



renfe

May 25th 2016

Energy efficiency in Renfe

Eress Forum



- RENFE IS THE ONLY PASSENGER RAILWAY UNDERTAKING IN SPAIN AND THE MAIN RAILWAY FREIGHT OPERATOR. (Trans European Network).
- THE BILLING SCHEME IS BASED ON GROS TON PER KM AND THERE IS NOT A METHODOLOGY FOR COLLECTING THE MEASUREMENTS, FROM TRAINS.
- THE EFFICIENCY POLICY HAS BEEN BASED ON THREE PILLARS:

- Training programs for drivers (from 2011)
- Energy recovery from braking (95 % of the fleet)
- Reducing Hotel loads (led lighting, switch off auxiliaries when parked)



– THE PRESENT AND THE FUTURE: ONGOING PROJECTS:

- Collecting consumptions from trains
- Automatic Economy Driving systems
- Liquefied gas and Hydrogen cells (Innovation projects)



Renfe and ADIF (IM) have signed an collaboration agreement in order to change the current status quo, setting up a new billing system, based on real consumption.

This is an important milestone. Means a deep transformation towards open passenger market and an impulse for the efficiency.

100 HS Trainsets
100 Freight Locomotives

Automatic Economy driving system (Efficient ATO): BEDS
Automatic Switch off for hotel load
New MSAV25K-46 Sensors - GPS - Central Unit - 3GTransmission

Fully 50463 compliance

BEDS FIELD TEST
(Passenger)



SINGLE JOURNEYS
SAVINGS FROM 6-31%
SAVING AVERAGE 11-19%



ENERGY RECOVERY
(Freight)

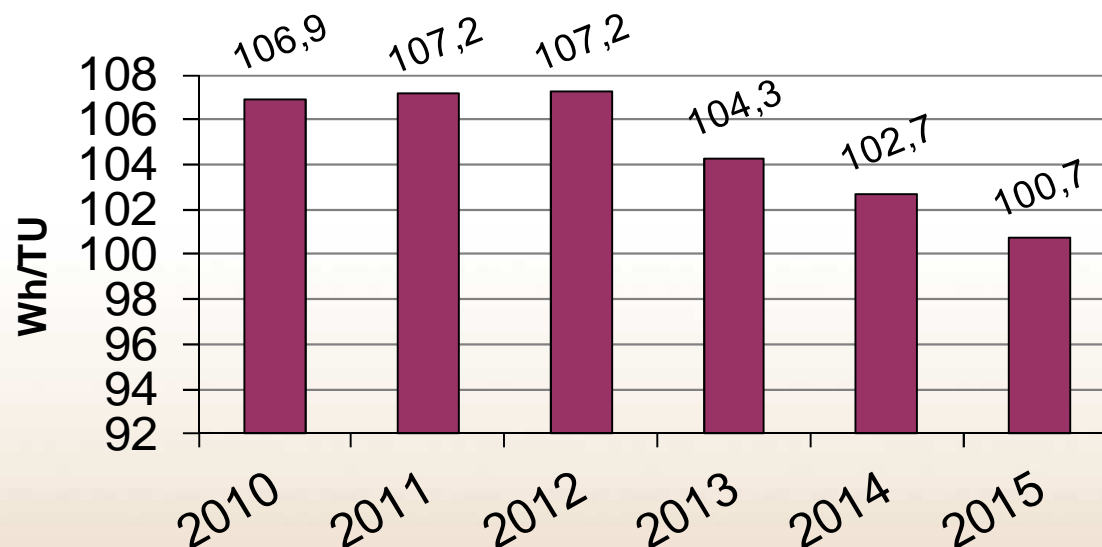


SINGLE JOURNEYS:
20-33%





Specific energy consumption in Renfe 2010 - 2015



To be continued...

	2010	2011	2012	2013	2014	2015
Total Gigawatts (Electricity + Fuel)	3.035	3.105	3.024	3.119	3.216	3.212
Transported Units (Million Tons)	28.395	28.966	28.204	29.912	31.310	31.898
Watts per hour h / TU	106,9	107,20	107,23	104,3	102,72	100,70
Results compared to previous year	-	0,28%	0,03%	-2,73%	-1,51%	-1,97%
Results compared to 2010	-	0,28%	0,31%	-2,43%	-3,91%	-5,80%

Start driving training





Thanks for your attention

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