



High Speed Rail in Spain

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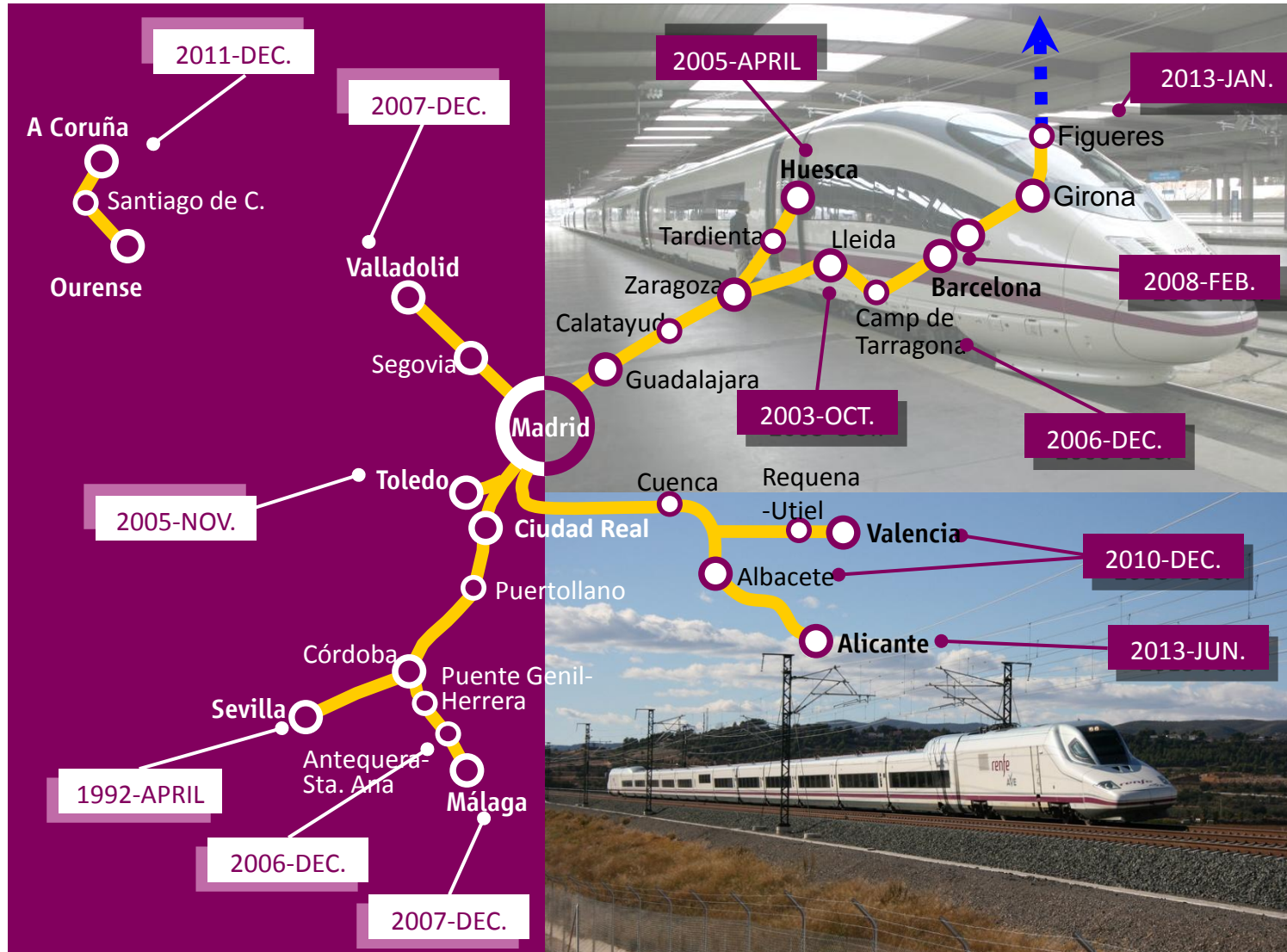
Spanish Railway Network

Total railway network: 15,333 km

- **HS network standard gauge (1,435 mm): 2,322 km**
- **HS network Iberian gauge (1,668 mm): 84 km**
- **Conventional network Iberian gauge: 11,596 km**
- **Mixed network (standard and Iberian Gauges): 119 km**
- **Narrow network metric gauge (1,000 mm): 1,211 km**



Development of the Spanish High Speed Network



Development of the Spanish High Speed Service

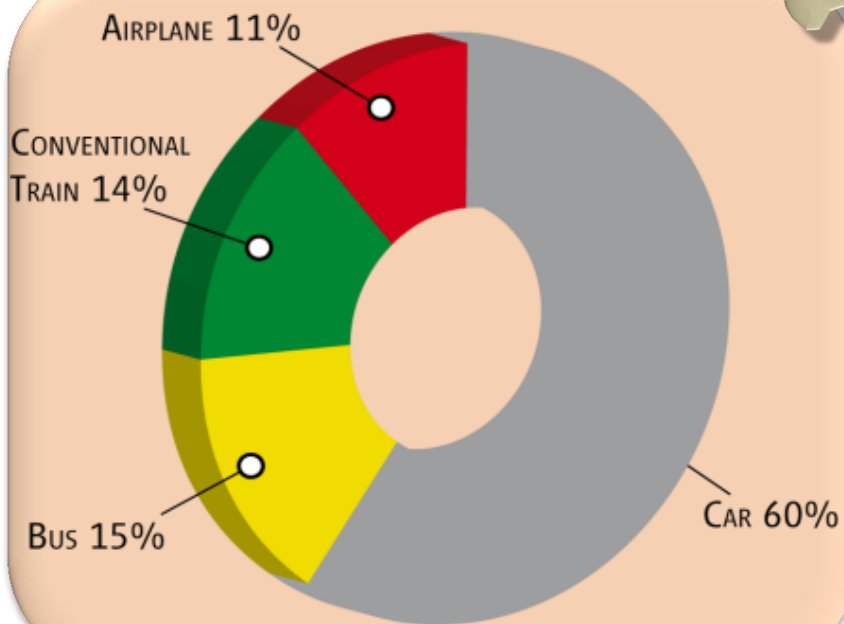


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First Spanish High Speed service Madrid –Seville 1992

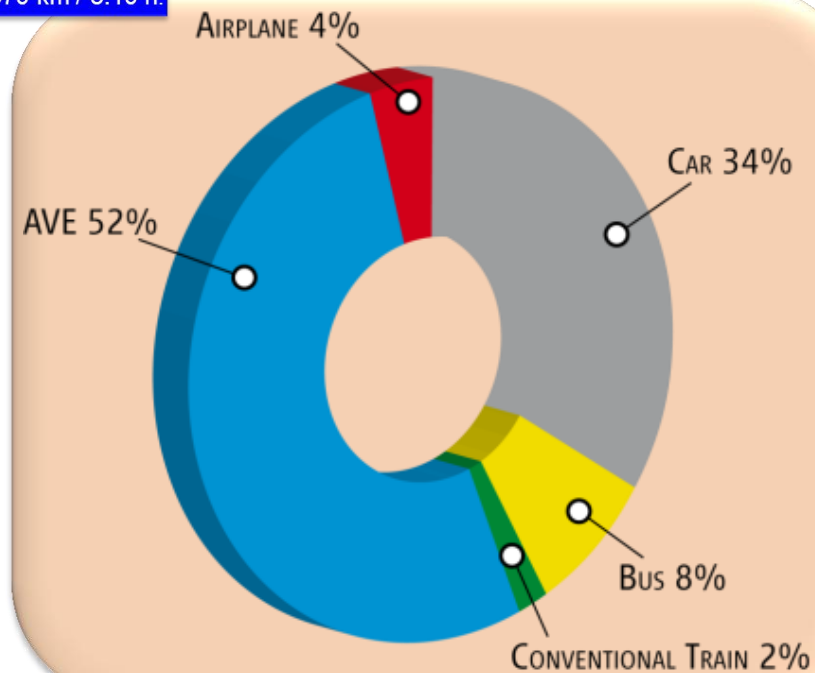
1991

Before AVE

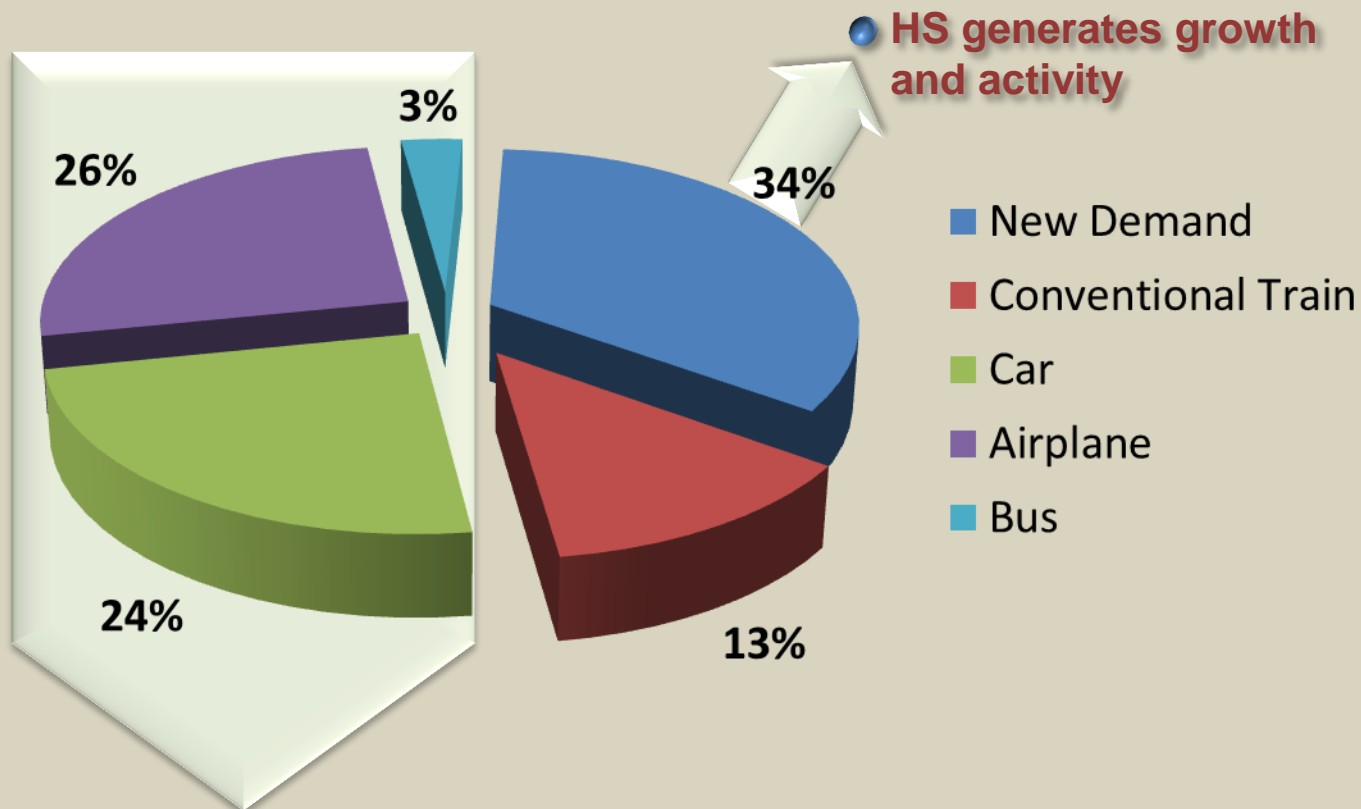


1993

After AVE



Origin of demand the first year Madrid-Seville service



• Transfer from other modes of transport less environmentally friendly

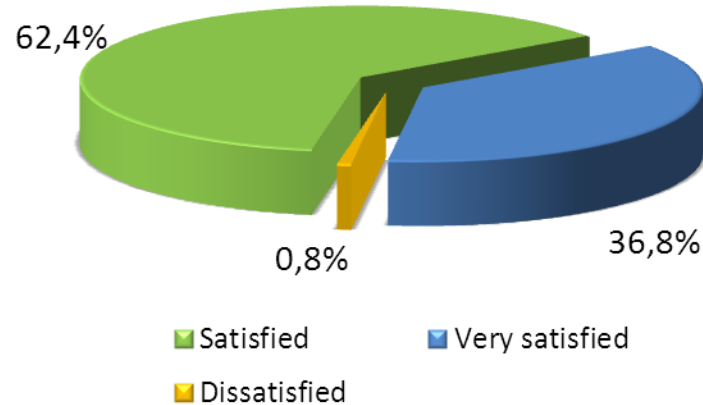
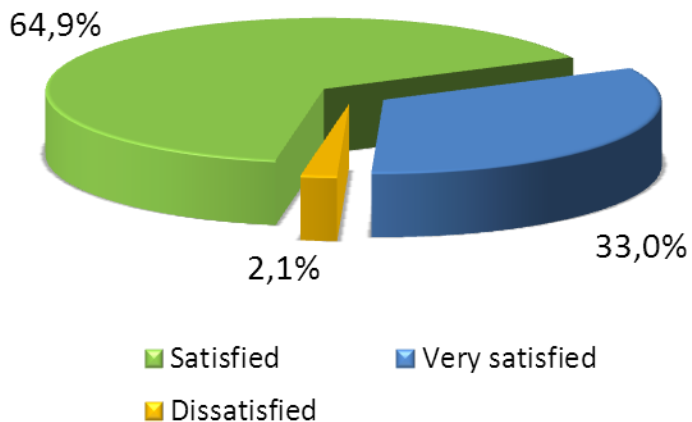
• HS generates growth and activity

More than 21 years of successful experience with High Speed

High level of satisfaction year after year

**First High Speed Line Madrid - Seville
Satisfaction after 20 years of
operation.
(Average 8.1)**

**High Speed Line Madrid - Barcelona
Satisfaction after 4 years of operation.
(Average 8.3)**



Source: Annual study of AVE products - 2012

High Speed Punctuality commitment

- **Since** September 11, 1994
- **On** Madrid-Seville line
- **Product:** High Speed services

- **Commitment:**

Full ticket price refunded if the train arrives at destination with a delay of five minutes or more

The price is refunded in cash

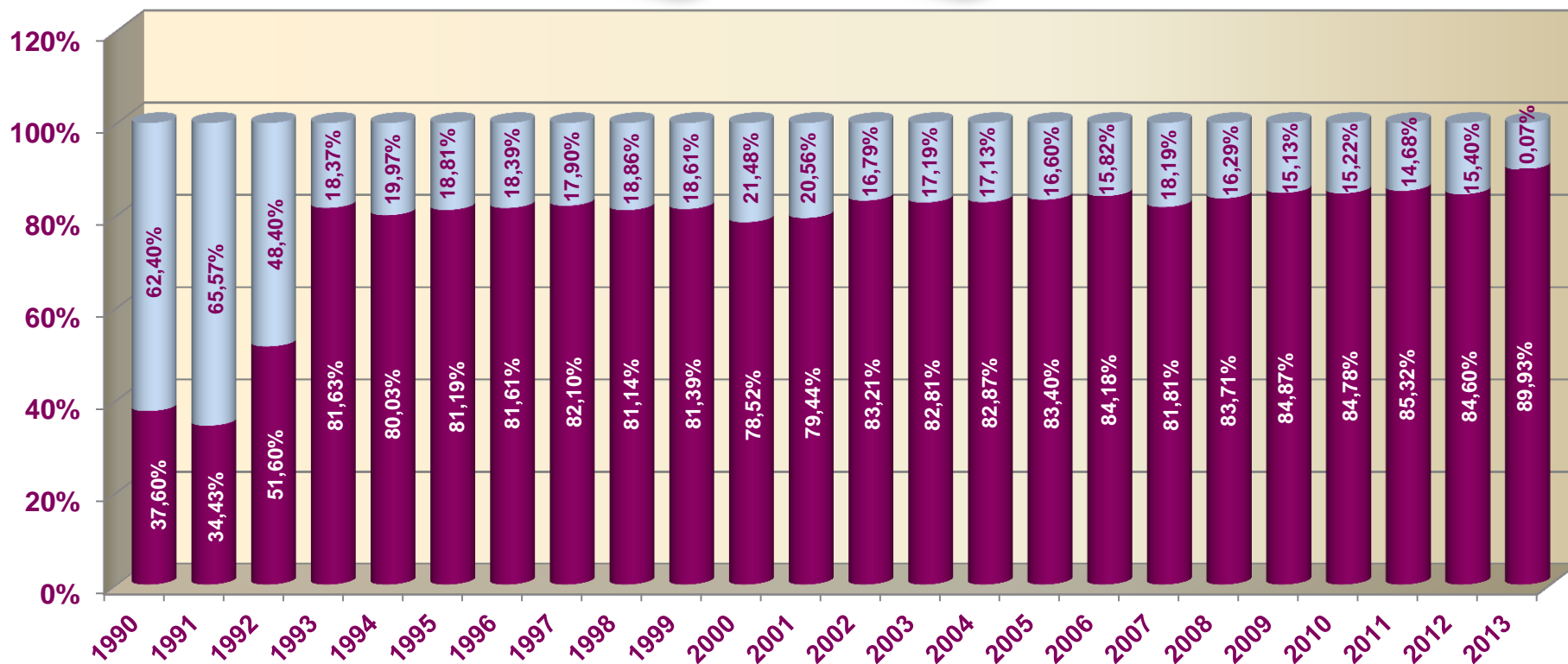
Pioneers



Market share Madrid - Seville

TRAIN

PLANE

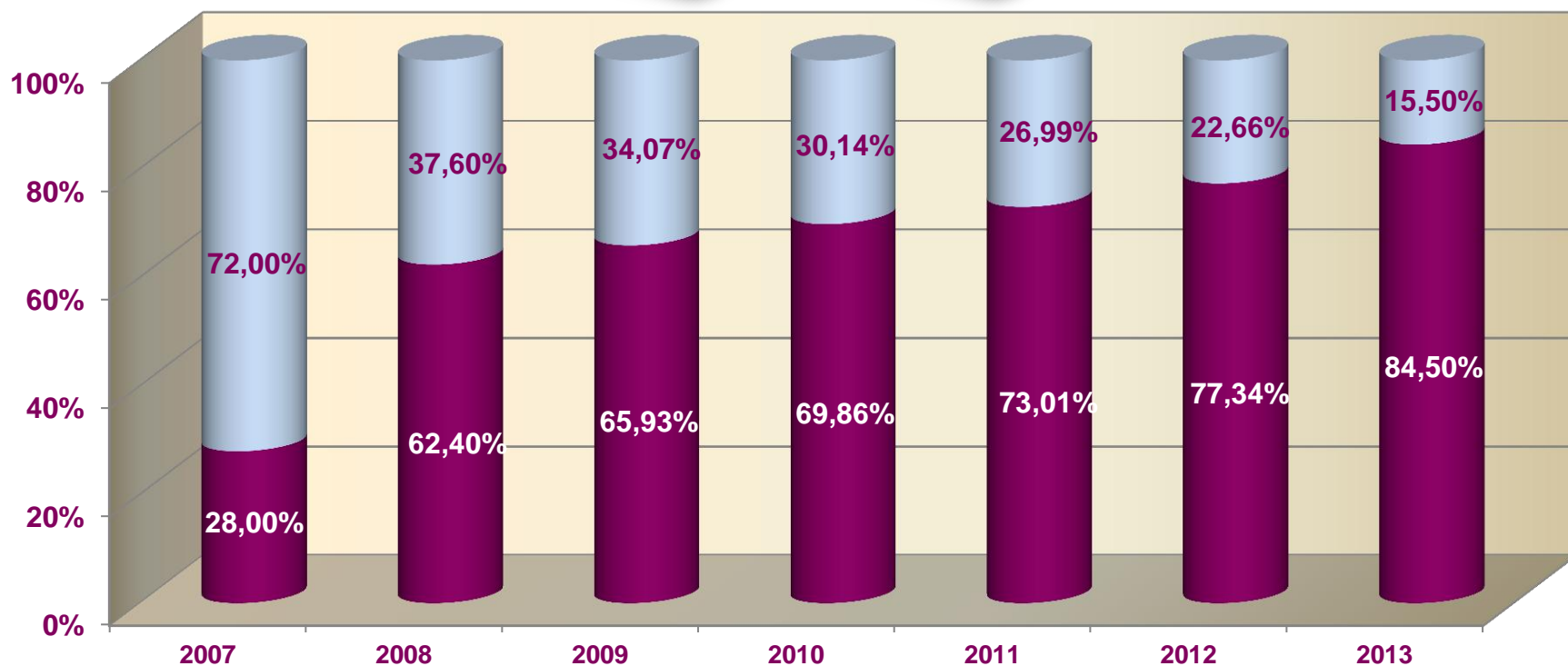


APRIL 21, 1992
THE FIRST HIGH SPEED SERVICE
ARRIVES IN SEVILLE

Market share Madrid - Malaga

TRAIN

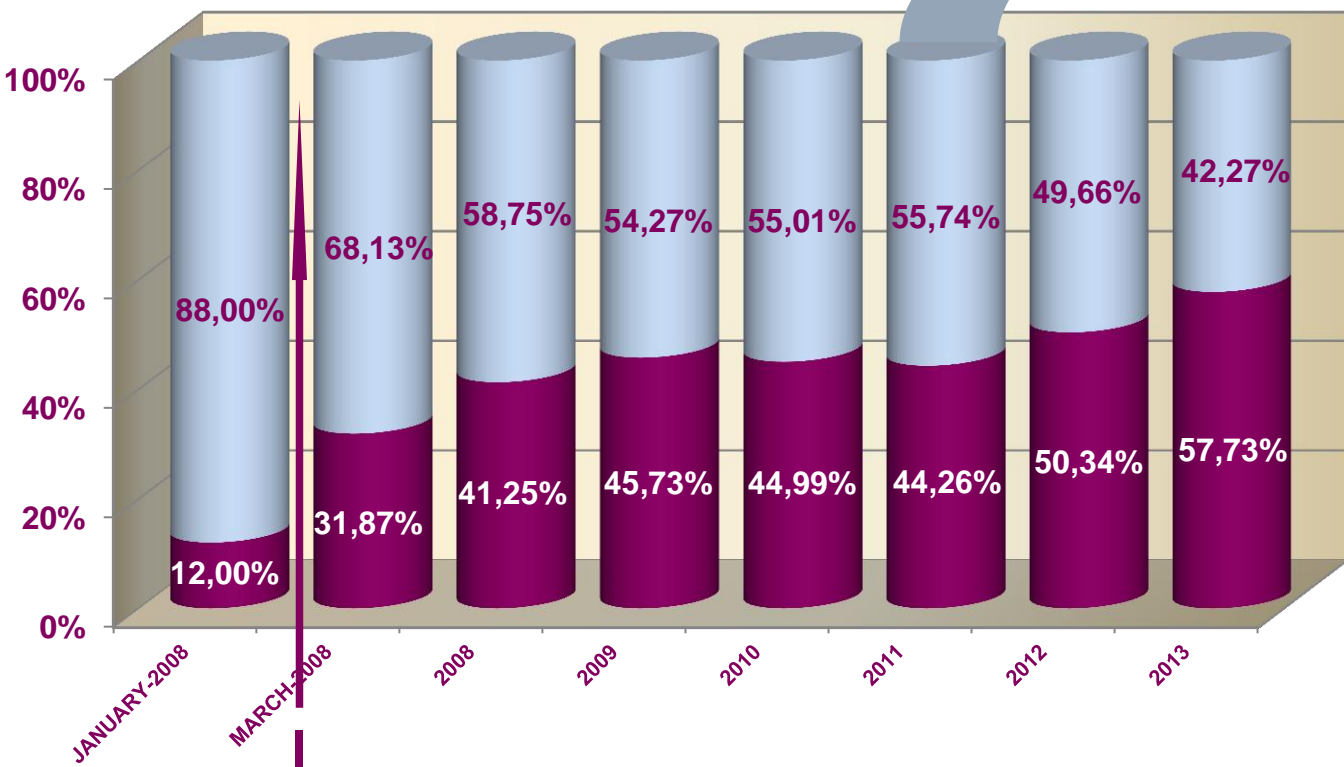
PLANE



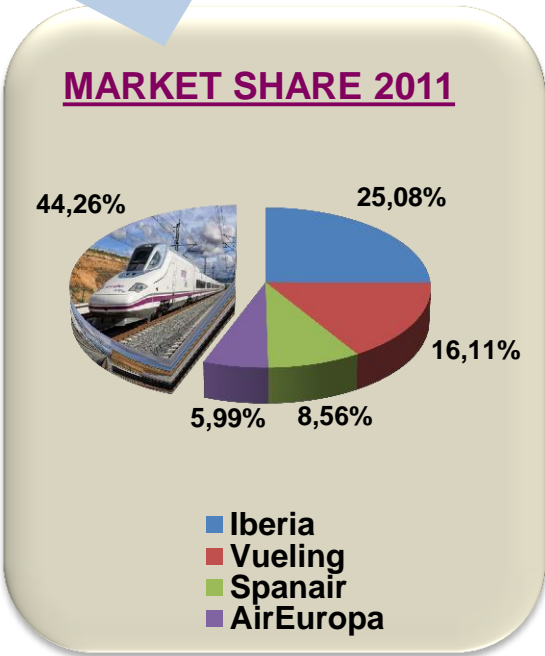
DECEMBER 27, 2007
THE NEW HIGH SPEED SERVICE
ARRIVES IN MALAGA

Market share Madrid - Barcelona

TRAIN **PLANE**



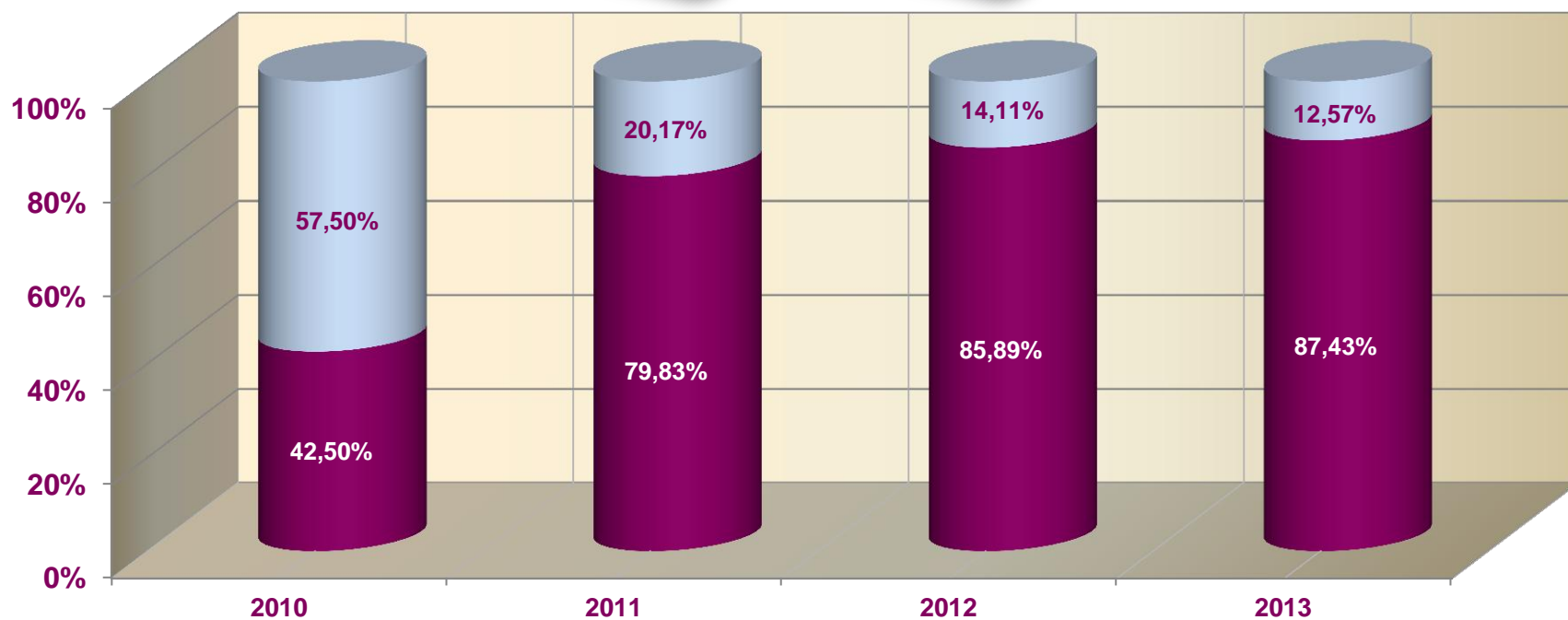
FEBRUARY 20, 2008
THE NEW HIGH SPEED SERVICE
ARRIVES IN BARCELONA



Market share Madrid - Valencia

TRAIN

PLANE



**ON DECEMBER 19, 2010
THE NEW HIGH SPEED SERVICE
ARRIVES IN VALENCIA**



HS Services

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High speed services. Renfe's model

Three different services, running on the same HS infrastructure:



Long Distance  Commercial service



2/3 classes



Mid-distance  Public service



Single class



Long Distance
Dual Gauge  Commercial service



2 classes

DIFFERENT
FARES,
AFFORDABLE
TO ALL



High Speed AVE

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High Speed – AVE 300/350 kph (186/218 mph)



Average service:
555 km (345 mi)

Second world's longest
high-speed service:
1,121 km (697 mi)

Services / working
day: 139

Punctuality AVE
2012 (3')
94,25%

- Two/Three classes
- High level of service
- Market price
- Profitable
- No government compensations





HS Mid-Distance (Avant)

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High Speed – Mid-Distance AVANT 250 kph (155 mph)

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Avant



Average service:
154 km (96 mi)

Services / working
day: 102

**Punctuality
AVANT 2012 (3')**
96,49%

- Public service fares, approved by the government
- Single class
- Functional train
- Financial compensations for PSO



HS Dual gauge Alvia

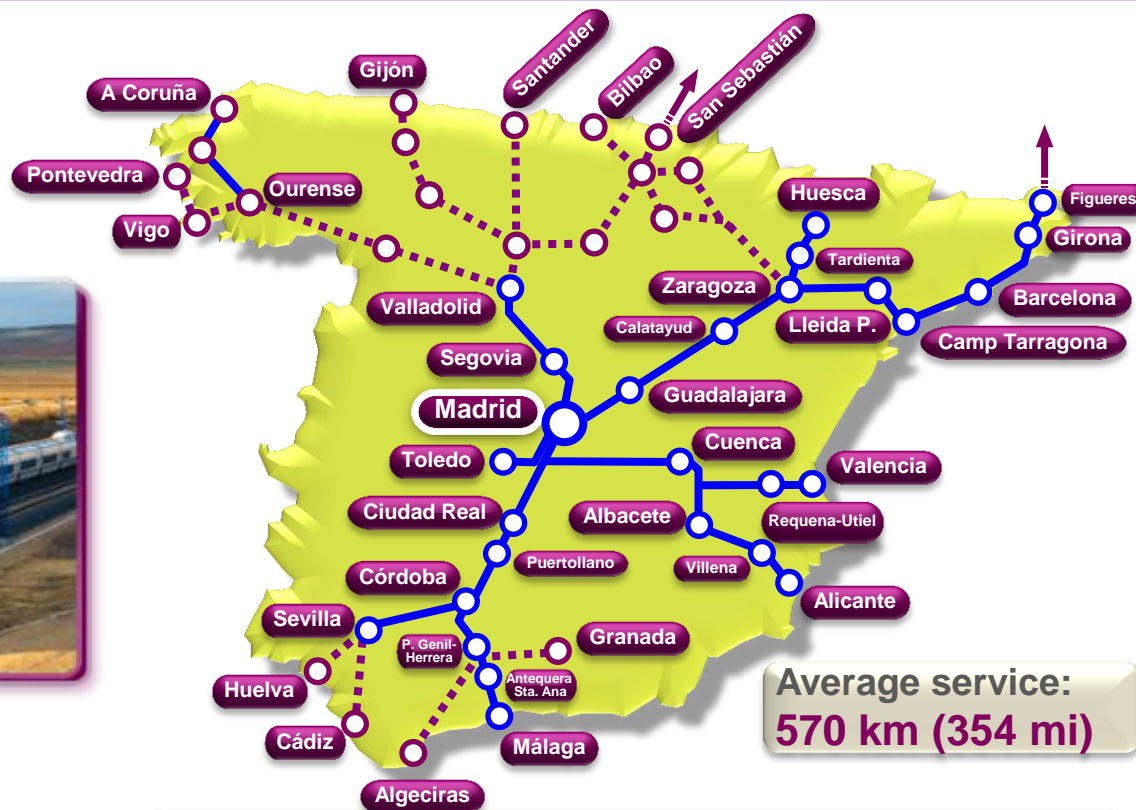
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High Speed Dual Gauge Services

- Speed 250 kmh using High Speed Lines.
- Up to 220 kmh using conventional lines.

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Alvia

- Conventional Lines
- High Speed lines



Average service:
570 km (354 mi)

- The Dual Gauge services extend the benefits of the high speed lines to conventional network
- Two classes
- Full service
- Market price
- Globally profitable

Vía
Via
PLATFORM

6

Hora | TIME

11:30

Tren | Tren | train

AVE TGV

Destinació | Destino | destination

PERPIGNAN

TREN INAUGURAL



High Speed International Services

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Spanish - French direct High Speed Services



Since December 2013, 17 Spanish and French cities are connected through High Speed trains, without transfer in Figueras.

Common AVE and TGV trains “Renfe - SNCF in Cooperation” provide :

- 2 daily services per way Barcelona - Paris
- 1 daily service per way Barcelona - Lyon
- 1 daily service per way Barcelona - Toulouse
- 1 daily service per way Madrid - Barcelona – Marseille

Freight on the HS line Barcelona-concession TP Ferro



14 freight trains per way run weekly between Barcelona and Le Soler through the concession TP Ferro



Thank you for your attention

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