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# TRAINER

Saving traction energy  
EED practice at the Slovenian Railways

Tours, Sept. 25<sup>th</sup> 2009

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**TR**Aining programmes to **IN**crease **E**nergy-efficiency by **R**ailways



## Introduction

- Energy expenses are significant part of company expenses
- Reduction of energy expenses and improving energy efficiency:
  - Improving load profile
  - Shaving power peaks (transmission costs)
  - Improving driver's practice to improve energy efficiency (specific consumption)
  - Improving energy efficiency over all
  - Reducing CO<sub>2</sub> emissions

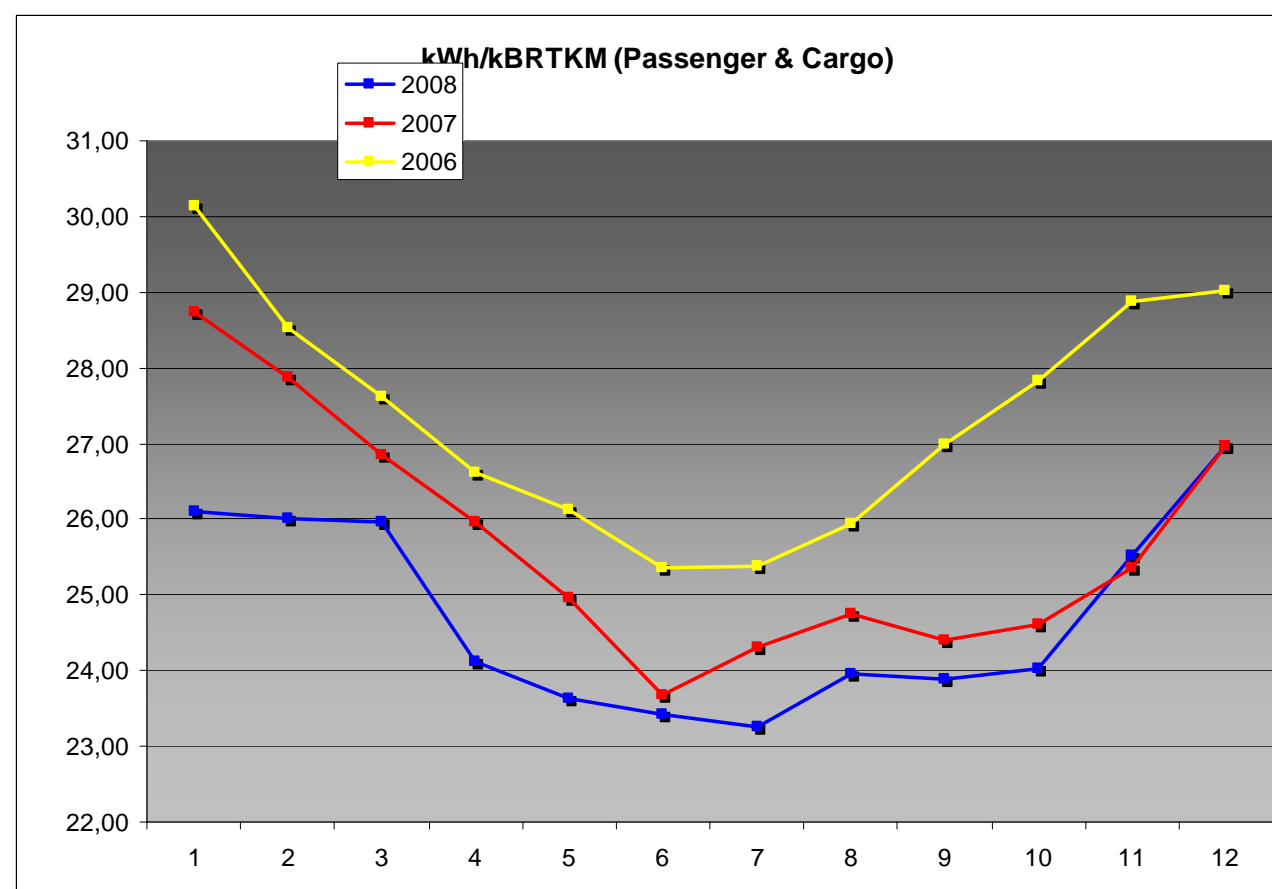


## Energy efficiency

- Energy for traction (~90%)
  - Monitoring:
    - power peaks at the converter stations to have influence on time table (particularly on steep grade lines)
    - consumption of electricity and diesel fuel onboard locomotives
    - energy for heating/cooling the trains
- Other energy (~10%)
  - Environmental Dept. and Infrastructure management



## Results





## Approach...

- Energy problems - everyone should be aware of
  - Articles in internal magazine
  - Intranet web pages
- Monitoring should be presented to drivers very carefully
- Trade Unions are very important...!!!
- Traffic administration should know about their influence on energy consumption
- Infrastructure management
  - propositions for improvements on tracks/catenary
  - track maintenance
- Company management should be informed and supportive. Top management should be connection point to the Government.





## Approach - drivers

- Lectures about the best practice during regular schooling process
  - Possibility for drivers to be able to check and compare their consumption profile with the best one on intranet
- Practical training with driver-instructor
- New generations of drivers to be taught about energy efficient driving. Knowledge acquired through EED/TRAINER project will be used in manuals.



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## Publications

- We prepared additional printed material - not only official leaflet!
- Articles in internal magazine (Nova Proga)
- All the publications and articles are available on Intranet pages of Traction Department
- Publications related to drivers activities available on drivers Union web page
- Pay attention on UIC brochure...!!!

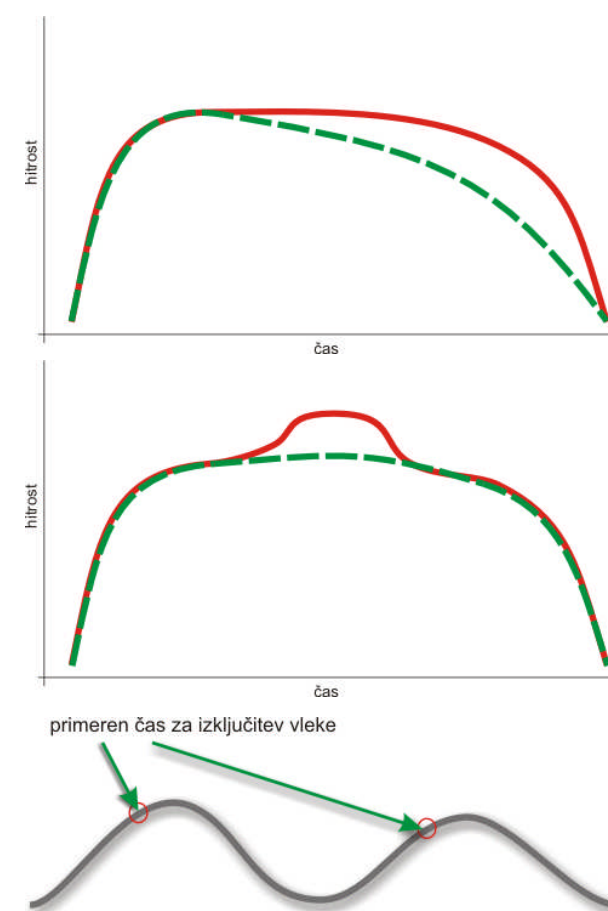






## TRAINER - how to improve driver's practise

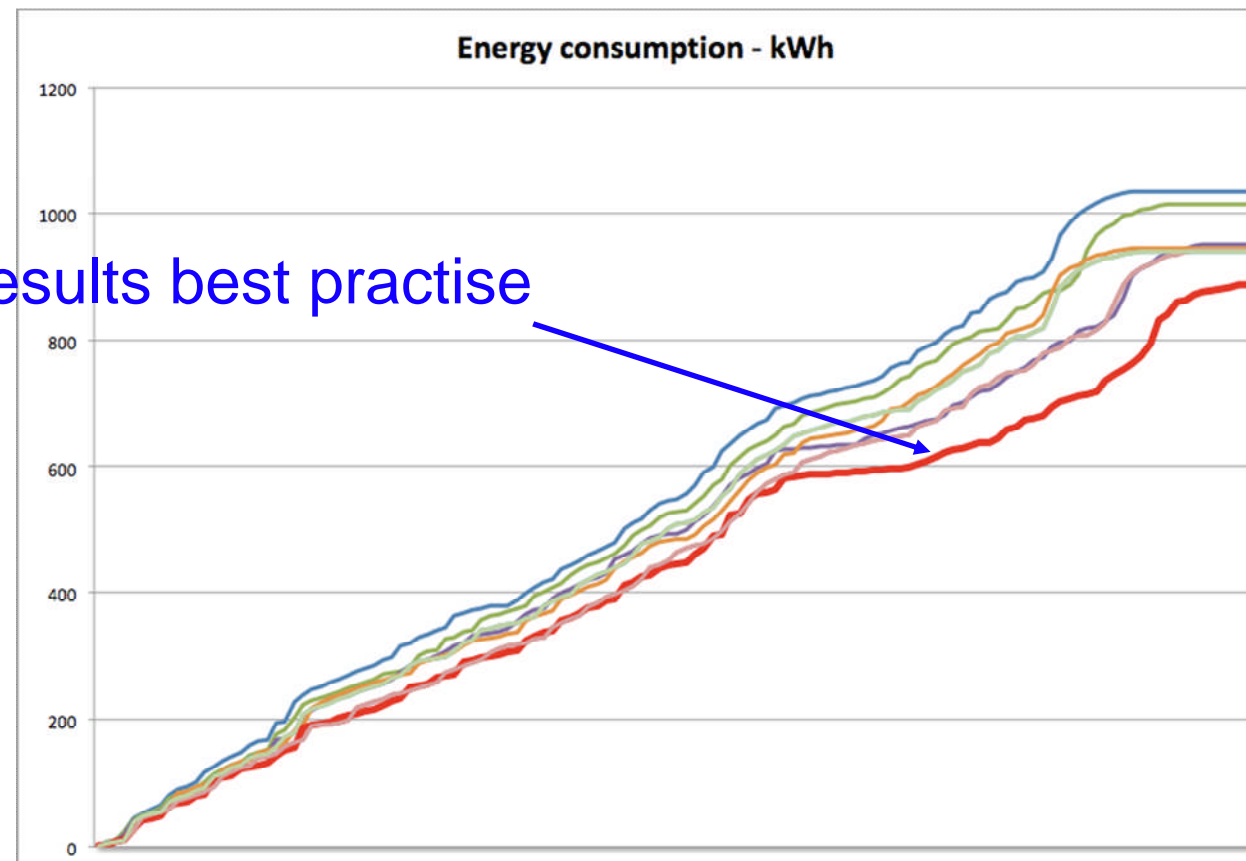
- Three simple rules (punctuality counts...!)
  - Let it roll
  - Avoid speed peaks
  - Find right moment to switch off traction
- Some other rules described in TRAINER video





## Energy efficient driving - different practice

This line results best practise

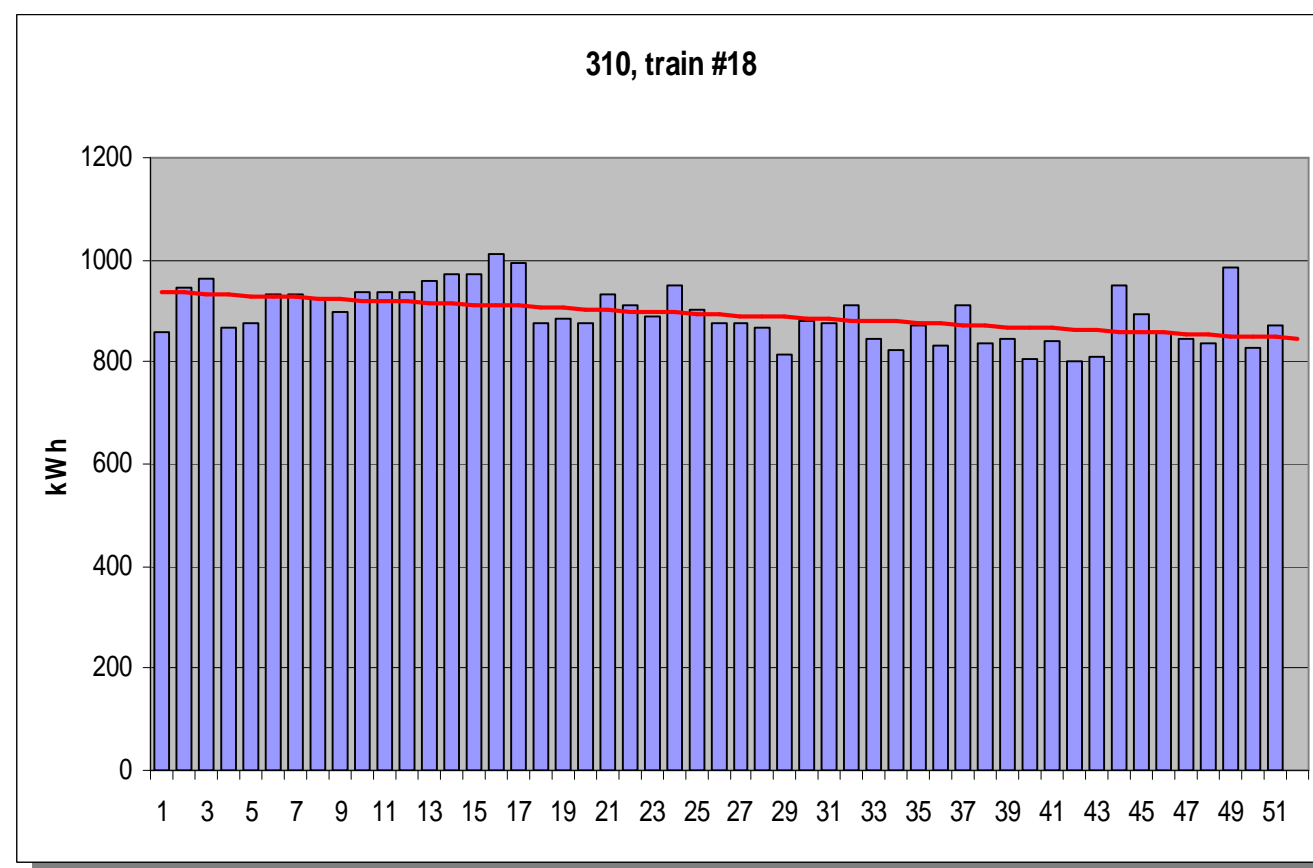




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## Results





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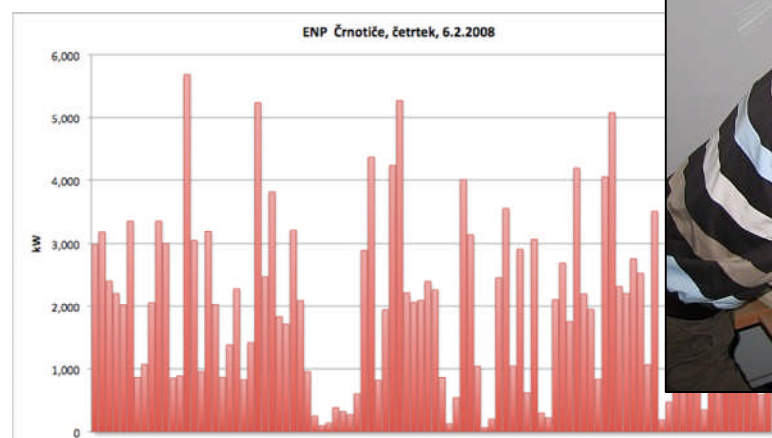
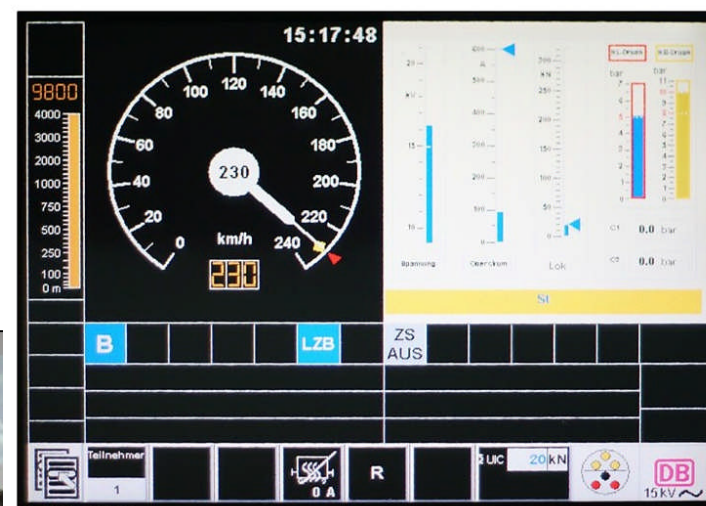
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## Future plans...

- Simulator
- Web access
- DMI - helpful for the driver





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**Attention!**

**Saving the energy is never ending  
process!!!**