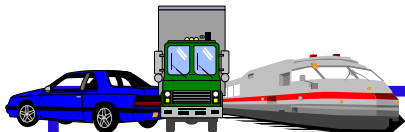


# **GHG, ENERGY & TRANSPORTATION:**

## **THE FRENCH GENERAL FRAMEWORK**

**EU-Twinning Project TR03-EY-01**  
**« Improvement of Energy Efficiency in Turkey »**

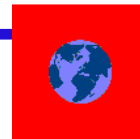
**Jérôme CICLE**  
**ADEME**  
**Délégation Régionale**  
**Provence Alpes Côte d'Azur**



# ADEME

## Environment and Energy Management Agency

ADEME



**STATUS:** Industrial and commercial public institution placed under the joint supervision of the ministers of the Environment, Energy and Research.

**AREAS OF INTERVENTION:** Air, Noise, Waste, Energy, Environmental Management, Polluted Sites and soils, Transport.

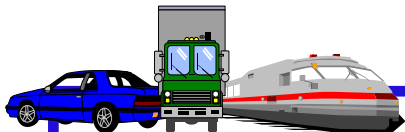
**MISSION:** Within the frame of public policies defined by the government, the Agency's mission is to stimulate, animate, coordinate, facilitate and perform operations aiming at the environment protection and energy management.

**STAFF:** 850 employees in 3 central offices (Angers, Paris and Valbonne), 26 regional branches, 3 representations in the French overseas territories and 1 office in Brussels.

2004 budget : 331 M€

Action budget : 262 M€

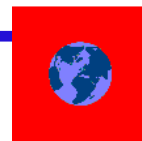
Operating budget : 69 M€



# ADEME

Environment and Energy Management Agency

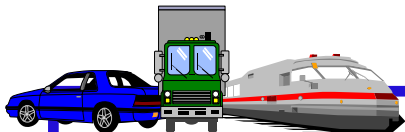
ADEME



## Background: 30 years of sustainable development

### Key dates

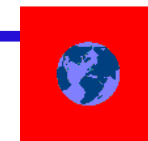
1974	Establishment of the <i>Agence pour les Economies d'Energies</i> (AEE) (Energy Savings Agency)
1975	Establishment of the <i>Agence Nationale pour la Récupération et l'Elimination des Déchets</i> (ANRED) (National Waste Recovery and Disposal Agency)
1978	Establishment of the <i>COMmissariat à l'Energie Solaire</i> (COMES) (Solar Energy Commission)
1980	Establishment of the <i>Agence pour la Qualité de l'Air</i> (AQA) (Air Quality Agency)
1982	Establishment of the <i>Agence Française de la Maîtrise de l'Énergie</i> (AFME) (French Energy Management Agency) by merging AEE and COMES
1991	Establishment of the <i>Agence De l'Environnement et de la Maîtrise de l'Energie</i> (ADEME) (Environment and Energy Management Agency) by merging ANRED, AQA and AFME.



# ADEME

## Environment and Energy Management Agency

ADEME



### Helping society to protect the environment and manage energy

**ADEME** has **many competencies** to accomplish its mission:

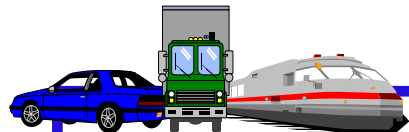
- scientific and technical competencies to encourage more environmentally-friendly solutions,
- expert assessment and consultancy competencies to guide decision-makers in their projects and facilitate their choices,
- “resource centre” competency capitalizing the results of local experience to encourage the dissemination of best practices to all members of society.

These competencies enable **ADEME** to **work in highly diverse ways** which constitute the specific aspects of its role:

- guidance, organisation and funding of research programmes,
- consultancy and expert assessments,
- development of methodological tools and dissemination of best practices,
- funding of decision-making aids, exemplary operations and projects,
- training, information, communication and awareness-raising actions.

**All sectors of society are concerned:** businesses, local authorities, government departments, non-governmental organizations (NGOs), the general public, international partners.

To implement its policies and its actions, **ADEME** develops many **partnerships** with federations of professionals, major companies, local authorities or NGOs and with equivalent structures in other countries.



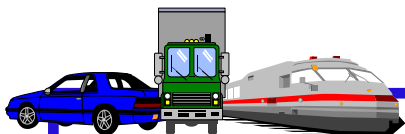
# KYOTO INTERNATIONAL COMMITMENTS

Kyoto (1997) First Real Commitment. Launched FEBRUARY 2005  
Average Emissions Reduction of 5,2% of GHG within 2008-2012 (Base 1990)

## Les engagements du Protocole

<b>Bulgarie</b>	<b>-8%</b>
<b>Canada</b>	<b>-6%</b>
<b>Croatie</b>	<b>-5%</b>
<b>Estonie</b>	<b>-8%</b>
<b>Etats Unis</b>	<b>-7%</b>
<b>Hongrie</b>	<b>-6%</b>
<b>Islande</b>	<b>+10%</b>
<b>Japon</b>	<b>-6%</b>
<b>Lettonie</b>	<b>-8%</b>
<b>Union Européenne</b>	<b>-8%</b>
<b>Liechtentstein</b>	<b>-8%</b>
<b>Lituanie</b>	<b>-8%</b>
<b>Monaco</b>	<b>-8%</b>
<b>Nouvelle-Zélande</b>	<b>0%</b>
<b>Pologne</b>	<b>-6%</b>
<b>République tchèque</b>	<b>-8%</b>
<b>Roumanie</b>	<b>-8%</b>
<b>Russie</b>	<b>0%</b>
<b>Slovaquie</b>	<b>-8%</b>
<b>Slovénie</b>	<b>-8%</b>
<b>Suisse</b>	<b>-8%</b>
<b>Ukraine</b>	<b>0%</b>

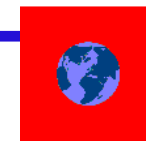
<b>Allemagne</b>	<b>-21%</b>
<b>Autriche</b>	<b>-13%</b>
<b>Belgique</b>	<b>-7,5%</b>
<b>Danemark</b>	<b>-2,1%</b>
<b>Espagne</b>	<b>+15%</b>
<b>France</b>	<b>0%</b>
<b>Finlande</b>	<b>0%</b>
<b>Grèce</b>	<b>+25%</b>
<b>Irlande</b>	<b>+13%</b>
<b>Italie</b>	<b>-6,5%</b>
<b>Luxembourg</b>	<b>-28%</b>
<b>Pays-Bas</b>	<b>-6%</b>
<b>Portugal</b>	<b>+27%</b>
<b>Royaume Uni</b>	<b>-12,5%</b>
<b>Suède</b>	<b>+4%</b>



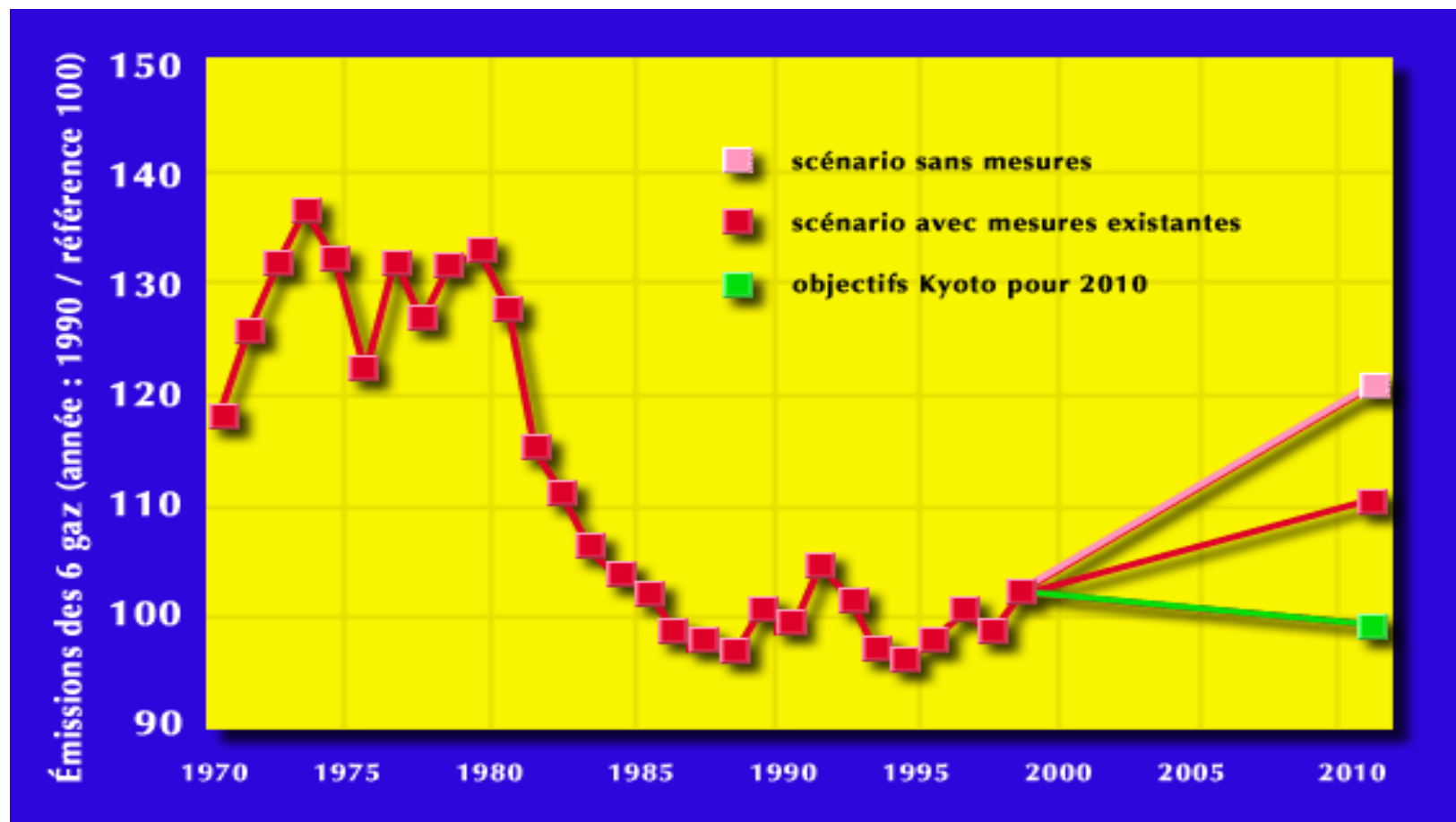
# KYOTO: THE FRENCH COMMITMENT

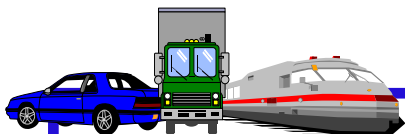
in 2010: emissions equal to 1990  
in 2050, divide them by 4 / 2000

ADEME



**Kyoto : 6 major GHG : CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O + 3 HFC**  
**Montreal: 4 indirect GHG: SO<sub>2</sub>, NO<sub>x</sub>, COVNM, CFC**

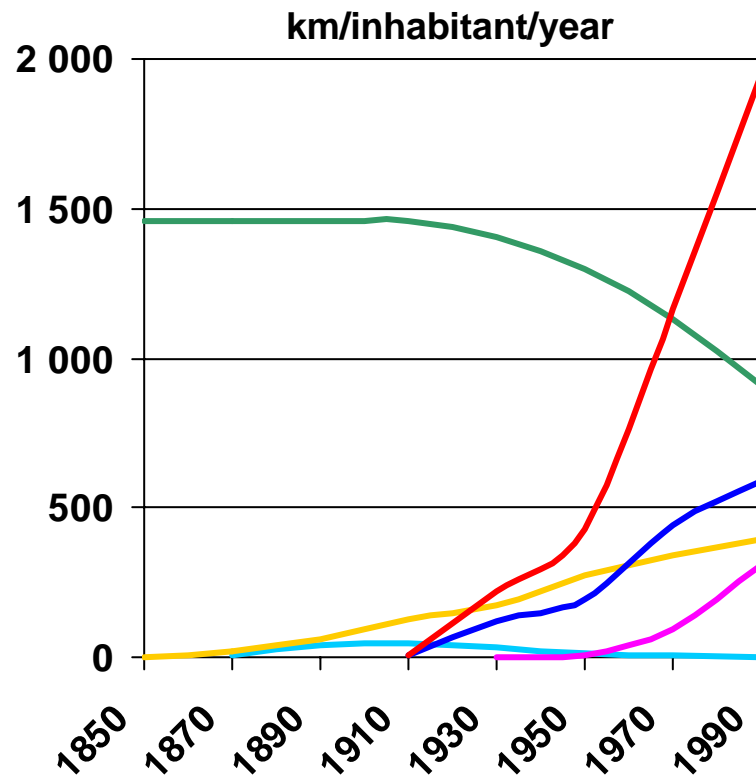
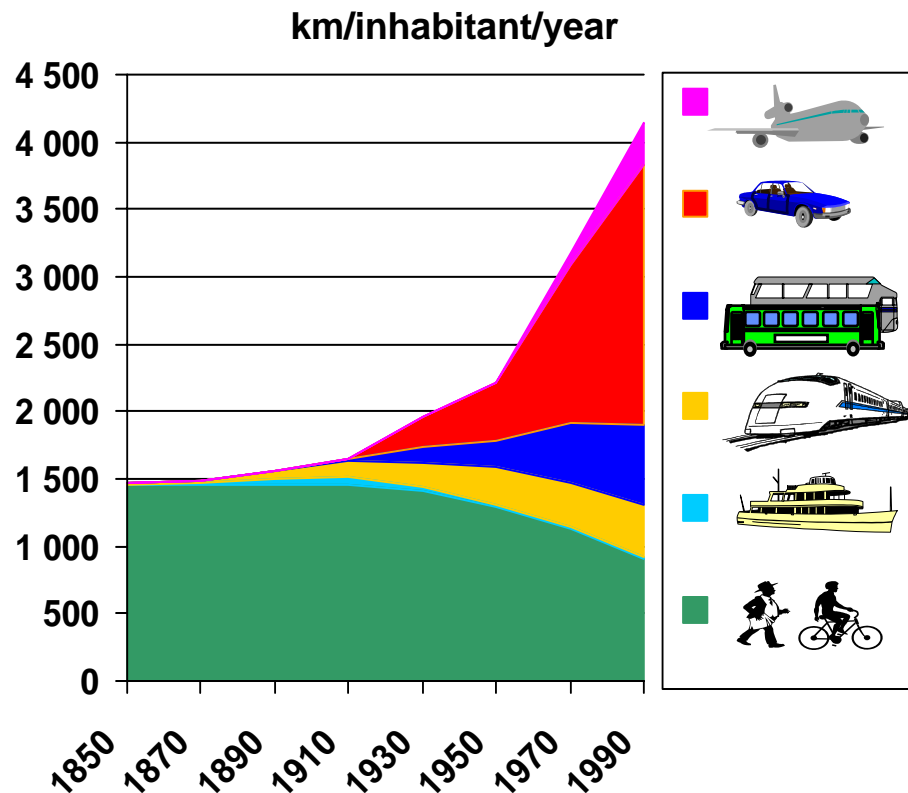
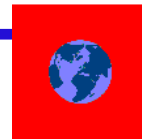




# WORLD PASSENGER TRAFFIC

## ... AN INTENSITY X 3

ADEME



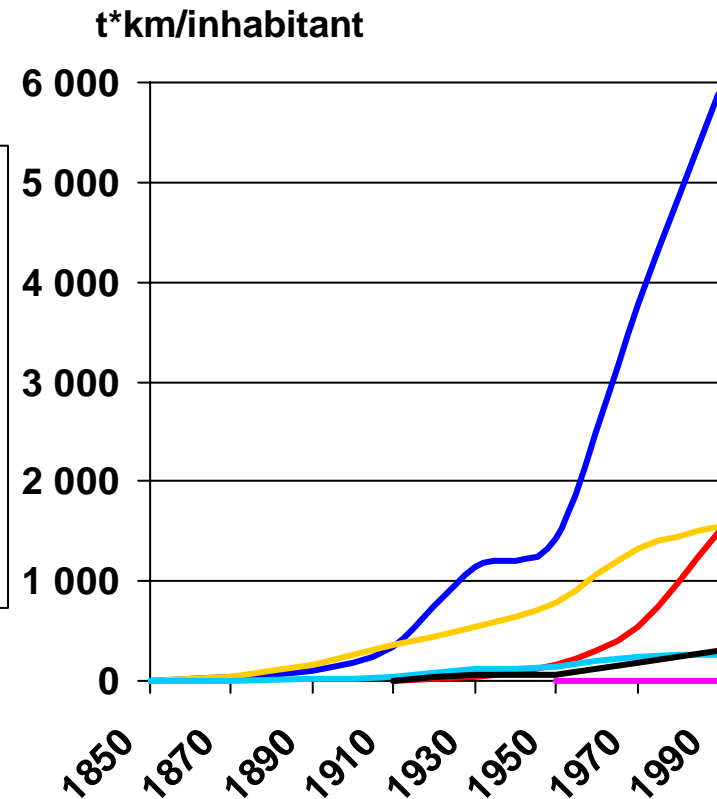
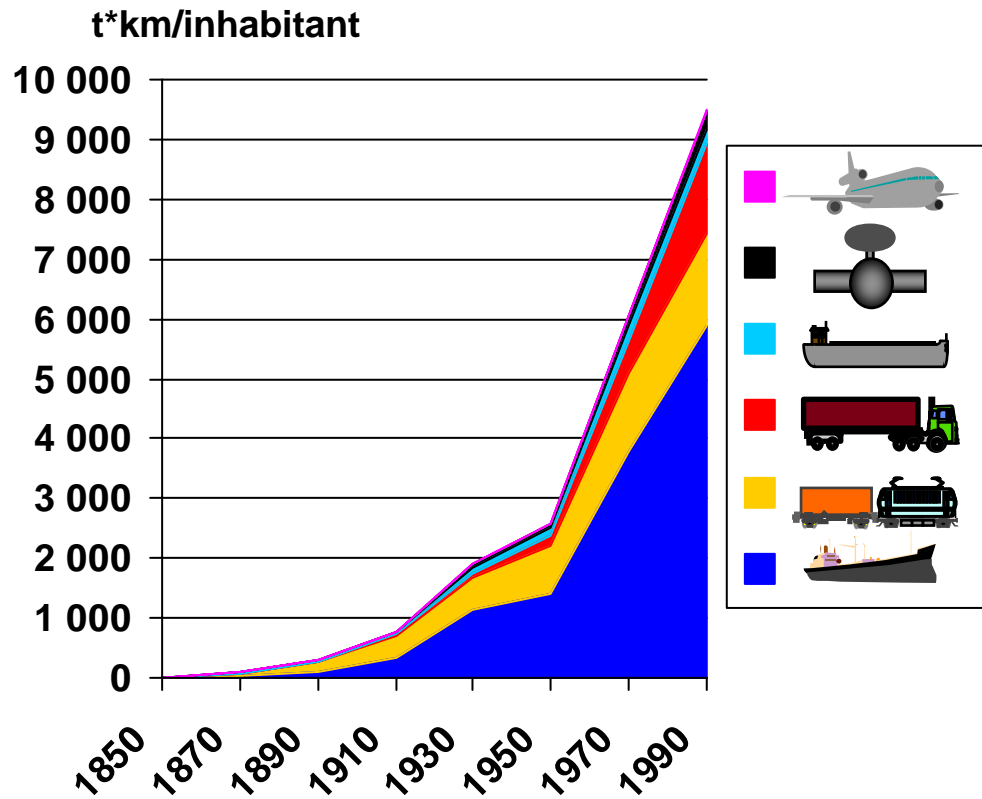
**From 1 500 km/year à 4 500 km/year par inhabitant within 1,5 century !**

Source: Centre for Sustainable Transportation (Canada).



# WORLD FREIGHT TRAFFIC ... AN INTENSITY X 1000

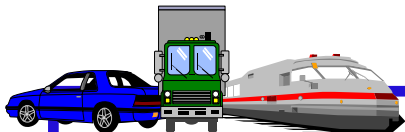
ADEME



**From 10 t0km/year to 10 000 t0km/year per inhabitant within 1,5 century!**

Source: Centre for Sustainable Transportation (Canada).

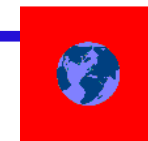




# SOURCES OF GHG IN FRANCE

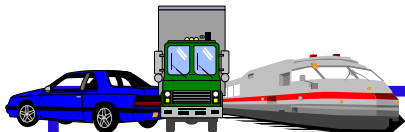
## Evolution 1990-2001

ADEME



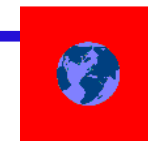
Area	Part in GHG in 2001	Trend since 1990
<b>Transportation</b>	26%	<b>+21%</b>
<b>Buildings</b>	18.59%	<b>+17%</b>
<b>Industry</b>	21.28%	-14%
<b>Energy</b>	11.97%	-17%
<b>Agriculture</b>	19.35%	-6%
<b>Waste</b>	2.53%	-4%

Source : MIES



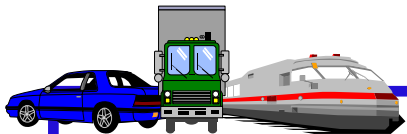
# GHG Emissions (Mt equivalent CO2) TRANSPORTATION '90-2003: an increasing responsibility

ADEME



	1990	2003	Evolution
<b>TRANSPORTS</b> <b>France 2003 = 27%</b> <b>Europe = 21%</b>	<b>121,5</b>	<b>149,1</b>	<b>+23%</b>
Air Domestic only	4,6	5,2	+
Road	113,8	137	+++
Rail	1,1	0,7	-
Sea Domestic only	1,9	2,6	+
Other	0,2	0,7	+
Air Conditioning Gases	0,0	2,9	+

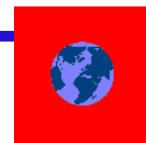
Source : MIES



# ENERGY CONSUMPTION & TRANSPORTATION

## *AN INCREASING SHARE*

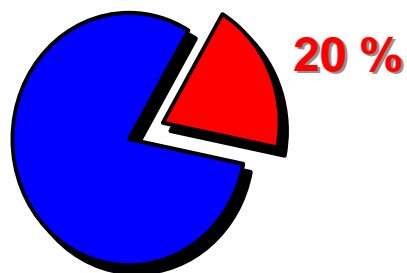
ADEME



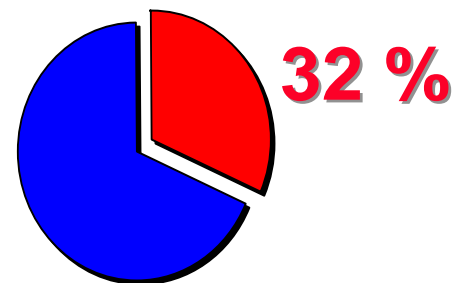
1973

FINAL ENERGY CONSUMPTION

2004

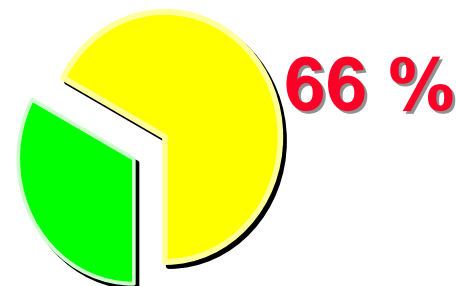
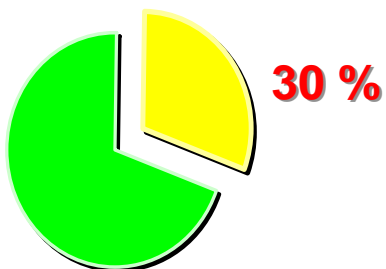


133 Mtep



161 Mtep

FINAL ENERGY CONSUMPTION OF FOSSIL FUELS



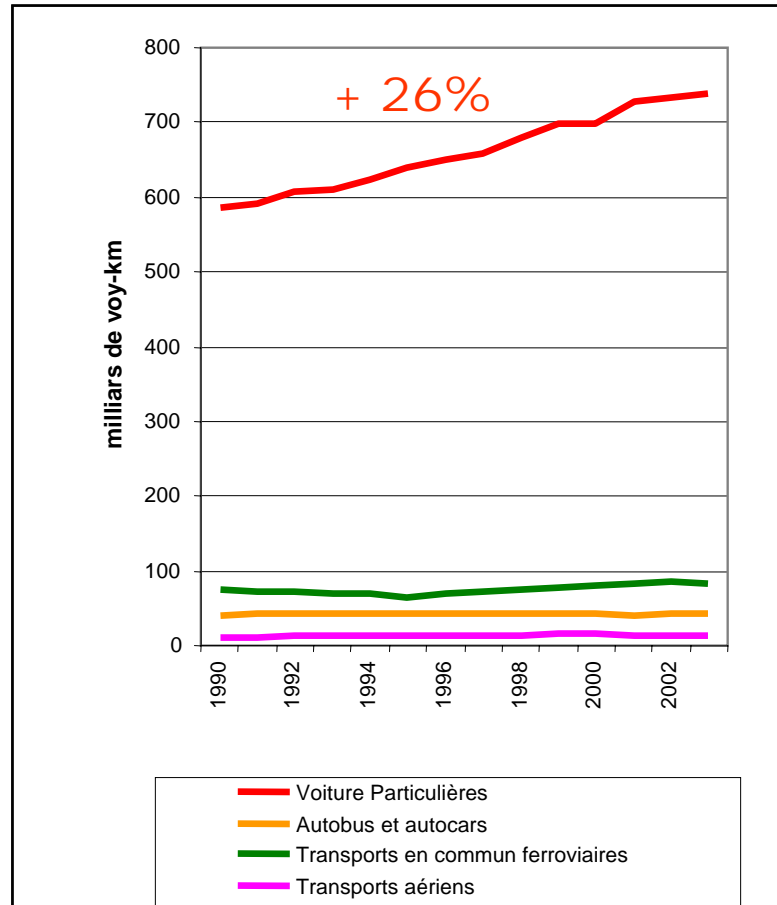
Source: 2005, DGEMP - OE, L'énergie en France Repères



# TRIP REPARTITION PAR MODES France

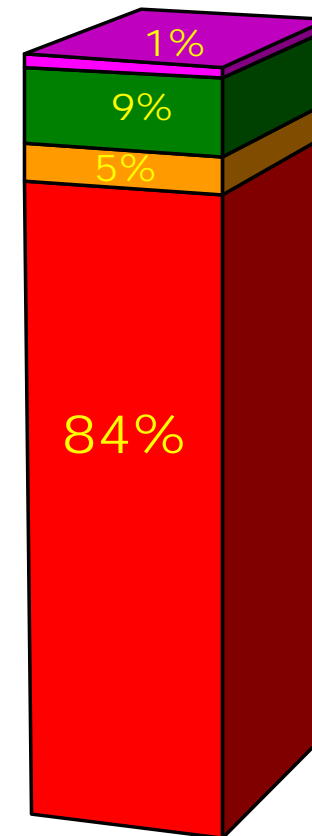
## ... Heavy Growth of Private Cars

ADEME

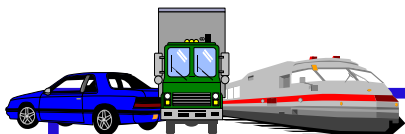


2003

877 Billions of pass-km



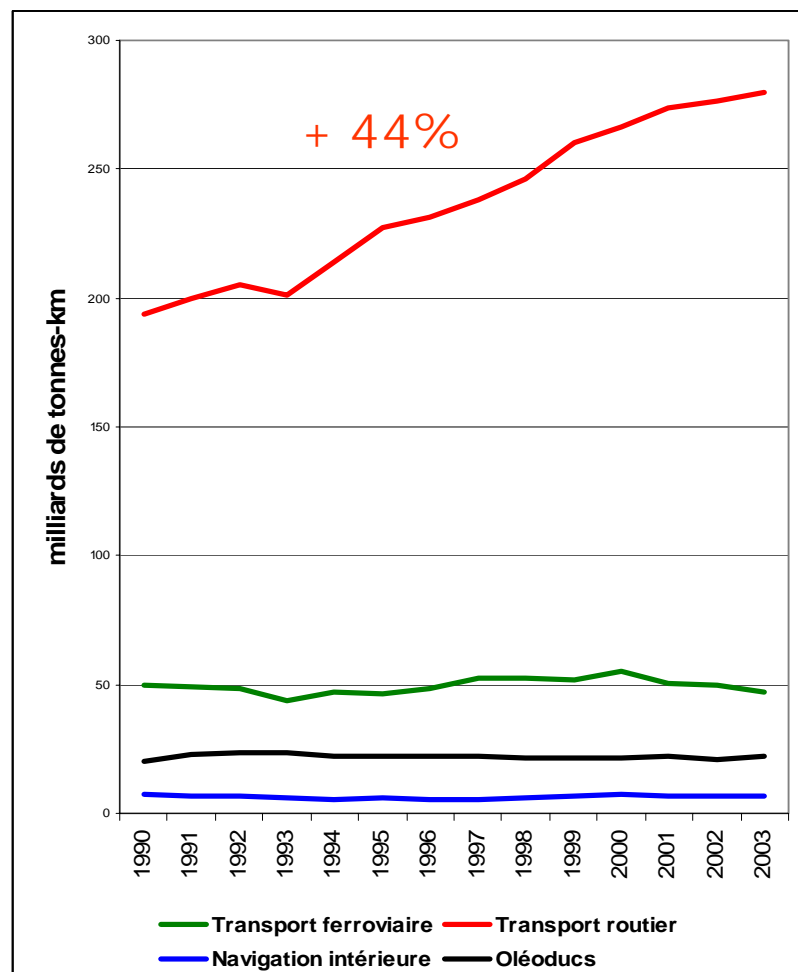
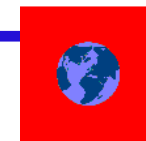
Source: 2004, DAEI-SES-Insee, Les transports en 2003, 41ème rapport de la CCTN



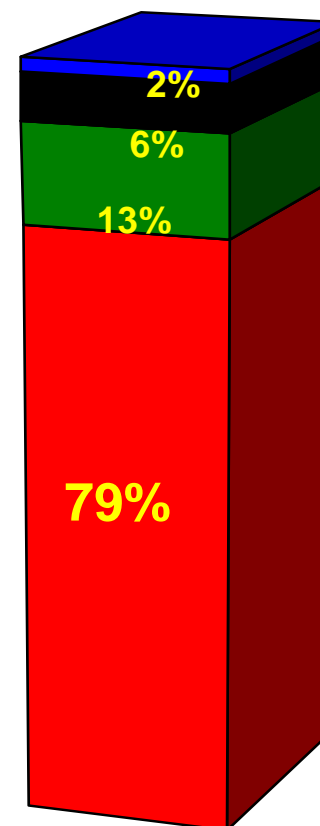
# FREIGHT TRAFFIC France

## ... Heavy Growth of Road Transport

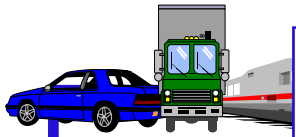
ADEME



2003  
356 Billion t-km

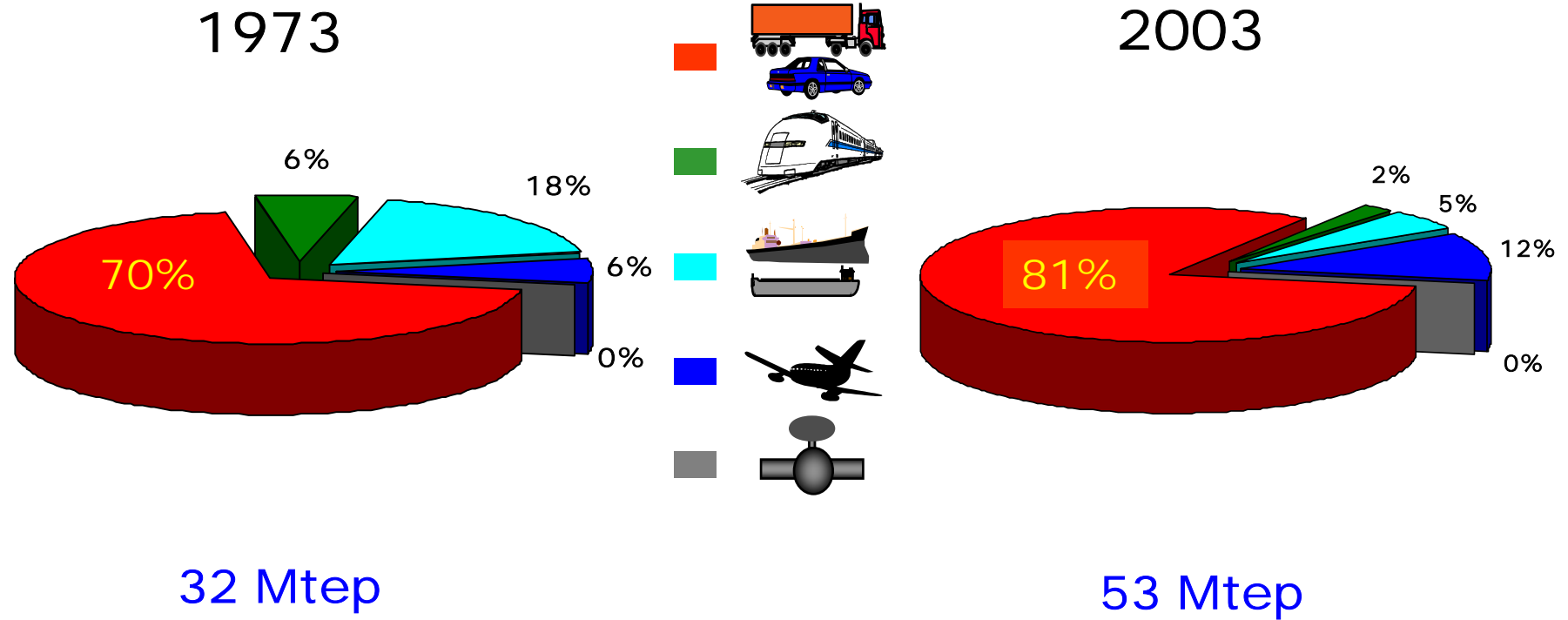


Source: 2004, DAEI-SES-Insee, Les transports en 2003, 41ème rapport de la CCTN

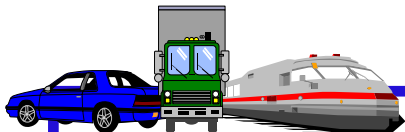


# ENERGY & TRANSPORTATION IN FRANCE : *ROAD TRANSPORT REMAINS THE MOST PROMINENT*

ADEME

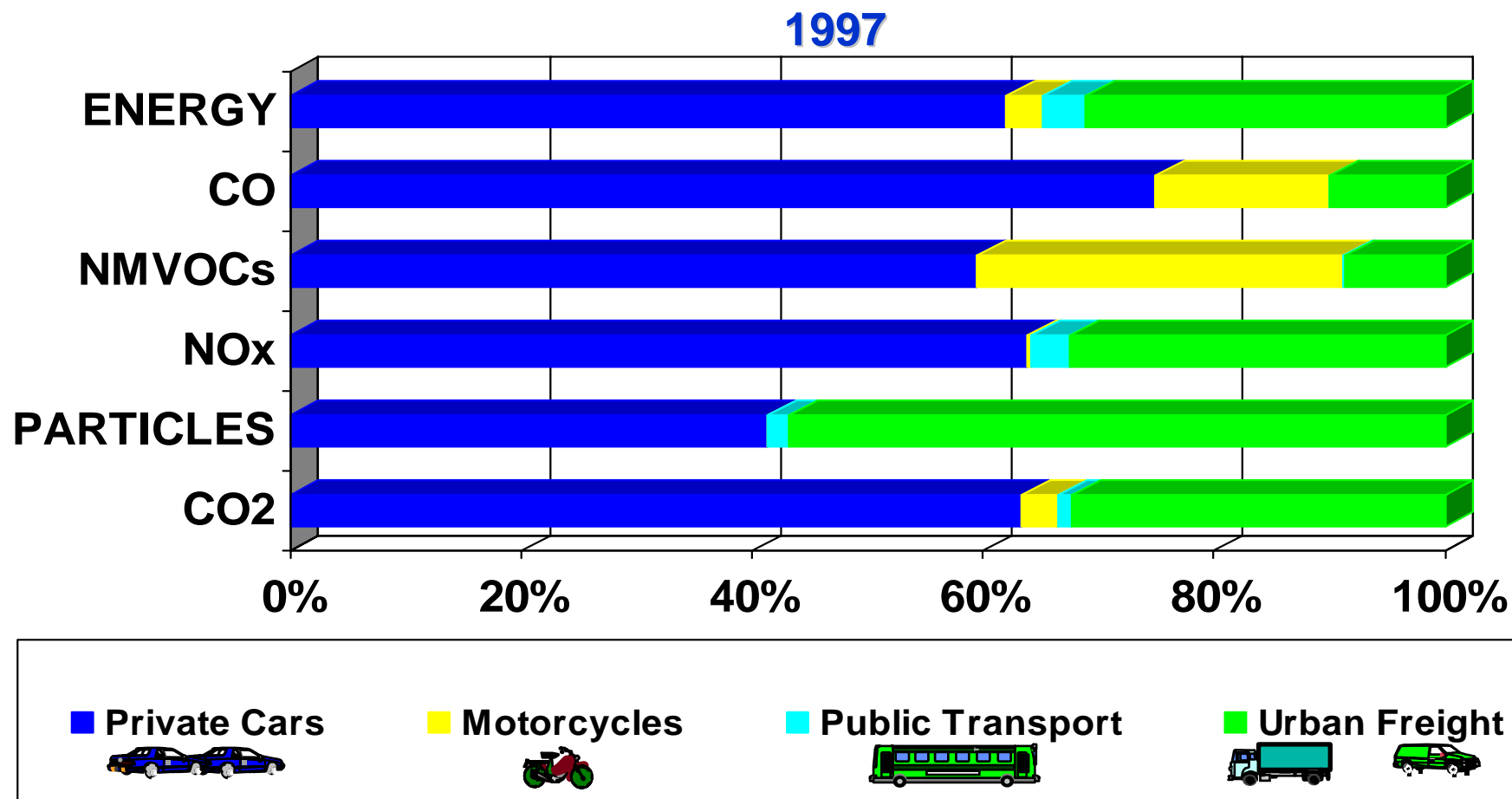
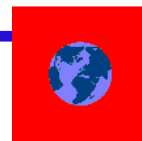


Source : 2005, DAEI-SES, Mémento de statistiques des transports.

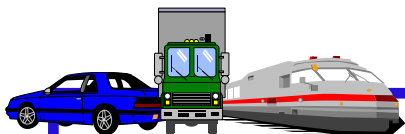


## URBAN TRANSPORTATION : WHO IS RESPONSIBLE FOR WHAT ?

ADEME

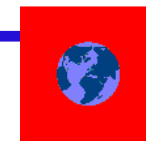


Source DAEI/SESADEME/ impact COPERT 1998



# ENVIRONMENTAL EFFICIENCY INTERURBAN TRANSPORTATION 2000

ADEME

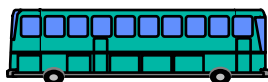


voy.km/Kg CO2



REGIONAL TRAINS

29,4



INTERURBAN

29,1



PRIVATE CARS

12,4



Moto < 125 cm3

9,5

Moto > 125 cm3

8,9



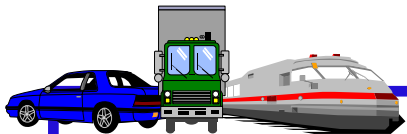
AIR

6,1

**TGV : 371 voy.km/Kg CO2**





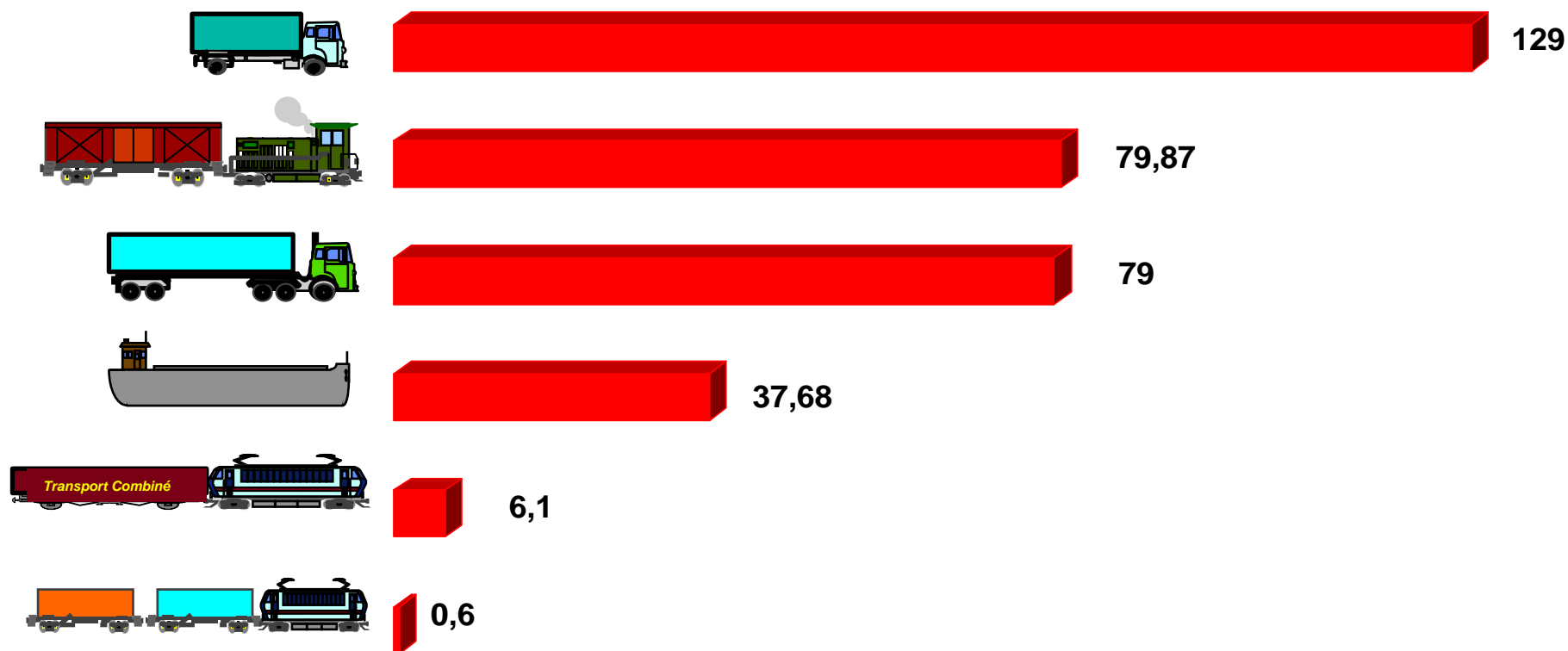


## CO<sub>2</sub> EMISSIONS PER UNIT INTERURBAN FREIGHT TRANSPORTATION 2000

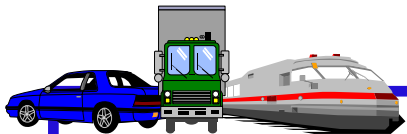
ADEME



gCO<sub>2</sub>/t.km

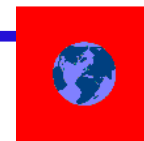


Source : 2002, ADEME / Explicit

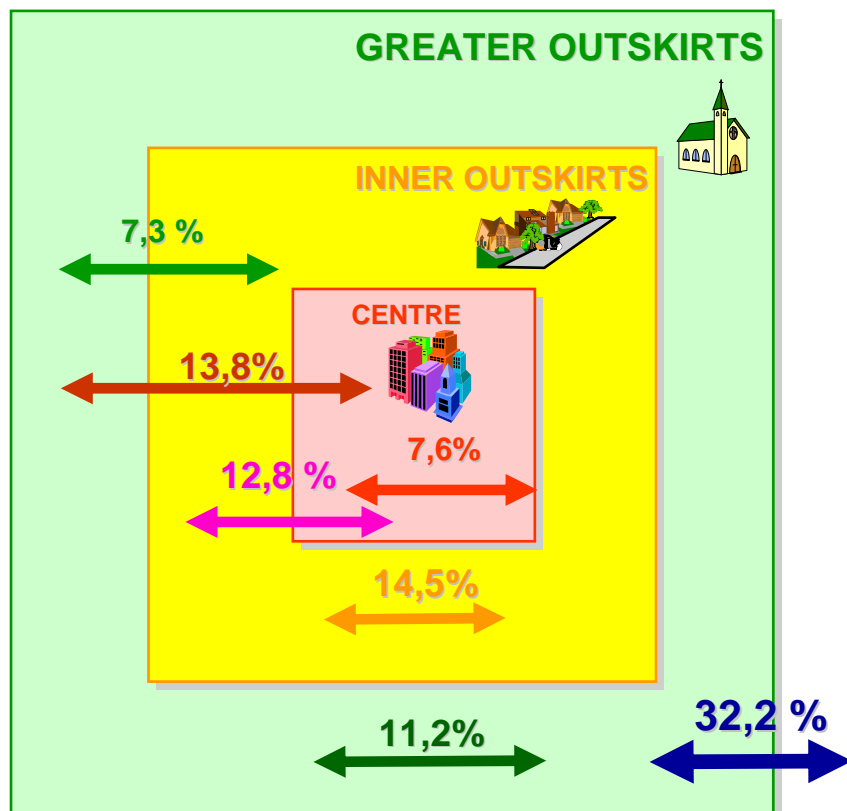


# AVERAGE TRIP DISTANCE BREAKDOWN *WEEK DAY*

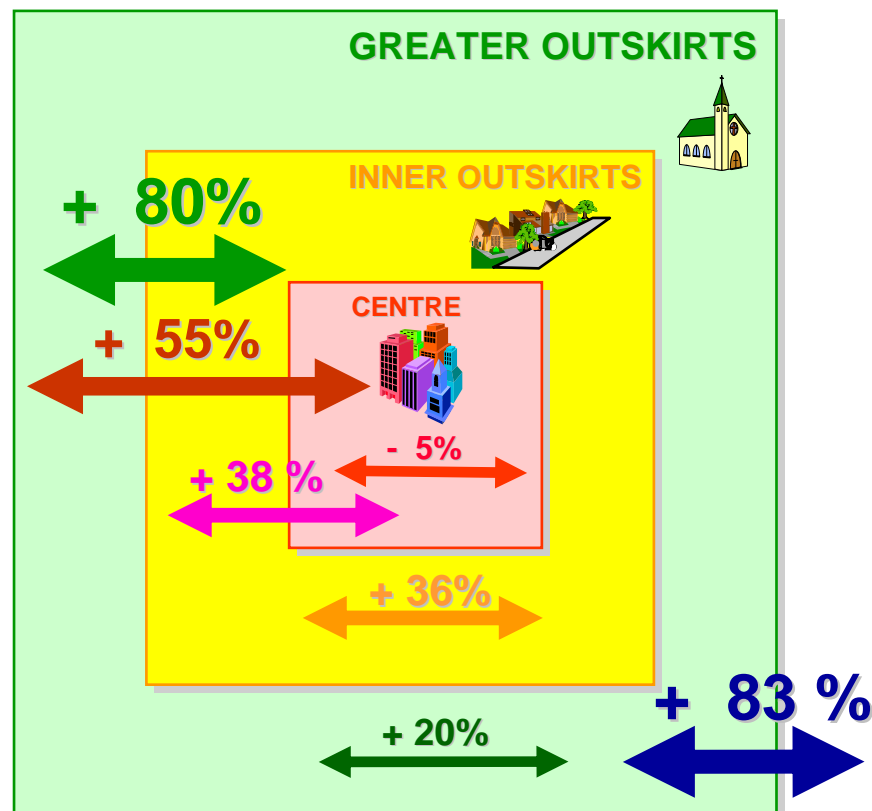
ADEME



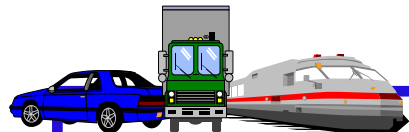
1994



1994 / 1982 EVOLUTION



Source INRETS, d'après les Enquêtes Transport INSEE-INRETS 1982 & 1994



## TRIP DISTANCES BREAKDOWN

- CAR TRIPS IN FRANCE

➔ DAILY TRIP DISTANCE : 40 km

➔ 50 % OF TRIPS < 3 km

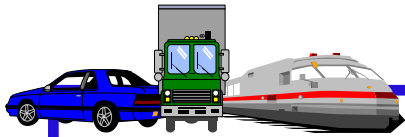
➔ 20 % OF TRIPS < 1 km

➔ 10 % OF TRIPS < 0.5 km

➔ Average speed : 36 km / h

➔ **MUCH ROOM FOR SOFT MODES**

Source INRETS, d'après les Enquêtes Transport INSEE-INRETS 1982 & 1994

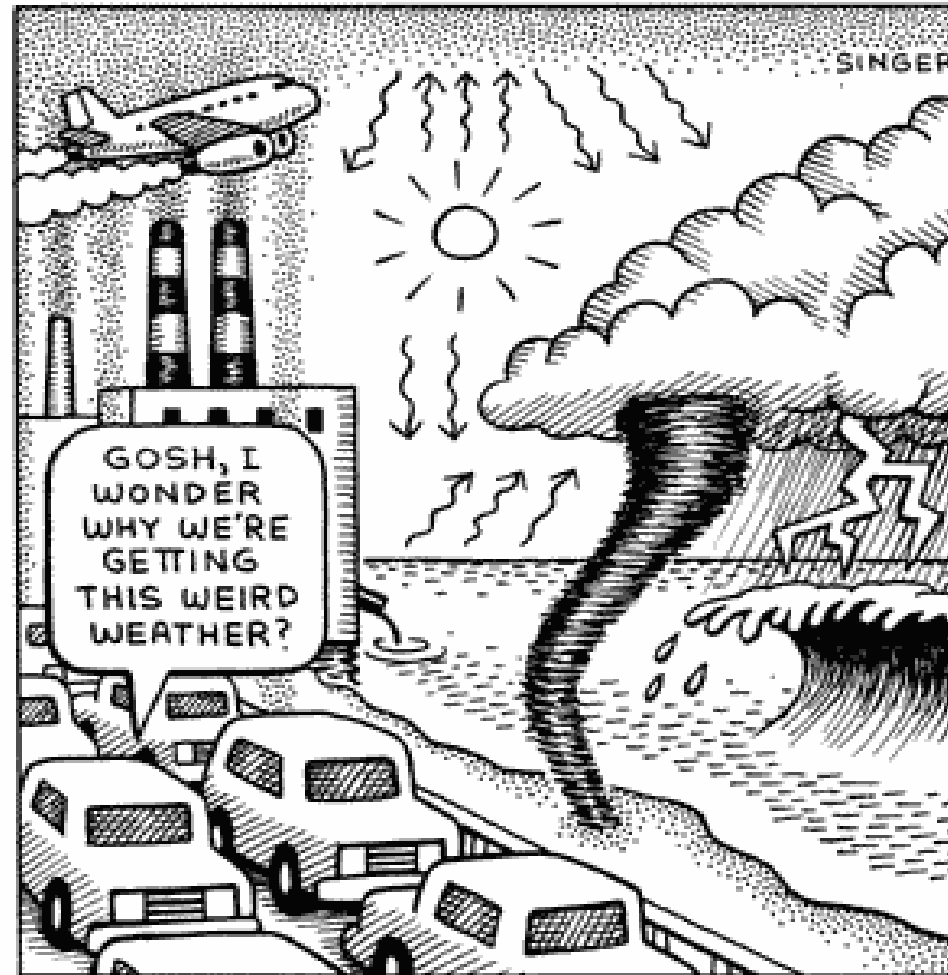


# CONCLUSION ?

ADEME



## THE GREENHOUSE EFFECT





## **CLIMAT CHANGE IS A REAL CONCERN AND TRANSPORTATION HAS A MAJOR RESPONSABILITY**

ADEME



**Temperatures will increase from 1,4 up to 5,8°C  
(from now on to 2100)**

**Most expected consequences are:**

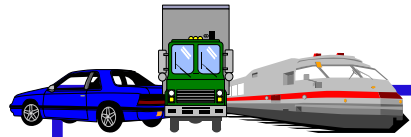
- **Sea Levels will increase of 80 cm (from now to 2080), erosion coastal erosion and threats on deltas..**
- **Dry zones relocation, less snow, agricultural and vegetal mutations, extinction of species...**
- **Floods (+20% of rain in winter), drought, heat waves (-15% rain in summer)...**
- **Impacts on Health...**
- **Impacts on Population movements (Environmental Refugees)...**



# CONCLUSION ?

ADEME





# CONCLUSION ?

