fuel consumption
RO - DJ 03 HEL	LVAN	Renault	Trafic	PETR	-14.78
RO - DJ 05 HEL	STRU	Iveco	Magirus 80 - 13A	DSL	-16.16
RO - DJ 06 HEL	SVAN	Ford	Tranzit L	DSL	-16.46
RO - DJ 08 HEL	SVAN	Dacia	1304 Pick - Up T	PETR	-16.44
RO - DJ 10 HEL	PASS	Mercedes - Benz	S 400	DSL	-15.83
RO - DJ 13 HEL	SVAN	Dacia	1305 Pick - Up RI	PETR	-15.99
RO - DJ 22 HEL	LVAN	Mercedes - Benz	Sprinter	DSL	-16.04
RO - DJ 29 HEL	PASS	Opel	Astra Caravan	DSL	-15.84
RO - DJ 30 HEL	PASS	Opel	Astra Caravan	DSL	-15.49
RO - DJ 31 HEL	PASS	Opel	Astra	DSL	-16.23
RO - DJ 32 HEL	LVAN	Mercedes - Benz	Sprinter	DSL	-14.83
RO - DJ 33 HEL	PASS	Mercedes	E - 250 Turbo	DSL	-16.12
RO - DJ 34 HEL	PASS	Opel	Astra Caravan	DSL	-15.98
RO - DJ 35 HEL	PASS	Opel	Astra Caravan	DSL	-16.82
RO - DJ 36 HEL	PASS	Opel	Astra Caravan	DSL	-16.07
RO - DJ 42 HEL	LVAN	Mercedes - Benz	Sprinter	DSL	-14.91
RO - DJ 43 HEL	LVAN	Iveco	Daily	DSL	-15.80
RO - DJ 77 HEL	STRU	Jeep	Grand Cherokee	DSL	-15.74

For now the fleet that has been in the pilot action is steel being monitored monthly to see how the drivers will do in the long term and if the fuel reduction is maintaining after the cars in the pilot action are not monitored weekly and in some cases daily as done for the duration of the pilot action.

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Follow-up actions
For now there are not any follow-up scheduled.

Quote of the fleet manager
Being one of the main food production firms in the Oltenia region Helco distributes panification products in Craiova daily and so the cost per kilometer is very high for every car in the fleet. FLEAT project pilot action helped to reduce the cost per kilometer for the cars in the pilot action.

Name of FLEAT consortium partner, country
S.C. IPA S.A Romania

HOLCOM AG



HOLCIM Deutschland AG is a international company for Cement-production and transport.

Description of the pilot action

1. Reduction of fuel consumption with ecodriving awards.

Monthly monitoring and gratification of the most efficient drivers

2. Test of eco chip tuning

Result of the pilot action

"Unfortunately, there was no comparable fleet company for sharing experiences, but we could present our experiences in few national fleet events. "

We participate with two pilot actions: Our monthly ecodriving awards shows a sustainable decrease of fuel consumption from 38 Liter / 100 km (2006) to 34 Liter 2010. From 2009 to 2010 we reduced our fuel consumption more than 1 Liter.

Last year we made good experience with ecochip tuning, which reduced the fuel consumption about 1,5 Liter / 100km.

Follow-up actions
We will continue our ecodriving awards and will install the ecochiptuning in our whole fleet.

Quote of the fleet manager
"Unfortunately, there was no comparable fleet company for sharing experiences, but we could present our experiences in few national fleet events. "

Name of FLEAT consortium partner, country
B.A.U.M. , Germanny

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ILPAP

ILPAP stands for the Athens Electrical Buses Organisation, operating as the name implies in Athens, Greece. The total fleet of the public transport company consists of 366 trolley buses which operate in a network that extends in 349 km with 22 lines in the wider area of Athens and Piraeus

Description of the pilot action

In September '08 the company started a pilot action focused on ecodriving principles. The demonstration has been coordinated by the Greek project partner CRES (Centre for Renewable Energy Sources) and involved 5 drivers in service on 2 trolleys of 2 different lines. Monitoring activities were conducted 3 months prior to ecodriving training and 3 months after the training.

"Ecodriving is of great interest to us and we are currently looking for funding in order to implement such activities in the future for all our drivers."

Result of the pilot action

The 2-days ecodriving training, as well as the whole monitoring period revealed first of all a great potential for energy saving which is about 10-15% in the long term without any loss of the average speed. In addition, another 25% of energy could possibly be used as a result of regenerative energy from braking but the electric buses of ILPAP do not own such equipment. Besides the measured benefits on energy savings and the related environmental and financial savings , it was obvious during the training that the stress levels of the drivers were reduced , the comfort levels of the passengers was increased, the average speed increased. It is also obvious that in order to fully benefit from ecodriving, the management of the company must set a comprehensive training program for all drivers as well as an incentives program to motivate drivers on continuing practicing ecodriving. During the pilot action it was calculated that if all drivers of ILPAP were practicing ecodriving, the company would save 7,164 t CO2 annually.

Follow-up actions

Ecodriving trainings for all drivers in the future as well as consideration of taking advantage of the regenerative energy from braking.

Quote of the fleet manager

"Ecodriving is of great interest to us and we are currently looking for funding in order to implement such activities in the future for all our drivers."

Name of FLEAT consortium partner, country

CRES, GREECE

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KBC

KBC is an integrated bank assurance group, catering mainly for retail customers, small and medium-sized enterprises and private banking clientele. It occupies leading positions on its home markets of Belgium and Central and Eastern Europe, where it specializes in retail bank assurance and asset management activities. Elsewhere around the globe, the group has established a presence in selected countries and regions. In Belgium KBC has 17695 employees.

KBC is already a key implementer of mobility management

Description of the pilot action

KBC is already a key implementer of mobility management measures but lacks a monitoring scheme. Based on an analysis of the current situation and practice, a training session was set up using MAX SUMO as a monitoring tool.

KBC already has a well-balanced package of MM-measures:

GLOBALLY

- Idea-box for employees
- Decentralization
- Mobility manager in place

AVOIDING TRIPS

- Intelligent placing of employees
- Carpool database
- Working locally
- Videoconferencing tools (2 installations)

CYCLE PROMOTION

- Allowance for cyclists since 2001
- Facilities for cyclists (lockers, dressing rooms, cycle stands, bike repair kits
- Insurance for cyclists since 2007
- Awareness raising and campaigning

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PT-PROMOTION

- 100% refund of PT-tickets
- Intranet, links with PT-sites + possibility to purchase tickets online
- Location of buildings near PT-facilities
- Company shuttle service
    - Leuven: since 1992, 100 subscribers, 9 trips daily
    - Brussels: since 2000, + 1400 subscribers, 42 trips daily(every 5 minutes)

COMPANY CARS

- 1000 company cars (800 functional, 200 as a form of salary)
- Green lease – concept (ecological cars, CO2-compensation, ecodriving)

Main problem was that the mobility department lacks a consistent tool for monitoring the effects of their efforts in mobility management. Therefore, M21 set up a an short analysis and a training session.

Result of the pilot action

The HR-department sees the added value the MAX-SUMO tool and will look into the adaptation to the needs of the 2 main buildings in Leuven and Brussels. Because of the long-lasting effort that it will take to implement such a monitoring tool on such a big scale, there are no consolidated results yet.

Follow-up actions

As the pilot action was substantially delayed because of problems with the gathering of consistent data, the action will be continued after the project finishes.

Name of FLEAT consortium partner, country

Mobiel 21, Belgium

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KBC

KBC, one of the 4 large banks and insurance companies in Belgium.

"It's a pity the FLEAT-the project finishes in March 2010"

Description of the pilot action

KBC expressed the intention to become CO_2-neutral in the coming years. Since one of the main sources of carbon emissions is the own vehicle fleet, it was decided to adapt the car policy. This is now based on 3 pillars: only best-in-class (in terms of CO_2) vehicles can be leased, every driver has to follow an ecodriving course, and the remaining CO_2-emission is compensated for.

Result of the pilot action

The average CO_2-emission of the 2009 fleet was 153 g/km. Thanks to the new car policy, the average emission of the new vehicles is 129 g/km. This means a decrease of more than 15%. On a yearly basis, this higher fuel efficiency resulted in a reduction of 20.000 kg of CO_2. If this fuel efficiency would be achieved for the whole fleet, it would result in a total CO_2-reduction of 695.500 kg.

The ecodriving-potential was not explored to a full extent, mainly because no follow-up scheme was installed.

Follow-up actions

Every new employee that is entitled to a company car, will have to choose a best-in-class vehicle. In addition, every vehicle that is on the end of its lease contract will be replaced by a best-in-class vehicle.

Quote of the fleet manager

"It's a pity the FLEAT-the project finishes in March 2010, since the new car policy will only come into full effect during 2010. That's why we expect even better results than 2009."

Name of FLEAT consortium partner, country

VITO, Belgium

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KONE

Kone is a large Finnish elevator company which is a protagonist on environmental issues. As a part of this, it is sending its drivers on an ecodriving course. They maintain 650.000 elevators and stairs.

"It was a super useful day, everybody should do this once"

Description of the pilot action

The training involves 570 drivers. They are elevator engineers and make many kilometres. KONE has set up a monitoring system to use the data afterwards as a management instrument. They trained in Ford focus and Ford Transit. The training was done by Prodrive Training. They did a pre-test before the training, one test after the training and one after the follow up.

Result of the pilot

The result was that 78.000 litres of fuel was saved. After the first training on avarage they saved 4,4%, after the follow up 6%. Kone used the image on how many lifts they could build from the saved money as a way of showing the participants something concrete.

Follow-up actions

Kone has integrated it into its company process, getting 3 monthly reports from its lease company about the performance and developing e-learning Europe wide.

Quote of the fleet manager

"It was a super useful day, everybody should do this once"

Name of FLEAT consortium partner, country

NL Agency/SenterNovem, The Netherlands

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LEASEPLAN

Leaseplan is one of the world's leading leasing services Group. The company's branch in Greece operates a fleet of more than 6800 vehicles, mainly private cars. Leaseplan Hellas, besides its contribution to the group's GreenPlan energy saving program decided in addition to participate in FLEAT to achive maximum results.

Description of the pilot action

Initially there was the phase of data collection of fuel consumption data for the past 12 months for the trainees. At the end of this period, the ecodriving training took place, which lasted 2 days. Finally, there was a 6-month long post-training monitoring period, to assess the effectiveness of the ecodriving training

Result of the pilot action

We will keep promoting ecodriving to our customers as part of our successful GreenPlan program.

The ecodriving training, as well as the whole monitoring period revealed first of all a big potential for energy saving which is about 7% in the long term. During the training days, the energy saving was 16%. This difference may be explained from the fact that during the training the trainees pay full attention while practicing the ecodriving rules and they are assisted on this from the trainers next to them. Therefore we may say that during the training, drivers reveal the maximum potential of energy savings. Besides the measured benefits on energy savings and the related environmental and financial savings, it was obvious during the training that the stress levels of the drivers were reduced due to the fact that surprisingly for them, the average speed was increasing instead of decreasing. For salesmen especially, speed is one of the most significant aspects of their job, therefore energy savings must be combined with no speed reduction. It is also obvious that in order to fully benefit from ecodriving, the management of the company must set a comprehensive training program for all drivers as well as an incentives program to motivate drivers on continuing practicing ecodriving.

Follow-up actions

Leaseplan has already communicated the results of the FLEAT pilot action to its customers (more than 6500 customer vehicles). It is expected that in 2010 more than 7 big companies with a fleet size of more than 100 vehicles will proceed in ecodriving trainings

Quote of the fleet manager

We are planning to have a closer look at ecodriving trainings for our employees in the future but most importantly, we will keep promoting ecodriving to our customers as part of our successful GreenPlan program.

Name of FLEAT consortium partner, country

CRES, GREECE

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POSTBUS

POSTBUS
Ein Unternehmen der ÖBB

Postbus GmbH is the market leader of public bus transport in Austria with approx. 2,100 buses.

Description of the pilot actions
Postbus has carried out two pilot actions in the field of mobility management:

- "Bus stops on demand". This concept implies that buses will only go to stops outside the main routes if customers push a button at these stops. This avoids unnecessary trips and thus saves costs, kilometres and CO2 emissions.
- Usage of a lightweight bus which is 2.2 tonnes lighter than a standard vehicle bus.

Result of the pilot
Bus stops on demand: One representative route was chosen (Vienna-Stockerau-Vienna). The route included 35 bus stops on demand in total, which are mostly used by commuters. The reduction concerning distance was only -1 %. However, the decrease in fuel consumption was 6 % because of the high consumption when stopping and restarting at bus stops. No major problems for drivers, passengers or the turnaround cycle have occurred.

Lightweight bus: The lightweight bus which was used is a prototype built by the Austrian bus manufacturer Kutsenits. The effects on fuel consumption were tested through the daily monitoring of fuel consumption and a parallel comparison with the energy demand of a conventional bus on the same route. The fuel consumption was measured daily. On average the lightweight bus consumed 25 % less diesel than the reference bus.

The concept "Bus stops on demand" is a way to provide cost-efficient public transport in rural areas and to Increase attractiveness for passengers due to shorter travel times, information systems and coverage of new regions.

Follow-up actions
It is planned to install bus stops on demand on more bus routes in the future. Also further tests with lightweight buses are planned, but no details are known yet.

Quote of the fleet manager
"Postbus has already carried out Ecodriving trainings for all its drivers. The FLEAT pilot actions were
further steps in the ongoing effort of Postbus, to raise the energy efficiency of the fleet."

Name of FLEAT consortium partner, country
Austrian Energy Agency, Austria

fleat

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PPC – PUBLIC POWER CORPORATION

PPC S.A. is the largest power generation company in Greece and the country's sole power supply company, providing electricity to approximately 7.4 million customers. PPC is also the sole company with a fully owned power transmission system in Greece. PPC owns 93% of the installed power capacity in Greece, generated by lignite, fuel oil, hydroelectric and natural gas power plants, as well as by aeolic and solar energy parks. At the same time, PPC owns the country's two large lignite mines in Ptolemais and Megalopolis, generating approximately 56% of the required power supply (2nd largest lignite power generator in the EU). During 2007 a total of 63.4 lignite million tons were mined. The company operates a fleet of more than 4,000 vehicles, of all types – utility, private, light duty and heavy duty.

Description of the pilot action

Initially there was the phase of data collection of fuel consumption data for 3 months prior to the training for the trainees. At the end of this period, the ecodriving training took place, which lasted 1 day. Finally, there was a 3-month long post-training monitoring period, to assess the effectiveness of the ecodriving training.

Result of the pilot action

The ecodriving training, as well as the whole monitoring period revealed first of all a relatively low but still satisfactory potential for energy saving which is about 3% in the long term. During the training days, the energy saving was 25%. This difference may be explained from the fact that during the training the trainees pay full attention while practicing the ecodriving rules and they are assisted on this from the trainers next to them. Therefore we may say that during the training, drivers reveal the maximum potential of energy savings. In addition we have to consider that with such huge public organisations, changing the driving behaviour is even more difficult. Besides the measured benefits on energy savings and the related environmental and financial savings, it was obvious during the training that the stress levels of the drivers were reduced due to the fact that surprisingly for them, the average speed was increasing instead of decreasing. It is also obvious that in order to fully benefit from ecodriving, the management of the company must set a comprehensive training program for all drivers as well as an incentives program to motivate drivers on continuing practicing ecodriving.

We are considering to have ecodriving for our drivers as part of our broader program on energy saving.

Follow-up actions

PPC is planning to expand Ecodriving trainings on all or a large number of drivers (after the valuable experience from the pilot action). In addition other running actions on fleet management include:

- Equipping all vehicles with GPS (and GIS) and with telematics the fuel stations in order to achieve route optimization, dispatching optimization, monitor unnecessary delays and energy consumption and finally prevent theft.
- Policy for the purchase of new vehicles In order to motivate employees to prefer smaller and more energy efficient vehicles
- Replacement of petrol fueled vehicles with diesel fueled ones

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PPC will also participate in an innovative for Greece pilot project, where there will be created recharging stations for electric vehicles. The innovative aspect is that the electric vehicles that will use the recharging stations, will also serve as temporary electric energy "storage devices" through their batteries and PPC will be able to draw energy back to the electric grid from the cars, when these are not moving.

Quote of the fleet manager
We are considering to have ecodriving for our drivers as part of our broader program on energy saving.

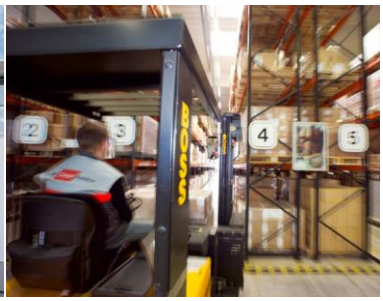
Name of FLEAT consortium partner, country
CRES, GREECE

RAIL CARGO AUSTRIA

Rail Cargo Austria is an internationally operating logistics service provider. Beside its core competences in rail transport RCA is also running 130 trucks. Rail Cargo Austria delivers sustainable, technically well-developed, reliable and cost-efficient transport and logistics solutions – with professional services along the overall value-added chain.

Description of the pilot action

Rail Cargo Austria has carried out Ecodriving training courses for all drivers in order to assist and convince drivers of utility vehicles to adopt an energy efficient driving style. All 132 truck drivers joined a full day Ecodriving training. The trainings were conducted at different spots all over Austria.



We take our social responsibility seriously. We provide services for the general public. We strengthen rail, the sustainable transport mode, thus making an important contribution to environmental and climate policy goals.

Result of the pilot action
RCA has provided long-term fuel consumption data for the monitoring of the FLEAT project for the year before and after the Ecodriving trainings. The reduction of fuel consumption for the whole fleet was 11.4%.

Follow-up actions
No follow-up actions are planned at the moment as all drivers have already taken part at the Ecodriving training.

Quote of the fleet manager
"Our goal is to make goods transport as environmental friendly as possible, be it on rail or on trucks."

Name of FLEAT consortium partner, country
Austrian Energy Agency, Austria

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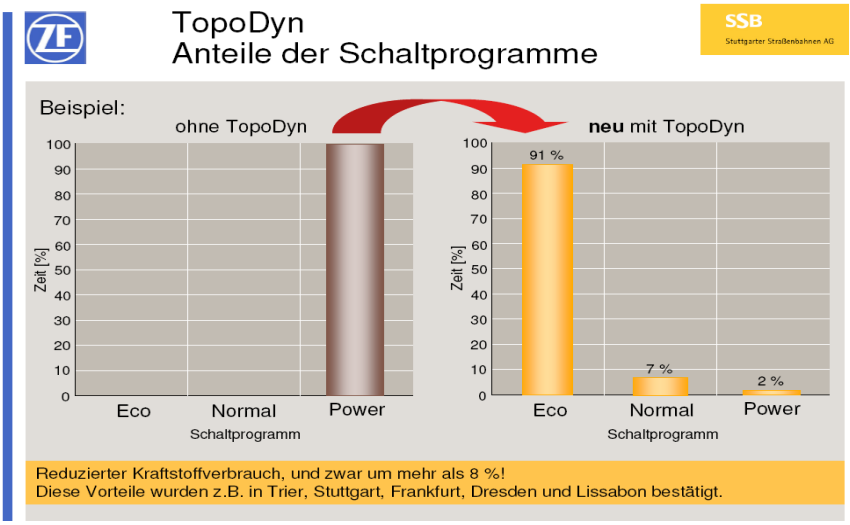
STUTTGARTER STRAßENBAHNEN AG

Stuttgarter Straßenbahnen AG, is responsible for the whoöe public transport in the city of Stuttgart. the fleetmanager Markus Wiedemann arranged different technical attempts to reduce the fuel consumption of the bus fleet (50 vehicles) since few years.

Description of the pilot action

Intelligent gear shift systems for reducing fuel consumption. Refitting on 50 existing busses (Citaro O530 Gelenkzug mit 260kW OM 457hLA Motor mit DPF) an transmission program that constantly compute the driving resistance (uphill/downhill) and select the optimum shift program (System Topodyn von ZF). Assessment by driving in city traffic (SORT 2)



This pilot action reduced 2009 our fuel consumption about 120 000 liter diesel for our 50 Busses

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Result of the pilot action
We prefer to invest in our vehicles, not in our drivers, because the fluctuation is too high for sustainable effects. From 2009 to 2010 we reduced our fuel consumption more than 4 Liter.

This pilot action reduced 2009 our fuel consumption about 120 000 liter diesel for our 50 Busses.

Follow-up actions We will continue our optimizing our bus-technique. Perhaps in future alternative traction systems are economic.

Quote of the fleet manager
At time nor CNG neither H2 is attractive. We tested both the last years. The best co2-reduction measure would be a separate bus-lane / track in the city.

Name of FLEAT consortium partner, country
B.A.U.M. , Germany

TNT SKYPAK

TNT SKYPAK is one of the world's leading mail and logistics services Group. The company's branch in Greece operates a fleet of more than 140 vehicles, mainly utility vans.

Description of the pilot action
Initially there was the phase of the analysis of fuel consumption data for the whole fleet, of the past 13 months. At the end of this period, the ecodriving training took place, which lasted 1 day. Finally, there was a 4-month long post-training monitoring period, to assess the effectiveness of the ecodriving training.

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Ecodriving is quite interesting and we are looking for ways to further investigate the use of such trainings

Result of the pilot action

The ecodriving training, as well as the whole monitoring period revealed first of all a great potential for energy saving which is about 5% in the long term. During the training day, the energy saving was 16%. Besides the measured benefits on energy savings and the related environmental and financial savings, it was obvious during the training that the stress levels of the drivers were reduced due to the fact that surprisingly for them, the average speed was increasing instead of decreasing. For courier drivers, speed and delivering on time is probably the most significant target of their job, therefore energy savings must be combined with no speed reduction. It is also obvious that in order to fully benefit from ecodriving, the management of the company must set a comprehensive training program for all drivers as well as an incentives program to motivate drivers on continuing practicing ecodriving. This is further stressed by the difference of the energy saving results between the training day and the monitoring period.

Follow-up actions

From TNT we had the information that ecodriving trainings were planned for all the drivers of the company, since the relevant manager was very impressed from the results of the pilot action. There is no specific time schedule at the moment but it was expected to begin in 2010.
TNT also examines other fleet management measures besides ecodriving such as the use of electric vehicles at a group level.

Quote of the fleet manager

Ecodriving is quite interesting and we are looking for ways to further investigate the use of such trainings as a tool to reduce our environmental impact as well as a way to reduce associated costs.

Name of FLEAT consortium partner, country

CRES, GREECE

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VAN DIEVEL

Van Dievel, a transport company with more than 80 trucks. They mainly transport goods for the distribution sector.

We can achieve such a low fuel consumption, that even one of the truck manufacturers came and watched how we were driving their vehicles.

Description of the pilot action

Van Dievel has a long history in training their drivers, and among these trainings ecodriving is an important one. Every driver follows at least one ecodriving course, and Van Dievel has an intensive monitoring and follow-up program in order to maintain the beneficial effects generated during the training. One remarkable aspect of their program is that drivers that perform less regarding fuel consumption, get support from more experienced drivers.

Result of the pilot action

Due to the intensive ecodriving program, Van Dievel managed to lower their fuel consumption by +- 9%. This resulted in a decrease of fuel consumption in the year 2008 of 200.000 liter, or more than 500 tons of CO_2. Not only do they achieve a decrease of their fuel consumption, but also their maintenance costs (tires, brakes, etc.) decreased.

Follow-up actions

Van Dievel will continue on the same path, and in addition they will start equipping every vehicle with low resistance tires, that should normally further decrease their fuel consumption.

Quote of the fleet manager

“We can achieve such a low fuel consumption, that even one of the truck manufacturers came and watched how we were driving their vehicles. The tire supplier also asked us to send one of the used tires back to them, because they couldn’t believe the mileage we reached with one of their set of tires.”

Name of FLEAT consortium partner, country

VITO, Belgium

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VLOTTE

Name of pilot action
VLOTTE – a model region for electro-mobility

Description of the pilot action
With the project VLOTTE Vorarlberg, the westernmost province of Austria, became a model region for electro-mobility. Within this project the implementation of electric vehicles will be intensively supported over many years.

VLOTTE customers deliberately buy (not rent) the vehicles: A so called mobility rate includes not only an electric vehicle but also service and maintenance of the vehicle, energy from public recharging stations, a ticket for public transport within the entire region and lots more. Electricity is consistently generated through additional renewable energy sources.

Result of the pilot action
We have measured the energy consumption of Think vehicles equipped with Zebra-Batteries in daily operations. The monitoring of the electric vehicles of the VLOTTE project included electricity consumption for heating, standby and charging losses and amounted to 40.5 kWh per 100km on average.

VLOTTE – a model region for electro-mobility:

- *75 E-Cars on the street*
- *More than 200 prospective customers*

Follow-up actions
The next project phase, VLOTTE II, is already on the way and will bring an expansion of cars, charging stations and renewable energy. In the long term every third Vorarlbergian shall have direct access to electric mobility.

Quote of the fleet manager
"Service / maintenance is a significant factor of success."

Name of FLEAT consortium partner, country
Austrian Energy Agency, Austria

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WELEDA AG

Green car policy is cost effective but it is a hard job to implement

Weleda AG is a famous health & wellness production company with a mission to protect nature & environment. Naturally the environmental manager is engaged to reduce the CO2-emission in the mobility issues, especially for the Company cars.

Description of the pilot action
Implementation of a car policy
Car policy for all new vehicles: In 2009 maximum 144 g/km CO2

Result of the pilot action
With the new green car policy we reduced our fuel consumption about a third of Liter/100km. The pilot action in our company fleet reduces 50 t CO2 per year.

Follow-up actions

We will intensify our CO2-conditions in our policy every year:

- In 2010 maximum 132 g/kg CO2
- In 2011 maximum 120 g/kg CO2
- In 2012 maximum 108 g/km CO2

Quote of the fleet manager
Green car policy is cost effective but it is a hard job to implement it in a company, because company cars are a status symbol for the employees. Some users want to have the option to select a car with a higher CO2 Emission. A bonus malus system is suggested, but not fixed, yet. The main part of users are satisfied with the car policy.

Name of FLEAT consortium partner, country
B.A.U.M. , Germany

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CITY OF TURNHOUT

The city of Turnhout is a middle-sized Flemish city with 40.765 inhabitants (counted on 31st of December 2009). Their activities are analogue to any other city. The City Region of Turnhout is a cooperation initiative between Beerse, Oud-Turnhout, Vosselaar and Turnhout. They have specific activities in the field of regional policies concerning mobility, environment, housing and social economy.

Description of the pilot action

The city of Turnhout owns 7 company cars for business trip purposes. By using a shared car, they can reduce CO2-emissions and costs. Next to that the city wants to adopt a green mobility policy, including company bikes, reduction of trips, green procurement and carsharing.

To operationalize the pilot action a comparative test was done between 1 company car (Renault Modus) and 1 shared car (VW Polo, provided by Cambio), during 1 month.

By using a shared car, they can reduce CO2-emissions and costs.

Result of the pilot action

After the pilot action the results were the following: a reduction of cost of 65.32 euro and a reduction in CO2 of 525 g, although the shared car had more mileage. (+36 km's). If these monthly results are representative for the 11 other months this can be scaled up to 783.84 euro cost reduction and 6900 g of CO2-reduction.

However, there's also a factor which must be taken into account. When comparing the cost structure of the use of both the company car (lease contract) and the shared car (private carsharing service Cambio) we saw a big difference in variable and fixed cost. For the lease-car the fixed cost per month is quite high, but the usage cost is low. For the shared car, this is the other way around. When set out in a graph consisting of costs per kilometer, we see there's a turnover point at approx. 450 km's. This means that the shared car starts to cost more than the company car once the mileage goes above 450 km's. Of course, the environmental benefits

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continue to be greater with the shared car. Of course, this example can't be generalised, as it's based on the specific cost structure in this case and the technical specs of the cars involved in the pilot action, but it gave a clear view on how to proceed on comparing car usage on costs and environmental issues for the pilot partner.

Follow-up actions

As said before, the pilot action gave a clear methodology (using www.ecoscore.be) on how to compare car usage within the city services. As a consequence, the city's fleet manager now wants to start several pilots (comparable with the one in FLEAT) within the city services. As a final result, the city wants to adopt a green car policy, using not only environmental friendly cars, but also continue the use of shared cars, bicycles and other mobility management measures (especially to keep the use of shared cars under 450 km's a month).

Name of FLEAT consortium partner, country

Mobiel 21, Belgium

AVM AREA VASTA MOBILITÀ SPA, FORLÌ, ITALY

Description of the pilot action

The Italian fleet which supported FLEAT is AVM Area Vasta Mobilità SpA, that was keen to introduce an ecodriving training programme to achieve real reductions in fuel consumption.

The company operates both urban (in Forlì, Cesena and Cesenatico) and inter-urban (Provinces of Forlì-Cesena and Ravenna) public transport services in the Emilia Romagna Region. AVM runs around 12 millions bus-km/year with a fleet of over 350 buses. The range of medium-sized bus networks and services operated by AVM means in practice that each driver is employed on a few local lines, thus knowing very well routes and running times.

AVM, with the support f TRT, designed a tailored pilot action in the framework of FLEAT. The company wanted to evaluate the potentials of both ecodriving and sustainable fleet management concepts for consistently reducing its fuel consumption and pollutant emissions.

A modern, environmentally-friendly and alternative fleet does not directly means lower energy consumption and CO_2 emissions. Vehicle procurement (i.e. rightsizing, greening the fleet, etc.),

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vehicle monitoring and especially proper driving styles are the key elements to achieve real benefits for the environment. Be conscious of the high green impact of combining energy consumption monitoring with improved driving performances is a fundamental rule for the AVM managers. It also creates the best work environment for employees and their active involvement in greening services.

Energy efficiency potentials can be achieved despite our work shift rotation and diversity of the fleet

AVM has therefore implemented a wide awareness campaign on ecodriving issues among its drivers. The FLEAT pilot action has been presented through the corporate newsletter, leaflets and an advise on the electronic totems used for registering and distributing the work shifts. All drivers received a tailored vademecum with tips and tricks for ecodriving a bus. Also maintenance and service employees have been involved in the action.

A theoretical ecodriving training module has been developed and it's now embedded in the annual AVM training programme. Over 50 drivers have been trained during the FLEAT pilot action.

The FLEAT pilot action was also implemented by an ad-hoc test on a specific route. The re-designed Line 6 of the urban public transport service in the Municipality of Cesena is constantly monitored in its energy and environmental performances. The service is operated with a fleet of 8 bus Bredamenarinibus M231 EXOBUS VIVACITY C powered by a CNG engine. Compared with the previous Euro4 generation, this new EEV version of the Exobus has obviously lower emissions of local pollutants (NOx, PM) but also higher fuel consumption rates, thus asking for better attention to driving styles. The Line 6 was therefore monitored from December '08 to August '09 for those aspects related to fuel consumption, service interventions, anomalies, driver shifts, etc. Drivers have been informed every week of their actual fuel savings by a wall chart in their meeting and rest room.

Together with the expertise of the safe driving school GuidarePilotare of Misano Adriatico (RN), 4 drivers have been trained in a beta (theoretical and practical) ecodriving course for urban buses. It was organised in November '09 in Forlì with test drives onboard of a bus SETRA S415 UL.

Result of the pilot action

After the FLEAT training and awareness campaign the average aggragate CNG consumption of the line was 3,4% lower compared to pre-test performances. This means that in terms of fuel reduction potentials, at least 4.000 kg of CNG could be saved yearly from Line 6 operations by a proper monitoring scheme and a widespread ecodriving attitude of drivers.

Also green procurement strategies have been revised. New buses will be equipped with a fuel consumption indicator in the dashboard.

A theoretical ecodriving and energy efficiency training module has been developed and it's now embedded in the annual AVM training program.
AVM management really appreciate also the practical ecodriving training.

Vademecum; Implementation of Green procurement strategies; Integration of Telecontrol Systems for the fleet; FMS-standard for onboard devices.

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Follow-up actions
Integration of Telecontrol Systems for the fleet with fuel and vehicle performance information. Onboard devices. Practical ecodriving tranings.

Quote of the fleet manager
"Energy efficiency potentials can be achieved despite our work shift rotation and diversity of the fleet. We are also focused on increasing awareness and motivation of our drivers. It's clear that we need to integrate a proper monitoring scheme over the entire fleet. To do this, we have to evaluate how to invest properly in onboard devices to track both drivers and vehicle's performances."

Name of FLEAT consortium partner, country
TRT Trasporti e Territorio Srl, Milan, Italy

REISEDIENST HUSMANN

Description of the pilot action
With an on-board device of mixtelematics we monitor the fuel consumption and the driving style. Consitutive on these datas we make driver trainings in fuel efficiency.

Result of the pilot action
The first problem is the installation of the monitoring tool. Although the engine producers promise that the FMS-interface works we had big problems in installing the tool. In addition also the producers of monitoring tools often promise more than they fulfil.
Follow-up actions
None

Quote of the fleet manager Will not work further on the topic because of too less time

Name of FLEAT consortium partner, country
BEMAG, Austria

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