Sustainability at MAV Zrt.

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MÁV – a Group of Companies

Operator –most - of the railway network in Hungary

- Operator of the related infrastructure
- Real estate, assets, property management

Railway passenger transport

- Technological, technical development
- Service development

Back office services to MAV Group

- Including environmental protection services
- Internal logistics, HR, training, etc.

Maintenance, development

The network

Operated network - 7276 km

International network, corridors - 2611 km

Electrified network – 2633 km

Serviced trains – ~1,4 mill

Train km - ~100 mill

Tkm - ~40 mill

Passenger transport

Operated trains - ~1 mill

Daily - ~2900

75 mill km

Passengers a year - ~ 140 mill

EU Recast Directive 2012/34/EU

- establishing a single European railway area

- Achieving sustainable mobility
- Market competitiveness – with environmental costs internalization in infrastructure fee charging schemes of rail infrastructure
- Noise, noise reduction, noise measurement
- User friendly performance indicators
- Indicators and quality aspects – environmental protection

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Network operations contract

- between the Member State & the Operator (MAV ZRt.)
- 10 years contract
- Development remains a Member State responsibility
- Environmental protection is a key measure
- Environmental activities are a responsibility of the Operator and the Users
- Goals: prevention, minimization, maintenance, elimination, recovery

- It means shared responsibility in sustainability
- Development happens in all stages
- Development has to be harmonized
- Goal on Sustainable operations

Sustainability

- MAV Group has a common Environmental Strategy
- Group Members has ISO systems, including ISO 50001 on energy management
- Developments are done with respect to all legislation, goals are towards sustainability
- Environmental activities cover all areas, elements (land, ground water, air, soil, nature – noise, waste, remediation etc.)
- CSR included – emphasis on training of employees
- With 170 years of history – historical heritage of a hazardous industry to be solved

- No specific Sustainability Plan yet

AVOID

- Avoiding vs. economic interest

SHIFT

- Train has to be competitive – DEVELOPMENT

IMPROVE

- This is and has to be the main focus of our activities

Places of improvement - energy consumption

Energy consumption

- 1,8% of the total electric energy consumption of Hungary is used by rails
- Total energy consumption decreased 3% (from 2013 to 2015) mainly due to the new electric trains in Passenger transport (60 to 108 pcs)
- 9,9% of the used electricity is from renewable (2015)
- Our „greenest” line is line 101- Budapest-Hegyeshalom

~4500 kWh/év

Egy átlagos háztartás éves energiafogyasztása

~48 500 millió kWh/év

Magyarország éves energiafogyasztása

~2700 kWh/vonat

Egy átlagos Railjet fogyasztása: Bp. Keleti – Hegyeshalom viszonylaton

~860 millió kWh/év

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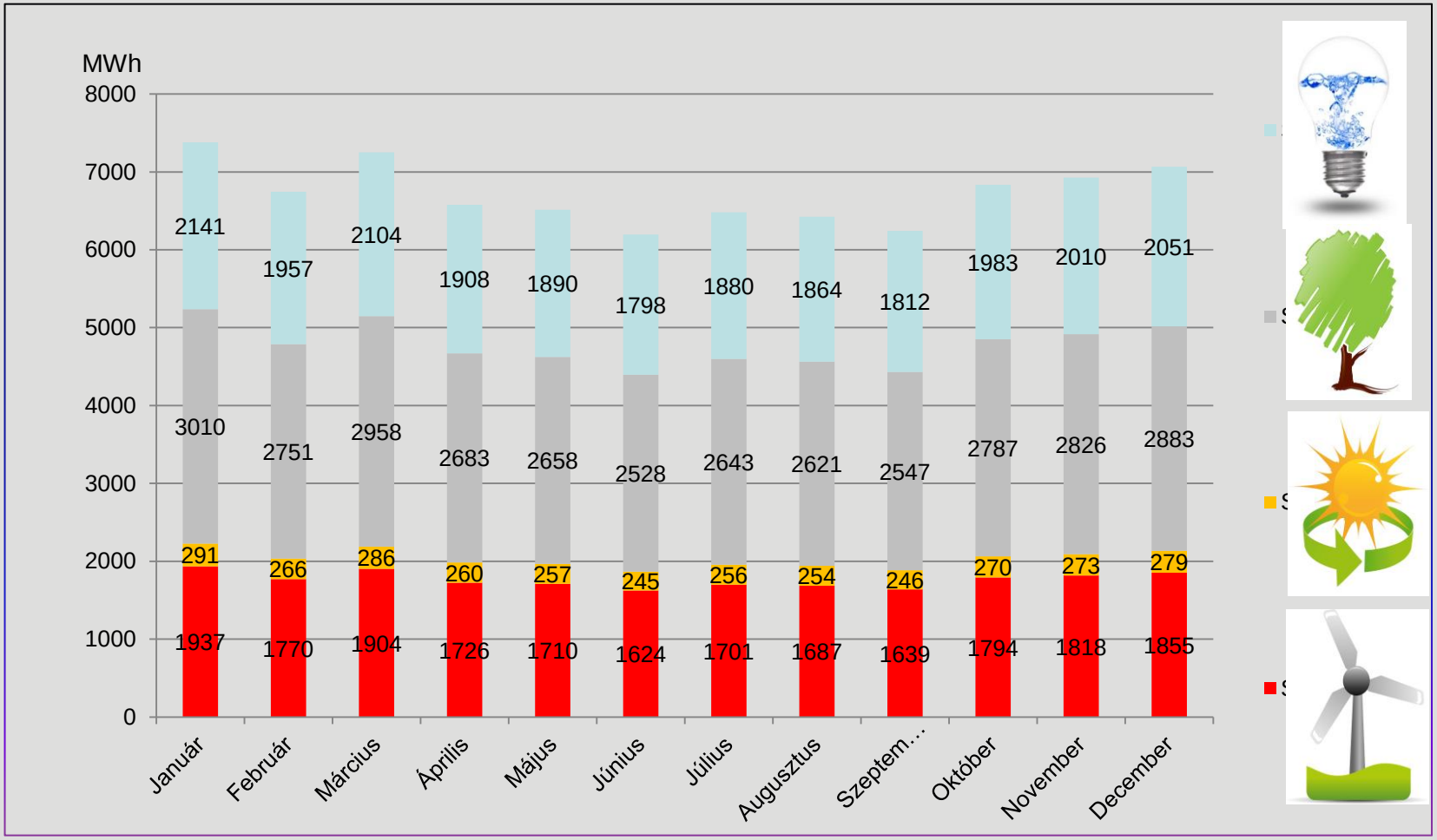
MÁV Zrt. hálózatán vontatásra felhasznált energia

Share of renewables



Achievements

Comparison in CO2 emission

1 gross ton km on train: 7,8 gram

1 gross ton km on road: 23,4 gram

In 2015 - 33,9 bill gross ton km has been transported on train

To capture the equivalent CO2 you need:

Train: 3,8 million trees

Road: 11,5 million trees

If you have transported on train in 2015 you have helped us saving

7 million trees ☺

Places of improvements

Energy management goals - examples

Train operation

- More electrified networks
- Exact planning – exact measurements – exact pricing - saving
- Energy regenerating braking - ~106 mill GJ

Property management

- Natural gas usage -2%, by 2017.12.31
- Replacement of solid fueled and oil fueled heating equipment –
- 20% by 2018.12.31
- Usage of renewable energy
- 5% deduction in outdoor electric lighting by 2019.12.31
- Higher efficiency and electrical car park by 2017.12.31
- Data clearing in measured data by 2017.12.31

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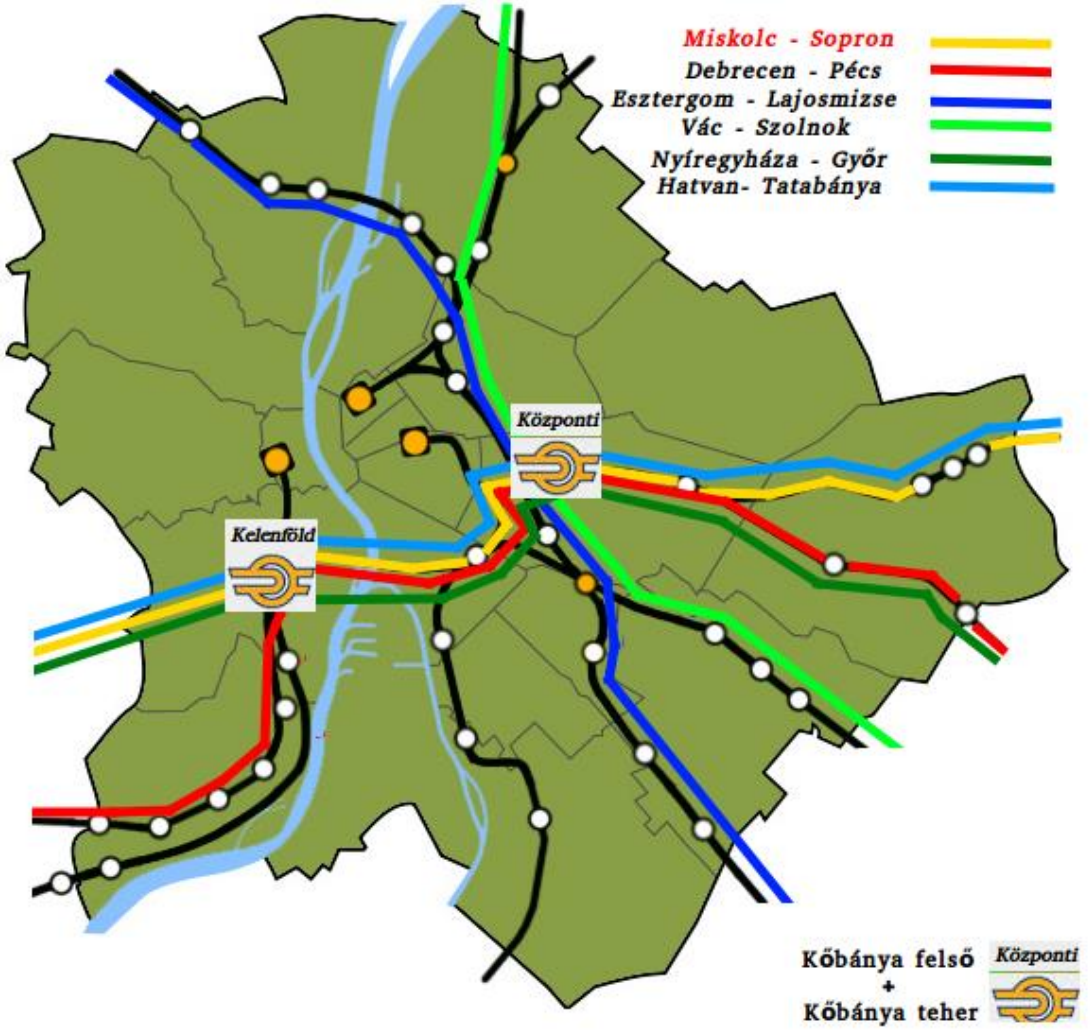
Places of improvements

- Faster, smoother lines (160 km/h – 10 minutes on 100 km)
- Reliable, modern protective devices
- Intermodal hubs
- Parking functions at stations
- Connectivity

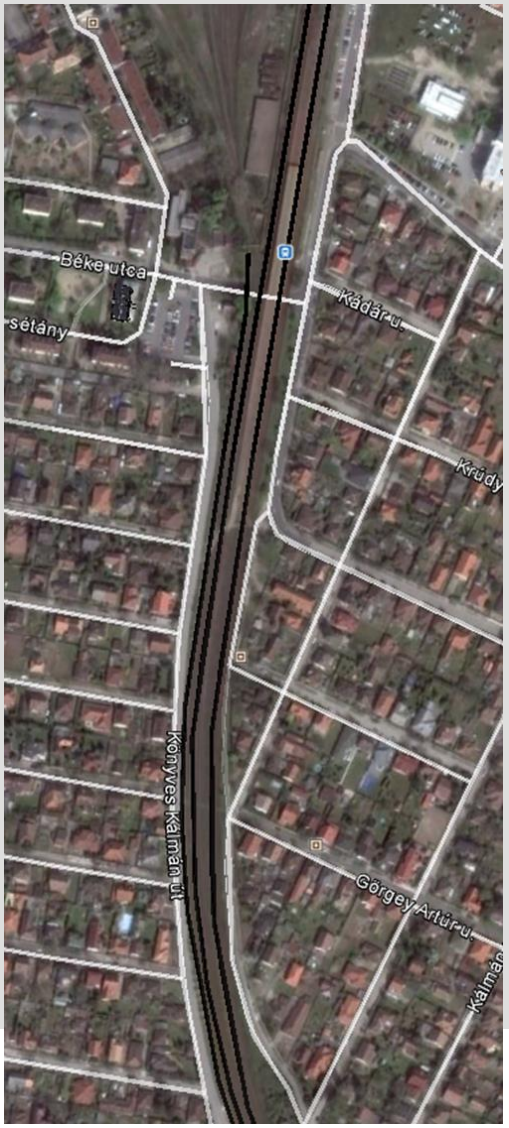
- Comfort functions for passenger
- Special pricing – e options for buying tickets,
- New equipment – new trains
- Less noise – more space

Collision in case of increasing rail transport – increasing sensitivity of inhabitants, urbanization

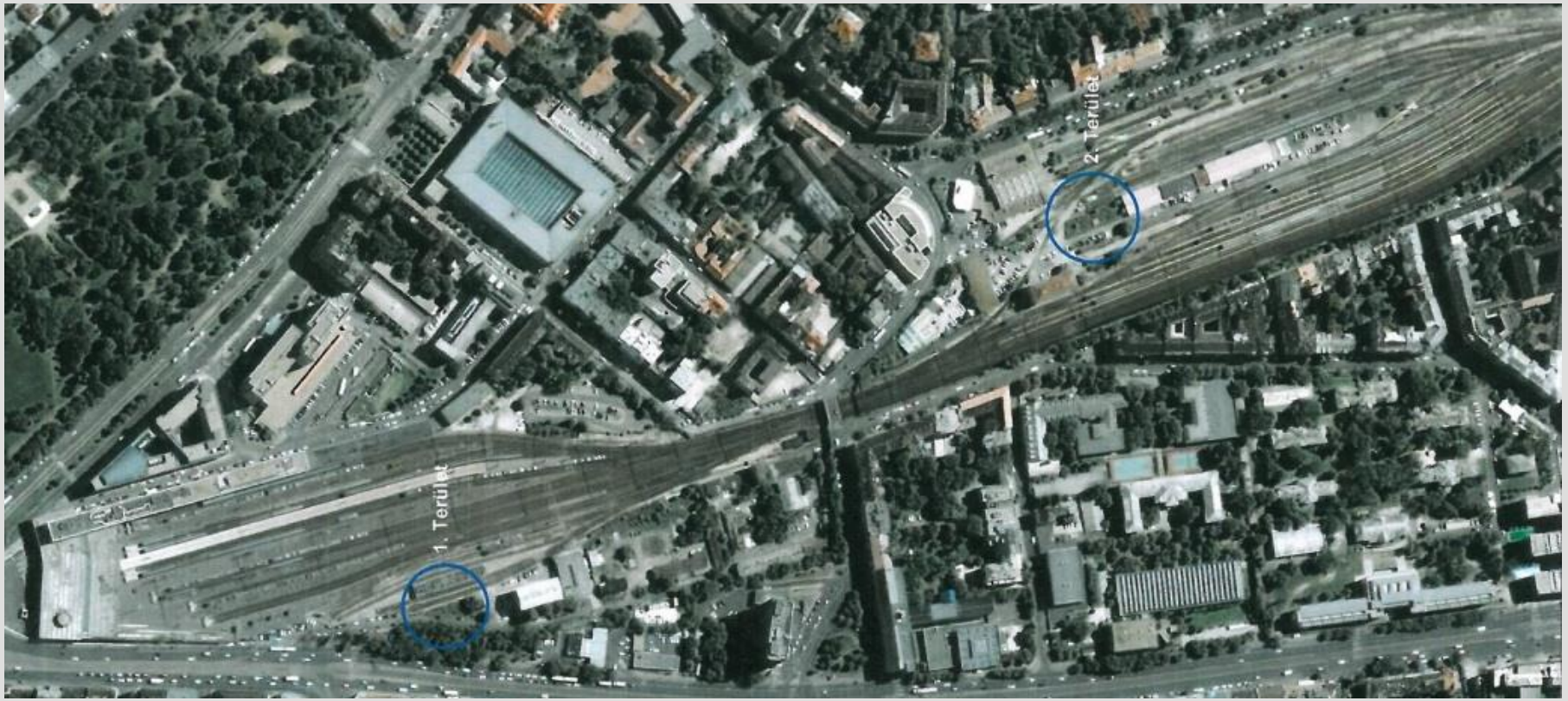
Urbanization vs. transport



Urbanization vs. transport



„The Southern”



Sustainability – knowledge base

- Special knowledge
- Internal trainings
- Environmental programs
- Dual training, dual education
- Collaboration agreement with schools and universities

SDGs and the MAV Group


Thank you for your attention!