



## High Speed in the Context of France's recent "Grenelle de l'Environnement" (\*)

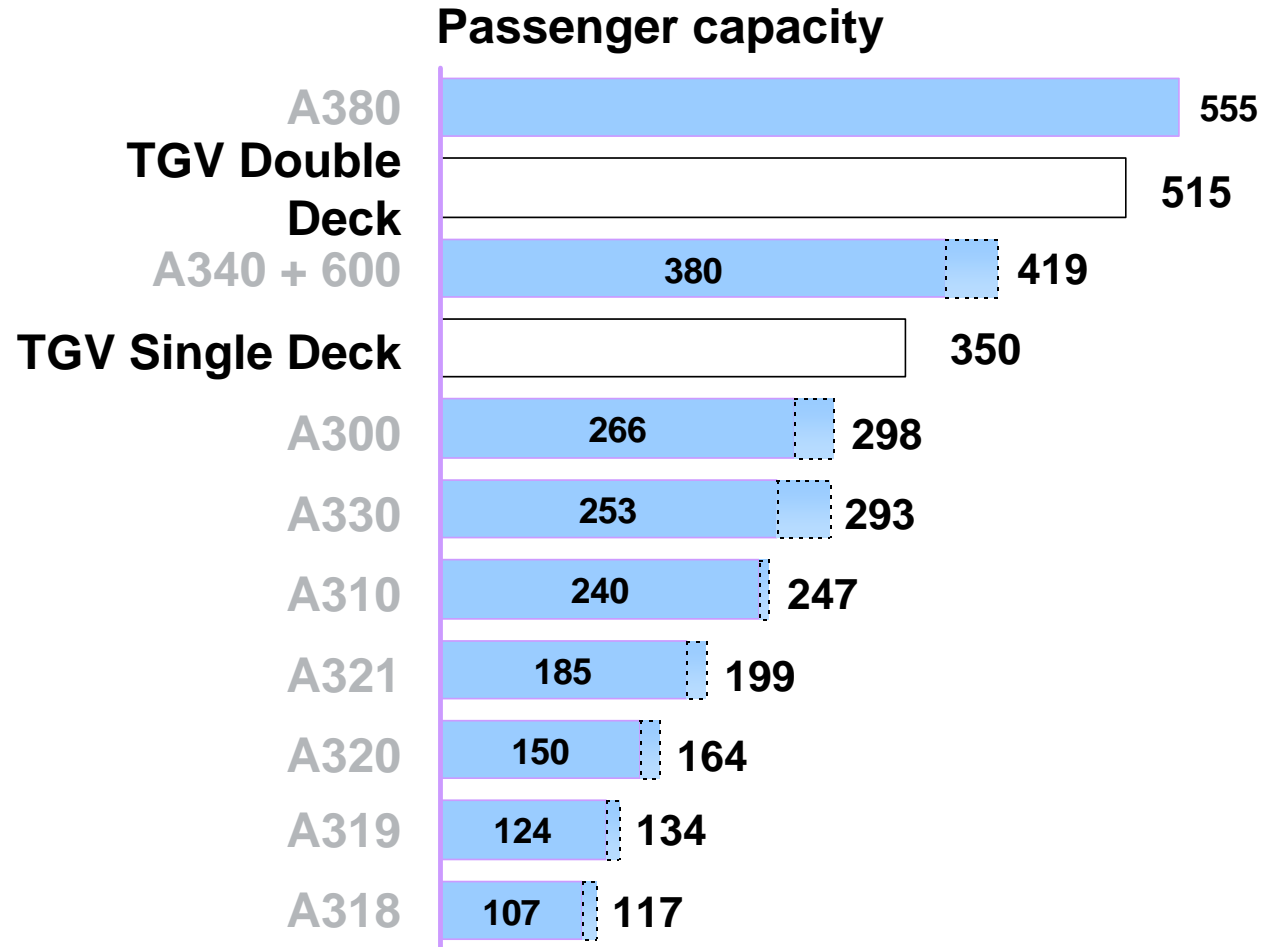
(\*) National Environment Roundtable

**The TGV is a high-capacity passenger carrier compared with the airplane, that offers high energy efficiency for a reasonable footprint, with market shares linked to the journey time and the offer.**

**In the French context marked by the "Grenelle de l'environnement" (\*) :  
measures promoting high-speed rail were announced at the end of 2007,  
involving important development stakes.**

**(\*)National Environment Roundtable**

# The smallest TGV passenger capacity is the size of heavy air carriers



# And its environmental performance is outstanding

## g of CO2 per passenger per km (\*)

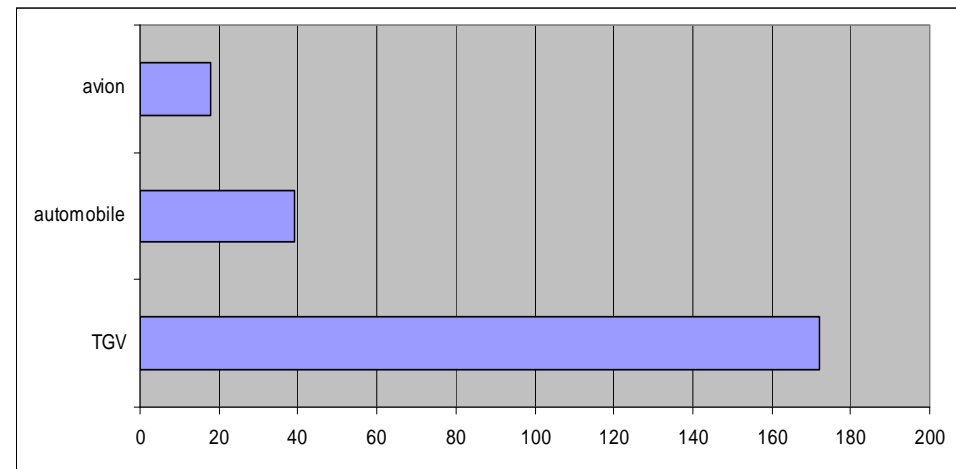
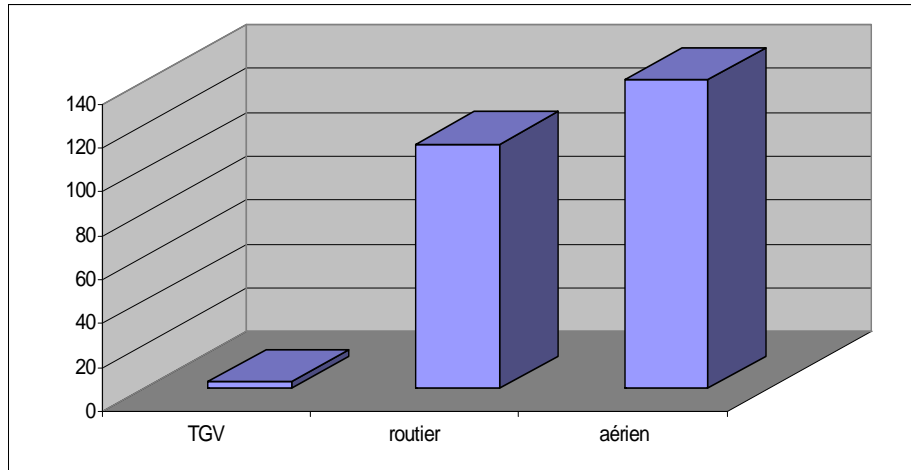
TGV	2.6
Car	111
Plane	140

## Energy efficiency (\*)

*(1 kg oil equivalent per passenger)*

TGV	172 km
Car	39 km
Plane	18 km

(\*) ADEME 2006

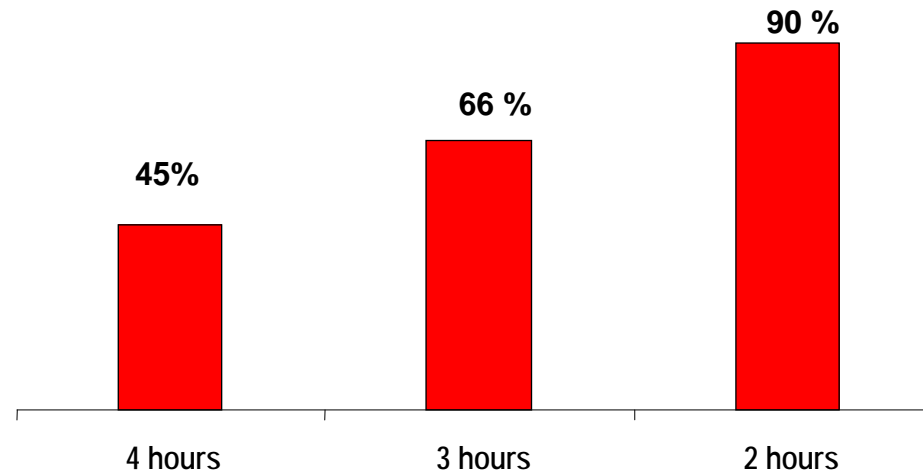


## For a reduced footprint at equivalent volume and mileage run

TGV line	15 m wide / area of 5 to 7 hectares per km
4-lane motorway	28 m wide / area of 9 to 10 hectares per km
6-lane motorway	35 m wide / area of 10 to 11 hectares per km

# With market share linked to journey time

TGV market share in France compared with air travel and according to journey time



An offer undergoing change to adapt to customers' needs:

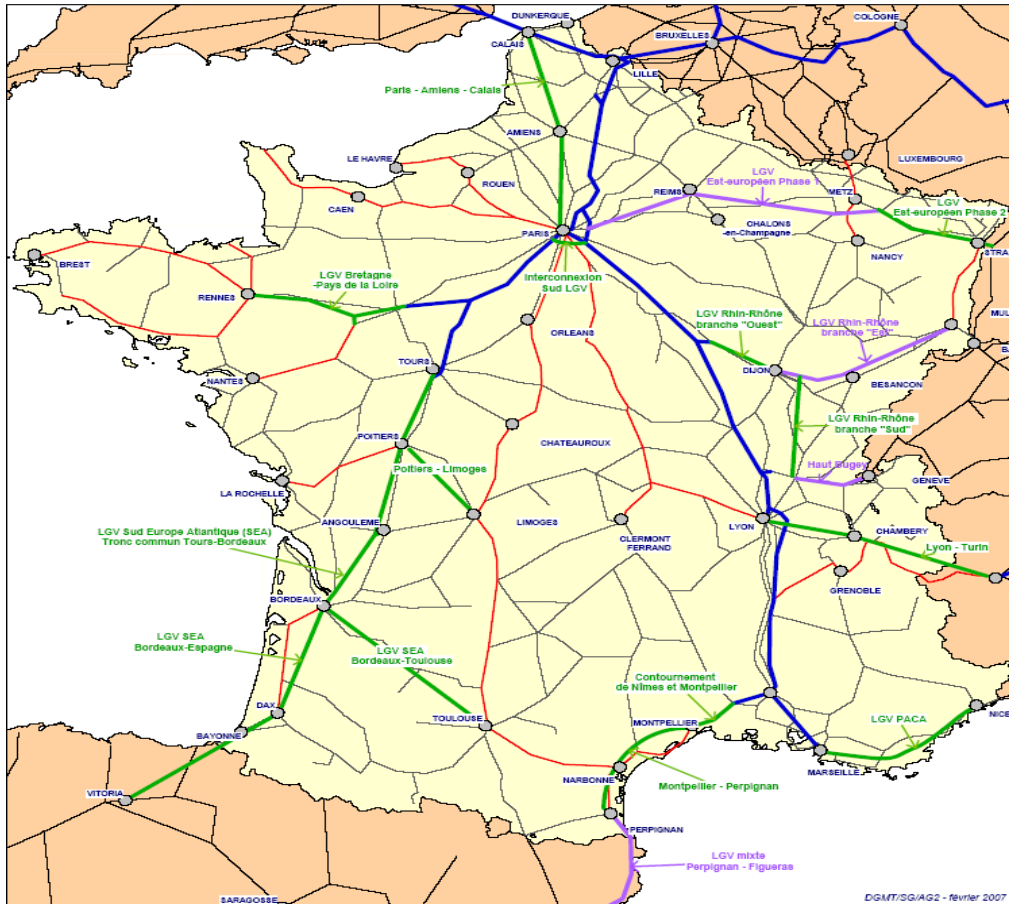
- improved accessibility/intermodality,
- expanded services policy,
- a quite advanced fares and yield management policy, that allows to optimise revenues and load factor (over  $\frac{3}{4}$  of trips are made at a discount price and the high load factor allows to cut way back the emissions per passenger carried),
- new offers developed independently or in alliance (Railteam).

# The French context of the "Grenelle de l'Environnement" policy-making conference

## Measures favourable to high-speed rail announced at end 2007 :

- upgrading of existing conventional network
- 2000 km of high-speed lines to be launched by 2020
- investigation of 2500 additional km in the longer term
- incentives: increased cost of using road vehicles, quotas, ...

## An outlook for doubling train traffic by 2025



- L High-speed lines in operation
- L High-speed lines under construction
- L Planned high-speed lines
- G Existing conventional passenger train routes

The representation of links on this map does not preclude future alignments

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# With development challenges that will be supported by

**An infrastructures development planning method currently being defined based on the decisions of the Grenelle conference, to promote :**

- the connection of major urban areas to the high-speed network by 2020,
- the spreading of the network effect throughout the territory: links to be provided on a competitive basis with the main secondary population and business centres,
- the capability for growth of different types of railway traffic (regional and inter-regional, long distance and high-speed passenger, freight), avoiding bottlenecks.

**Finding a balance in the matter of Infrastructure-usage costs** (tolls now accounting for more than 40% of all operating costs) to enable sustainable development of the High-Speed railway offer.