



WP 4: CONTEXTUAL DRIVERS FOR CO₂ REDUCTIONS IN PUBLIC TRANSPORT

Executive Summary

May 2012



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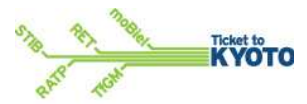
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TICKET TO KYOTO

Contextual drivers for CO2 reductions in public transport



1. Introduction

1.1. Ticket to Kyoto

The Ticket to Kyoto Project has been established to reduce CO₂ emissions in public transport through more environmentally friendly behaviour and changes in infrastructure. The project's five partners are:

- moBiel, Bielefeld, Germany;
- RATP, Paris, France;
- RET, Rotterdam, Netherlands;
- STIB (Project Lead), Brussels, Belgium; and
- TfGM, Manchester, United Kingdom.

The project will run over four years (2010 to 2014) and is being co-financed by the INTERREG IVB North West-Europe Programme. Its key goal is to "introduce the principle of low CO₂ emissions as the new standard for public transport providers".

1.2. WP4 - Optimizing policies and regulations for CO₂ reduction measures

To reach this goal the project has identified five key actions plans that will be delivered within a series of five work packages (WP). Atkins, in partnership with Frontier Economics and Edinburgh Napier University, has been commissioned to assist the partners with work package 4 - Optimizing policies and regulations for CO₂ reduction measures.

WP4 focuses on the interactions between public transport operators and authorities and their stakeholders, including local government, suppliers, maintenance operators, as well as the policy and legal context within which they operate.

The study has been undertaken in four stages – inception, analysis, recommendations, and reporting. A key element of the study has been a series of workshops undertaken in each of the partner cities to inform the analysis and recommendations.

2. Study context

2.1. A variety of public transport models

The analysis stage confirmed that there is quite a distinct range of operational and governance models for public transport delivery across the five T2K partner cities as shown in Table 1. It also highlighted the differences in scale of population and public transport operations. The smallest operator, moBiel, delivers services to approx. 55 million passengers per year, and the largest, RATP, supports 3.5 billion passengers per annum. These differences of scale also translate in variations in budgets and spend on energy.

2.2. Transport sector carbon emissions and energy efficiency commitments

Emissions from the transport sector represented 24% of EU greenhouse gas emissions in 2009, with road transport by far the largest contributor. In European urban areas, public transport is responsible for approx. 10% of transport related greenhouse gas emissions. Across Europe, 40 to 50% of public transport is already powered by electricity (up to 66% in Germany). Buses however still account for 50 to 60% of the total public transport offer in Europe and 95% of buses run on fossil fuels.

For public transport, the objective to reduce energy use (and associated costs) and carbon emissions needs to be balanced with the wider objective to reduce overall transport sector emissions by encouraging more users to switch from the private car to public transport and low carbon modes. Initiatives to encourage this change in behaviour can result in increases in energy use and emissions for the public transport sector through the provision of additional services and equipment. It is therefore important to consider public transport sector emissions on a per passenger km basis.

The transport sector mainly emits CO₂ directly, through vehicles burning fossil fuels, and indirectly, through electricity used to power trains, metros and trams. The balance between these two main sources of emissions might change in the future as the transport sector becomes more electrified (additional public transport services and electric vehicles).

Table 1. Overview of operations and governance models across the five partners

| Partners | moBiel | RATP | RET | STIB | TfGM |
|---|---|--|--|---|--|
| Population | 325,000 | 12 million (Greater Paris) | 1.3 million (Greater Rotterdam) | 1.1 million (Brussels Capital Region) | 2.6 million (Greater Manchester) |
| Scale | 55 million pax p.a. (set to double by 2030) in Bielefeld urban area 700 staff | 3.5 billion pax p.a. in Greater Paris Region 56,000 staff (companywide) | 185 million pax p.a. in Rotterdam metropolitan area 3,000 staff | 311 million pax p.a. in the Brussels metropolitan area 6,500 staff | 280 million pax p.a. in Greater Manchester Approx. 550 staff |
| Transport modes operated | Tram services (with some parts underground) Bus services | Regional rail services (in part) Metro lines Tram lines (3 out of 4 lines) Bus services (in part) | Metro lines Tram lines Bus services Ferry service | Metro lines Tram lines Bus services | TfGM does not operate services directly Tram lines Supported bus services Some influence over regional rail |
| Public transport operations | moBiel is responsible for planning, operation and maintenance of tram & bus infrastructure and services | RATP operates the services (RATP Operations) and owns and maintains the infrastructure (RATP Infrastructure) | RET operates the services and maintains the infrastructure | STIB operates the services and maintains the infrastructure | TfGM owns the tram network & bus infrastructure and enters into agreements with private sector operators who run tram and bus services |
| Governance and operator status | The local authority is Stadt Bielefeld (the City of Bielefeld) moBiel, a publicly owned company, is the “preferred operator” for bus and tram services in the city | STIF is the Region’s transport authority RATP is a publicly owned company and the internal operator for the Region but the provision of services will be put out to tender in the coming years (third party operator) | The responsible authority is Stadsregio Rotterdam (City Region) RET, a publicly owned company, was the internal operator for SRR but the provision of services will be put out to tender in the coming years (third party operator) | Brussels Capital Region (Transport Minister) is the transport authority (with Bruxelles Mobilité as its executive arm) STIB is the internal operator for the Brussels Capital Region | TfGM is a public body, governed by elected representatives from the ten Greater Manchester local authorities Tram and bus operations are a mix of concessions (franchises) and open market (majority of bus services) |
| Financial information (approx, budget definition can vary)* | moBiel budget €66.6 million (72% covered by PT operations revenue) | RATP annual income: €4.2 billion RATP financial: €183 million | RET budget: €488 million & financial results: €10 million | STIB annual budget: €600 million p.a. (55% covered by operations revenue) | TfGM annual budget: £274 million (ITA budget) |
| Energy costs (approx. per year)* | Electricity: €2.4 million Fuel: €2.9 million | Electricity: €90 million Fuel (incl. support fleet): €88 million HVAC: €10 million | Electricity: €10 million Fuel (incl. support fleet): €7.7 million | Electricity: €20 million Fuel (incl. support fleet): €13 million | Electricity: £ 3 million p.a. (£1 million for tram traction & £1 million for traffic signals) |

* Based on the most recent data available

The overall carbon emissions for public transport operations vary depending on the type of fuels available for vehicles and the energy mix on offer for the electrified network (reported emissions also depend on national reporting rules). This means that each of the T2K partners face different priorities when trying to reduce carbon emissions. For example, in France, the high proportion of nuclear and hydro power results in relatively low carbon electricity. This means that initiatives which aim to further reduce energy consumption and energy carbon intensity do not deliver as many benefits as in Holland, Germany or the UK.

2.2.1. Energy efficiency and carbon reduction commitments and initiatives

The five partners are all influenced by a range of carbon reduction commitments (at EU, national, regional, local and the organisation's level) and have already implemented various energy efficiency and carbon reduction measures, including new initiatives through the other T2K work packages.

Successful energy efficiency and carbon reduction interventions usually require organisations to be able to plan for the long term, including energy and carbon considerations early in the planning and design stages, and coordinate the efforts of many partners from the planning stage through construction/implementation and maintenance (as shown in Table 2). Governance structures have a strong influence on T2K partners' ability to do so.

Table 2. Overview of possible abatement measures and responsibilities

| Activity | CO ₂ source | Possible emission reduction measures | Who needs to be involved |
|---------------------------|---|--|--|
| Vehicle operations | Emissions from trains, trams, metros, buses and ferries (direct from fuel use or indirect from electricity use) | Vehicle specifications for new and refurbished stock (lower emission engines, lighter vehicles, regenerative braking capability) Energy source/fuels used (green energy, sustainable biofuels) Network conditions and driver/users behaviour (running speeds, stops, acceleration/deceleration, energy efficient traffic management, use of regenerative braking, hotel load management) Improved vehicle maintenance | Investors and vehicle owners (incl. leasing companies) Vehicle manufacturers EU and national governments (standards) Operators Energy and fuel suppliers Network owners, contractors operating and maintaining the network Drivers and users |
| Public transport networks | Energy losses on electric networks | Reduction of losses from electricity transmission (conductor resistance, transformer losses and leakage across insulators, etc) | Network owners, organisations operating and maintaining the network (incl. sub-contractors) |
| Buildings | Energy use at stations, stops, depots and offices | Reduction of energy used through lighting, air conditioning, building insulation, passenger facilities (waiting rooms, lifts and escalators, etc) Production of renewable energy | Building owners and users (incl. sub-contractors), organisations maintaining the buildings Energy providers Third party investors |

Although EU level targets and initiatives do not specifically target the public transport sector at present, some important regulations on vehicle, fuel and building efficiency and procurement support the partners' effort to improve their energy efficiency and reduce emissions.

In this context, there is an opportunity for T2K partners to develop packages of measures (individually or together) and show explicitly how these packages could contribute to EU and national level targets. In the long run, this could provide a solid foundation for attracting new sources of funding. This could build in work undertaken by the partners in WP1 and WP2 where partners have piloted projects to reduce energy use and emissions from their vehicle operation, public transport networks and buildings.

2.2.2. Making use of market mechanisms

T2K partners are already aware of their ability to reduce their indirect carbon emissions through the purchase of green electricity either through a green tariff (where the supplier sources the agreed amount of electricity from renewable sources) or through a green fund (where the supplier guarantees to invest in environmental projects to reduce carbon emissions). RET, STIB and TfGM currently procure green electricity for all or part of their consumption.

When procuring green electricity, it is however important that T2K partners check how this green electricity is provided. All EU countries already require electricity suppliers to provide a set proportion of their electricity from renewable sources and requiring a green tariff should mean that the supplier provides green electricity over and above this minimum legal requirement (to ensure that the choice of a green tariff actually results in additional renewable electricity being produced). If the supplier uses an offset mechanism, the carbon credits bought should be of sufficient quality to ensure that an actual reduction in emissions is achieved (see the section on carbon markets below). There is also some criticism of tariffs which use already established renewable generation (such as older hydro capacity) as this is not new investment in additional renewable capacity (although the increase in demand for green electricity and the limited availability of existing sources should still result in additional investment in renewable capacity).

The choice of a green tariff is generally perceived as a clear signal that the organisation is taking action to reduce its emissions and encourage the production of renewable energy through the market mechanisms available. It is however important to note that not all green tariffs offer the same guarantees and that, in some countries, company reporting guidelines do not recognise the purchase of green electricity as a carbon emission reduction measure on par with internal energy efficiency.

T2K partners are not currently directly involved in carbon trading on international (Kyoto mechanisms) or EU (EU ETS) markets although some of them are already indirectly involved through their purchase of green electricity. Although theoretically possible for some partners, the option of raising revenue by generating carbon credits from public transport sector investment is probably not viable at present. T2K partners could however decide to take part in carbon trading as buyers of carbon credits to offset their emissions.

Other market mechanisms potentially of interest to T2K partners were identified such as the white energy efficiency certificates in place in France and the domestic offset model which could be developed across Europe for sectors outside the EU ETS (including transport) under Article 24a of the EU ETS Directive.

White certificates (CEE) in France

In France, a system of tradable “white certificates” for energy savings measures is in place.

Energy providers (electricity, heat, fuels) are required to achieve a set level of energy efficiency improvements. They can invest themselves to encourage users to save energy and support their customers’ investment in energy efficiency but they can also buy “white certificates” to meet this requirement. A penalty of €0.02 per missing kWh is set if providers fail to meet their energy efficiency requirements.

Certificates are issued to local authorities and housing associations when they invest and achieve energy efficiency improvements for their operations such as building insulation, energy efficient lighting/heating/warm water, HVAC, low resistance tyres, eco-driving or freight modal shift. RATP is able to take part through a third party arrangement.

Some interventions are considered standard and a set amount of certificates will be issued when they are implemented. For example, for the investment to train a bus driver in eco-driving, 3,000 certificates should be issued for a year (equivalent to €12 at the current market value of €0.004 per certificate).

Source: ADEME and RATP

JI in France – Domestic offsets (“projets domestiques”)

The French “projets domestiques” mechanism is based on JI but is really a domestic offset mechanism for France to incentivise greenhouse gases reductions in non-EU ETS sectors (including transport).

Due to the cumbersome JI mechanism which has to be used, take up and the number of projects which have received credits have been relatively low so far.

RATP investigated the potential for the mechanisms to support some investment in energy efficiency and renewable energy production but concluded that the potential financial gain from the sale of credits would be very low and might not cover resource costs initially required to obtain the credits.

Sources: Caisse des Dépôts and Effet de serre: bilan des actions mises and œuvre et perspectives, Rapport de commissionnement de C.Bouhot, RATP, 2008

Alternative approach – a city wide cap and trade scheme for Tokyo

The City of Tokyo, which covers 12 million inhabitants, has taken the lead in regulating municipal emissions by introducing the first mandatory cap and trade system in Japan as part of its climate change strategy.

Starting in 2010, the Tokyo Emission Trading Scheme (ETS) will target 1,255 private organisations from the industrial and commercial sectors. Office buildings, factories, department stores, hospitals and hotels are covered by the scheme under which companies that cannot meet the reduction target will have to buy credits from those that can, or will face fines and bad publicity.

This is the first ETS in the world to have such a territorial approach. The ETS cap has been established according to Tokyo's own emission reduction target of a 25% reduction by 2020 (on 2000 levels).

Tokyo ETS was approved by business groups, companies, NGOs and Tokyo's Chamber of Commerce and Industry during a wide public consultation exercise. Monitoring and reporting will be undertaken on an annual basis.

Source: Cities and Carbon Market Finance: Taking Stock of Cities' Experience with Clean Development Mechanism and Joint Implementation, OECD Environmental Working Paper No. 29, OECD, Clapp C., A. Leseur, O. Sartor, G. Briner, J. Corfee-Morlot, 2010

Why is emission trading cost effective? A view from the UK Carbon Trust

By using emission trading, organisations can decide whether to:

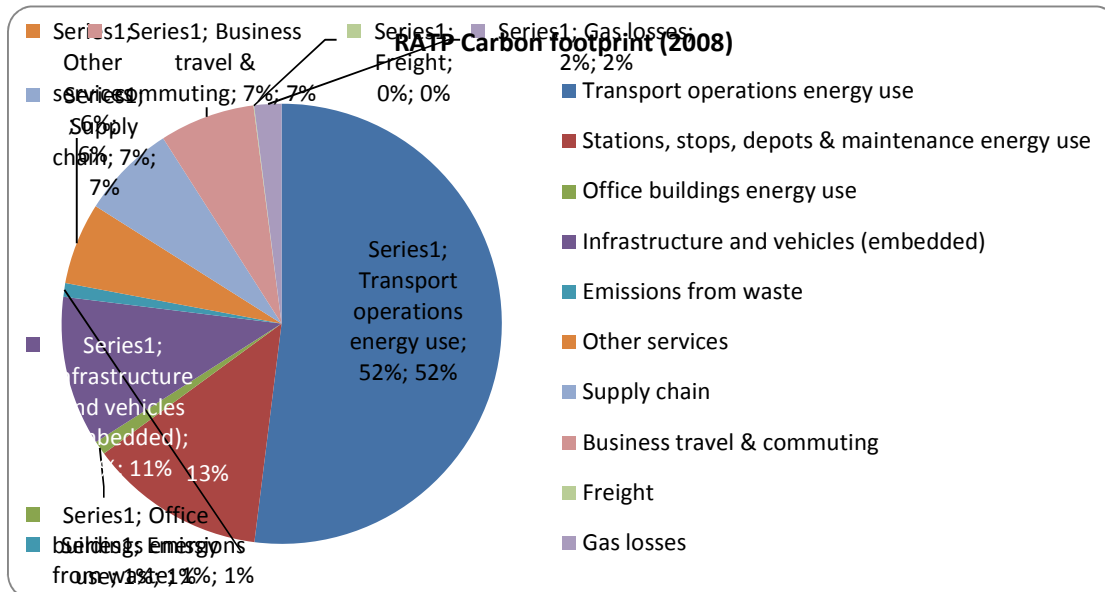
- reduce their emissions internally, taking into account the costs of their internal abatement opportunities;
- buy credits and allowances from other parties, taking into account the price of those allowances and credits;
- abate their emissions beyond what is required, generating a surplus of emissions reductions that could be sold to other parties.

Through a market-based mechanism with price signals, organisations can take decisions on which is the most cost-effective strategy to follow to reduce their emissions.

Source: adapted from The Carbon Trust three stage approach to developing a robust offset strategy, Carbon Trust, 2006

RATP Carbon Footprint (“Bilan Carbone[®]”)

The scope of activities selected for footprinting work includes all RATP activities on the Greater Paris network: public transport operations, buildings and offices (including staff restaurant), infrastructure and vehicle maintenance, staff travel, freight movements between suppliers and RATP, emissions from waste and sub-contractor emissions. Embedded emissions from materials procured by RATP are accounted for. Embedded emissions for tramway lines T1, 2 and 3 are included (recent infrastructure). Metro and RER infrastructure embedded emissions are excluded. Main sources of carbon emissions for RATP in 2008 were as shown in the figure below.



Energy use is the most important source of emissions (66%), followed by infrastructure and vehicle embedded emissions due to the scale of RATP infrastructure and rolling stock. 2008 results showed a 8% decrease in RATP emissions (on 2005 levels), with energy efficiency and emission reduction initiatives more than offsetting the increase in RATP’s offer of services.

Source: RATP Bilan Carbone[®]

3. Best practice

Discussions with partners supported by research undertaken at the analysis stage have provided many examples of current or emerging best practice summarised below.

3.1. Well-developed carbon footprinting

T2K partners are measuring their carbon footprint through WP3 but footprinting methodologies were already well established with some partners before the T2K project and STIB has also assessed its wider carbon footprint.

STIB wider footprinting work

To better understand its share of emissions and where it can have an influence on emissions attributed to others under conventional footprinting techniques, STIB is currently examining its wider carbon footprint. A wide ranging scope was defined for the work including:

- STIB buildings (direct, indirect emissions and embedded carbon) for offices, depots, staff amenities and green spaces
- Emissions from materials and equipments procured (embedded)
- Emissions from waste
- Staff commuting
- Public transport operations
- Embedded emissions in public transport network (STIB network and other networks used by STIB services)
- Public transport users' emissions including first and last kilometre (considering emissions from travel from the user's origin to STIB's services and from STIB's services to their final destination)
- Emissions from wider activities in which STIB is involved including STIB marketing and promotional campaigns, commercial activities, investments, staff pension scheme and partnerships (for example Cambio car club/sharing)

Source: STIB

3.2. Regulations supporting better understanding of energy use and further investment in emission reduction

This includes the example of regulations in France requiring emission reporting at the organisation level but also for individual journeys to better inform users, improving building performance through "green leases" in France, where building owners and tenants have to work together to improve energy efficiency and local UK planning rules requiring significant proportion of the energy needs of new developments to be met through on site renewable energy generation.

Reporting for public transport operators in France

In France, carbon reporting will become compulsory from December 2012 for private sector organisations with more than 500 staff, public sector organisations with more than 250 staff, regional, sub-regional and local authorities with more than 50,000 inhabitants and central government. This information will be publicly available and updated every 3 years. Organisations are required to report on Scope 1 and 2 emissions as a minimum (including non energy GHG such as cooling gases and methane). Organisations will also be required to publish a summary of their action plan to reduce GHG emissions for the 3 year period.

French reporting guidelines require organisations to use national emission factors for electricity use, meaning that organisations can't report reduced emissions if they have chosen a low carbon supplier or have specified a proportion of green electricity. Offsets (carbon credits) are also excluded.

From December 2013, all transport providers (public transport as well as car rental, flights or freight) will also be required to provide information to their customers on the amount of CO₂ emitted for their journey¹.

Providers will be able to use default values provided by government until July 2016. From this date, larger organisations (above 50 staff) will be required to provide information based on the organisation's actual emissions (with the possibility to average total emission per passenger/tonne and per km).

Green building leases in France ("Baux verts")

In France, new "green" requirements are applicable to new commercial building leases (above 2,000 m²) from 2012 (and from 2013 for existing leases). Both parties are required to provide each other with information on the building's energy (and water) use and to develop an action plan to improve the building's energy and environmental performance. The lease holder is required to provide access to the building to the owner for energy efficiency improvements to be implemented.

Source: Ministère de l'Écologie, du Développement durable, des Transports et du Logement

On-site renewable energy generation in the UK

In the UK, national planning guidance allows local planning authorities to require a percentage of the energy to be used in new developments to come from on-site renewable energy. Such policies should:

- ensure that the requirement to generate on-site renewable energy is only applied to developments where the installation of renewable energy generation equipment is viable given the type of development proposed, its location, and design;
- not be framed in such a way as to place an undue burden on developers, for example, by specifying that all energy to be used in a development should come from on-site renewable generation.

In 2003, the London Borough of Merton was the first local authority to adopt an area wide prescriptive planning policy requiring new developments to generate at least 10% of their energy needs through on-site renewable energy. Around half of the UK's local authorities implemented the "Merton Rule". It is however applied to a different degree with some authorities requiring 20% or more.

Sources: *Planning Policy Statement 22: Renewable Energy*, office of the Deputy Prime Minister, 2004, London Borough of Merton website and www.themertonrule.org

3.3. Improved knowledge of energy consumption and energy/ carbon prices

T2K partners have already improved their understanding of their energy use and associated carbon emissions through the T2K project. This knowledge could support improvements to the business case (cost benefit analysis) process and potentially help them reduce their energy bills.

Business case guidance in the UK (Cost Benefit Analysis)

The UK Department for Transport (DfT) has published investment appraisal guidance (TAG) for investment in the transport sector. TAG prescribes calculating the difference in GHG emissions with and without the investment. It provides values for carbon tonnes equivalent for the traded and non-traded sectors of the economy up to 2100.

The Department of Energy and Climate Change (DECC) has also developed a toolkit for the valuation of energy use and GHG emissions for appraisal and evaluation, comprising guidance handbooks and a Microsoft-Excel based toolkit.

TAG specifies that the full length of the "useful life" of an investment should be taken into account and sets a maximum length of 60 years for the appraisal period.

TAG is regularly used for business case development in the UK and not restricted to large infrastructure projects. For instance DfT's impact assessment for the Bus Service Operators Grant Regulations in 2011 values GHG emissions according to DECC standard values under a central, low and high emissions scenario over the recommended appraisal period.

Sources: *DfT and DECC*

Business case guidance in France and Germany

In France, a 2005 internal guideline paper from the Minister for Transport ("Instruction de Robien") to the Directors of government departments involved in transport projects appraisal sets a revised methodology for the economic valuation of large transport infrastructure projects. The methodology:

- includes recommendations on sensitivity tests, including with regard to energy costs and taxes;
- sets a value for carbon for the period 2000-2010 (100 €/tonne equivalent to € 0.066 per litre of petrol and € 0.073 centimes per litre of diesel) and a formula to roll it forward (value to be increased by 3% per annum after 2010); and
- prescribes a long life cost assumption.

German guidance issued by the Federal Environmental Agency in 2007 sets the mid-value of carbon to be used for transport appraisal at €70 per tonne.

Sources: *Temis and Umweltdaten*

Exploring contractual models to reduce electricity costs

STIB is currently developing a potential option to reduce energy costs for high voltage by offering to provide suppliers with precise consumption estimates (3% error margin) six months in advance of use. This should enable providers to purchase electricity in advance, at times when market prices are lower, and offer electricity at a lower cost to STIB. STIB would then carry the risk of overconsumption (with this electricity likely to be charged at a much higher rate). Discussions are on-going with potential electricity providers to see if this could be included in the next procurement process.

Source: STIB

3.4. Including energy efficiency and carbon performance in the procurement process

Some T2K partners have already developed energy efficiency and carbon criteria for their procurement process, with incentives to ensure take-up also being explored.

STIB sustainability criteria for procurement

STIB's corporate procurement guidelines ensure that sustainable development is taken into account through the procurement process through three main stages:

- At the pre-selection stage, qualitative sustainability criteria are strongly recommended by STIB's procurement guidelines for contracts over €135,000. In practice, this means requesting information on suppliers' environmental and sustainability policies (for example ISO 14000, EMAS or SA8000);
- At the awarding stage, qualitative sustainability criteria are compulsory for contracts over €135,000;
- In addition, the guidelines include sustainability marks to account for between 5 and 20% of the overall mark supporting the decision to award the contract. This is recommended for contracts over €22,000 and required for contracts over €135,000 (on the condition that this does not preclude competition between suppliers).

Source: "Processus Challenge des Achats et Politique Corporate des Achats à la STIB", April 2011

CO₂ Performance Ladder[®]

The Independent Foundation for Climate Friendly Procurement and Business (SKAO) owns the CO₂ Performance Ladder[®], a tool originally developed by ProRail, the operator of the Dutch railway infrastructure. The Ladder allows companies procuring services to take account of the CO₂ performance of potential suppliers by rewarding effort: "A higher score on the ladder means a concrete advantage in the tendering process, in the form of a nominal discount on the tender price."

The Ladder includes five levels of CO₂ awareness certificates with higher levels resulting in higher competitive advantages (it is up to the commissioning party to decide the applicable nominal discount for each level). This goes from:

- Level 1, where "the company has identified its energy flows in qualitative terms and has a list of potential options for saving energy and using renewable energy. Internally, the company communicates its policy in relation to energy-saving and renewable energy on an ad hoc basis and is aware of sector and chain-based CO₂ reduction initiatives"; to
- Level 5 where "the company has a CO₂ emissions inventory of its most important suppliers. The company can demonstrate that the objectives for levels 3 and 4 have been attained. The company is publicly committed to a government or NGO CO₂ reduction programme, and is able to demonstrate that it is making a relevant contribution to an innovative CO₂ reduction project."

The set of requirements to be met are contained in a general certification scheme and related audit checklists submitted to ladder-certifying organisations which assess the level of performance attained.

Source: SKAO

Encouraging the adoption of Green Public Procurement – "bonus – penalty" system in France

In France, a publicly funded, budget neutral financial "bonus-penalty" system was introduced in 2010 to reward the best performing Ministries and penalise the poorer performing ones with regard to the implementation of Green Public Procurement in Government. This is based on eight indicators covering the following areas: the delivery of an implementation plan, a social assessment, energy audits, a tool to calculate fluid (water and energy) flows, share of vehicles emitting less than 130g CO₂/km, paper, copy machines and printers, energy use in buildings.

Source: Assessment and Comparison of National Green and Sustainable Public Procurement Criteria and Underlying Schemes, Final Report to the European Commission, AEA, November 2010

3.5. Financial incentives and disincentives for energy efficiency and carbon emission reduction

Some partners have benefited from financial incentives within the organisation to support further investment in energy efficiency and carbon emission reduction. Others have benefited from national level incentives.

Financial incentive for "Eco-dynamic Enterprise" quality-label

Since 2002, STIB has been involved in the "Eco-dynamic Enterprise" quality-label initiative. The label is managed by Bruxelles Environnement. It is a voluntary certification scheme with three performance levels (stars). Once awarded the label is valid for three years. The label requires organisations to respect all applicable environmental regulations, to assess their impact in eight areas: energy, water, waste, ground pollution, air, noise, green spaces and mobility and to act to reduce these impacts.

The current management contract between Brussels Capital Region and STIB included a financial reward of €250,000 per site (or group of sites) and per annum for the achievement of the label (with continual improvement conditions attached).

Although STIB teams are generally interested in environmental performance, the financial incentive was key to the success of this initiative as all wanted to help secure additional budget for STIB. At present, the financial incentives secured are not ring-fenced but allocating the additional funding obtained to additional environmental improvements would probably result in even greater motivation.

Source: STIB

Climate Change Levy (CCL)

The Climate Change Levy is a tax on the use of energy in industry, commerce and the public sector in the UK. All revenue raised through the levy (rates are shown in the table below) is recycled back to business through a 0.3 percentage point cut in employers' national insurance contributions, introduced at the same time as the levy, and support for energy efficiency and low carbon technologies. The aim of the CCL is to encourage businesses to become more energy efficient and reduce their greenhouse gas emissions.

Electricity generated from renewable sources (such as solar power and wind power – but not large-scale hydro-electric schemes or some energy from waste) is exempt as is electricity used for rail traction.

| Taxable commodity | 2011/12 rate | 2012/13 rate |
|---|--------------|--------------|
| Electricity (pence per kilowatt hour) | 0.485 | 0.509 |
| Gas supplied in Great Britain (pence per kilowatt hour) | 0.169 | 0.177 |
| Petroleum gas supplied in a liquid state (pence per kilogram) | 1.083 | 1.137 |
| Any other taxable commodity (pence per kilogram) | 1.321 | 1.387 |

Carbon Reduction Commitment (CRC) Energy Efficiency Scheme

The CRC Energy Efficiency Scheme was introduced by the UK government in 2008. It is a mandatory scheme aimed at improving energy efficiency and cutting emissions in large public and private sector organisations, together accounting for around 10% of the UK's CO₂ emissions. The scheme includes three main elements:

- an obligation to monitor and report carbon emissions;
- a financial incentive to reduce emissions through the requirement to buy allowances for each tonne of CO₂ emitted. Allowances will go on sale from April 2012 and the current price is set at £12 per tonne of CO₂; and
- a reputational incentive as an annual performance league table is published showing participants' performance.

Sources: UK Department of Energy and Climate Change, HMRC, Environment Agency

Green Bus Fund – supporting the switch to low carbon buses

The Green Bus Fund is a fund set up by the UK Government to support bus operators and local authorities in England to buy new low carbon buses. Its main purpose is to support and hasten the introduction of low carbon buses across England.

For the purpose of the fund, a low carbon bus is defined as a bus that is capable of achieving at least a 30% reduction in greenhouse gas emissions compared to a similar size standard diesel Euro III bus. Low carbon buses also need to meet Euro V or better emissions standards.

The fund has been allocated in three rounds:

- £30 million in 2009 to be used between 2009 and 2011;
- a second round was run in 2010, with a budget of £15 million; and
- a third round for 2011/12 is currently running with a budget of £20 million.

The first two rounds helped deliver some 540 new low carbon emission buses in England.

Source: DfT Green Bus Fund

3.6. Use of market mechanisms to improve energy efficiency and reduce emissions

Market mechanisms are already being used in France through the white energy efficiency certificates and the development of a domestic offset programme (see Section 2). Carbon credits are also used by some public transport operators to offer carbon neutral journeys.

Carbon free business travel with Deutsche Bahn

Since 2009, Deutsche Bahn (Germany's national rail operator) offers carbon free business travel through its bahn.corporate Environment Plus programme. In 2010, the programme was used by various organisations including Germany's Federal Government and its Departments and the State of Rhineland-Palatinate. An equivalent Eco-Plus programme is also available to freight customers.

The Deutsche Bahn Group uses an internal compensation mechanism by feeding electricity generated from renewable sources on the network (through DB Energie, Deutsche Bahn's energy supply company) for the amount needed for the carbon free business trip. Carbon free business travel costs an additional €1 for a return Munich to Mannheim trip.

Deutsche Bahn use 10 % of the profits from the Environment Plus and Eco Plus offerings to support the construction of new plants for generating renewable energy. In 2010, an agreement was concluded with Enertrag AG to support the construction of a hybrid power plant in Prenzlau (Germany).

Source: Deutsche Bahn

Eurostar's carbon neutral offer – an offset programme under review

Eurostar's policy with regard to carbon emissions includes efforts to reduce energy use and emissions, with a target to reduce CO₂ emissions per passenger journey by 35% by 2012 (on 2007 levels) and remaining emissions are offset by purchasing carbon credits.

For example, Eurostar journeys in 2007/08 emitted 45,597 tonnes of CO₂e, which were offset through the purchase of carbon credits. 2009 emissions were expected to be in the region of 38,000 tonnes of CO₂e.

When offsetting, Eurostar uses a company to supply carbon credits. Offset projects are selected to ensure that they are of good quality and accredited either through the Clean Development Mechanism (CDM), the Voluntary Carbon Standard (VCS) or the Voluntary Gold Standard (VGS) criteria.

The carbon credits are bought in advance and are already issued by the relevant authorising body before Eurostar counts them towards carbon neutral journeys. This means that the reductions in emissions have already happened. External assurance is provided by Bureau Veritas which checks Eurostar's assessment of its emissions and that a robust process was followed to purchase carbon credits.

In 2011, it was however announced that Eurostar would abandon carbon offsetting to focus on cutting emissions across its business. The decision was taken after discussions with customers and partners showed they did not fully understand the offsetting concept and felt the benefits were too far away.

Sources: Eurostar and BusinessGreen.com

3.7. Opportunities to access funding to support energy efficiency investment

The analysis stage also identified opportunities for T2K partners to obtain financial support for energy efficiency investments through EU funding mechanisms as well as the involvement of third party investors under the EPC (Energy Performance Contracting) and ESCO (Energy Services Company) models.

European Local ENergy Assistance (ELENA)

ELENA (European Local ENergy Assistance) is a European Facility run by the European Investment Bank aiming to support authorities in accelerating their investment programmes in the fields of energy efficiency and renewable energy sources. It supports local and regional authorities in contributing to the “20-20-20” EU targets. ELENA support covers a share of the cost for technical assistance that is necessary to prepare and implement an investment programme, e.g. additional feasibility and market studies, business plans, energy audits - in short, everything necessary to make sustainable energy projects ready. ELENA does not focus on PPP specifically, but it recognises public-private partnerships (PPP) as a possible procurement method.

Examples of current ELENA projects in the public transport sector include:

- Electrobus - Energy Efficient Bus Network for Barcelona, with €1.9 million ELENA funding to support the large scale retrofit of diesel and GNC buses into hybrids (including technological studies on the buses, support in the definition of tailored financial instruments to finance the bus fleet renewal, studies for a new bus and signals network and LED technology); and
- SPIS – Tramways in Skåne, with almost €3 million ELENA funding to support tender preparation, tendering and definition of maintenance approach, support for financial studies, support for the development of common standards, specifications and procedures and support for the definition of the best approach for an innovative quality system for tramway infrastructure maintenance.

Source: www.eib.org/elena

Intelligent Energy Europe Call for Proposals 2012

Priorities for this call include energy in transport, with an indicative budget of €12.5 million, focusing on:

- energy efficient transport, supporting local authorities in developing Sustainable Urban Mobility Plans covering freight and passenger transport in urban and peri-urban areas, and giving particular emphasis to the reduction of transport energy use; and
- clean and energy efficient vehicles, promoting policies and projects fostering the take up of non-conventionally fuelled vehicles with low GHG emissions in urban areas.

An indicative budget of €27 million is also included for integrated initiatives, including:

- energy efficient Public Spending Initiative, providing support and capacity building to help public procurers at national and local level apply green public procurement criteria for the purchase of energy related products, including vehicles under the Clean Vehicles Directive;
- local energy leadership;
- mobilising local energy investments, including working with EPC and ESCOs; and
- energy efficiency and renewable energy in buildings.

Source: *Intelligent Energy Europe*

European Energy Efficiency Fund (EEEF)

EEEF is a public-private partnership open to investments from institutional investors and professional investors. The Fund aims to support energy saving and energy efficiency investments in EU countries including “*clean urban transport to support increased energy efficiency and integration of renewable energy sources, with an emphasis on public transport, electric and hydrogen vehicles and reduced greenhouse gas emissions*”. The overall objectives of the Fund are to “*contribute to the mitigation of climate change*”, “*achieve economic sustainability of the Fund*” and “*attract private and public capital into climate financing*”.

EEEF can pursue two types of investment:

- direct investment in projects from project developers, energy service companies (ESCOs). This includes direct investment in projects in the range of €5 to €25 million as well as investment through financing instruments; and
- investment into financial institutions (local commercial banks, leasing companies, etc) committed to financing projects meeting the eligibility criteria of EEEF.

The final beneficiaries of EEEF are municipal, local and regional authorities as well as public and private entities acting on behalf of those authorities such as utilities, public transportation providers, energy service companies.

An Eligibility Check tool is available on the EEEF website. Deutsche Bank is the fund manager and conducts initial eligibility screening and due diligence for EEEF projects.

Source: <http://eeef.lu/home.html>

Invest to save support for energy efficiency in the UK

Salix Finance Ltd is an independent, not for profit company, funded by the UK Department for Energy and Climate Change (DECC), the Welsh Assembly Government and the Scottish Government. Its purpose is to accelerate investment by public sector bodies in energy efficiency technologies through invest to save schemes. Salix delivers funding through:

- a recycling fund, where a public sector body is given match funding for a number of projects. The client can continue to recycle energy savings returned to the fund into more projects, always maintaining the value of the fund at a constant level. Money is returned to Salix only when no more suitable projects can be found; and
- loans targeted at specific projects, which when completed repay their costs to Salix from the energy savings.

Sources: DECC and Salix

Energy contracting in the Greater Paris Region

SIPPEREC is an arm's length organisation set up by local authorities from the Greater Paris Region to manage their duties with regard to electricity provision and the electric infrastructure. SIPPEREC offers energy services to its local authority members, supporting them in the development, delivery and maintenance of renewable energy investments (focused on solar PV and geothermal energy) and advising them on energy efficiency (including on street lighting).

For renewable energy investments, two models are available to member local authorities:

- if the local authority pays for the initial investment, a contract is signed between the local authority and SIPPEREC for SIPPEREC to manage the project and receive payment for the electricity generated (from EDF). This is then repaid to the local authority minus the cost of maintenance for SIPPEREC;
- if SIPPEREC funds the investment, SIPPEREC receives payment for the electricity generated (from EDF) and shares any surplus with the local authority.

Source: SIPPEREC

Energy performance contracting in Belgium - FEDESCO

FEDESCO is a publicly funded ESCO set up by the Belgian federal government in 2005, with a capital of €6.5 million. FEDESCO only works with public sector organisations in Belgium, offering audits, feasibility studies, procurement support, project management and installation of solar PV on public buildings in Belgium. STIB has already worked with FEDESCO to undertake some audits and feasibility studies for their sites.

Source: FEDESCO

RE: FIT – Working with ESCOs in London

RE:FIT is a ready-to-use, cost neutral procurement initiative that allows the public sector to retrofit existing buildings with energy conservation measures (supported by ELENA funding). Several leading agencies including Transport for London have taken part in the first phase.

The RE:FIT framework streamlines the procurement process for energy services by providing prenegotiated framework contracts through which a group of prequalified ESCOs can undertake the design and implementation of energy conservation measures. RE:FIT allows the public sector to implement the retrofitting in typically 3 to 6 months (instead of up to 18 months through OJEU).

The reduction in energy bills is achieved by appointing an ESCO to implement energy efficiency measures in the buildings. The ESCO guarantees a set level of energy savings (risks transferred to the ESCO), offering financial savings over a set period. The Framework Agreement is available for 3 years commencing in January 2010 (with an option to extend to a fourth) and the resulting call offs from the framework can be for up to 10 years duration.

Source: Manage Energy RE:FIT case study

4. Drivers and challenges for T2K partners

When energy use and CO₂ emission reduction are considered, a **similar set of drivers** can be found across all five T2K partners. These include:

- **achieving cost savings** - through reduced energy use or reduced energy costs (and reduced CO₂ emissions where these are taxed);
- **attracting additional public transport users**, especially from the private car – in line with national and regional transport strategies; and
- **demonstrating the organisation's commitment to environmental and climate change targets** - through action on energy efficiency and carbon, also improving the organisation's image and the attractiveness of public transport services.

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T2K partners are **faced with important challenges** when considering initiatives to reduce energy use and CO₂ emissions. Although some differences appear between countries and operating models, many of the challenges presented in Table 3 are shared across the five partners.

Table 3. Challenges identified during workshops

| Challenges | moBiel | RATP | RET | STIB | TfGM |
|---|--------|------|-----|------|------|
| Trade-off between high short term costs and potential long term benefits – difficulties in convincing organisations and partners to invest when high levels of capital investment are required up-front offset by long-pay-back periods | ✓ | ✓✓ | | ✓ | ✓ |
| Access to capital and credit market failure – reducing debt and achieving overall cost savings can be overriding objectives, limiting access to capital for investment. It can also be difficult to secure credit from private sector lenders | | ✓✓ | | ✓✓ | ✓✓ |
| Balancing public transport emission reduction with wider transport sector objectives – public transport is seen as a low carbon option and national and regional transport strategies aim to encourage further use of public transport (resulting in lower emissions for the transport sector as a whole) whilst ensuring that transport supports the local economy and remains affordable for everyone | ✓ | ✓ | ✓✓ | | ✓ |
| Split responsibilities and incentives – ownership, governance and operating models sometimes mean that the financial/reputational benefits arising from an initiative might not accrue to the organisation funding the investment. Investment decisions resulting in higher energy can also be made independently from the organisation paying for energy. | | ✓✓ | ✓ | ✓ | ✓✓ |
| Informational failures and uncertainty – uncertainty about future energy (and carbon) prices and future transport demand can result in sub-optimal decisions, as can uncertainty on future governance, ownership and operating models. The information required to inform decisions can also be difficult to gather (especially when considering indirect and embedded emissions and wider sustainability impacts) | ✓ | ✓ | ✓ | ✓ | ✓ |
| Carbon price externality – failure of investment decisions to take full account of the cost of CO ₂ emissions to society | | ✓ | ✓ | ✓ | ✓ |
| Policy and regulatory framework – existing policies, regulations, standards and terms of contract between operators and transport authorities can restrict (or fail to encourage) the implementation of energy and carbon reduction initiatives | ✓ | ✓ | ✓ | ✓ | ✓ |
| Technology risk - some technologies are still relatively unproven and the higher risk can be a barrier to investment | | | | | ✓ |
| High search and transaction costs – identifying the right opportunities and technologies to improve energy efficiency or reduce carbon emissions requires time and knowledge as does convincing the organisation and its partners to invest/implement the initiative | | | | | ✓ |
| Path dependency (lock-in) – investment in public transport infrastructure and vehicles has long term impacts due the long life of these assets which means that partners could end-up being locked-in high energy use/emission paths | ✓ | ✓ | | | |
| Inertia and behavioural barriers – individuals and organisations can end up acting habitually or to meet existing norms and standards rather than objectively considering the impacts of their actions on energy use and carbon emissions | ✓ | ✓ | ✓ | ✓ | ✓ |
| Market approach versus planning approach – partners have differing views on the best approach to encouraging CO ₂ reduction and the production of renewable energy which results in different decisions being made on initiatives | ✓ | ✓ | | | |

“✓✓” denotes a challenge which was identified as particularly strong through discussions with the T2K partners. The absence of a “✓” does not mean that this issue not at all relevant to the organisation but rather that this particular issue was not raised in discussions with the organisation and its partners during the workshops.



5. WP4 recommendations

A long list of 30 potential options to support further energy efficiency and carbon reduction investment for the public transport sector was generated and tested at the second round of stakeholder workshops. Using a multi-criteria deliverability framework the stakeholder prioritised the options they considered as having the most practical merit for further development.

From the long list of 30 options the ten listed in Table 4 have been developed to help T2K partners deliver further energy savings and CO₂ emission reductions

Table 4. Summary of WP4 recommendations

| Recommendations | moBiel | RATP | RET | STIB | TfGM |
|---|--------|------|-----|------|------|
| R1 - Company emission reporting and information provided to public transport users Lobbying for stronger requirements on company reporting and information provided to public transport users (with a well defined scope), supported by joint budget and accounting for energy use and carbon emissions | √ | | √ | √ | |
| R2 - Improvement to business case process and guidance Improvement to appraisal and business case processes and guidance to better take account of volatility of energy prices, cost of carbon and whole life cost of decisions | √ | √ | | √ | √ |
| R3 - Capacity building and tools Capacity building and tools (for example, rules of thumb for carbon and whole life cost assessment) for T2K partners on energy efficiency and carbon reduction | √ | | √ | | √ |
| R4 - Raising awareness of the need for public transport to remain a low carbon option Raising awareness of the need for public transport to remain a low carbon option and of the potential for financial savings through energy efficiency investment | √ | | √ | √ | |
| R5 - Investigating EU funding sources Investigating funding options including free/low interest loans, state guarantees, revolving funds (including within the organisation), etc, focusing on EU funding sources | √ | √ | | √ | √ |
| R6 - Using ESCO and EPC models Using ESCO (Energy Services Company) and EPC (Energy Performance Contracting) models | | √ | √ | √ | √ |
| R7 - Providing carbon neutral journeys by using the carbon market Development of “green tickets” products and use of offsets | | √ | | √ | |
| R8 - Including GHG performance in procurement process and contracts Including GHG performance as a criteria in procurement and contracts with supply chain, potentially supported by lobbying for the development of legal standards in energy efficiency/carbon content of products and services | | √ | √ | | √ |
| R9 - Joint procurement of low carbon vehicles Exploring the potential to procure low carbon vehicles jointly | √ | | | | |
| R10 - Land use planning and building regulations Lobbying for stricter, consistently enforced land use planning and building regulations requiring improvements in energy efficiency and carbon reduction | | | | | √ |

5.1. R1 - Company emission reporting and information provided to public transport users

- To encourage organisations to monitor and reduce energy use and emissions
- To give an advantage to organisations with lower carbon footprints
- Risks: scope definition, data accuracy and use of standard conversion factors

| Quick wins & short term actions | Long term actions |
|--|---|
| <ul style="list-style-type: none"> • Information already being developed through WP3 • Dissemination | <ul style="list-style-type: none"> • Lobby for reporting and user information requirements to become the norm within the public transport sector |

5.2. R2 - Improvement to business case process and guidance

- To more accurately reflect the cost of energy and carbon
- To give an advantage to energy efficient and low carbon investment options
- Risks: complexity if wide scope (non-CO₂ GHG and embodied), resource intensive

| Quick wins & short term actions | Long term actions |
|--|---|
| <ul style="list-style-type: none"> • T2K partners can change internal processes quickly and at low cost | <ul style="list-style-type: none"> • Lobby for EU/national or regional guidance to be changed (case studies) |

5.3. R3 - Capacity building and tools

- To better be able to support/defend investment in energy efficiency and carbon reduction
- More of an issue for smaller organisations
- Risks: complexity, potential to become resource intensive rather than time saving

| Quick wins & short term actions |
|---|
| <ul style="list-style-type: none"> • T2K partners can already share knowledge and tools • T2K partners could develop a capacity building project (potentially using EU funding through Intelligent Energy Europe) |

5.4. R4 - Raising awareness of the need for public transport to remain a low carbon option

- To ensure that energy efficiency and carbon reduction is prioritised
- For public transport to remain environmentally competitive and to lower operating costs
- Risks: negative media coverage and lower investment in public transport

| Quick wins & short term actions | Long term actions |
|---|---|
| <ul style="list-style-type: none"> • Use information gathered through WP3 to raise awareness internally and with partners and stakeholders | <ul style="list-style-type: none"> • Keep monitoring performance against other modes of transport to inform funding prioritisation |

5.5. R5 - Investigating EU funding sources

- Access to capital and revenue support
- Risks: proposal development can be resource intensive

| Quick wins & short term actions |
|---|
| <ul style="list-style-type: none"> • Consider the development of project proposals for European funding, focusing on Intelligent Energy Europe, ELENA and EEEF |

5.6. R6 - Using ESCO and EPC models

- To facilitate capital investment in energy efficiency
- No up-front investment from public transport authority/operator, transfer of financial risk
- Risks: loss of control on equipment, resistance within the organisation, lack of experience in the public transport sector (from ESCOs and public sector)

| Quick wins & short term actions | Long term actions |
|--|--|
| <ul style="list-style-type: none"> • Initial discussions with potential partners to test interest in public transport sector and assess feasibility • Submit proposals for EU support (ELENA and EEEF) | <ul style="list-style-type: none"> • If the EPC/ESCO approach is viable, consider developing a joint procurement approach |

5.7. R7 - Providing carbon neutral journeys by using carbon markets

- To become a carbon neutral organisation or offer carbon neutral journeys to users (image benefits for organisation and users)
- Risks: cost, complexity, status under emission reporting regulations, reputational risk

| Quick wins & short term actions | Long term actions |
|---|---|
| <ul style="list-style-type: none"> • Define position on the use of offsets • Appoint suitable credit provider | <ul style="list-style-type: none"> • Lobby for other market mechanisms such as domestic offsets or the use of energy efficiency certificates |

BSI PAS 2060 – Specification for the demonstration of carbon neutrality

The British Standards Institution (BSI) has developed a standard for entities seeking to demonstrate carbon neutrality for their activities or products. The recommended process includes the following steps:

- define the product or service which will be offered as carbon neutral;
- use a recognised methodology to quantify its carbon footprint;
- develop a carbon footprint reduction action plan and commit to carbon neutrality;
- take action to reduce the footprint and monitor the effectiveness of those actions;
- re-assess the product or service's remaining carbon footprint;
- introduce offsets for the remaining carbon footprint;
- declare the achievement of carbon neutrality.

Source: BSI PAS 2060 Specification for the demonstration of carbon neutrality

5.8. R8 - Including GHG performance in procurement process and contracts

- To improve energy/carbon performance of organisation and reduce whole life costs
- To support the development of energy efficient and low carbon products and services
- Risks: higher (initial) costs, compliance with procurement rules

| Quick wins & short term actions | Long term actions |
|---|--|
| <ul style="list-style-type: none"> • Organise internal procurement strategy review and training on green procurement • Explore the possibility of strategic partnerships with suppliers | <ul style="list-style-type: none"> • Lobby for stricter standards on energy efficiency and carbon emissions for goods and services they procure |

Procura Manual – examples of procurement criteria

For direct bus purchases, specifications could include:

- vehicle engines must be certified as meeting the EEV standard for emissions;
- all vehicles are to be fitted with driving style meters to monitor fuel usage;
- vehicle noise emissions must not be higher than XX dB

For tendered public services, specifications could include:

- all buses used in carrying out the service must have engines meeting EURO XX standards;
- all buses used in must be fitted with driving style meters to monitor fuel usage;

Example award criteria: the contract will be awarded to the tender applicant with the highest score of points allocated according to the following scheme: Engine EURO standard 10 points, other criteria 90 points (out of 100).

Examples of contract provisions:

- the number of kilometres driven by EEV buses must be reported annually. This number must increase by 10% per annum.
- all bus drivers involved in carrying out the service must be trained on environmentally conscious driving on a regular basis to increase fuel efficiency.

An alternative approach is also proposed: for tendered services, maximum values for emissions for the fleet as a whole could also be set, getting progressively stricter through the contract period. This allows flexibility for the operator to decide how best to meet this limit.

Source: *The Procura⁺ Manual A Guide to Cost-Effective Sustainable Public Procurement, 2nd Edition, Procura and ICLEI, 2007* (see www.procuraplus.org)

Procura Manual – procuring green electricity

When procuring green electricity, the Procura Manual recommends considering:

- giving preference to non-hydro renewable energy sources, given the local environmental concerns relating to hydro schemes and the quantity of existing large hydro plants (as buying electricity from these plants would not result in additional renewable generation); and
- additionality, requiring that a proportion of the energy procured comes from new plants to further encourage the development of additional renewable energy capacity.

Example specifications:

- at least 50% of the supplied electricity must come from renewable energy sources. Guarantees of Origin must be provided by a credible independent third party that certifies the origin of the electricity and that it has not already been sold elsewhere. Such Guarantees of Origin should be issued by competent bodies designated by the Member States.
- 30% of the electricity from renewable sources must be from “new” renewable plants. Plants will be so-defined if they came into operation less than seven years before the publication of the tender. Alternatively, this condition is met if the tenderer commits to bringing into operation a new renewable energy plant within two years from the start of the contract period, leading to an overall capacity of 30% of the supplied electricity.

Example award criteria:

- 10 points out of 100 awarded for electricity from renewable sources offered above the minimum requirement;
- 5 points out of 100 awarded for electricity generated by “new” renewable plant above the minimum requirement;
- 5 points out of 100 awarded for the proportion of the renewable energy supply (non-hydro); and
- other criteria – 80 points.

Source: *The Procura⁺ Manual A Guide to Cost-Effective Sustainable Public Procurement, 2nd Edition, Procura and ICLEI, 2007* (see www.procuraplus.org)

5.9. R9 - Joint procurement of low carbon vehicles

- To support the development of energy efficient and low carbon products and services
- To reduce search and transaction costs and benefit from economies of scale
- Risks: higher (initial) costs, compliance with procurement rules, contractual issues, technology failure, higher maintenance costs

| Quick wins & short term actions | Long term actions |
|---|--|
| <ul style="list-style-type: none"> • Discuss the potential for joint procurement exercises and financial support through EU mechanisms | <ul style="list-style-type: none"> • Lobby for stricter standards on energy efficiency and carbon emissions for goods and services they procure |

Joint procurement initiatives in other sectors

In 2003, the community of Assen received the Dutch Sustainable Procurement Prize for its leading role in the **joint procurement of green electricity** by eleven municipalities and the province of Drenthe. Agreements were defined in a framework agreement with the energy supplier, complete with annual energy conservation targets and ambitions for various renewable energy projects. Through the framework, all municipalities in the province and the province itself purchased 100% green electricity, representing 45 million kWh per year. By purchasing jointly, the authorities saved €300,000 per year in energy costs and reduced administrative costs by reducing the number of invoices processed.

Local authorities in Sweden have also teamed up to jointly procure **biodiesel** for municipal fleets.

Source: LEAP toolkit (see www.leap-app-toolkit.org)

5.10. R10 - Land use planning and building regulations

- To increase public transport use, achieve higher energy efficiency and lower carbon emissions
- Risks: additional (initial) costs, impact on economic development

| Quick wins & short term actions | Long term actions |
|---|---|
| <ul style="list-style-type: none"> • Prepare for the implementation of stricter EU targets | <ul style="list-style-type: none"> • Lobby at the national/regional level to ensure that EU level targets are implemented (case studies) |

5.11. Taking the recommendations forward

Recommendations from WP4 should be incorporated into T2K partners' Action Plan to be developed as part of WP3. As noted above, some recommendations would need more urgent attention than others.

Many actions require T2K partners to lobby other organisations within the public transport sector or wider governmental institutions. This could potentially be done in conjunction with existing transport sector organisations such as the International Association for Public Transport (UITP) or the Association for European Transport (AET).

