Panel 2

Overview about the market segment
“Electric Regional Rail Services”

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Overview

- Main characteristics of the Electric Regional Rail Services
- Fixed installation Railenergy solutions
- Rolling stock Railenergy solutions
- Conclusions
- (Recommendations)
Main characteristics

- The electric regional service type consumption is about 18% of the total energy consumption for electric railway traction in Europe;
- The market segment of electric service type is growing;
- The regional service type use both dc and ac electric traction systems;
- This service type is characterized by a large number of EMU’s, electric multiple units (about 37 800).
Main characteristics

The regional service type is characterized by many stations and limited average distance between them.

Many acceleration and braking phases!

High energy saving potential!!!
The strategic recommendation of Railenergy are mainly focused on these technologies:

- 2 x 1.5 kV DC Traction System;
- Reduced line impedance;
- Reversible DC Substation.
The idea is to use existing/or new feeders and to set them to a voltage different from the catenary by new converters installed in existing substations.

Energy saving potential is about 2 – 4 %

Promising if increased capacity is needed

Can also be “exported“ for 2 x 3 kV dc
The idea is to decrease the impedance of the catenary in order to reduce losses.

- Energy saving potential is about 2 – 5 %
- Promising if increased capacity or renewal is needed
- Can be used for dc and ac systems
This topic will be treated in details by next presentation of Alstom and Enotrac!!!

TecRec on this topic will be publish.
The technical and strategic recommendation of Railenergy are mainly focused on these technologies:

- Medium Voltage loads management
- Active filtering to reduce input passive filter losses
- Control to reduce traction chain losses

These technologies will be treated in details by the presentation of Ansaldobreda!!

Some proposal are only SW changes !!
Conclusions

- Some technology evaluated in Railenergy are promising for the electric regional services;

- Some of them could have high investment costs but they should be considered together with other technical needs (increasing capacity, renewal, new trains etc);

- The solutions proposed for DC systems are in general more promising due to lower energy efficiency of existing DC systems.
Thank you very much for your attention!

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Recommendations

- Active filtering
- 2 x 1.5 kV DC Traction System
- Reversible DC Substation
- Reduced line impedance
- Medium Voltage loads management
- Reduce traction chain losses
- existing systems
- new systems

ac systems

dc systems