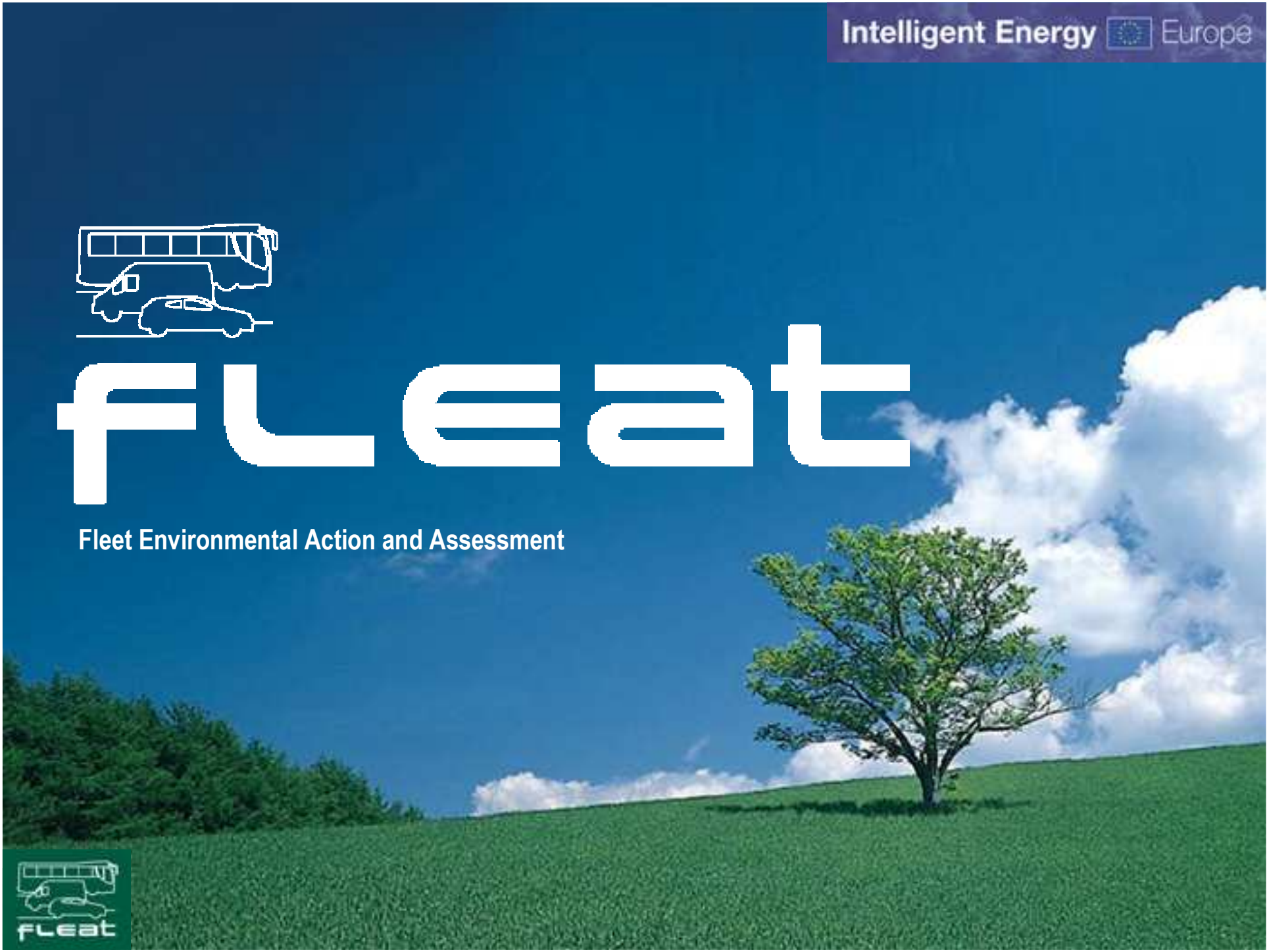

Intelligent Energy Europe
fleat
Fleet Environmental Action and Assessment
fleat

The Project

- Intelligent Energy For Europe – STEER
  - EIE/07/007/SI2.466261
- 1/10/07 – 31/3/10
- Consortium 11 partners
  - VITO (BE) – Flemish Institute for Technological Research
  - AEA (AT) – Austrian Energy Agency
  - TRT (IT) – Trasporti e Territorio
  - IPA (RO)
  - Geonardo (HU)
  - BAUM (D)
  - SenterNovem (NL)
  - CRES (GR) – Centre of Renewable Energy Sources Hellas
  - Mobiel21 (BE)
  - BEMAG (AT)
  - RFOL (SWE) – Örebro County Regional Development County

Background

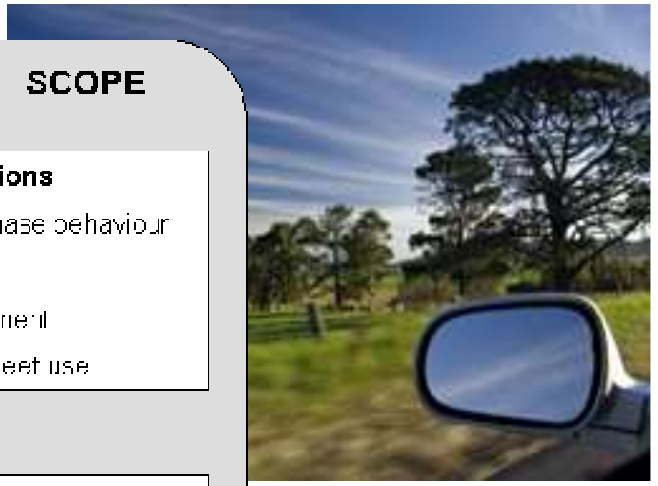
Fleet transport activity has an increasing share in the total transport activity

- Owner of vehicles <> driver of vehicles, costs are not carried by driver
- Car policy is part of HRM, not transport driven
+ Fleet management is more rational (cost driven) compared to private purchase behaviour
+ Measures dedicated at captive fleets are effective
+ Companies are interested in environment
- 'Mobility' is not top priority in environmental management
- Actions are quite superficial

Objective

The overall objective of FLEAT is to reduce energy consumption and CO_2-emissions of captive fleets by implementing integrated measures on energy efficient vehicles, energy efficient use of vehicles and energy efficient use of fleets.

Overview



WP1 Management

Knowledge

Test

Monitor

Transfer

WP2 Networking

WP3
Tools, Instruments and measures

WP4
Pilot actions

WP5
Impact assessment

WP6
Communication & dissemination

WP7
Common dissemination

SCOPE

Measures & Actions
Green fleet purchase behaviour
Alternative fuels
Mobility management
Energy efficient fleet use

Impacts
Transport demand
Energy / Fuel consumption
CO2-emissions

Target audiences
Fleet managers (private)
Fleet managers (public)
Policy makers

Tools & policy mix

- Toolbox for fleet operators based on existing material
  - available at www.fleat-eu.org
  - 3 types of actions
    - Energy efficient vehicles: green car policy, AFV…
    - Driving behaviour: training, long term monitoring & feedback systems…
    - Mobility management: improved logistics, commuting…
- Policy mix for policy makers
  - Overview of effective programmes and measures abroad

Pilot actions

- Implement actions in the field of energy efficient fleet management
- Fixed: 29 pilot actions (all types of actions)
- Conclusions of pilot actions are expected in January 2010
- 3 types of actions
  - Energy efficient vehicles: green car policy, AFV…
  - Driving behaviour: training, long term monitoring & feedback systems…
  - Mobility management: improved logistics, commuting…
- Different types of captive fleets
  - Private fleets – passenger cars
  - Utility fleets – vans & HDV
  - Public fleets
  - Public transport fleets

Pilot actions: main elements

- Provide insight in cost-effectiveness of different measures in different circumstances
  - By means of harmonised monitoring & assessment approach
  - What works best ? Clean vehicles, driving behaviour and/or mobility management ?
- Draw recommendations for policy makers
  - Supporting programmes
  - Learnings from pilot actions & networking

FLEAT Outcomes

- Direct Outcomes
  - Toolbox and policy mix
  - Direct impact on transport activities and CO_2-reduction
  - Assessment framework
  - Networking events and dissemination
- Indirect Outcomes
  - Indirect impact on transport activities and CO_2-reduction
  - Networking and dissemination

Pilot actions (fixed): overview

	Type of action			
Type of fleet	Vehicle technology	Driving behaviour	Mobility management	*Total*
Private – passenger	3	5	1	*9*
Private – utility veh.	2	6	1	*9*
Public	1	1	--	*2*
Public transport	1	7	1	*9*
Total	*7*	*19*	*3*	*29*

Pilot Actions in Greece (CRES)

- **ILPAP** (public bus company, 366 busses): drivers trained in eco-driving. Average results after 3 months: -11,5% energy use and +8% average speed, possible savings of €620.000 annually
- **DHL Hellas** (postal service, 160 utility vehicles): eco-driving
- **Leaseplan Hellas** (5000 passenger cars): eco-driving for lease drivers
- **Public Power Corporation** (4000 vehicles): eco-driving
- **Bristol Meyers Squibb** (100 vehicles): drivers trained in eco-driving

Pilot Actions in Romania (IPA)

- **Helco** (transport and service company, 22 vans and passenger cars): 18 drivers trained in eco-driving
- **ISIS** (transport company, 22 vehicles): optimise routing of vehicles
- **Craiova municipality** (public transport fleet, 203 busses): drivers trained in eco-driving
- **ELPRECO** (concrete blocks and bricks, 41 utility vehicles): eco-driving

Pilot Actions in Belgium (VITO)

- **KBC Bank** (1000 cars): eco-driving for 100 drivers + green car policy
- **Athlon Car Lease** (70 cars): EcoCoach black box monitoring for eco-driving in 10 vehicles + training if monitoring is not enough
- **TNT Express** (330 utility vehicles): car policy, awareness campaign on ecodriving and driving behaviour monitoring
- Negotiations with the cities of **Antwerp** (on board monitoring and CNG vehicles) and **Hasselt** (black box monitoring and car policy) and **BESIX** (construction, car policy)

Pilot Actions in Belgium (Mobiel21)

- **KBC Bank**: monitor current mobility management scheme & make recommendations to become CO_2-neutral by 2010
- Negotiation with the **city of Antwerp**: reduce car fleet from 160 to 30 vehicles (relocation with less parking space) + mobility management
- **City of Ghent**: less car use by avoiding trips, pooling…

Pilot Actions in Austria (AEA)

- **Rail Cargo Austria** (international logistics): eco-driving for all drivers of 130 utility vehicles
- **ÖBB** (Austrian Railways Holding, 4000 cars): eco-driving for 150 drivers
- **ÖBB**: vehicle technology (1 hybrid car, 1 electric car, 2 CNG-cars), demonstration and purchase
- **Postbus** (public transport company): lightweight busses, efficient heating & cooling, bus stops on demand and improved vehicle capacity
- Other pilots under negotiation: **Vaillant** (30 CNG vehicles), **VLOTTE** (100 electric cars), **Feistritzwerke** (solar car)

Pilot Actions in Austria (BEMAG)

- **Verkehrsverbund Vorarlberg** (public transport, 200 busses): on-board monitoring device and eco-driving trainings for bus drivers
- **Reisedienst Husman** (private bus company, 20 busses): on-board monitoring device and following driver trainings

Pilot Actions in Germany (B.A.U.M.)

- **Holcim** (building materials, 270 utility vehicles): eco-driving on 130 vehicles with awards for the most energy efficient drivers
- **Hamburg Wasser** (water company): procurement and assessment of 80 CNG utility vehicles and feasibility study to use own bio-methane production from water sludge
- **Weleda** (health and wellness products, 105 cars): green car policy to reduce CO_2 and incentive-system for employees to accept smaller vehicles

Pilot Actions in Germany (B.A.U.M.) - continued -

- **Stuttgarter Strassenbahnen** (public bus company): retrofitting 38 busses with an intelligent gear shifting system
- **DATEV** (software, 560 cars): comparison of different car policies + money instead of cars for mobility

Pilot Actions in the Netherlands (SenterNovem)

- **Kone** (elevators): eco-driving training for 120 utility vehicle drivers + European spread out (Italy, Austria, Belgium)
- **Arriva** (public transport): training 565 bus drivers in eco-driving
- **Delta Lloyd**: mobility management (alternatives to lease cars) in cooperation with Leaseplan NL – Mobility Mixx
- Negotiations with **BP** about ecodriving and possible other actions

Pilot Actions in Italy (TRT)

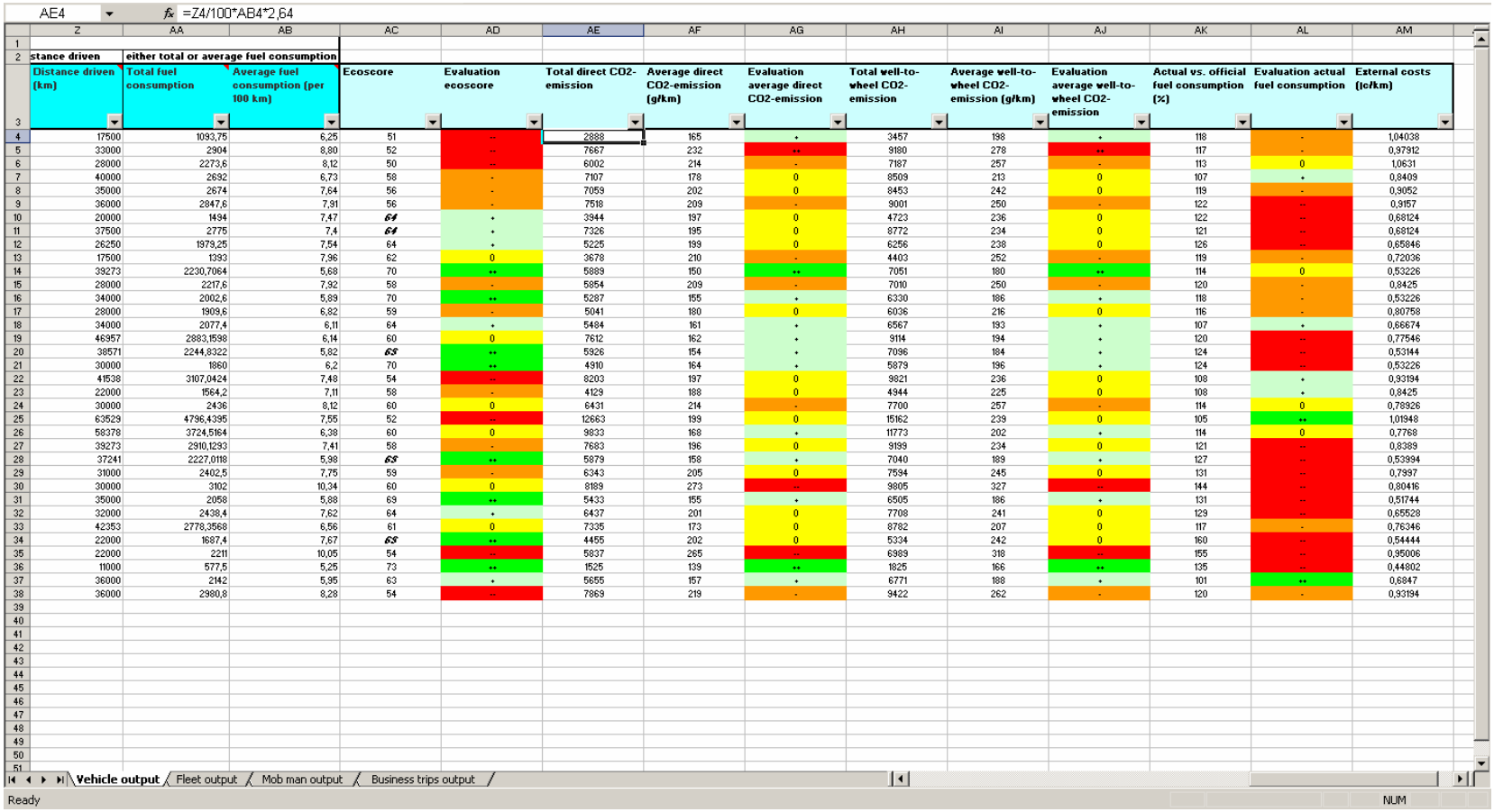
- **EBUS** (public transport company): eco-driving for min. 5 drivers, possibly more actions (technical improvements, mobility management)
- Negotiations with **Union Key / Nestle**

Monitoring and Assessment

- Web-based application to monitor impact of actions
  - Introduction of cleaner vehicles
  - Driving behaviour
  - Mobility management
- Main indicators
  - Number of vehicles involved in pilot actions
  - Reduction of km driven
  - Direct fuel savings
  - Direct CO_2-savings
  - Indirect CO_2-savings
  - Cost of the action
- Real-world figures on the effectiveness of fleet management (€/ton CO_2 reduced)

Monitoring and Assessment

- Screenshot of monitoring tool:



AE4 =Z4/100*AB4*2,64

	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM
1														
2	stance driven	either total or average fuel consumption												
3	Distance driven (km)	Total fuel consumption	Average fuel consumption (per 100 km)	Ecoscore	Evaluation ecoscore	Total direct CO2-emission	Average direct CO2-emission (g/km)	Evaluation average direct CO2-emission	Total well-to-wheel CO2-emission	Average well-to-wheel CO2-emission (g/km)	Evaluation average well-to-wheel CO2-emission	Actual vs. official fuel consumption (%)	Evaluation actual fuel consumption	External costs (€/km)
4	17500	1093,75	6,25	51	--	2888	165	+	3457	198	+	118	-	1,04038
5	33000	2904	8,80	52	--	7667	232	++	9180	278	++	117	-	0,97912
6	28000	2273,6	8,12	50	--	6002	214	-	7187	257	-	113	0	1,0631
7	40000	2692	6,73	58	-	7107	178	0	8509	213	0	107	+	0,8409
8	35000	2674	7,64	56	-	7059	202	0	8453	242	0	119	-	0,9052
9	36000	2847,6	7,91	56	-	7518	209	-	9001	250	-	122	--	0,9157
10	20000	1494	7,47	64	+	3944	197	0	4723	236	0	122	--	0,68124
11	37500	2775	7,4	64	+	7326	195	0	8772	234	0	121	--	0,68124
12	26250	1979,25	7,54	64	+	5225	199	0	6256	238	0	126	--	0,65846
13	17500	1393	7,96	62	0	3678	210	-	4403	252	-	119	-	0,72036
14	39273	2230,7064	5,68	70	++	5889	150	++	7051	180	++	114	0	0,53226
15	28000	2217,6	7,92	58	-	5854	209	-	7010	250	-	120	-	0,8425
16	34000	2002,6	5,89	70	++	5287	155	+	6330	186	+	118	-	0,53226
17	28000	1909,6	6,82	59	-	5041	180	0	6036	216	0	116	-	0,80758
18	34000	2077,4	6,11	64	+	5484	161	+	6567	193	+	107	+	0,66674
19	46957	2883,1598	6,14	60	0	7612	162	+	9114	194	+	120	--	0,77546
20	38571	2244,8322	5,82	68	++	5926	154	+	7096	184	+	124	--	0,53144
21	30000	1860	6,2	70	++	4910	164	+	5879	196	+	124	--	0,53226
22	41538	3107,0424	7,48	54	--	8203	197	0	9821	236	0	108	+	0,93194
23	22000	1564,2	7,11	58	-	4129	188	0	4944	225	0	108	+	0,8425
24	30000	2436	8,12	60	0	6431	214	-	7700	257	-	114	0	0,78926
25	63529	4796,4395	7,55	52	--	12663	199	0	15162	239	0	105	++	1,01948
26	58378	3724,5164	6,38	60	0	9833	168	+	11773	202	+	114	0	0,7768
27	39273	2910,1293	7,41	58	-	7683	196	0	9199	234	0	121	--	0,8389
28	37241	2227,0118	5,98	68	++	5879	158	+	7040	189	+	127	--	0,53994
29	31000	2402,5	7,75	59	-	6343	205	0	7594	245	0	131	--	0,7997
30	30000	3102	10,34	60	0	8189	273	--	9805	327	--	144	--	0,80416
31	35000	2058	5,88	69	++	5433	155	+	6505	186	+	131	--	0,51744
32	32000	2438,4	7,62	64	+	6437	201	0	7708	241	0	129	--	0,65528
33	42353	2778,3568	6,56	61	0	7335	173	0	8782	207	0	117	-	0,76346
34	22000	1687,4	7,67	68	++	4455	202	0	5334	242	0	160	--	0,54444
35	22000	2211	10,05	54	--	5837	265	--	6989	318	--	155	--	0,95006
36	11000	577,5	5,25	73	++	1525	139	++	1825	166	++	135	--	0,44802
37	36000	2142	5,95	63	+	5655	157	+	6771	188	+	101	++	0,6847
38	36000	2980,8	8,28	54	--	7869	219	-	9422	262	-	120	-	0,93194
39														
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Vehicle output / Fleet output / Mob man output / Business trips output

Ready NUM

Dissemination

- Website: www.fleat-eu.org
- 15 high quality FLEAT posters
- FLEAT brochures (hard copy)
- FLEAT newsletter (2/year)
- FLEAT PowerPoint presentation
- Publications in relevant journals
- Presentation on national events
- Organization of 8 national events and 1 international event
  - See website for agenda of events

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