



European Investment Bank

A renewed policy for EIB lending to the transport sector

The EIB has renewed its policy on lending to the transport sector. The new transport lending policy sets the guiding principles and selection criteria that will reinforce the Bank's contribution to this sector, in particular taking into account climate change concerns.

A RENEWED POLICY FOR EIB LENDING TO THE TRANSPORT SECTOR

1. Introduction

The first half of 2007 has seen the EU reinforce its leading role on environmental sustainability and notably with respect to climate change.

The decisions of the Spring European Council¹ are likely to have a lasting and profound impact on policy formulation, not only in the specific policy areas of energy and environment policy, but across a range of EU policies. The EU has committed itself to a 20% reduction of greenhouse gas emissions by 2020 compared to 1990, a 20% renewable energy share of overall consumption by 2020, as well as strongly supporting energy efficiency improvements. In addition, a minimum target of 10% for the share of biofuels in petrol and diesel for transport has also been set.

The Bank has been closely associated with these developments, contributing to the dialogue of the EU institutions and embracing the results of Council decisions. A first concrete result was the translation of these new developments into the Bank's energy policy. The resulting package, "Clean Energy for Europe: A reinforced EIB contribution", was approved by the Board of Governors in June².

The present document is a natural further development and in line with the Transport Council of June 2007, which agreed that it is necessary to develop a European energy strategy for transport. As in all areas of EIB activity, transport lending has been and should continue to be driven by EU policy. In the present context of heightened attention to climate change EIB is committed to a review of its lending approach in the transport sector to ensure that its support for the sector remains sustainable.

In order to reinforce the EIB's contribution to the transport sector while taking into account global warming concerns, the Board of Directors endorsed the adoption of the following guiding principles and project selection criteria on 27 September, 2007.

The annex provides a background note on global warming and transport.

2. EIB lending in the transport sector supports a range of EU policies

The Bank is a key player in financing the European transport sector. Effective transportation systems are essential to Europe's prosperity, having significant impact on economic growth, social development and the environment. Transport is an important industry in its own right and makes a major contribution to the functioning of the European economy as a whole. Mobility of goods and persons is an essential contributor of a functioning internal market and a key component of the competitiveness of European industry and services. The long-term perspective and the truly European dimension of major transport projects have made the Bank a natural financier of investments in the sector.

A number of EU policies provide the basis for the Bank's transport lending: the development of the trans-European transport networks (TENs), cohesion policy, sustainable transport development as well as support to Research Development and Innovation (RDI). In all cases the Bank's lending policy for this sector is multi-dimensional and integrates environmental concerns³ in all stages of the

¹ European Council 8/9 March 2007, Presidency conclusions.

² CG Document 07/05

³ All EIB supported projects are in line with EU environmental legislation and an assessment of a project's environmental impact and the adequacy of the envisaged mitigation measures is an integral part of EIB's due diligence.

Bank's due diligence. Moreover, the Bank supports a range of transport projects where the explicit project aim is to achieve environmentally friendly and sustainable transport systems leading to substantial reduction of emissions of CO₂ and other pollutants. Lending to such projects has steadily increased over the last years both in absolute and in relative terms. This includes lending to urban transport systems as well as projects in the field of research and development aiming at reducing exhaust gas emissions, enhancing fuel efficiency and improving safety. Furthermore, relative to the aggregate underlying investments made in the road and rail sectors, the Bank has demonstrated a clear preference towards funding projects in the railway sector.

3. A new policy context of constant change

While the range of traditional policy objectives for the Bank's lending in the transport sector remains valid, the new and complex policy context due to the need to combat global warming is evolving rapidly. The EIB will be expected to continue its effective intervention in favour of the key EU growth policies while at the same time putting its instruments at the service of combating climate change.

It is evident that the construction of a modern transport system in the 21st century requires a sophisticated combination of all available transport modes. Transport needs are met in different ways in different situations, ranging from passenger transport in local communities to the long distance hauling of industrial goods. The requirements are not the same in sparsely populated peripheral areas as they are in large urban concentrations around EU's major cities.

The challenge for EIB support to the transport sector will therefore not be to discard one or the other type of intervention, one or the other transport mode, but rather to seek to optimise the strategy for action and to strive for an appropriate mix of interventions to serve the complex set of policy objectives. The satisfaction of the future transport demand in the EU requires the combined effort of all transport modes and means⁴.

Such a fine tuned policy calibration is unlikely to be achieved by setting rigid sub sector lending targets. Instead, it will be necessary to define guiding principles for Bank intervention and to seek to develop operational selection criteria to assess efficiently whether projects meet the requirements of the multidimensional approach. The Bank will also seek to develop, inter alia, methodologies to examine in a meaningful way the greenhouse gas emissions from the projects it finances.

It should be underlined that the new policy environment will be dynamic. The Bank will welcome comments on this policy document, and the policies presented will be subject to periodic review.

4. Guiding principles and selection criteria for intervention by sector

Based on the approach outlined above, EIB transport lending will be determined in accordance with the following guiding principles:

- Mobility is essential for the free movement of people and economic growth. In this context, the EIB will pursue an approach that strives for the most efficient, most economic and most sustainable way of satisfying transport demand. This will require a mix of transport solutions, covering all modes, though carefully planned to control the negative environmental impacts of transport.
- The EIB will continue its strong commitment to the funding of TENs. The long-term nature of these investments and their essential role in achieving an efficient and cohesive Community-wide transport system continue to make them the backbone of transport investment in the EU and essential for the functioning of the internal market. The relationship between the stock of

⁴ As outlined by the European Commission's: Keep Europe moving - Sustainable mobility for our continent. Mid-term review of the European Commission's 2001 Transport White Paper. COM(2006) 314 final, 22.06.2006

infrastructure capital and greenhouse gas emissions is complex, but this does in itself not call into question this continued EU commitment to TENs.

- Funding railways, inland waterways and maritime projects (in particular Motorways of the Sea) will continue to be a priority as these are intrinsically the most promising in terms of reducing greenhouse gas emissions per transport unit. The same applies to urban transport and inter-modal hubs.
- Further emphasis will be given to RDI activities with vehicle manufacturers whatever the sector involved. This should primarily focus on ensuring energy efficiency, emissions reduction and safety enhancement.
- As with all other EIB projects and in line with the proposals adopted in the 'Clean Energy for Europe' document, the Bank will seek to identify more fully the consequences of the projects it funds in terms of energy consumption.

The following specific selection criteria are proposed:

Means of transport

Automotive sector

- Strong support for *RDI projects* in the automotive sector will continue in view of the overall role that the sector plays in the European economy. EIB support to *manufacturing* in this sector should, however, be selective and limited to projects in convergence regions, where their contribution to employment and to innovation diffusion, including through their links with the local mid-cap and SME network is important. In all cases, projects supported should be fully in line with the orientations of EU environmental and energy efficiency policies, achieving higher environmental standards and accelerating the achievement of the goal of reducing CO₂ emissions (as, for example, through the development of energy efficient smaller cars and renewably fuelled vehicles).

Trains, Ships, and Urban Transport vehicles

- In the rail, shipping, and urban transport sectors, financing the purchase of vehicles is consistent with climate change goals, as is funding the manufacture of rolling stock and ships. Development of shipping is particularly important to the Motorways of the Sea concept. RDI in these sectors also merits full support.

Airplanes

- Financing will continue to be provided for aircraft manufacturers' RDI focused on improved safety and environmental performance but will be restricted when there is no such RDI element (following the same approach as for car manufacturing financing). In view of the effectiveness of the private sector in this area, financing of aircraft purchase will be limited to exceptional circumstances when very strong value added can be demonstrated. Examples could be connections to convergence regions if air transport is essential to secure the territorial integrity of the EU and fuel efficiency is improved.

Infrastructure

Roads

- EIB policy has always required that road projects must demonstrate appropriate economic returns. Projects with high economic value (such as rehabilitation of dilapidated roads and new roads in highly-congested settings) will be given priority. Road projects with weak economic value – notably projects with excessively large increases in capacity – will be avoided.

Railways and Urban Transport, Ports, Inland Waterways and Multimodal Terminals

- Lending to sound projects in rail (including interoperability investments such as ERTMS), multimodal terminals, urban transport as well as maritime (e.g. Motorways of the Sea) and inland navigation sectors will be prioritized, even when they are neither TENs nor located in assisted areas. Efforts will be made to enhance lending to these sectors.

Airports and Air Traffic Management

- Airport projects may be supported when they demonstrate high economic value. Appraisal will therefore take into account potential future adjustments to demand including those occurring when the emission burden is carried over to consumer prices (e.g. through inclusion of airlines in the EU Emission Trading System). Particular attention will be paid to developments in Air Traffic Management, as improvements in this field can contribute not only to improved safety but also to improved efficiency and reduced environmental impact.

Background note: Global Warming and Transport

1. Background

This note reports on a review of the Bank's lending policy in the transport sector and proposes future orientations for such a policy. The review follows the adoption of the Action Plan for Energy Policy during the European Council in March 2007¹. The first reaction by the Bank was to translate these new developments into its energy policy and the resulting package, "Clean Energy for Europe: A reinforced EIB contribution", was approved by the Board of Governors in June².

Furthermore, in line with the prominent position now given to the global warming issue, the Transport Council of June 2007³ agreed that it was also necessary to develop a European energy strategy for transport. In this rapidly changing policy environment it is appropriate that the Bank has reviewed its transport policy as well.

This paper starts with an examination of the existing lending objectives of the Bank, EU policy framework for lending to the sector as well as the Bank's activities in the sector (section 2). This leads to a recommended course of action on appropriate ways for EIB to achieve a stronger focus toward projects with lower greenhouse gas (GHG) impacts (Section 3). The paper concludes with some final comments on the way forward (Section 4).

2. The Existing Framework for EIB Lending to the Transport Sector

2.1 EIB's lending objectives

The Bank is an important player in financing the European transport sector. There are good reasons for this. Effective transportation systems are essential to Europe's prosperity, having significant impact on economic growth, social development and the environment. The transport sector is an important industry in its own right and makes a major contribution to the functioning of the European economy as a whole. Mobility of goods and persons is an essential component of the competitiveness of European industry and services. The long-term perspective and the truly European dimension of major transport projects have made the Bank a natural financier.

EIB financing in this sector derives from its Statutes as well as a range of Community policies supported by specific EIB initiatives⁴. Lending presently falls under several overlapping priority objectives:

- Transport projects of common interest, namely the development of Trans-European Networks (TENs).
- Economic and social cohesion. Support to transport infrastructure and manufacturing, including the automotive sector has traditionally been a main contributor to lending for regional development.
- i2i, through support to research and development efforts in the vehicle industries.

¹ European Council 8/9 March 2007, Presidency conclusions

² CG Document 07/05

³ The Transport, Telecommunications and Energy Council meeting of 6/8 June 2007

⁴ All supported by the Board of Governors as part of the New Strategy decision in 2005

- Environment, for projects with significant environmental, energy efficiency and safety benefits i.e. supporting sustainable transport solutions.
- External mandates, which include infrastructure projects to enable private sector growth as well as the extension of TENs to neighbouring countries.

Due to the nature of the projects and the counterparts involved, the sector provides significant opportunities for controlled risk-taking and use of the Bank's Structured Finance Facility (SFF) and Risk Sharing Finance Facility (RSFF), e.g. in PPP structures (principally for roads and airports) and research-intensive enterprises.

The Bank is engaged in a continuous dialogue on EU policies with the Commission, for example, through its involvement in the TENs Committee, the CARS21 High level group or its current participation in the discussions on the Green Paper on Sustainable Urban Transport. While EIB strategic lending objectives derive from these policies, it must be recognised that they only provide a set of guiding principles. EU policies must be interpreted at a project level especially when multiple policy objectives are involved and the impact of a project is not necessarily positive in all dimensions.

2.2. EU Policy framework

A transport project may have to be considered in the light of the following EU policies:

TENs

TENs policy covers both transport and energy networks. In this note we refer to the trans-European Transport Network (TENs). Development of TENs is by far the most significant element of EU transport policy for infrastructure. It has resulted in the definition of an overall multimodal network eligible for grant support under the TENs budget,⁵ following the principle that by putting the focus of support on a well-defined set of transport links one could expect to improve interconnections (and mobility) within EU and with its neighbouring countries in the most efficient way. A number of priority axes and projects (some 30) on the TEN network have also been defined.

Economic and social cohesion

Convergence policy has a significant focus on the environment and transport sectors, each one accounting for 50% of the Cohesion Fund grant to be allocated under the 2007-2013 programming period.

Convergence goals will therefore continue to be an important driver of EIB lending to the transport sector. Roads play a particularly significant role in the regional development context since they are often seen as a key component of efforts to spread the benefits of economic development. Hence the Bank is involved in the financing of secondary road networks, be it for rehabilitation, upgrade or capacity expansion, outside of the TENs network in eligible areas. This activity may be expanded further under the current EU financial perspective.

In addition, the automotive industry – automobile makers and parts suppliers alike – is an important force for economic convergence – whether with larger companies or through Small and Medium Enterprises (SMEs) that supply components and services.

The aerospace industry has also benefited from Bank financing in assisted areas in Spain and Northern Ireland, bringing highly skilled jobs and new technologies to SMEs.

⁵ The TEN network covers some 90,000 km of road network, a similar length of rail track, together with most major ports and airports and their connecting infrastructure.

However, it is notable that few of the EIB's transport projects serve only a convergence objective. Just some 10% of projects fall in this category (for both infrastructure and automotive manufacture), and the vast majority of projects also meet other objectives (such as TENs or the support for RDI and i2i).

Lisbon Strategy

The Bank has been called upon to support the Lisbon agenda, which aims to make Europe the most competitive and dynamic knowledge-based economy in the world. i2i is the EIB's main contribution to the Lisbon Strategy.

The automotive and aircraft industries are major drivers of new technologies and the diffusion of innovations throughout the economy (such as materials, electronics nanotechnology, fuel cells, etc.). Automotive is one of Europe's internationally leading industries mainly because of its innovation capacity, notably in safety and diesel engine technology. In absolute figures, the automotive sector is Europe's largest investor in R&D, spending some EUR 30 billion yearly in the EU. The automotive industry invested 4.5% of turnover on R&D in 2005, compared to the European average for all industrial sectors of 2.5%. Apart from being an active lender to this industry the Bank has also participated in a range of European Technology Platforms related to transport and in associated bodies.

EIB financing for the aircraft manufacturing industry has been more modest than to the automotive sector, though with significant RDI content.

Transport policies

In 2001, the EC issued a White Paper on transport⁶ supporting, inter alia, a shift of investment away from the more environmentally damaging modes of transport towards more friendly ones, essentially toward rail and shipping. This was based on a concept of "decoupling" of economic growth from growth in transport volumes.

But a few years later, a review of the White Paper concluded (in a communication published in 2006⁷) that the concept of decoupling could only be realistically applied between economic growth and the *negative effects* of transport, i.e. continued growth of transport volumes should be expected for economic development, but with improved environmental performance. Along with this fundamental change of perspective, the vision moved toward that of a transport system making efficient use of all transport modes, particularly from the point of view of environmental impacts.

EU transport policy also includes a large number of regulations and actions not directly related to infrastructure investment. Some indirectly influence modal choices due to their impact on the quality of transport services (such as liberalisation and interoperability, notably ERTMS, in the railways) or by regulating the costs to users (such as rules on infrastructure charging). Others, such as vehicle emission and safety standards, have a more direct influence on energy consumption and on the environment.

Environmental policies

EU environmental policies aim at two different but interrelated objectives: (i) providing support to projects and programmes that promote environmental protection; and, (ii) ensuring that projects that support other EU policy objectives respect the environmental policies and their potential negative

⁶ European Commission: White Paper — European Transport Policy for 2010: Time to Decide, COM (2001) 370, 12.09.2001.

⁷ European Commission: Keep Europe moving - Sustainable mobility for our continent. Mid-term review of the European Commission's 2001 Transport White Paper. COM(2006) 314 final, 22.06.2006.

environmental impact is duly assessed and properly mitigated. In the context of the present review, the second set of policies is the more relevant. These policies have a significant influence on projects in the transport sector, principally through the Environmental Impact Assessment (EIA), Strategic Environmental Assessment (SEA) and Natura 2000 framework, but also through thematic policy orientations (e.g. on environment and health, since transport choices have a significant impact on health). While the EIA is more directly focused on the local impacts of projects, in many countries the analysis also includes an assessment of impacts on fuel consumption and emissions of various pollutants. Furthermore, as the SEA Directive progressively starts producing results, it is expected that infrastructure planning should better integrate overall intermodal trade-offs in the environmental field.

Recently, environmental and energy considerations have moved to the top of the European policy agenda. The European Council of 8/9 March 2007 adopted an Action Plan committing EU to achieve at least a 20% reduction of GHG emissions by 2020 compared to 1990, endorsing at the same time a binding minimum target of 10% for the share of biofuels in the petrol and diesel transport fuel pool. The Council meeting of 6/8 June 2007 on Transport, Telecommunications and Energy followed up with conclusions on a European energy strategy for transport, considering both the issue of securing energy supplies for a critical sector for European growth, and the environmental constraints which the sector must respect. The underlying challenges are also seen as an opportunity for the development of new technologies.

Transport must be included in the global warming debate given the significant contribution the sector makes to the problem. As illustrated below, transport is responsible for roughly 20% of total GHG emissions in the EU⁸.

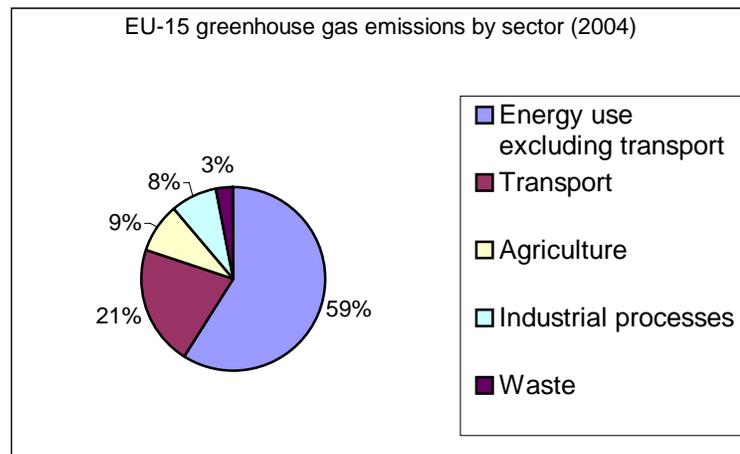


Figure 1: The role of transport as a producer of greenhouse gases

Within this total, road transport accounts for the overwhelming majority of GHG emissions. In total, the figure below shows that more than 90 percent of greenhouse gases come from cars and trucks. Other sectors only contribute between 1 percent (for rail and maritime) and 3 percent (for aviation). This clearly points to the need to pay particular attention to policies relating to roads and the automotive sector.

⁸ Data from the European Environmental Agency – figures exclude the international aviation and maritime sectors.

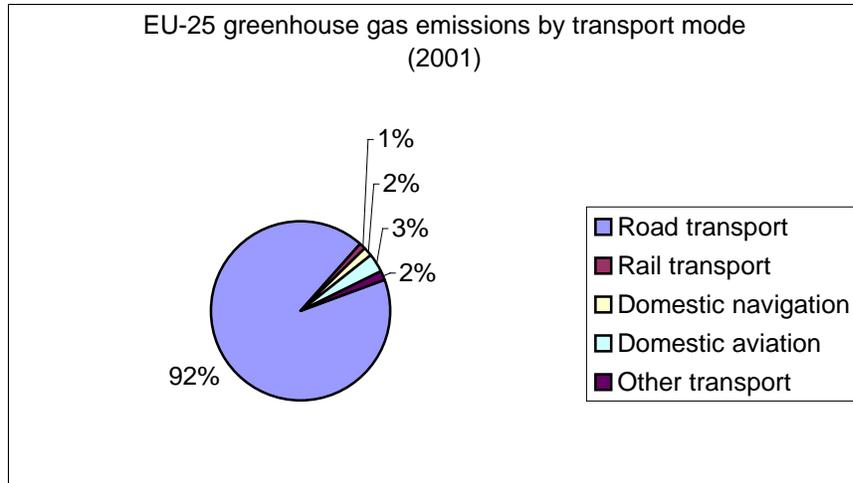


Figure 2: The importance of road transport as a producer of greenhouse gases

Indeed, the increased awareness of global warming issues shifts the spotlight back to questions of intermodal choice, because of the differences in average unit emissions per passenger-km or per tonne-km between modes of transport. It is well documented that air transport is on average the most emission-intensive mode, followed by road, while rail and sea generate the lowest greenhouse gases per transport unit.

This being said, it is important to note that the range within each mode is large and depends highly on length of trip (especially for air due to high emissions during take-off, which weighs heavily on the performance of short-haul aviation), vehicle technology, operating conditions (e.g. speeds, presence of congestion, etc) and load factors. Moreover, where electrical energy is used, the fuel mix of electricity production becomes highly relevant. Figure 3 gives an idea of the range of variation of carbon emissions of various passenger transport modes.

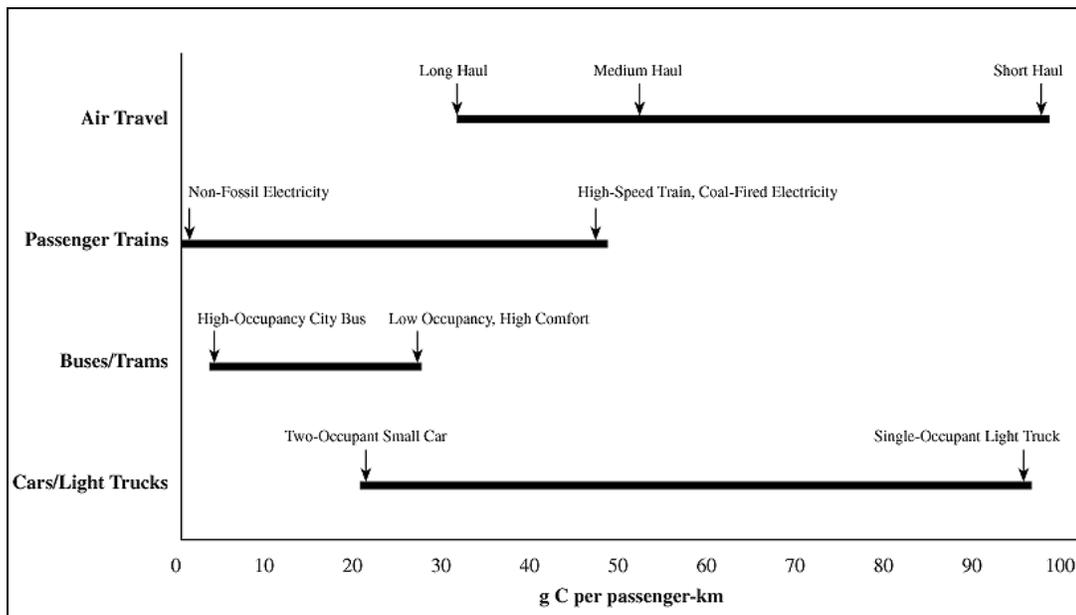


Figure 3: The carbon emissions of passenger transport (IPCC, 1999)

The general conclusions that emerge from an analysis of current emission intensities are:

- Rail and bus/coach passenger services generally have a better environmental performance than their competitors, especially in an urban setting. Of course there are also examples of inefficient rail services with low load factors, especially off-peak, which may compare negatively to cars.
- For long trips (above 1,000 km), the performance of air travel increases in comparison with car, and could even compare favourably with high-speed rail depending on the energy mix for electricity generation in the rail comparator.
- For freight, estimates vary (see the figures in table 1), but all point to similar qualitative conclusions. In particular, the advantage of rail and short-sea shipping over road is clear-cut from the GHG point of view, even on a 'door-to-door' basis involving mixtures of road and rail/water

Aside from the goal of developing biofuels, the EC Action Plan to achieve GHG targets focuses principally on including aviation in the Emission Trading System (ETS) and on reducing road vehicle emissions (through fuel efficiency and fuel substitution), with additional suggestions for infrastructure and congestion charging, and the promotion of railways, short sea shipping and maritime transport.

Table 1: CO₂ Emissions of Freight Transport (g/t-km)

	EC (1999)	EEA (2003)	TREMOVE (2005)	UA (2007)
Road	98	123	58-78	120
Rail	28	22	34	25
Inland waterways		30	44	30
Short Sea Shipping	15	14		15

Sources:

EC (1999); Presentation in Communication from Commission: Development of Short Sea Shipping in Europe (1999); Annex II prepared by Technical University of Denmark and Aristotle University, Greece.

EEA (2003); European Environment Agency, Transport and Environment Reporting Mechanism (TERM).

UA (2007); University of Antwerp, presentation to Climate Change Conference.

TREMOVE (2005); European Commission-funded research model.

The EU regulates the automotive sector through environmental emission and safety legislation.⁹ Important upcoming legislation is the "Euro 5" and "Euro 6" that regulates emissions from light vehicles, and the "Euro VI"¹⁰ that regulates emissions from heavy-duty vehicles. These address pollutants such as NOx, particulates, and CO, but not greenhouse gases. However, the Commission has recently sent a proposal to the Council and the Parliament that aims at legislation to limit the

⁹ <http://ec.europa.eu/enterprise/automotive/pagesbackground/regulatoryframework.htm>

¹⁰ The Arab numbers refer to light vehicle emission standards; Roman numbers refer to the heavy-duty equivalents.

average CO₂ emissions from the European light vehicle fleet from 140 g/km targeted for 2008 to 120 g/km by 2012 through a combination of technology, use of biofuels, etc.¹¹

In the aviation sector, the issue has been to find ways to ensure that the external costs of GHG emissions are internalised into voyagers' decisions. Of course fuel efficiency is an essential parameter in the profitability of operations in aviation, and the sector has a long history of continuously strengthened emission regulations through ICAO. But contrary to other transport modes, aviation fuel is presently tax-exempt. One option would have been to attempt to impose minimum taxation levels, but this might have simply given an incentive for operators to purchase fuel outside of the EU. The strategic choice has therefore been to promote inclusion of the sector in the Emissions Trading System (ETS). This choice has been upheld by the conclusions of the Transport Council meeting of June 6/8 2007, which suggest orientations for further discussions with ICAO on this topic, since the enforceability of a regional solution on non-EU carriers is not yet entirely clear.

2.3. EIB lending

The priorities in the Bank's Corporate Operational Plan (COP) have reflected the above policy considerations. As already mentioned the Bank is a key player in financing the European transport sector, and has lent more than EUR 120 billion to the sector over the past decade.¹² Apart from Member States themselves, EIB is the largest financier of TEN-T projects.

The contribution to the fulfilment of convergence objectives is also significant. Between 2000 and 2006 almost 70% of EIB's transport lending (or some EUR 50 bn) was located in cohesion areas. In addition, the sector contributed about one-quarter of the lending towards the Bank's i2i objective (via automotive projects).

Furthermore, the Bank is already supporting a range of transport projects where the explicit project aim is to achieve environment friendly and sustainable transport systems leading to substantial reduction of CO₂ emissions. Lending to such projects has steadily increased over the last years both in absolute and in relative terms. This includes lending to rail projects (both inter-urban and urban transport systems) as well as strong support to research and development projects aimed at reducing exhaust gas emissions and enhancing fuel efficiency. Indeed, relative to the aggregate underlying investments made in the road and rail sectors, the Bank has demonstrated a clear preference towards funding projects in the railway sector¹³.

Although the Bank has managed to increase its share of support to environmentally friendly transport in the past, the combination of investment trends in the Member States and the financial (or regulatory) situation of potential counterparts would tend to maintain a strong share of support to

¹¹ The 120 g/km target is to be met through a combination of technical improvements to vehicles (to 130 g/km) and the use of biofuels (Communication from the Commission to the Council and the European Parliament, Results of the review of the Community Strategy to reduce CO₂ emissions from passenger cars and light-commercial vehicles).

¹² Out of the total of some EUR 106 bn loan signatures for transport infrastructure and vehicle purchase in 1996-2006, 45% were for rail and urban transport – 26% for rail (both infrastructure and rolling stock) and 19% for urban transport – 36% were for road investments, 15% for airports, aircraft, and air traffic management systems, leaving 4% for maritime transport (ports and vessels). In the same period, the Bank financed EUR 15 bn of automotive projects. A notable trend since the introduction of i2i has been a significant shift away from manufacturing towards RDI projects, and in 2006 these corresponded to almost 90% of the total. .

¹³ The road/rail modal split of investments over 1995-2004 in ten of the EU-15 countries (chosen based upon data availability) was 65%/35% (this refers strictly to heavy/inter-urban rail, and excludes urban transport). The equivalent ratio within EIB signatures in the EU-15 countries over the same period was 52%/48%, pointing to the existence of a "preference" in EIB lending toward rail projects in comparison to road projects. Focusing on the NMS of Central and Eastern Europe, the overall road/rail modal split of investments over 1995-2004 of 78%/22% was closely reflected by the split of EIB signatures in those countries of 80%/20%.

roads in the future¹⁴. Similarly, it would appear that lending to airport projects and aircraft purchases could potentially increase along with the growth of the industry unless the Bank reviews its lending criteria.

Moreover, while the overall trend is reassuring, there is some volatility in the composition of annual lending figures from year to year. For example, 2006 has shown a significant rise in the share of roads in the lending portfolio, correlated with a drop in urban transport lending. This volatility can arise due to the presence of a small number of very large projects. It can also be due to changes in national support measures in favour of certain types of project (such as investments by municipalities in public transport schemes) as these may have a significant impact on the underlying volume of investment that takes place. While such volatility may be inevitable, it does point to the need for measures to ensure that lending reverts to long-term trends and that these trends are moving in the right direction.

In conclusion, the range of traditional policy objectives underlying Bank lending in the transport sector remain valid. However, the new and complex policy context carried by the need to combat global warming does suggest that the EIB should adjust its transport lending strategy.

3. The Renewed Policy Response

As pointed out in the European Commission's latest transport policy paper¹⁵ the European transport system requires a combination of all available transport modes to meet future demand. Transport needs are met in different ways in different situations, ranging from passenger transport in local communities to the long distance hauling of industrial goods. The requirements are not the same in sparsely populated peripheral areas as in large urban concentrations in and around EU's major cities. The challenge for the lending policy in the transport sector will therefore not be to discard one or the other transport mode but rather to seek to optimise the strategy for interventions to contribute to an efficient, economic and sustainable way of satisfying future demand.

3.1 Policy responses for Infrastructure Projects

3.1.1 Road versus rail

While rail is a close substitute to road for some journeys, this is not always the case particularly in areas with difficult topography or where demand patterns do not provide sufficient volumes and distance. In addition, the general mobility provided by roads has a high economic value. Because of the benefits, demand is likely to be relatively unaffected by the additional costs implied by GHG. Furthermore, with the notable exception of projects significantly promoting the shift of freight from road to rail, the inclusion of shadow costs of CO₂ in transport projects may only bring marginal changes to estimates of the economic profitability of a particular project. In the case of freight, the inclusion of CO₂ shadow costs might have an impact as the value of time for freight is lower; externalities are higher and the overall project costs tend to be lower.

However, it is safe to conclude that most of the gains in energy efficiency in the transport sector are likely to come from improvements in vehicle emissions rather than from large reductions in demand or massive modal shift – at least in the medium-term. In the longer run, assuming the full internalisation of environmental costs, location decisions (e.g. away from suburban sprawl) and demand patterns (e.g. away from purchasing goods produced in distant locations) could evolve slowly in a direction

¹⁴ Note that PPPs have tended to be much more frequent for road and airport projects than for rail. This is likely to continue given the dominant role of incumbent railway operators and difficulties of systems integration at the project level. Formal assessment of Value-for-Money considerations would be helpful in judging the appropriate role of PPPs across sectors.

¹⁵ European Commission: Keep Europe moving - Sustainable mobility for our continent. Mid-term review of the European Commission's 2001 Transport White Paper. COM (2006) 314 final, 22.06.2006.

that would reduce the demand for mobility and orient it toward public transport. However, that is not the vision underpinning EU transport policy at present, which is more directly focused on facilitating increased mobility in order to promote trade, integration, and economic growth.

New roads can provide a range of benefits such as greater safety and improved urban environments if traffic is diverted away from city centres. In terms of GHG emissions, changing the infrastructure stock can also have complex results due to the impact on the balance of vehicle usage, distance travelled, and average speeds. For example, in some cases an increase in capacity on a congested road could still be neutral in terms of GHG emissions even taking into account an increase in demand due to the new capacity (generated traffic) – because GHG emissions tend to increase in presence of congestion. If distances travelled are reduced, GHG emission might even fall in some circumstances. Other examples of road projects with positive environmental impacts could be found in the field of Intelligent Transport Systems (ITS). Conversely, an effort to increase speeds on a railway line with no significant potential for modal shift from air or road may well reduce energy efficiency and, ultimately, increase GHG emissions.

It is also the case that infrastructure requires long lead times to prepare projects including proper environmental assessment at the local level (via EIA/SEA), and the economic life is also very long. A road built today will still be available for the zero-emission car of 2030. Provided there is a strategy to improve vehicle efficiency, including the development of biofuels, it is not clear what additional benefits would be generated by allowing severe congestion problems to develop in the meantime. Indeed – as mentioned above – road congestion can be an environmentally costly way to try to reduce traffic volumes.

Rigorous economic analysis is required at the project level and this is especially important for roads given the existence of environmental externalities. Projects with high rates of return, such as rehabilitation works, should be high on the list of priorities, especially in countries where a large part of the road network has become dilapidated due to inadequate maintenance in the past. Road projects with weak economic viability – such as over-sized new construction – should be avoided.

At the same time, the Bank should attempt to document more fully the consequences that its projects have in terms of green house gases. Some projects might formally be registered as “energy efficiency” projects, most likely for urban public transport and rail freight projects.

3.1.2. Airports

Much of the discussion of roads above can be transposed to airports. Development of airports brings benefits due to improved safety and reduced congestion as well as time savings for travellers. Air Traffic Control (ATC) investments may also provide opportunities to improve traffic management with positive side-effects on GHG emissions, an area which the Bank should follow closely due to the important developments in the SESAR (Single European Sky ATM Research Programme) system. Indeed, the recent report of the High Level Group for the Future European Aviation Regulatory Framework has noted the need to improve performance and the environmental benefits this could bring. In this context, Eurocontrol has calculated that current *en route* emissions could be reduced by 6% by optimising flight efficiency¹⁶.

The economic life of airport investments is measured in decades, encouraging a long-term view of technological developments.

Steady improvement in energy efficiency of air travel is expected and there is no doubt that the important economic role of air travel can only increase with time. Once airlines are included under the ETS, the cost of carbon will be included in decision-making. The current expectation is that the directive bringing aviation under the ETS will be effective from 2012 onwards.

¹⁶ “European Aviation: A framework for driving performance” report of the High Level Group for the Future European Aviation Regulatory Framework, July 2007.

With the internalisation of GHG emission costs in air transport, that cost is likely to be passed on to end consumers with knock-on effects on their demand. The extent of this impact on demand is directly related to the level of carbon pricing. Initial calculations performed by the Bank suggest that based on reasonable carbon pricing, long-term demand for air travel could fall about 10% below the levels forecast in a situation without emission trading.

The Bank should ensure that the assessment of aviation projects takes these long-term demand effects into consideration, in order to test the robustness of proposed investments to likely future pricing of GHG emissions.

3.1.3 Railways, inland waterways, ports, and multimodal terminals.

As these are more environmentally “friendly” sectors from the point of view of GHG emissions -- provided investments are well justified in terms of meeting demand, both quantitatively and qualitatively (e.g. appropriate speed) – they will not be discussed in detail. Indeed, the “Motorways of the Sea” concept has the explicit goal of moving freight from the road to short-sea shipping and ferries. This requires the development of both port infrastructure and shipping fleets.

Nevertheless, there is scope to further improve energy efficiency and the resulting emission of GHG by the use of best available technology and by ensuring that investments are well tailored to demand within efficiently managed transport systems. In this context, it is worth mentioning the critical role of the logistics industry, which is highly competitive and responsive to price signals and changes in the regulatory environment. Clearly, projects to support the general market position of these sectors (such as interoperability in the railways through the adoption of ERTMS) should be supported.

As for other transport sub-sectors, energy efficiency considerations will be mainstreamed into the assessment of project quality. It is likely that some projects could be demonstrated to bring about significant energy efficiency improvements and could benefit from an increase in loan amounts (to 75% of project costs in appropriate cases).

3.1.4 Summary points

The above discussion has identified two guiding principles for EIB involvement in projects:

- The need for a continued commitment to the development of TENs.
- Priority shall continue to be given to environmentally friendly modes of transport.

Within these broad goals, a number of selection criteria are proposed:

- Support will continue for economically sound road investments. However, projects with weak economic viability – such as over-sized new construction – should be avoided.
- Lending to sound projects in rail and maritime/inland navigation projects throughout the EU should be a priority, even when they are neither TENs nor located in assisted areas.
- Airports will continue to receive support especially when investments improve both efficiency and safety. However, economic assessment of airport projects will have to verify that the result is robust to the reductions in demand for air travel that may follow the internalisation of emission costs, e.g. through the introduction of an ETS.
- The potential for ATC investment will be explored, as substantial investments for the “Single European Sky” are expected in the coming years.

3.2 Policy responses for vehicle manufacture and purchase

3.2.1 Automobiles and trucks

Even though EIB lending to the automotive industry is already principally oriented toward supporting i2i objectives and improving the environmental and safety characteristics of vehicles, there is scope to focus further on technologies and vehicles supporting EU targets for fuel efficiency, emissions and safety.

Improved vehicle technology is likely to play an important role in managing the carbon emissions from the road sub-sector. All efforts to develop technologies aimed at reducing emissions and improving safety (including alternative fuels, more environmentally friendly engine technology) and the associated vehicles should receive maximum support. It follows that the Bank should continue to finance the RDI activities of the automotive sector. The support of biofuel projects would be an important parallel activity, notably as 2nd generation technologies emerge.

As targets for automotive CO₂ emissions are going to be hard to meet, the EIB's support to manufacturing in this sector should be limited to convergence regions where it can contribute to employment, innovation diffusion and local industry. Projects should be clearly in line with the orientations of EU environmental policy, notably the rapid achievement of the goal of reducing CO₂ emissions, which will result in financing production facilities for energy efficient vehicles, such as small passenger cars and cars using renewable fuels.

When pollution is global, policies restricting emission in one location will be ineffective if they simply lead to the relocation of the business to more lenient regulatory environments. This means the same approach should be adopted both within and outside the EU.

3.2.2 The aeronautical sector

Although aviation only contributes some 3% of global GHG emissions, there are reasons for concern: the sector faces strong growth rates in demand, coupled with the lack of alternative low-emission technologies for the foreseeable future. Therefore, the share of global emissions from aircraft might double during the next couple of decades.

Moreover, the perceived poor performance of aviation, due mostly to the poor performance of short-haul aviation in comparison to other modes in terms of GHG emissions, has created an image problem for the industry. The image problem is compounded by the fact that fuels are not taxed¹⁷ and flight is not yet included in the Emission Trading System (ETS). The environmental implications of air travel are borne neither by airlines nor their passengers.

Fuel costs are significant for airlines, and as a result manufacturers have paid great attention to the efficiency of their aircraft. Modern aircraft are 70% more fuel efficient than 40 years ago and continuous RDI has reduced specific fuel burn at an average rate of 2% per annum over the last 10 years. It will be essential to continue this trend through the development of new technologies and materials for engine and airframe design and to encourage the incorporation of these advanced technologies in new models.

The industry's aim is to reduce fuel burn by another 25% by 2020. The development of alternative fuels and propulsion technologies (biofuels, synthetic fuel blends, hydrogen fuel cells) could provide additional improvements in the longer term. As mentioned, enhancements in Air Traffic Management could further reduce CO₂ emissions through improved traffic flows and reduced holding times.

In order to have improved aircraft for the future, RDI that reduces GHG emissions (such as new materials, improved engine design) should continue to receive financing from the Bank. Aircraft

¹⁷ The aviation industry does however pay direct infrastructure charges, in the form of airport taxes for example.

manufacture with no RDI component could be considered in line with the approach to the automotive sector.

As regards fleet purchase, the Bank has already a highly selective approach and it would seem appropriate to reinforce this in the future. Aircraft purchase will only be financed in exceptional circumstances when very strong value added can be demonstrated. Examples could occur with connections that are not only to convergence regions but where air flight is essential to secure the territorial integrity of the EU (e.g. flights to remote areas such as islands, rescue or firefighting planes, etc). In addition, aircraft purchases should normally involve a significant increase of fuel efficiency over existing fleets. Outside the EU a similar logic applies, and fleet expansion by flag carriers should not be financed.

3.2.3 Other vehicles

Support for the purchase of trains and ships is compatible with reducing carbon emissions, as long as the investments are made as an efficient response to transport demand so that vehicles operate with adequate load factors. The development of shipping is particularly important to the Motorways of the Sea concept. In the rail and maritime sectors there may also be potential to support RDI spending. The Bank should monitor the activity of the relevant European technology platforms closely to identify potential areas of support. Manufacturing of rolling stock for the rail sector is a significant industry in several New Member States, which might also create opportunities for Bank support under Convergence objectives.

Shipping, while efficient in terms of greenhouse gases, is responsible for other pollutants since the burning of low grade fuel oil in marine diesel engines also produces sulphur oxide and nitrogen oxide. These emissions are controlled by IMO marine environment protocols and equivalent EU directives. To ensure proper management of these pollutants as well as risks of oil spills, the Bank will pay special attention that the ships it finances use best available technologies and that promoters use sound environmental management practices.

3.2.4. Summary points

The analysis points to the principle of continued support for RDI activities with vehicle manufacturers whatever the sector involved. Beyond these activities, additional selection criteria have been adopted:

- RDI projects will be focused on ensuring energy efficiency, emission reduction and safety enhancement.
- Support to the manufacturing in this sector will be more selective. For automotive, projects will be limited to assisted areas where the contribution to the Convergence objective can be clearly demonstrated, and the projects supported should be clearly in line with the orientations of EU environmental policy, notably the rapid achievement of the goal of reducing CO₂ emissions, e.g. the production of energy efficient vehicles such as small cars. Similar considerations apply to aerospace.
- Financing of aircraft purchase will be limited to exceptional cases of very strong value added, such as might occur with connections to convergence regions where air transport is essential to secure the territorial integrity of the EU. Improved fuel efficiency will also be of paramount concern.

4. Concluding comments

EIB transport lending has been and should continue to be driven by EU policy. In the present context of heightened attention to climate change, and other environmental impacts of transport, the possible contradictions between environmental targets and support to transport through both transport policy and convergence objectives are likely to be further debated. In the meantime, EIB has to develop its own transport lending strategy.

The new transport lending strategy must ensure that the Bank continues its effective intervention in favour of the key EU growth policies while at the same time responding to the new climate change policy. This will require a multidimensional approach, which is unlikely to be achieved by setting rigid sub-sector lending targets. Instead it is necessary to define basic guiding principles for Bank interventions as well as set out operational selection criteria that establish priority between projects for the individual sectors. This paper has identified a set of such criteria.

In addition, from a methodological point of view the Bank intends to examine ways of assessing the GHG emissions resulting from the projects it finances. It will seek to document more fully the consequences that such projects have in terms of energy consumption as foreseen in the “Clean Energy for Europe” paper