



Ministry of Infrastructure
and Water Management



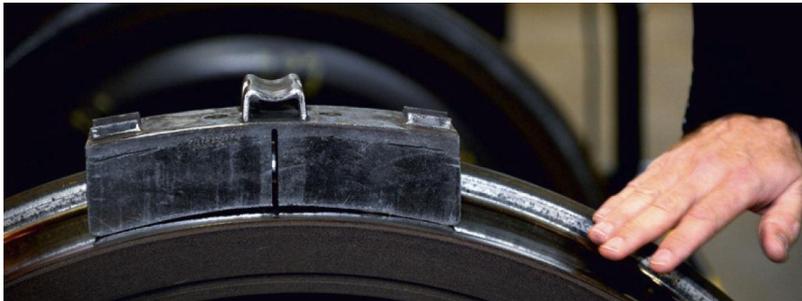
Noise Differentiated Track Access Charging in the Netherlands: positive impact on sustainability of transport

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Freight rail transport has many advantages:

- Less emissions of CO₂ per tonkm compared with trucks
- Less emission of 'classical pollutants' (NO_x, SO_x, particulate matter)
- Contributes to less congestion and traffic jam
- Contributes to more road traffic safety

But . . .



Freight rail transport has also some disadvantages:

- Trains are the second most dominant source of environmental noise in Europe
- 10 % of the European population is exposed to significant noise pollution from rail transport, in particular freight transport
- Nearly 14 million people affected
- Health-related cost of road and rail traffic noise across Europe: € 40 billion in 2010

Sources: White Paper 'Roadmap to a Single European Transport Area - Towards a competitive and resource efficient transport system', COM(2011) 144
Commission Staff Working Document 'Rail freight noise reduction' SWD (2015) 300 final, 22.12.2015



Photo: Brabants Dagblad

. . . public opposition . . .

In the future:

- Rail freight traffic is expected to increase by more than 50 % by 2030, compared with 2010 levels
- Noise pollution will be a major reason for public opposition to rail transport in densely populated regions in Europe
- Reducing rail noise is a condition to the development of the rail sector, which plays an important role in ensuring sustainable mobility

Source: Commission Staff Working Document 'Rail freight noise reduction' SWD (2015) 300 final, 22.12.2015



Nearly all rail freight transport is international transport, so reducing rail noise pollution is important for the future of the international railsector

An international sector needs international regulation





In The Netherlands, high expenditures (2012-2017: € 45 million) for:

- noise barriers
- noise dampers and
- acoustic isolation of houses near railways

Noise barriers . . .
only effective
at local scale =>
'end-of pipe' solution!



Photo: ProRail



The most effective way for reducing railway noise by up to 50 % (8-10 dB) is to replace

cast-iron brake blocks

by

composite brake blocks



Cast iron brake block



Composite brake block

Photo: Shanghai SUYU Railway Fastener Company

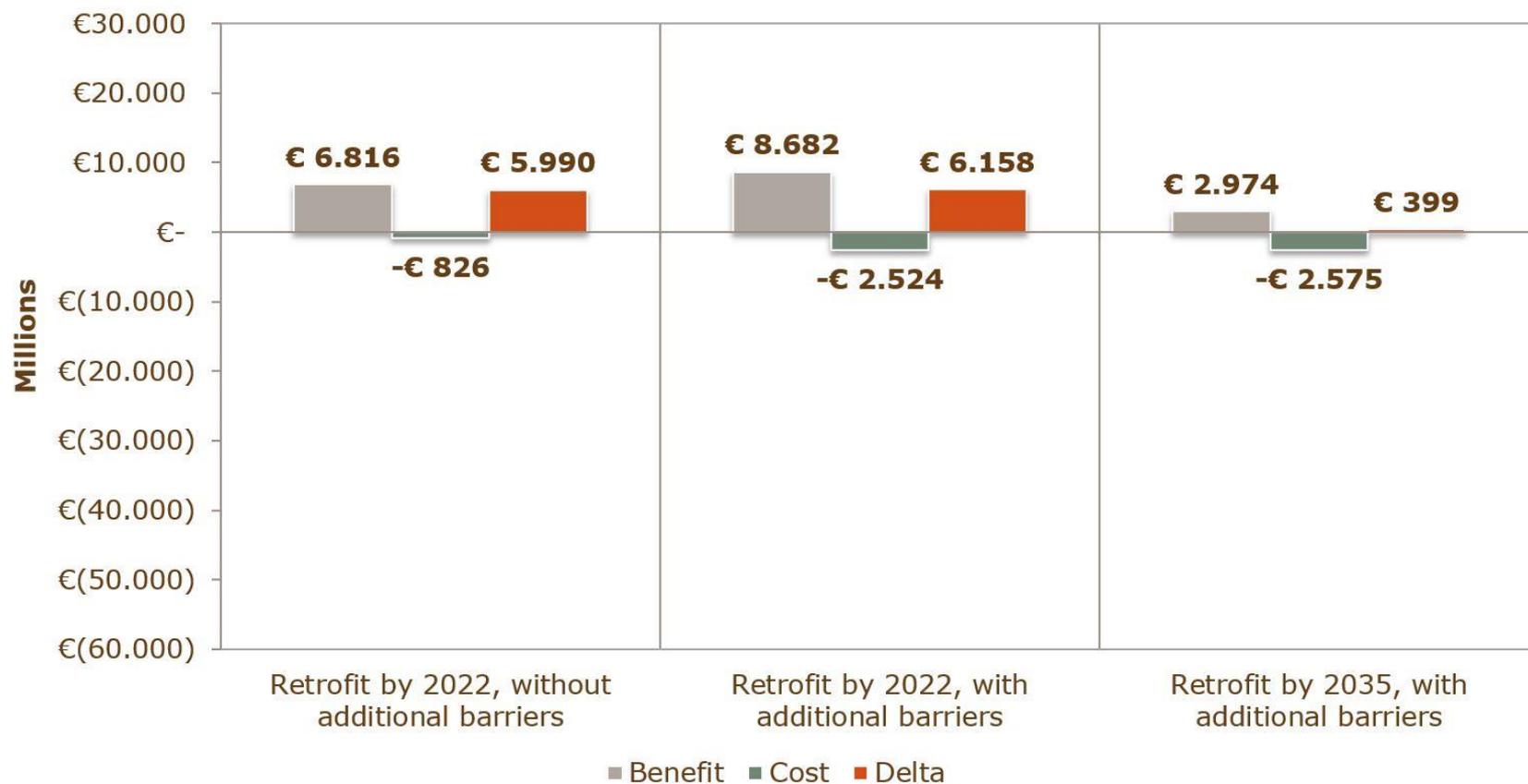
Photo: Wabtec

Reduction of the noise of trains is the most cost-effective at the source, where the noise is produced



NPV₂₀₄₀ (5% discount), compared to baseline

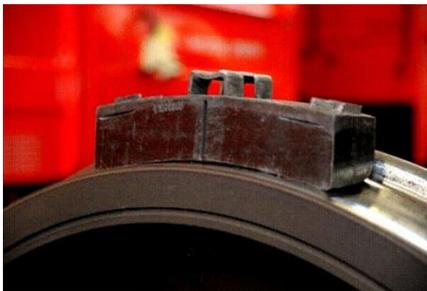
* Barriers are assumed only to be built if B-C>0





Evolving European context:

- Authorization of composite brake blocks in 2013 ('LL brake-blocks');
- Financial framework retrofitting: state aid guidelines 2008, CEF regulation 1316/2013/EU, DG COMP approval of CZ state aid scheme regarding the possible use of Cohesion fund for retrofitting JOCE C/336/2017
- Noise Differentiated Track Access Charging (EU) 2015/429
- Banning of Noisy Wagons, Retrofitting of existing wagons, 4th railway package provides a possibility to apply the TSI provisions to existing vehicles TSI Noise expected 2018



Composite brake block





Regulation (EU) 2015/429:

Noise Differentiated Track Access Charging

- Aims at the retrofitting of cast iron brake blocks by composite brake blocks
- Infrastructure managers in EU-memberstates are able to introduce a bonus for railwayfirms with retrofitted wagons
- Incentivising the retrofitting by allowing the reimbursement of relevant costs linked with installation of composite brake blocks

Smooth wheel
(braked with composite
brake blocks)



Rough wheel
(braked with cast
iron brake blocks)





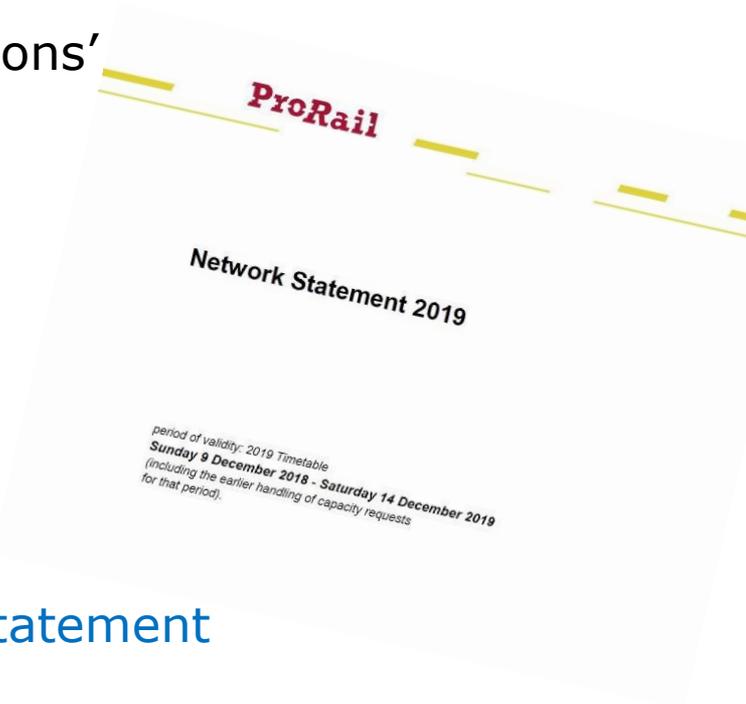
Regulation (EU) 2015/429 has been implemented in The Netherlands in the regulations:

1. 'Discount for running retrofitted goods wagons'
- and in the
2. 'Discount for running silent freight train'

For more information on these regulations

See the ProRail Network Statement:

<https://www.prorail.nl/vervoerders/network-statement>





1. 'Discount for running retrofitted goods wagons'

- Bonus regulation since 2008
- Aims at replacement of Cast iron brake blocks by Composite brake blocks at freight wagons
- With this discount the costs for retrofitting and higher operational costs for Composite brake blocks are being compensated
- This discount is valid till 31 december 2021

and in the

2. 'Discount for running silent freight train'

- Discount since 2014
- Extra bonus for trains with > 90 % silent wagons
- Valid till 31 December 2021



Discount



Bonus for retrofitted wagons . . .

NL-schemes for noise reduction:

	Old regime, till 2016	Implementation 2015/429/EU
Bonus for retrofitted wagon	€ 0,04 per wagonkm	€ 0,01 per axlekm 2016 - 2018 € 0,0035 per axlekm 2019 - 2021
Maximum	€ 4800	Geen
Duration	4 jaar	Till final date
Finale date	No final date	31 december 2021
Malus possible?	Yes	Yes
Bonus for silent trains?*)	€ 0,01 per wagonkm	€ 0,00175 per axlekm

*) The 'Discount for running silent freight train'; silent train = train with more than 90 % silent wagons



European context next steps:

TSI NOI EC proposal expected 2018

on mandatory noise limits existing wagons:

- quieter routes approach
- applicable as of 2024

Evaluation NDTAC 2015/429/EC 2018:

- Effectiveness, efficiency, sustainability of schemes established under current implementing act;
- As a second step EC might make proposals on possible amendments such as time-horizon beyond 31 December 2021, level bonus / malus, etc.



The results:

- 12.746 wagons have been retrofitted and notified in NL (period 2012-2017)
- Ca 36.000 wagons have been notified (retrofitted and new silent wagons)
- In 2016 20,4 million km is run by retrofitted wagons which received a bonus
- Estimated percentage of silent wagonkm (new and retrofitted) is 50 % (2016) (based on so called Quo Vadis measurement system)
- In NL 9 railway-undertakings have notified wagons
- In NL 17 railway-undertakings have been paid





What is the Single Entry Point?

- Entry point for silent wagons
- One central point for railway-undertakings and wagon-owners
- For Germany, Switzerland, Austria and The Netherlands
- ProRail can perform random checks of retrofitting and the number of axles
- One database
- The Inframangers pay the bonus per country

Single Entry Point



Financing systems for low-noise rail freight traffic in Europe



OBB
INFRA



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Office of Transport FOT

ProRail

DB NETZE

http://sep-silentwagon.info/docs/en/LaTPS_Flyer_englisch.pdf



Conclusions:

- Barriers and silent wagons both have a positive influence on the exposure to noise.
- Calculations demonstrate the cost effectiveness (in €) of a quick retrofit by 2022 versus noise barriers (including cumulative noise reduction effects).
- In particular for towns, suburbs and rural areas, retrofit provides a cost-efficient solution to reduce rail noise.
- The effect of 100 % retrofitting is almost comparable to the effect of 2 meter higher barriers.



Now follows a 'fall back sheet':



Application of screens only where economically feasible

