

# Developing a renewable energy strategy

**UIC Sustainable Conference**

**Pascale Heylen**  
Environmental Advisor

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# Agenda

- Our challenges as railway sector
- Infrabel and renewable energy
- Approach renewable energy projects
- Our renewable energy projects

# Our challenges as railway sector



UIC DECLARATION  
**SUSTAINABLE MOBILITY & TRANSPORT**



“We are the backbone for sustainable mobility and transport systems in our society”

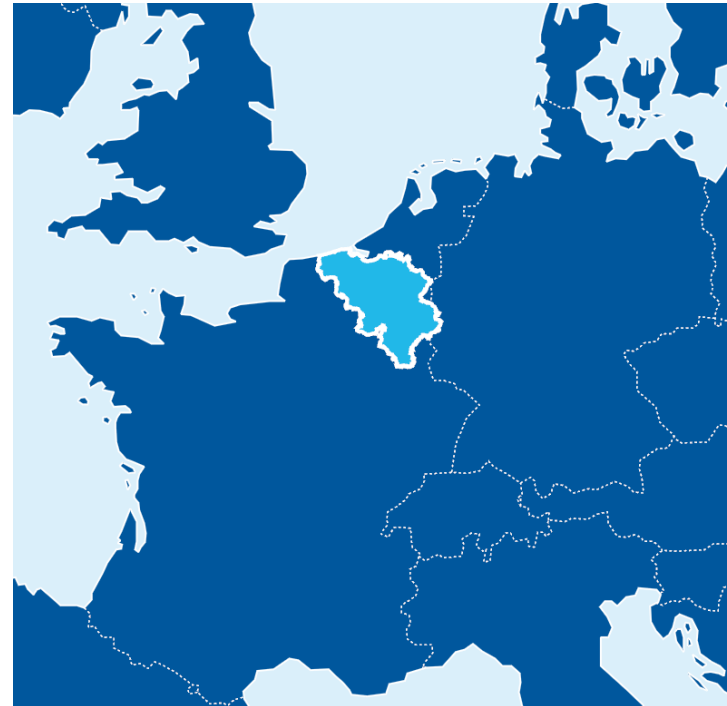
- A1 Rail offers solutions to cope with the mobility and transport challenges of the future.
- A2 Rail has lower impact on climate and environment than most other transport modes.

## Infrabel and renewable energy

- Our objectives as railway infrastructure manager in Belgium
  - Policy contract Infrabel and Belgian government
    - Renewable energy
      - Infrabel shall examine possible partnerships for the construction of production facilities using alternative energy sources, such as cogeneration, solar, wind, ...
        - No obligation of results
        - No specific budget
  - Rational use of energy
    - Reduction of energy use non-traction of 7,5% between 1995-2012
    - Reduction of CO<sub>2</sub> emissions

## Infrabel's activities

- Railway Infrastructure Manager Belgium
- Public company
- 3582 km rail
- Energy flows
  - Buy 1,6 TWh
  - Sell 1,4 TWh
- No production facilities
- Electricity grid Infrabel is underlying the public grid



## Approach renewable energy projects

- Infrabel wants to contribute to new production facilities
  - Use of infrastructure Infrabel:
    - Installation at roofs, buildings, property,...
    - Connection of external installations at electrical infrastructure Infrabel
  - Production is taken off by Infrabel
    - Price must be competitive
- Participation in equity is possible but not necessary
- Not interested in “window dressing”
  - No “green washing” of electricity using certificates of origine

# Approach renewable energy projects

- Investment done by Infrabel (small projects)
  - Investment by third party (large projects)
1. Installation at an Infrabel site
    - Past; ad hoc projects
    - Now: transparent procedure « *qualified suppliers* »
      - Sun
      - Wind
      - Ecological projects
  2. Possibility to connect other installations at the electrical grid of Infrabel

## Solar train

### Europe's first "green" train leaves the station thanks to Belgium's Solar Tunnel

Antwerp, 6 June 2011 - 16,000 solar panels installed on the roof of a high-speed rail tunnel in Antwerp, Belgium have been officially entered into service. The solar installation is the result of a



Some railways produce their own renewable energy. A particularly innovative example is the Schoten Rail Tunnel near Antwerp in Belgium, where infrastructure manager Infrabel has installed 17,820 solar panels on the roof, covering a total length of 3.4 kilometers (or 8 football fields) which will deliver 3,300 MWh of electricity every year. This corresponds to the average annual consumption of around 950 families and will save 47.3 million kg CO2 over 20 years.



Railways and Sustainable Development

*A global perspective*





## Solar train

- High speed railway between Antwerp and the Netherlands
- Ecological tunnel of 3,5 km long, 17 meter wide
- 4 MW peak, 50.000 m<sup>2</sup>, 16.000 panels
- Estimated production: 3,3 GWh/year
- In cooperation with Enfinity and 2 municipalities
- Investment cost 15,7 million euro
- Reduction of 47,3 million kg CO<sub>2</sub> in 20 years, yearly 2400 ton CO<sub>2</sub>

***One day a year:  
all the trains with renewable energy,  
produced by this installation***

## Solar train: role of Infrabel

- Participates in capital SPS Fin (2%)
- Gives a leasehold free of charge
- Buys electricity
- Connection at electrical grid Infrabel
- Change of electrical exploitation Infrabel grid in order to receive higher price for green certificates



## Solar train: role of developer

- Participates in capital SPS Fin
- Project organisation
- Permits
- Financing
- Study
- Operation & Maintaining of the installations
- Selling the produced electricity, not used by Infrabel



## Sail train

- Construction of windmills alongside high speed line – motorway between Brussels and Liège
  - 20-25 windmills of 2 MW
  - Total distance: 15 km
- Total investment: 120 million euro
- Estimated production: 130 GWh
- Construction will be started in 2014
  
- Role Infrabel:
  - Participates in capital Greensky (10%)
  - Buys electricity that can be used local
  - Reconfiguration of Infrabel-grid to increase consumption in Avenas
  - Connection at electrical grid Infrabel (36 kV)



## Windmills Montzen (new project)

- Infrabel has launched a procedure to construct windmills at a property in the Walloon region
- Sent to qualified suppliers
- Suppliers must introduce a proposal containing:
  - Number of windmills
  - Installed MW
  - Price
- Decision taken on the MWh produced and the price offered

## Difficulties

- General
  - Permits
  - Unstable renewable energy legislation
- Specific for railway sector
  - Decentralized consumption
  - Places with high consumption have limited possibilities to construct renewable energy facilities (urban environment)
  - Relation with public grid operators

## Conclusion

- Our core business – opportunities
- Active role via qualified partners
- Realize ecological and economical benefits
  - Increase the share of renewable energy
  - Lower dependency 'classical' electricity sources
  - Decrease CO<sub>2</sub> emissions



## Contact

### **Pascale Heylen**

Environmental advisor

T + 32 2 525 29 13

F + 32 2 526 37 46

M + 32 491 16 22 10

E [pascale.heylen@infrabel.be](mailto:pascale.heylen@infrabel.be)

