This document is submitted for discussion under item 3, “Modal Shift” of the draft agenda of the Bucharest session of the Council of Ministers.

Ministers are invited to discuss the key instruments that must be included in packages of measures to promote a sustainable balance between inland transport modes and to identify where they believe international coherence between the measures adopted is most important.
SUMMARY

During debate at the 2000 Council, Ministers identified shifting freight from road to rail as a key part of their strategies for developing more sustainable systems of transport.

Achieving a shift to non-road modes in a manner that is efficient, compatible with the development of open market economies and which contributes effectively to the social, economic and environmental goals of sustainable development will not be easy. It will require major investments in railways, significant improvements in the quality and productivity of rail and inland shipping services and liberalisation in freight transport markets. It will also require effective implementation of more efficient and equitable regulatory frameworks particularly in respect of charges for the use of transport infrastructure and the social working conditions that prevail in transport.

The full implications are explored below together with the package of measures likely to be required. It is argued that only a comprehensive approach, that omits none of the main measures (measures 1 to 10), is likely to succeed.

The infrastructure investments needed will be funded largely from public resources. The social, environmental and financial returns on these investments are critically dependent on coherence between the regulatory frameworks developed for each mode of transport. A relatively predictable path for changes in the pricing, safety and social working conditions prevalent in each mode is essential. Without this coherence there are significant risks of investing large amounts of public money to no tangible effect.

A massive and generalised shift from road to other modes is not anticipated. Road transport is frequently the most efficient, and in some situations the only1, mode for the freight transport tasks demanded by trade in Europe for the foreseeable future. This implies that improvements in the environmental performance of road vehicles and in the quality of road infrastructure are important to sustainable development. But it does not undermine the significance of the environmental gains that can be achieved by creating efficient regulatory frameworks to enable non-road modes to compete successfully in the freight markets they are best suited to serve.

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DEVELOPING A SUSTAINABLE BALANCE BETWEEN SUBSTITUTABLE MODES OF
FREIGHT TRANSPORT

CONTEXT

All ECMT Member Governments seek to maintain or to develop a sustainable balance between substitutable modes of transport in both passenger and freight markets. More particularly, many are concerned to ensure that the full potential for rail, inland waterways and short sea shipping to absorb part of the projected growth in freight transport is realised.

A number of Governments have recently set ambitions targets for rail traffic to absorb road traffic growth. For example:

- French policy foresees a doubling of freight traffic on the railways and on the waterways over the period 1998 to 2010.
- German policy foresees a doubling of rail freight traffic between 1997 and 2015.
- The UK 10 year plan\[^2\] foresees an increase in the modal share of rail in freight transport from 7% to 10% between 2000 and 2010, representing an 80% increase in rail freight traffic.
- Between 2000 and around 2009 Switzerland plans to halve the number of truck trips through the Swiss Alps instead of seeing road traffic grow 50% as forecast in the absence of measures to promote modal shift.
- The European Commission outlines measures in its 2001 transport white paper\[^3\] intended to arrest the decline in the modal shares of non road modes and return to the 1998 modal split by 2010 as part of the European Union's strategy for integrating the environment and sustainable mobility in to Community transport policy\[^4\].

Concern to shift traffic off the roads is driven by the rapid traffic growth of recent decades, particularly for road freight, and by the growth still forecast to come. There is widespread public concern with congestion on the roads (even if this is partly the result of unrealistic expectations that free flow conditions should be the norm). The noise and nuisance impacts of trucks are of acute concern to local populations on heavily used routes, particularly in sensitive areas such as mountain valleys. A series of recent accidents caused by trucks in Alpine tunnels have exacerbated these concerns, as well as concern for safety, in this key region for European trade.

In the Alps, rail and combined transport are often, although not always, the only feasible substitute for transport by road. Elsewhere coastal shipping and inland waterways may be a preferred alternative in terms of environmental impact, where geography permits. There is in any case no universal hierarchy as to which mode has the lowest environmental impact. Load factors, operating efficiency, engine technology, fuel quality and respect of emissions standards and maintenance requirements are all important in determining the relative performance of each mode in practice. Assessment of exactly how reductions in congestion, accidents and environmental impacts will be delivered should therefore underpin any intervention by public authorities to promote modal shift.

At the same time, very significant differences in national circumstances between ECMT Member countries must be acknowledged. Congestion is not apparent in freight transport outside urban areas in many peripheral regions. Some Member countries already enjoy a high share of alternatives to road transport in the modal split and expect to maintain a sustainable balance with measures already in place\[^5\]. In some cases road alternatives are also associated with significant air pollutant emissions and noise nuisance.
TARGETING MODAL SHIFT

Figures 1 and 2 show the evolution of freight transport in ECMT regions in both absolute terms and in terms of modal split. It should first be noted that even doubling the quantity of freight carried on the railways over the next decade would only match a small part of the growth projected in road freight.

The interdependence of the measures required to provide a framework for achieving modal shift, discussed below, should make it clear that any goal stated by Governments in terms of a specific modal split to be achieved over a certain period of time is not an operational target but only a simple way of communicating the overall direction of transport policy.

Figure 1. Freight Transport Trends in ECMT Member Countries - tkm index

Source: ECMT database.
Operational indicators for assessing progress towards sustainable transport systems might include emissions of pollutants and other environmental impacts in relation to traffic or transport volumes, as developed by the OECD and illustrated in figure 3, and might also include the volume of truck movements through sensitive locations. An indicator of progress towards establishing more efficient systems of taxes and charges for the use of roads by freight vehicles, as set out in Resolution 2000/3 on Charges and Taxes in Transport, could also be relevant.

At an aggregate level, estimates of environmental impacts in relation to the carrying capacity of the environment, locally and globally, would be the most relevant indicators. As a substitute the ratio of environmental impacts in monetary terms to the social and economic value of specific transport services could be used. Ratios of transport volume to GDP are sometimes employed to discuss “decoupling” of transport and economic growth, but it should be noted that they make no distinction between the benefits that transport provides and the environmental costs it engenders. It should be recalled that the objective of sustainability is not to limit transport services but to optimise environmental, social and economic performance simultaneously.

Some governments view the current modal split as so far removed from the optimum that they employ ton-km transported by mode as a broad indicator to monitor progress towards sustainable development. In general, however, ton-km by mode is not, on its own, a good indicator of progress towards sustainable development, not least because it could be used to encourage rail traffic regardless of financial sustainability, economic return on investment or environmental impact. Moreover, rail, inland and short sea shipping can not substitute for road in many markets. Two thirds of tonnes transported by road in the European Union travel less than 50 km and, especially where delivery points are dispersed, non-road modes are not able to carry many of the movements concerned. Care must therefore be taken not to confuse modal split with market share. Modal split is an extremely aggregate concept whilst market share is only meaningful at a highly disaggregate level where there is potential competition between transport services for the same business.
A generalised transfer of traffic off the roads onto other modes is neither possible nor necessarily cost effective. It is therefore important to target carefully the large investments required, in order to achieve the reductions in nuisance, congestion and environmental emissions that are the real goal behind targets expressed in terms of modal split.

The situations where the largest benefits from a modal shift might be achieved are likely to differ widely between countries, nevertheless, the biggest benefits overall are to be expected in three main situations:

- crossing mountain barriers;
- developing dedicated trunk freight corridors, where circumstances make this possible and economic assessments show positive socio-economic returns, along routes where congestion on the roads is a problem or is likely to become serious and where there is a potential to create significant increases in rail capacity;
- improving the structure or loading gauge of infrastructure serving certain ports.

Decisions on making investments aimed at changing modal split must be supported by assessments of the socio-economic return expected. This calculation must be made on the basis of the competitive conditions for road, rail and other modes in place, or on the basis of changes to these conditions planned and,
moreover, expected to be implemented with a high degree of certainty. These competitive conditions depend critically on the system of charges and taxes for infrastructure use (road, rail, ports and inland waterways), weight limits for road haulage and the level of enforcement of working time, safety and environmental regulations in the road sector, and on labour and technological productivity in the railways.

THE PACKAGE OF MEASURES REQUIRED

Review of the experience of a number of countries that have developed explicit plans for influencing modal split indicates that a comprehensive package of measures is required in order to create the conditions in which modal shift can be achieved. Many of the measures are interdependent. Failure to implement any one of the main elements in the package (measures 1 to 10) can seriously compromise the impact of all the other measures.

Unless carefully co-ordinated, changes in the regulatory and fiscal environment for one of the modes can seriously undermine achievement of plans to influence modal shift. For example, reducing the charges paid by trucks for the use of roads can have a major impact on the financial and economic returns of rail projects, and has the potential to seriously undermine the value of investments of public money in railways where this value derives from the social and environmental benefits of diverting traffic from road to rail.

Moreover, there is potential for induced traffic to influence the outcome of measures to promote modal shift, particularly where the emphasis is on improving rail services without addressing the other elements of the package. Where existing traffic is successfully transferred off congested roads to other modes, the resulting improvement in travel time and reliability is likely to attract additional traffic (cars as well as trucks) onto those roads.

At the same time efficient, quality alternatives are essential to achieving any significant transfer from road to other modes. This is reflected in the importance European governments attach to improving the financial performance of the rail sector. Most Governments will be reluctant to commit significant new funds to railways unless they can be sure that the money will be translated into the results intended. Without significantly altering the balance of the costs of producing rail and road services, little modal shift in favour of non-road modes can be expected. At the same time, successful progress in railway reform should provide the basis for increased public, and private, investment in railways.

It is also essential that the environmental performance of non-road modes improves. This particularly concerns air emissions from shipping and diesel locomotives, noise from freight trains and a range of environmental impacts from port activities. Attention needs to be given to the development of cost effective emissions and fuel quality regulations and possibly tax incentive frameworks.

The principal elements of the package of measures for promoting a modal shift from road to other modes for freight transport can be summarised as follows.

More competitive railways

1. Governments and rail companies have to create the conditions for sustained improvements in rail freight performance in terms of cost, quality and reliability of service. This is primarily a matter for the commercial policies of rail companies but Governments could facilitate:

   − creation of independent businesses within national rail companies to concentrate on freight services and free to optimise labour inputs in what is basically a capital and technology intensive industry;
– separation of freight traffic from inter-city passenger traffic on a limited number of trunk freight corridors to reduce scheduling conflicts or allow longer freight trains to be run, where this is feasible and where net social benefits are expected on the public investments required;
– interoperability by encouraging co-operation between rail companies, consistent with competition law and national policies towards the creation of competition in rail markets;
– the creation of non-discriminatory conditions for competition in rail freight markets.

**Better integrated short sea shipping**

2. **Governments should promote better integration of inland transport with short sea shipping, which requires:**

– resolving incompatibilities in the legal frameworks applicable to maritime and inland shipping that undermine the development of fluvio-maritime transport;
– simplification of customs procedures for fluvio-maritime shipping, which should be treated as inland transport;
– ensure non-discriminatory access to the sea and to inland waterways for fluvio-maritime transport and to this end accelerate the specification and adoption internationally of technical regulations for fluio-maritime vessels;
– avoid the development of intermodal transport units with dimensions that are incompatible with infrastructure for inland transport.

**Access to waterways**

3. **Governments should work towards progressive opening of inland shipping markets and to this end should:**

– harmonise the legal frameworks for inland shipping — this requires co-ordinated preparatory work in the Rhine and Danube Commissions, which Member countries should do everything possible to promote;
– seek agreements on harmonised technical and safety standards, traffic regulations and rules governing crews, and harmonised procedures for certification of licences;
– ensure the development of framework conditions for competition between railways and inland shipping that promotes complementary development of the two modes and avoids economic distortions;
– ensure uninterrupted access to waterways and uninterrupted operation of related infrastructure;
– provide training and information for the future of the profession, in order to support development of inland shipping.

**Quality road haulage**

4. **Governments must improve enforcement of regulations on road vehicle loading limits, vehicle maintenance and road safety.**

– Following the truck fire on 24 March 1999 in the Mont Blanc tunnel, pre-existing minimum safety distances between trucks were strictly applied at other French tunnels. This had the effect of sharply reducing the nominal capacity of all the tunnels. In illustration, traffic diverted from Mont Blanc increased average traffic in the Frejus tunnel to 4000 trucks a day. The long tail-backs that
developed indicated capacity was saturated even though in 1998, under prevailing operating
conditions at that time, capacity had been estimated to be 8000 trucks per day.

5. Competitive conditions must also be harmonised by determined Government action to develop
and enforce effective regimes for social working conditions in road haulage.

Planning for intermodality

6. Government must co-ordinate land use planning to ensure railheads and terminals can be
retained and developed where they can best serve freight markets, and better co-ordinate policy
towards the location of industrial, commercial and residential developments that generate major
traffic demands.
   - public money may be required to assist the development of inland waterway and rail head logistics
     centres, and notably for combined transport operations.

Investment

7. Public money has to be provided, and conditions for increased private investment created, for
major infrastructure projects designed to increase trunk freight rail infrastructure capacity and
increase productivity, subject to a positive socio-economic assessment of the benefits expected.
   - Notable examples include base tunnels through the Alps and other mountain barriers and the
     structure or loading gauge increase planned for UK bridges and tunnels on lines serving main ports
to accommodate larger containers;
   - In order to safeguard funding, improvements in rail productivity and quality of service are essential
to reassure Governments that they will see results and get value for money;
   - Funding on this scale will require robust economic assessment identifying clearly the socio-
     economic returns expected.

8. For inland waterways most efforts should be directed at improving the use and maintenance of
existing capacity. There is very little congestion on the system and the development of existing
infrastructure can show far greater returns than major new projects. However, for inland
shipping to play a larger role in international freight transport an integrated network is
required.
   - The quality of the network must improve, with better maintenance of the infrastructure and
     dredging above all, and modernisation to meet the requirements of modern shipping, providing
     sufficient headroom for the stacking of containers;
   - Improved quality also implies investments, needed for certain missing links in order to create a
     competitive international network of inland waterways;
   - Public authorities must guarantee the completion of projects once they are underway to avoid the
     exposure of transport enterprises to avoidable risks of stranded investments.

9. Investments to improve the quality of road infrastructure and where there is congestion expand
capacity to the extent efficient, where environmentally acceptable, will be essential given the
strong demand forecast for services road haulage is best adapted to deliver.
   - The efficiency of such investments must be assessed at a network as well as local level and take
     adequate account of prevailing distortions in transport charges.
Efficient charges and taxes

10. Over the longer term, a level playing field for the use by freight transport of road and rail infrastructure and inland waterways must be provided by Government through the system of charges and taxes levied on infrastructure use. In the short term, changes in rates and structures of charges that do not move in this direction should be avoided.

- Efficient use of existing infrastructure would be promoted by charges based on short run marginal social costs, including external costs, and requires a greater degree of territorial differentiation of charges than presently exists in the road sector in order to reflect costs that differ with location.
- At the same time, where there is congestion, it is important also to include some incentives for efficient development of infrastructure, i.e. reflecting capital infrastructure costs, in the charging systems adopted.

11. Earmarking of funds raised from charges on roads for investment in rail is being considered by some Governments.

- This can be useful on a limited scale, both for achieving public acceptance and overcoming shortages of public money for investment. When applied in a generalised way it requires careful design and monitoring to manage the inherent risks of economic distortion.

Subsidies

12. Some Governments see public subsidies to freight train operating costs, particularly in combined transport, as necessary, at least as a temporary measure, to achieve the scale of modal transfer sought.

- Some governments provide this support by maintaining infrastructure use charges below short run marginal costs, others target aid specifically to operations where modal transfer can be demonstrated;
- Maintaining operating subsidies over the long term will distort markets. One argument employed to justify such transfers is under-charging for the use of roads by trucks, however, this is not a long term alternative to getting the charges right as the ultimate effect would be to over-inflate demand for freight transport services as a whole and exacerbate the associated costs in terms of congestion and environmental impact.

Road use restrictions

13. Regulations limiting the use of roads by trucks exert an influence modal split although there can, in some cases, be problems of compatibility of such physical limitations with the objectives of trade policy. All aspects of the costs and benefits of such measures must be carefully considered in each case.

- An example is the ban on night time driving in Switzerland, this alters the logistical costs of moving goods, for example between Italy and northern Europe, in favour of rail and particularly combined transport.
- Restrictions on specific itineraries and limitations on truck movements for specific periods appear more acceptable than blanket restrictions such as national quotas for truck movements. Measures to re-route traffic, for example to by-pass a town or village, can also be effective in addressing localised environmental problems in some cases.
- Weekend and national holiday driving restrictions, however, require much more effective provision of information to shippers to avoid trucks being stranded at frontiers.
INTERNATIONAL POLICY AND ECMT FOLLOW UP

A number of recent multilateral agreements and policy statements address promoting a sustainable balance between the modes of transport. Chief among these are the Alpine Convention and the Common Declaration on improving road tunnel safety in the Alpine region agreed by the Austrian, French, German, Italian and Swiss Ministers of Transport in November 2001, together with the conclusions of the EU Council of Göteborg of June 2001 and the European Commission's 2001 white paper on European transport policy. International institutions can play a leadership role in catalysing change and promoting policies employed successfully by individual countries, but more fundamentally need to bring a degree of harmonisation to the approach to modal shift developed in national policies, compatible with open and efficient economies. This is important if the measures adopted are to yield their full potential, and if tensions related to trade policy are to be avoided. This concerns in particular local and national measures to reduce the nuisance from trucks in sensitive areas, notably in mountain valleys.

The work of the ECMT should in particular contribute to international policy development in improving the framework conditions for competition between the modes including the regulatory frameworks for pricing, investment, safety, social working conditions and traffic restrictions. This is fundamental to determining modal split.

The Working Groups of ECMT are preparing analysis and recommendations related to most of the key measures identified for ensuring a sustainable modal balance in freight transport:

- The Road Group is preparing new recommendations and resolutions on the quality of road haulage as well as reporting on implementation of Resolution 2001/2 on the Social Aspects of Road Transport.
- The Group on Fiscal and Financial Aspects of Transport will report to Ministers in 2003 on progress towards more efficient transport charges and taxes.
- The Transport and Environment Group will report to Ministers in 2003 on integrated transport and environment planning, and specifically on assisting decision-making through better use of assessments of the benefits and environmental impacts of transport projects and policies.
- The Railway Group will follow up implementation of the 2002 draft Resolution on development of European railways and continue to examine effective regulatory reforms for railways in all Member countries.

Work will also continue on ensuring support for rail, combined transport and inland shipping is designed in ways that are effectively co-ordinated across the modes and successfully contribute to the primary goals of making transport more efficient and reducing its environmental impacts.

ECMT will endeavour to contribute to the development of meaningful indicators of progress towards more sustainable transport systems in co-operation, notably, with the OECD.

Work should also be pursued to develop a better understanding of the factors that drive the demand for transport services.

Finally, it should not be forgotten that ensuring an appropriate balance between the modes is only part of developing more sustainable transport policies. As the joint statement of Ministers on Sustainable Transport Policies agreed at the Prague Council in 2000 concludes, "in the long term, transport ministries will increasingly see a change in emphasis in their role and will be seen less as a simple provider of transport infrastructure and more as responsible for the intelligent management of the transport system as an integrated whole."
Ministers are invited to discuss:

- the key instruments that should be included in packages of measures to promote a sustainable balance between inland transport modes;
- steps taken at a national level to ensure coherence between reforms to the regulatory framework for road transport and measures taken to promote the efficient use of other modes of freight transport;
- where they believe international coherence between the measures adopted is most important;
- and the roles ECMT can play in fostering the necessary international coherence in the measures adopted, notably in respect of planning investments with major impacts on international traffic and developing a common framework for charging for the use of transport infrastructure.

NOTES

1. Urban freight transport is one notable example, and a subject in its own right not addressed in this paper as it is the subject of ongoing work in the OECD.


4. Council report to the Helsinki European Council concerning the strategy for integrating the environment and sustainable mobility into Community transport policy, EU Bulletin 10-1999 point 1.3.77; Council resolution of 4.4.2001 concerning a strategy for integrating the environment and sustainable development into Community transport policy, press release 7587/01 of the 2340th Council meeting on transport and telecommunications.

5. In Finland for example 26% of inland freight transport is by rail and the modal split has been stable for the past 30 years.