

## International Transport Forum 2010 Transport and Innovation: Unleashing the Potential

### CASE STUDY - FRANCE

This document has been translated by the International Transport Forum from the original French text

The following information is based on a response to a survey carried out by the International Transport Forum on innovative policy initiatives within member countries, and countries' efforts to promote innovation.

**Briefly describe innovative policy initiatives that your government has succeeded in implementing in the transport sector in recent years. Please take the widest possible definition of innovation, including innovative technologies (e.g. ITS), policies, practices (e.g. new pricing mechanisms), etc.**

France's commitment and efforts in favour of sustainable development have been expanding at an unprecedented rate in recent years. 2007 marked the beginning of the Grenelle Environment Round Table process, with the opening up of a dialogue between the representatives of five key actors of society, i.e. representatives of central government, labour and management, trade union and employers' organisations, civil society associations and local and regional governments. This path-breaking consultation process initially made it possible to develop collective proposals for combating climate change and preparing the necessary adaptation measures. This "five-party governance" process is, in fact, making it possible to build networks and organise a forum for discussion among actors who seldom meet and exchange ideas.

The Expenditure Planning Law of 3 August 2009 concerning the implementation of the Grenelle Environment Round Table process, known as "Grenelle 1", was published on 5 August 2009. An entire chapter consisting of six articles (Chapter III, Articles 10-17) is devoted to transport initiatives. Chapter V, consisting of a single article (22), is devoted to research in the field of sustainable development.

#### France's innovative approach:

1. The approach used to build a shared vision of the future that takes into account the major environmental challenges: this is the method of the "Grenelle Environment" process, which has established working groups composed of different partners ("five-party governance"), a Round Table that issues many "Grenelle Commitments", operational committees to prepare their implementation, an expenditure planning law and a monitoring committee.
2. The adoption of an integrated programme through an expenditure planning law that describes the objectives that the central government has set in the field of sustainable development for the coming years.

In fact, innovation in transport is part of a more general framework of sustainable development and is based on an approach that takes into account the economic, social and environmental aspects of the various initiatives. The “Grenelle 1” Expenditure Planning Law is therefore used as a reference for all innovative initiatives, particularly in transport, whether these involve changing practices or new technologies.

### ***The Expenditure Planning Law of 3 August 2009, known as “Grenelle 1”***

France is emphasising a “multimodal approach to transport” (Art. 11, Chapter III, Grenelle 1 Law) and a “reduction of the nuisances generated by the various transport modes” (Art. 10, Chapter III, Grenelle 1 Law).

The Grenelle 1 Law defines and orients the development of innovation in transport using the following guidelines:

#### *Chapter III, Article 10:*

Given the need to behave responsibly with regard to ecological requirements, companies in the transport sector should be encouraged to improve their environmental performance.

#### *Chapter III, Article 11: goods transport*

- Priority is being given to inland waterway, rail and maritime transport, and to cabotage in particular;
- There is a special commitment to intermodality, with France supporting the development of high-volume flows of rail freight traffic, combined transport, **Rolling Road Services** and **Motorways of the Sea**;
- The establishment of **Free-Flow Tolls**, a technological innovation in the field of road freight, is a means of improving environmental performance;
- Greater use of **eco-driving**, a practice that consists of training drivers to drive in a way that limits CO<sub>2</sub> emissions and fuel consumption, is considered as an innovative practice aimed at changing individual behaviour;
- **The eco-tax on heavy goods vehicles.**

#### *Chapter III, Article 13:*

One innovative practice, supported by the central government, consists of establishing **mobility plans for firms**, government departments, schools and business areas (as part of the urban mobility plans of large urban areas). Mobility plans constitute a set of measures aimed at optimising mobility related to the activities of firms by promoting the use of transport modes other than individual cars.

The central government is supporting and promoting technological innovation aimed at reducing vehicle pollution and consumption. For example, **the development of biofuels** (from production to distribution, including transport, cf. Directive 2009/28) is contributing to French technological innovation.

## Chapter V, Article 22: research in the field of sustainable development

Research is the source of technological innovation, and the national research effort will focus in particular on the energy efficiency of vehicles and of land, maritime and air transport systems, the development of second-generation biofuels, etc.

The “Grenelle 1” Expenditure Planning Law also features a number of innovative planning policies and tools, such as:

***The National Transport Infrastructure Plan (Title 1, Combating climate change, Chapter 3, Transport, Articles 16 and 17).***

The Grenelle 1 Law provides for the establishment of a National Transport Infrastructure Plan, which sets out the central government’s lines of approach to **maintenance, modernisation and development of the networks** under its authority, to the reduction of environmental impacts and the consumption of agricultural and natural areas, and to the aid provided to regional and local governments to develop their own networks. In 2009, the development component of the Plan was prepared in consultation with the stakeholders of the Grenelle Round Table, i.e. the central government, trade unions, firms, NGOs and regional and local governments, and in particular with the Regions. The Plan is legally binding since it is specified by legislation. Beyond the construction of new transport infrastructure, it covers the use of existing infrastructure and the maintenance of the entire network to ensure reliability and safety. It also seeks to facilitate and optimise the role of the transport service authorities. The Plan is designed to make an overall assessment of consistency and impact of any project with regard to the environment and the economy before any new decision is made. It examines the priorities set, the routes selected, the alternatives to high-speed service and the key principles of financing. It also acts as a frame of reference for the central government and local authorities so that they can harmonise the respective expenditure planning of their transport infrastructure investments.

***The National Health and Environment Plan*** is also aimed at encouraging innovative transport projects by promoting the reduction of local pollution and greenhouse gas emissions (*Title III Preventing risks to the environment and health, Chapter, Article 37*). The novelty of this plan is that it **takes human health issues into account among the environmental effects of transport.**

### Examples of other innovative initiatives recently introduced in France:

#### **“Monsieur Vélo” (bicycle czar)**

The interministerial co-ordinator for the development of the use of bicycles promotes safety and co-operation among all road users while encouraging the use of bicycles. This initiative has contributed in particular to developing systems of **self-service “bike hire”** in French cities.

#### **Meeting areas**

The Decree of 30 July 2008 amending the Highway Code has introduced the concept of “meeting areas” in city centres, in which priority is given to two-wheel vehicles and to pedestrians, who will no longer be required to use pavements only, and in which vehicles are limited to a speed of 20 km/h.

## ***Charters of voluntary sustainable development commitments***

Charters of voluntary commitments between companies and the central government have been established in order to initiate or strengthen concrete initiatives aimed at going beyond legal requirements in the field of sustainable development, and for transport in particular, to reduce vehicle fuel consumption and CO<sub>2</sub> emissions.

## ***Public-Private Partnerships (PPP)***

Partnership contracts enable a government body to entrust a private firm with the overall task of financing, partly or wholly designing, building, maintaining and managing public infrastructure or facilities and of providing services that contribute to the government's public service missions. These services are provided on long-term basis in return for on-going payment by the public entity. The aim is to optimise the respective performance of the public and private sectors so as to be able to complete as rapidly and effectively as possible urgent or complex projects in the public interest, such as hospitals, schools, IT systems and infrastructure.

This new kind of contract has many advantages, such faster completion of projects through pre-financing; innovation that uses the dynamism and creativity of the private sector for the benefit of the community; an overall cost approach; a guarantee of performance over time; and optimum risk sharing between the public and private sector, each of which assumes the risks that they manage best.

**The financing of the Southern-Europe-Atlantic high-speed rail line** is being carried out through a PPP that is innovative for rail transport, a **concession**. It is the first time in France that this type of public-private partnership (PPP) has been proposed for the construction of a high-speed line. Concessions are a method of management and financing that make it possible to involve private partners and investments in the realisation of public projects. There are a number of reasons for using a concession in the railway sector:

- To accelerate the development of the national rail network by completing a larger number of projects in a shorter time; many projects are being developed at the national level and public finances are insufficient to undertake them all at the same time;
- To reduce the time required to initiate new service;
- To optimise public funds by mobilising new financial resources from the private sector;
- To use the private sector's creativity right from the design stage;
- To reduce project costs through a comprehensive approach that incorporates design, construction and maintenance, and which optimises project planning and management and logistics organisation.

## **Examples of innovation in transport technologies and concepts:**

The different types of aid to innovation developed in France in recent years have led to significant progress in the following areas:

1. The development of high-quality bus services,
2. Motorways of the sea and rolling road services,

3. Sea-inland waterway interoperability by facilitating administrative procedures and using Information and Communication Technologies,
4. Electronic ticketing and related mobility services,
5. Energy recovery in tramways,
6. On-board risk assessment and route planning tools (SIVIC),
7. A real-time speed limitation system (COSAC),
8. Ground-level power supply,
9. An automatic vehicle guidance system,
10. A tramway-on-tyres system,
11. Optimisation of highway infrastructure management through a network strategy, incorporating the *IQOA-IQRN* method,
12. Li-Ion batteries developed by the firm Saft,
13. The “microbus” developed by the firm Gruau,
14. The development of the High-Speed Train (TGV) by the SNCF and RFF,
15. StARS starter-alternator system (Valéo),
16. The development of an “eco-comparator” to evaluate the environmental impact of the life cycles of road surfaces (ECORCE - Central Laboratory of the Department of Roads and Bridges),
17. Intermediary electric transport systems on tyres: Translohr,
18. Chronocity service by Chronopost: clean goods transport in cities,
19. The methodological guide on Urban Logistic Areas (*Espaces Logistiques Urbains*) of the Programme of Research and Innovation in Land Transport (PREDIT),
20. Experiments with electric vehicles by Dassault and Heuliez.

**What initiative(s) does your country have to promote innovation in the transport sector? Are these initiatives part of a larger effort to promote innovation across the economy? Please provide any additional material you have regarding these initiatives, including web sites, reports, etc.**

- **The Grenelle Environment Round Table process and Five-Party Governance** (cf. question 1.1)
- **The “Grenelle 1” Expenditure Planning Law** (cf. question 1.1)
- **National Sustainable Development Strategy, “Transport and Sustainable Mobility” component**

As part of the EU Sustainable Development Strategy (SDS) and to update the 2003-2008 National Sustainable Development Strategy, France is preparing its 2009-2012 National Sustainable Development Strategy (SNDD). These strategy documents, which argue that the central government must play an exemplary role, set concrete and quantifiable objectives in the fields of energy, water, waste disposal, public procurement, buildings, transport and greenhouse gases. These documents are prepared by the central government in consultation with regional and local governments, representatives of business and wage-earners, and representatives of civil society, such as environmental protection associations and non-governmental organisations. The objective is to provide a frame of reference and policy outline for all private and public actors that are consistent with the strategies of EU bodies and France's international commitments.

The 2009-2012 SNDD will include a "sustainable transport and mobility" component that will emphasise the need to invest more broadly in research and innovation in transport and to support research in the fields of automobile, rail, maritime and inland waterway transport.

- **Ecological penalty fee and rebate ("feebate") system**

This system, which emerged from the Grenelle Environment Round Table process and was implemented on 5 December 2007, is aimed at rewarding motorists who purchase new cars that emit the least CO<sub>2</sub> by giving them a rebate at the time of purchase, and penalising those who choose the most heavily polluting models by increasing the purchase price. The rebate given to the former is financed by the penalty fee paid by the latter.

- **"Carbon-free vehicle" plan**

Introduced on 9 October 2008, one of the key objectives of the "carbon-free vehicle" plan is to promote the emergence in France of industries producing batteries and the power train for hybrid and electric vehicles. It is also aimed at improving the environmental performance of traditional thermal engines. Among other provisions, it contains a plan providing 400 M EUR to support research and development in this field.

A plan of aid for the purchase of electric or hybrid vehicles provides for an amount of up to 5 000 euros per vehicle.

Following the "*Monsieur Vélo*" (bicycle czar) model, in early 2009 an interministerial co-ordinator for these issues was appointed in the General Directorate for Energy and the Climate, "*Monsieur Véhicules Décarbonisés*" (carbon-free vehicle czar).

- **Purchase of 40 000 electric vehicles**

Announced by the Minister of State on 12 September, a call for tenders for the purchase of 40 000 electric vehicles was launched on 23 September 2009. These vehicles would be used by public institutions and enterprises. This call for tenders is part of the government's "clean vehicle" plan.

- **National Strategy for the deployment of the recharging infrastructure required for rechargeable electric and hybrid vehicles**

Launched on 17 February 2009, the National Strategy for deployment of the recharging infrastructure required for rechargeable electric and hybrid vehicles goes hand in hand with the preceding measure. The aim of this initiative is to accelerate and co-ordinate the installation of infrastructure, recharging terminals, rapid recharge units and even battery exchange stations. The working group established at this time will produce a plan for developing recharging infrastructure and battery exchange stations.

## References:

The Grenelle Environment Round Table: [www.legrenelle-environnement.fr](http://www.legrenelle-environnement.fr)

### Bodies devoted to research and innovation:

- National research management body ANR: [www.agence-nationale-recherche.fr](http://www.agence-nationale-recherche.fr),
- Body supporting innovation in companies OSEO: [www.oseo.fr](http://www.oseo.fr),
- National Environment and Energy Management Agency, ADEME: [www.ademe.fr](http://www.ademe.fr),
- Organisation of “poles of competitiveness” around various themes, some of which are devoted to transport: [www.competitivite.gouv.fr/](http://www.competitivite.gouv.fr/).

### Major research programmes devoted to transport (cf. question 1.5):

- Programme of Research and Innovation in Land Transport (PREDIT): [www.predit.prd.fr](http://www.predit.prd.fr)
- Programme of research in intermodality (PREDIM): [www.predim.org](http://www.predim.org)

What are the specific objectives of these initiatives? (e.g. Do they focus on certain challenges, such as climate change or safety, or on certain modes? Do they take a wider approach focusing on all of the challenges faced by transport?)

The “Grenelle 1” Expenditure Planning Law, like the National Sustainable Development Strategy, falls directly within the scope of sustainable development and therefore not only targets environmental challenges, but also challenges of a social and economic nature.

The Grenelle 1 Law sets **quantified objectives to be reached** in the field of transport:

- To reduce greenhouse gas emissions by 20% by 2020,
- To raise the non-road and non-air modal share for goods transport from 14% to 22% by 2022,
- To double the share of non-road freight for goods transported to and from ports by 2015,
- To reduce the average CO<sub>2</sub> emissions of the current fleet from 176 g/km to 120 g/km by 2020,
- In the field of air transport: by 2020, objective of a 50% reduction in aircraft fuel consumption and CO<sub>2</sub> emissions, an 80% reduction in NOx emissions and a 50% noise reduction.

**Research efforts are under way** in the field of transport, focusing on the following: energy, CO<sub>2</sub> storage, hybrid and electric power trains, engines of the future promoting lower greenhouse gas emissions, reduction in fuel consumption, the regulation of systems (air navigation, railway activities), economic efficiency and service quality. Air transport research is fully integrated into European initiatives, such as the SESAR research programme on the future air navigation system and the ACARE strategic research programme.

The “carbon-generating vehicle” and “clean vehicle” plans are aimed at the automobile industry more specifically (cf. question 2.1).

**Please describe the funding arrangements associated with your efforts to promote innovation in transport:**

The following instruments support transport without being exclusively dedicated to innovation.

- **Economic stimulus plan:**

In response to the downturn in short-term economic activity caused by the economic crisis, on 4 December 2008 the President of the Republic announced an economic stimulus plan. This plan was implemented in the 2009 amended Finance Act.

The plan is aimed at supporting economic activity and employment through strong but targeted measures. The choice of providing stimulus through investment should make it possible to achieve this objective and regain competitiveness. In this plan, over 400 M EUR are devoted directly to non-road transport infrastructure.

The economic stimulus plan is not a mechanism for supporting innovation in transport directly, but it does provide new financing for potential innovation in this field.

- **AFITF - French Transport Infrastructure Financing Agency:**

The AFITF is a key component for the financing of major transport infrastructure projects. Since 2005, it has supported the Government's policy for implementing a multimodal infrastructure programme by providing the central government's share of financing and ensuring that planning is clearer for all actors.

**What is the lead ministry or agency for your efforts to promote innovation in transport?**

Innovation in transport cuts across the various responsibilities of the **Ministry of Ecology, Energy, Sustainable Development and the Sea (MEEDDM)**. In fact, the work of the existing bodies in charge of innovation and technological initiatives covers a number of fields, including transport.

The **General Commissariat for Sustainable Development (CGDD)** is a cross-cutting body within the Ministry that has a broad range of responsibilities involving research and innovation, monitoring and statistics, economic, social and environmental analysis, public policy assessment and the provision of support to actors. The CGDD's mission is to promote and facilitate the sustainable development initiatives of all socio-economic actors (such as adopting new types of consumption and production). It is also responsible for defining and implementing the Ministry's strategy by ensuring the follow-up of the Grenelle Environment Round Table, and it promotes the launching of large-scale projects.

Within the CGDD, in co-operation with the Ministry of Research, the **Directorate for Research and Innovation (DRI)** shapes national research and innovation policies in the field of sustainable development, the environment, territorial development, transport and energy. In co-operation with the general directorates of MEEDDM, it provides guidance for the Ministry's research programmes and monitors their implementation, assessment, optimisation and the dissemination of their results. It implements the priorities of the "Grenelle 1" Law in the field of research. Its main functions are to manage MEEDDM's research network and its research staff, to shape the strategic policies of MEEDDM's scientific and technical network and to **support innovation in eco-technologies and the promotion ecological competitiveness**, including in the field of transport. The DRI also implements the interministerial Programme of Research and Innovation in Land Transport (PREDIT).

One of MEEDDM's eight general bodies, **The General Directorate for Infrastructure, Transport and the Sea (DGITM)** was created to prepare and implement national land and maritime transport policy. It follows sustainable development principles by promoting modal shift towards the most environment-friendly modes at every stage of decision-making. It is not only in charge of initiatives in the field of innovation in transport, but plays an even greater strategic and cross-cutting role by addressing all issues that concern land and maritime transport and airport planning.

**What other public entities are involved and what are their roles?**

cf. Replies to questions 2 and 11.

**What other partners are involved (e.g. the private sector, universities, states/provinces, etc.)?**

The work of the platforms devoted to innovation (Major Research Programmes, PREDIT and PREDIM [see above], the Environment and Energy Management Agency, ADEME, Poles of Competitiveness, etc.) also involves other partners, such as universities and *Grandes Ecoles*, public research institutions and the private sector (industry and SMEs).