Green Mobility Management

Annex A of the Handbook 'Navigating Transport NAMAs'

TRANSfer Project – Towards climate-friendly transport technologies and measures

The concept

Commuting and business trips are responsible for the largest share of the GHG emissions from passenger transport. In Germany, for instance, work trips are responsible for 550 to 950 kg annual per capita emissions of CO_2, whereas the aggregated emissions from leisure activities, shopping and childcare amount only to 500 to 600 kg per capita CO_2 emissions (Hunecke *et al.*, 2008).

Each business entity, organisation or administration can reduce its transport-related carbon footprint. Individual travel decisions for business trips or employee commuting as well as the composition of vehicle fleets determine the organisation's overall GHG emissions from transport. Municipal governments can improve the emission balance of the local administrative body and of public institutions controlled by the city. Private companies often cause a lot of commuter travel and business trips and some have company-owned vehicles. However, the private sector often has little interest to develop a corporate travel policy or to introduce emission based vehicle procurement guidelines and further lacks knowledge about green corporate mobility management or green procurement. The local government needs to give a strong impetus to encourage private companies to implement a green mobility management. Therefore, the local government is the main actor to foster corporate mobility management. However, when it comes to final implementation in single companies, the head or the managing body of the company play a key role.

Elements of green mobility management:

- Implement green vehicle procurement guidelines;
- Introduce a municipal travel plan;
- Support green corporate mobility management in the private sector.

For more details on the elements' characteristics see Box 1.

Table 1: GHG reduction matrix of green mobility management

	Avoid	Shift	Improve
Direct effects	☑ Teleworking reduces the number of trips ☑ Car pooling leads to a decline in vehicle kilometres travelled	☑ Shift commuter traffic and business trips towards public transport and cycling (including electric bikes)	☑ Increases the fuel economy of the public/corporate vehicle fleet
Indirect effects		☑ People may also use public transport and cycling for leisure more often when they are used to such modes for commuting	☑ Facilitates market penetration of low carbon vehicle technologies
Rebound effect	☒ Teleworking might reduce the barriers for long-distance commuting		
Complementary measures *(to achieve full mitigation potential)*	☑ Car-pool matching websites	☑ High quality public transport network (see Factsheet "*'Public Transport First' Strategy*") ☑ Proper cycling and walking infrastructure (see Factsheet '*High Quality Walking Infrastructure*') ☑ National fiscal incentives for alternative modes	☑ Vehicle fuel economy standards (see Factsheet 'Promotion of Energy Efficient Vehicles') ☑ Fuel economy labels (see Factsheet '*Promotion of Energy Efficient Vehicles*')

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Box 1: Possible elements of green mobility management

Include emission criteria in public vehicle procurement

The municipality often owns a considerable vehicle fleet. The city government decides about the procurement of these vehicles. Clean vehicles offer a considerable emission reduction potential and at the same time cost savings. Especially if municipal enterprises operate local public transport, waste collection or street cleaning, there is a large vehicle fleet that can be improved in terms of energy efficiency and emissions.

Municipal procurement guidelines can oblige all departments and municipal enterprises to purchase only low carbon, low emission vehicles. Thus, either very fuel-efficient vehicles are purchased or alternative fuels are applied. Since for many trips the average driving distance is rather low, electric vehicles or even bicycles can be suitable to substitute parts of the existing vehicle fleet.

How it works and intended effects:

- Clean vehicles are used by the administration and municipal enterprises;
  - ➔ Reduces the municipal vehicle emissions;
  - ➔ Sets an example for private companies.

To be considered for implementation:

- Slightly higher procurement costs for advanced vehicle and fuel technologies may be compensated by energy savings.
- Time until the measure is fully effective depends on the fleet turnover rate.

Responsible actor: Mayor and city government

Introduce a municipal corporate travel plan

The municipal government can introduce a travel plan that encourages employees to use alternative modes for commuting and business trips. Several measures can be introduced to encourage more efficient commuting:

- Create the part-time position of a “mobility manager”;
- Corporate parking management – Limit parking spaces for employees and/or introduce parking pricing;
- Job tickets – Employees get rebates on public transport tickets. (Often introduced in dense areas in combination with parking management);
- Shuttle buses – Company-owned buses offer free or low-cost transfer to nearby public transport stations;
- Ridesharing matching programmes – Employers support the formation of car pools for instance using the intranet;
- Flexible working hours – Employees can adjust working hours to public transport schedules or carpools;
- Teleworking – Employees are allowed to work from home;
- Changing facilities and bicycle stands – Promotes commuting by bicycle.

The municipal experience with mobility management can be transferred to private employers.

How it works and intended effects:

- Facilitate the use of alternatives modes for commuting and reduces the associated costs;
  - ➔ Induces a shift from private cars to alternative modes.
- Promote rideshare and teleworking;
  - ➔ Reduces the vehicle kilometres travelled of employees.
- Act as a role model for private companies.

To be considered for implementation:

- Carry out a survey to identify the employees’ travel patterns and design the commuter mobility programme accordingly;
- Annual cost for commuter trip reduction programmes in the US varied between USD 33 to 89 per employee. (Some costs are offset, *e.g.* by reduced expenses for parking supply.)
- Typically, commute trip reduction programmes reduce peak car trips by 10–30 % at a workplace (Gómez Vilchez, 2011).

Responsible actor: Mayor and city government

Support green corporate mobility management in the private sector

The local government can encourage private companies to follow their example and to introduce green vehicle procurement guidelines and travel plans. Private employers can implement the similar measures as municipal governments to reduce employees' vehicle trips (see above). However, they need an incentive to do so.

To promote green corporate mobility management in the private sector the local transport department can use various instruments:

- The local government offers financial incentives;
- Offer a central point of contact (mobility manager) for information on sustainable travel policies and vehicle procurement;
- Provide a platform for cooperation between various companies;
- Oblige large companies to develop a company mobility concept (*e.g.* legal obligation for companies above 300 employees in Italy (ILS, 2007));
- Set targets for car commuting trip reduction;
- Bilateral agreements between municipality and private sector (*e.g.* in the Netherlands public-private agreements oblige companies to implement green mobility management and in turn municipalities commit to improve public transport services (ILS, 2007)).

How it works and intended effects:

- Encourage private companies to implement mobility programmes for sustainable commuting and business trips;
  - ➔ Reduces vehicle trips of employees;
  - ➔ Fosters a shift towards alternative modes for commuting.

To be considered for implementation:

- Corporate mobility management can be implemented more effectively in companies above 100 employees.
- Gradual targets for car commuting trip reduction can be set.

Responsible actor: Local transport department (head/administration of the company or a company mobility manger is responsible for the final implementation of instruments in the company)

GHG mitigation effect and co-benefits

In most countries the average fuel economy of new vehicles declined during the last decade (IEA, 2009). If municipal or company vehicles are outdated and under-used, there is a considerable potential to substitute the existing fleet with fewer and more efficient vehicles.

Regarding commuting, the GHG reduction potential is highly case specific. Important factors are location and accessibility by public transport and non-motorised modes as well as employee demographics. Different studies investigated the effect of corporate mobility management and commuter trip reduction programmes on the commuting behaviour of employees. Comparing 20 private and public corporate mobility management initiatives in the UK, it was found that on average the car use was cut by 18 %. In some organisations even a reduction in car use of more than 50 % was achieved (DfT, 2002). Typically, commute trip reduction programmes reduce peak car trips by 10–30 % (Gómez Vilchez, 2011).

For the City of Cologne, a study from the Wuppertal Institute (Böhler-Baedeker *et al.,* 2011) investigates the emission reduction potential of improvements in employee commuting and low-carbon vehicle fleet management: although nearly 60 % of the 17 600 employees travel to work by public transport and 10 % by non-motorised modes, there is a considerable reduction potential. It was estimated that annual CO_2 emissions from employee commuting could be reduced by 23 % through a package of measures (*e.g.* promotion of car pooling, public transport and cycling, eco-driving programmes for employees, use of low-carbon fuels). Furthermore, improvements in the municipal vehicle fleet (*e.g.* natural gas vehicles, low-resistance tyres, high-lubricant oils and eco-driving programmes) were estimated to offer an additional emission reduction potential of 28 %.

Besides emission reductions, green mobility management leads to multiple benefits:

- Lower travel costs for employees;
- Reduced cost for parking supply;
- Vehicle fleet operating costs are reduced;
- Reduced rush hour congestion and air pollution;
- Improved municipal or corporate image.

Towards implementation

In a first step, the strategy aims at reducing the emissions of transport activities of the local municipal body. The vehicle fleet and business trips of all departments and public institutions are targeted and commuting of municipal employees is addressed. Secondly, the measure transfers the concept of green mobility management to private companies.

Key stakeholders

- Mayor and city government:
  As head of the municipal body, the mayor can actively promote a reduction target for the administrative body. City governments are responsible for procurement guidelines for vehicles, for the travel policy for business trips and for commuter trip reduction programmes for municipal employees.
- Local transport planning departments:
  Are responsible for programmes to reduce car travel and to promote a shift to low-carbon modes. They can initiate programmes for local private companies that intend to reduce emissions from employee commuting and business trips. Additionally, they can consult local companies and promote cooperation between public transport providers and employers.

Table 2: Potential barriers to implementation and countermeasures

Barriers	Options to overcome
Lack of financial resources to renew the municipal vehicle fleet	■ Cut the size of your vehicle fleet (a detailed analysis of the vehicles' use often reveals fleet reduction potentials). ■ Substitute own vehicles with car sharing (car sharing providers often offer new, fuel-efficient vehicles). ■ Consider the long-term savings in fuel consumption due to efficiency gains.
Energy-efficiency and environmental performance is not considered when municipalities and associated departments purchase vehicles*)	■ Develop financial and organisational structures that encourage administrative entities to reduce operational costs, to save energy and to invest in environmentally-friendly products (Thomas *et al.,* 2002). ■ Dedicated incentive schemes can be developed to award the environmental performance of individual departments. ■ Alteration in the accounting system can ensure that long-term savings remain with the investing department.
Unclear responsibilities and lack of coordination regarding employee commuting and fleet management	■ Unite responsibilities by appointing a special employee as a transport coordinator.
Resistance from employees concerning commuter trip reduction measures and vehicle policies	■ Establish a participation process, *e.g.* by building a working group composed of different departments, staff categories and transport users to develop a plan that suits different needs and to assure acceptance across all staff units (OECD/ITF, 2011). ■ Cooperate with employees and integrate them in the decision-making process.

*) Often, functionality and purpose of the vehicle seems to be much more relevant, especially if departments do not gain any economic advantage from energy savings. Furthermore, there is often a lack of knowledge about energy-efficient and environmentally-friendly vehicle technologies.

Success factors

- High-quality alternatives to commuting with the private car have to be available (accessibility by public transport and non-motorised modes);
- Implementation of municipal budgeting (it enhances the visibility of long-term effects through energy savings from efficient vehicles and efficient use of the fleet);
- Provide a Guaranteed Ride Home[1];
- Continuous information and communication with the staff to raise acceptance of the travel plan;
- Commitment of the mayor and city government (or top company officials in case of private institutions);
- Cooperation with local public transport operators or car sharing providers.

[1] Commuters who use carpools, public transport or non-motorised modes are provided a free ride home (*e.g.* with a taxi) in case of unexpected emergencies or unscheduled overtime working.

Practice example: Mobility management plan in Dublin

The City of Dublin developed a workplace mobility management plan for the 6 000 employees of the Dublin city council to encourage the use of sustainable modes for commuting. To identify potential areas for improvement and to design a suitable mobility management plan, a staff travel survey was conducted. All employees were informed about the project and the benefits of a mobility management plan. A steering committee was formed and an employee transport coordinator was appointed. Possible instruments to improve the mobility management were discussed and news and updates were continuously disseminated to all employees. All in all, there was a close cooperation between the project leaders and the employees. This secured the support and acceptance of the municipal travel plan. An overall shift towards public transport was noted and a survey showed that the share of public transport among Dublin city council employees exceeded national average. Furthermore, the city purchased 21 electric vehicles and 19 bioethanol vehicles for the municipal fleet.

In 2008, the plan was incorporated into the climate strategy of the city council and other local authorities as well as local businesses followed the example and started to develop their own mobility management plans (Eltis, 2011).

Eschborn, Germany – Photo by Jonathan Gómez, 2011

Further reading

- **DfT – Department for Transport (2002)** '*Making personal travel plans work: Lessons from UK case studies*' UK Department of Transport, London http://eu-added-value.eu/docs/making-travelplansworklessons5783.pdf accessed 18 October 2011.
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- **Gómez Vilchez, J. (2011)** '*Mobility Management & Commuting: Inputs and Examples of Best Practices in German Firms*' Case Studies in Sustainable Urban Transport #5, Sustainable Urban Transport Project (SUTP), GIZ, Eschborn.
- **IEA (2009)** '*World Energy Outlook 2009*', WEO, International Energy Agency (IEA).
- **Litman, T. (2010b)** '*Commute trip reduction – Programs that encourage employees to use efficient commute options*' Victoria Transport Policy Institute (VTPI), Victoria, http://www.vtpi.org/tdm/tdm9.htm accessed 14 October 2011.
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