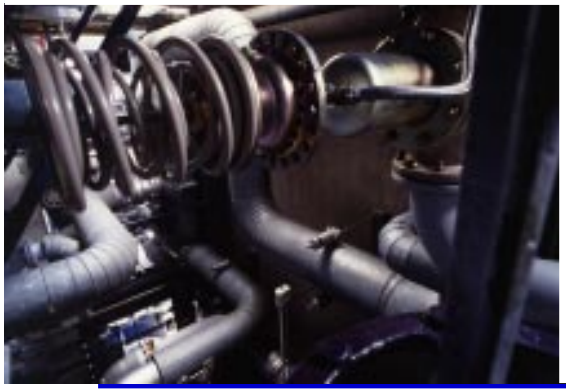
European Commission





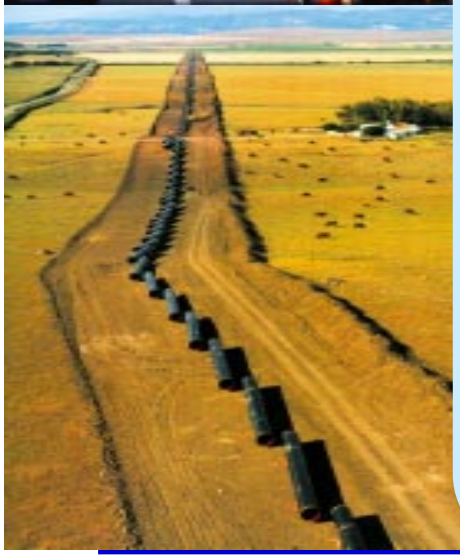

Promotion of bio-fuels and other alternative fuels for road transportation

Action plan

Short presentation of the new proposals

October 2001

The fuel challenge



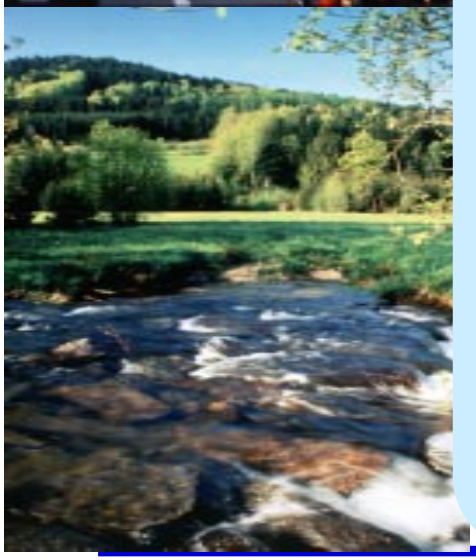
- **Environment and climate change**

  CO_2 is the main gas responsible for climate change. Although the European Union committed to reduce its **CO_2 emissions, emissions from the transport are still growing. Road transport** in particular generates **85%** of the transport sector's emissions.

- **Security of supply**

  98% of the transport market is dependant upon oil. If nothing is done, the European Union's **external energy dependance will reach 70% before 2030, 90% for oil.**

Objectives of the action plan



- **Contribute** to reduce the European Union's **growing dependency on external supply** for oil.
- **Contribute** to the achievement of the European **Union's greenhouse gases emissions reductions objectives** as decided in Kyoto
- **Meet** the objective of substituting **20%** of traditional fuels by **alternative fuels** in the road transport sector **by 2020**.

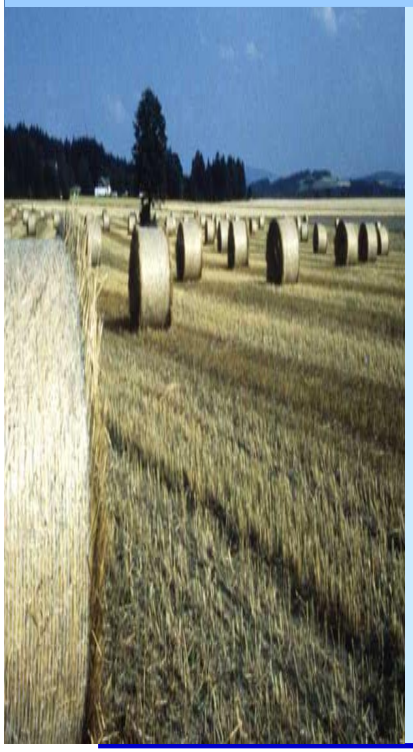
Elements of the package proposed today

- **A Communication** presenting the **action plan** for the promotion of **biofuels** and other **alternative fuels** in road transport.
- **A draft Directive** on **the promotion of biofuels for transport** which requires an increasing proportion of all diesel and gasoline sold in the Member States to be biofuel.
- **A draft Directive** proposing to allow Member States to apply **differentiated tax rates** in favour of biofuels. The draft Directive proposes to modify **Directive 92/81 on excises duties.**

The Communication

The Communication

Communication on alternative fuels for road transportation and on a set of measures to promote the use of alternative fuels



Structure:

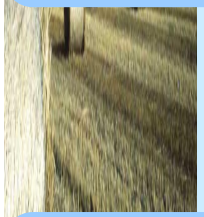
- **Identifies the challenges** faced by the Union in reaching the objective of a 20% share of alternative fuels by 2020.
- Assesses the **various alternative fuel technology options**
- Proposes an **action plan** for the promotion of alternative fuels

The challenges of take-off

Road transport of passengers and goods

- The car and the fuel have to be **competitive**
- **Refuelling** has to be easily available and quick for cars, not so close but with a good coverage for trucks
- **Existing safety, security or comfort** levels maintained

Investments in infrastructure and equipment

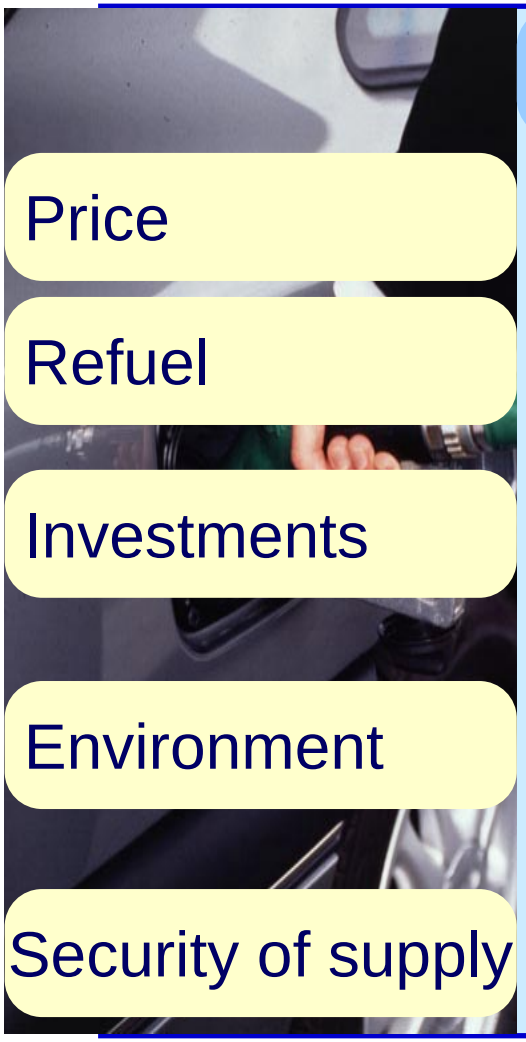


Determine the scale (national, European, international) of the strategy and timing (short, medium or long term).

Environment and security of supply

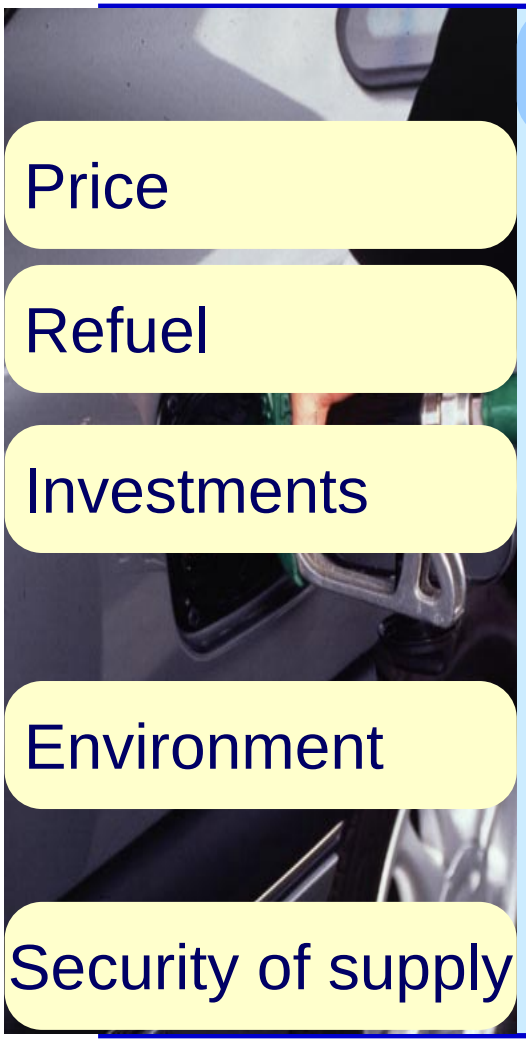
Should offer a reduction in oil-dependency and of environmental impact, particularly in terms of CO_2 emissions

The options (1)



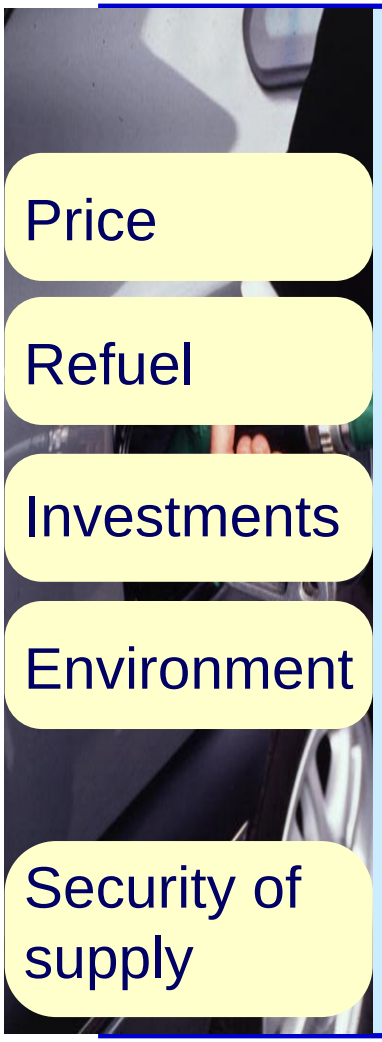
	Motor vehicule fuel efficiency	Biofuels
Price	Cost-effective and commercial potential	Expensive
Refuel	NA	Everywhere, can be mixed in the current diesel or gasoline
Investments	None in terms of infrastructure	Can be used in existing vehicles and distribution system. No investment needed.
Environment	Less emissions	Around 60% CO_2 reduction advantage.
Security of supply	Less imports	Potentially 100% indigenous

The options (2)



	Natural gas	Hydrogen
Price	Cost-effective and commercial potential	Expensive
Refuel	Limited places to refuel	Need investments in production and distribution
Investments	Can be used in existing cars with modifications. Investment needed in refuelling facilities.	New cars needed. Investment needed in storage and distribution.
Environment	Potentially 20-25% less CO_2 emissions than gasoline and less noise	Depending on how electricity is produced. No emissions from the car.
Security of supply	Is also imported but more evenly distributed	Depending on type of energy used to produce electricity.

The options (3)



	Electric cars	Hybrid cars	Methanol and Dimethylether
Price	Batteries are costly	Batteries smaller but still expensive since 2 engines	Diesel from natural gas
Refuel	Slow but easy recharging	Everywhere	
Investments	Not much	Not much	LPG
Environment	Depending on how electricity is produced. No emissions from the car	Up to 30% fuels savings and corresponding emissions.	Benefits are limited or uncertain.
Security of supply	Depending on type of energy used to produce electricity	No significant difference.	

Assessment

Options with potential over the next 20 years

Only three options appear to have a volume potential of more than 5% fuel consumption. If **active policy** is decided to promote them, their **optimistic** development scenario is (% fuel consumption):

	Biofuel	Natural gas	Hydrogen	Total
2005	2			2
2010	6	2		8
2015	(7)	5	2	14
2020	(8)	10	5	(23)

Action plan (1)

To promote that development, the Commission will:

Biofuels
Proposals for 2 Directives

- Propose to require that an increasing proportion of all diesel and gasoline sold in the Member States be biofuel.
- Create a framework for Member States to apply differentiated tax rates in favour of biofuels.

Natural gas and hydrogen

Set up of a contact group to advise on the introduction of natural gas and hydrogen: types of vehicles, geographical areas, infrastructure, taxation. With the participation of relevant industry and NGOs.

Action plan (2)

The Commission will also:

Other alternative fuels

Monitor new development that might call for a review of their assessment.

Fuel efficiency cars

- Encourage governments to buy a significant amount of high efficiency cars.
- Continue its negociations with the car industry to include light duty vehicles and sport utility vehicles in the ACEA agreement.

The Draft Directive on the promotion of biofuels for transport

What are biofuels ?

They originate from plant oils, sugar beets, cereals, organic waste and the processing of biomass. Other types of biomass could become important.

- **Bioethanol**: is ethanol produced though fermentation of sugarbeets, cereals or other organic material.
- **Biodiesel**: is a methylesther produced by reaction between a plant oil and methanol.
- **ETBE**: ethyl-tertio-butyl-ether is etherised bioethanol
- **Biogas**: produced from biodegradable waste. It is basically methane.
- **Biomethanol:** produced from biomass or biodegradable waste is equivalent to methanol from fossil fuels.
- **Biodimethylether:** is produced from biomass or biodegradable waste for use as biofuel.

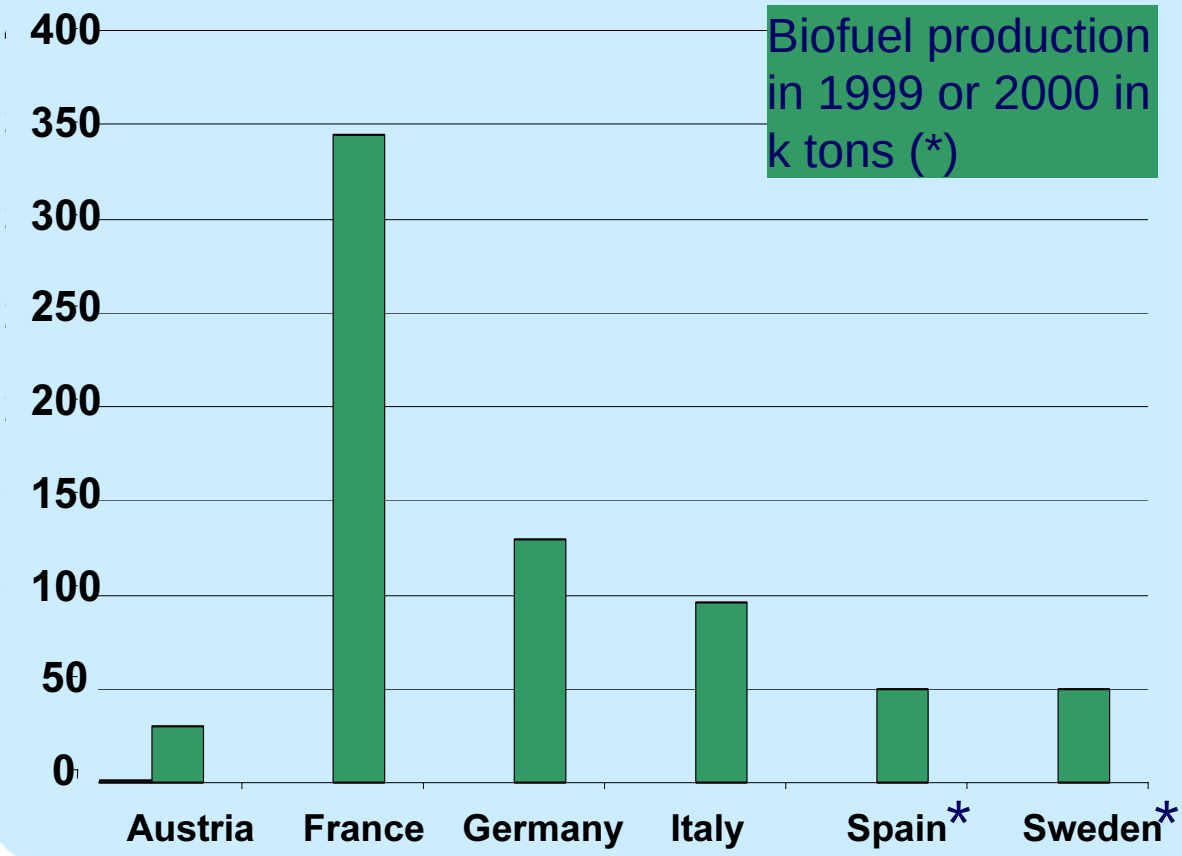
Comments on blending

Biofuels can be used in a “pure” form for captive vehicles or blended to be used in normal cars.

- **Bioethanol**: regular vehicles can run on a 15% blend of bioethanol, 100% if adapted.
- **Biodiesel**: regular vehicles can run on a 5% blend. 100% if adapted.
- **ETBE**: can be blended with gasoline, up to 15%.
- **Biogas**: can be purified and used in gas engines.
- **Biomethanol:** can be used in the same conditions methanol.
- **Biodimethylether:** is a diesel quality fuel.

Biofuels in figures:
current production

The current situation in Europe



Only **6 Member States** contribute to around 700 k tons of biofuels produced in the Union last year.

Biofuels currently represent around **0.3%** only of diesel and gasoline consumption in the Union.

Biofuels in figures: potential in Europe

Influencing factors

- The type of primary biomass and process efficiency.
- The economics of the main process and by-products
- Technology developments

Example
Rapeseed: 1 toe biodiesel/ha, sugar beet: 5,6.

Potential

3.9 Mha **agricultural land** was set-aside in the Union in 2000. This area could grow between **4 and 15 Mtoe biofuels**, representing between **1,2 and 5%** of total transport fuel consumption.

But biofuel production is not only linked to agricultural surface, since **waste vegetable oils and fats,** and **secondary biomass** in general could also be used to produce biofuel.

Biofuels in figures: price/advantages

Extra production costs

At current oil prices levels (25$ a barrel), biofuels are **not competitive**.

Production cost: Biofuel: 0.5 € / litre
Diesel: 0.2 - 0.25 € / litre

+ It takes 1.1 litre of biofuel to replace 1 litre of diesel

Benefits of CO2 avoidance

Fossil diesel emits **3.2 kg CO2/ litre**
Savings from biodiesel **2 - 2.5 kg CO2/ litre**

Cost of CO2 avoidance:
0.1 - 0.15 € / kg CO2

Benefits of security of supply

The cost of replacing 2% of diesel by biofuel would be recovered if the impact of the measure on world oil price would be a 1% decrease.

Employment

A biofuel contribution of 1% of total fossil consumption would create 45000-75000 new jobs in rural areas.

The Draft Directive

Draft European Parliament and Council Directive on the promotion of the use of biofuels for transport

The Directive sets a minimum percentage of biofuels to replace diesel or gasoline for transport purposes in each Member State:

- **Obligation** on Member States to ensure that as from 2005 a minimum share of transport fuel sold on their territory is biofuels.
- At a later stage, the Commission will make a proposal for **mandatory blending of biofuel** in petrol and diesel

Minimum share of biofuel

- **Member States** must ensure by end of 2005 a **2%** minimum proportion of biofuels of all gasoline and diesel fuels sold on their market.
- **Schedule for the compulsory share after 2005:**

2005	2006	2007	2008	2009	2010
2	2.75	3.5	4.25	5	5.75

- **Biofuels can be made available** as:
  - pure
  - blended in mineral oil derivatices
  - liquids derived from biofuels such as ETBE

Review

Member States shall report every year on the total sales of transport fuel and share of biofuel.

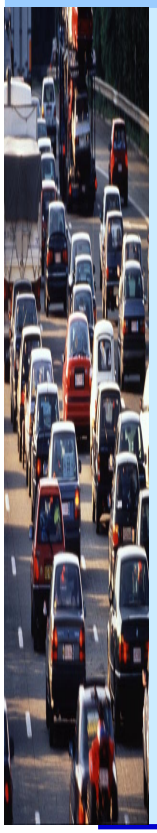
In 2007 the **Commission** will:

- **report** to the European Parliament and Council on progress
- **if appropriate** propose to **review the schedule** for minimum shares of biofuels

The Draft Directive on a reduced excise duty for certain mineral oil containing biofuels

Objective

Draft Council Directive modifying Directive 92/81 on excise duties on mineral oils



The objective is to allow Member States to apply under fiscal control reduced excise duties to biofuels if certain criteria are met.

Main products eligible to differentiated excises duties between 1/1/2002 an 31/12/2010 :

- Vegetable and animal oils and fats
- Non synthethic methyl and ethyl alcohols
- Energetic products from biomass
- Water

Awarding criteria

- The reduction in excise duty may not be greater than the amount of excise duty payable on the volume of biofuels present in the final product.
- The excise duty reduction is modulated to avoid overcompensation.
- The reduction can be awarded as part of a multiannual programme, limited to 6 years (with a possibility for reconduction).
- The reduction cannot be greater than 50% of the excise levied on the corresponding motor fuel. Exceptions include:
  - biofuels used in local public transport, including taxis, and public authority- operated vehicles
  - « grandfathering clause» until the end of 2003
- Supplementary measures allowed on case by case demand (derogation pursuant to Article 8 (4) of Council Directive 92/81/EEC on mineral oils)
- Biofuels used for heating purposes: full exemption allowed