

13th UIC Sustainability Conference



Carbon Arbitration Fund

An innovative tool to reduce residual
emissions in construction

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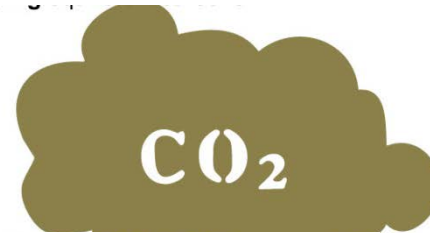


12, 13, 14 October 2016

When we talk about carbon and trains:



100 km by train = 10 kg of carbon eq



100 km by car = 70 kg of carbon eq





Only focused on the operational period...

... but what about during **construction** ?

What we know!

42% of the emissions generated during 30 years of operation
correspond to the emissions of the construction phase

(SNCF Réseau, Rhin-Rhône HSL, 2011)



1st step:

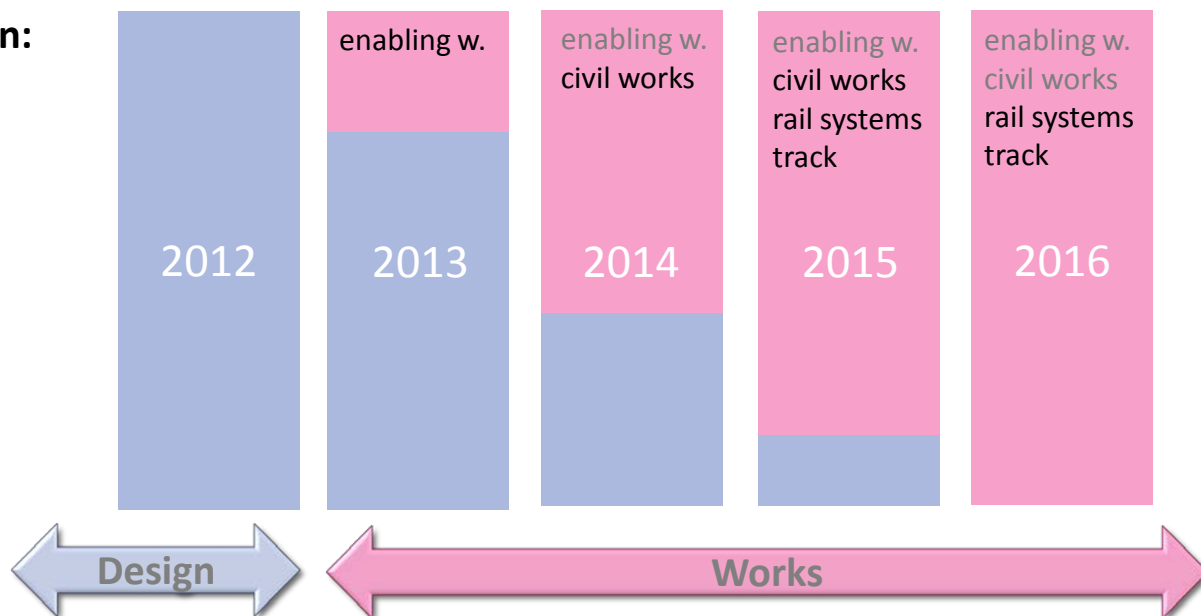


- Measure & monitor the carbon footprint

Carbon assessment based on:

■ Forecast quantities

■ Real quantities



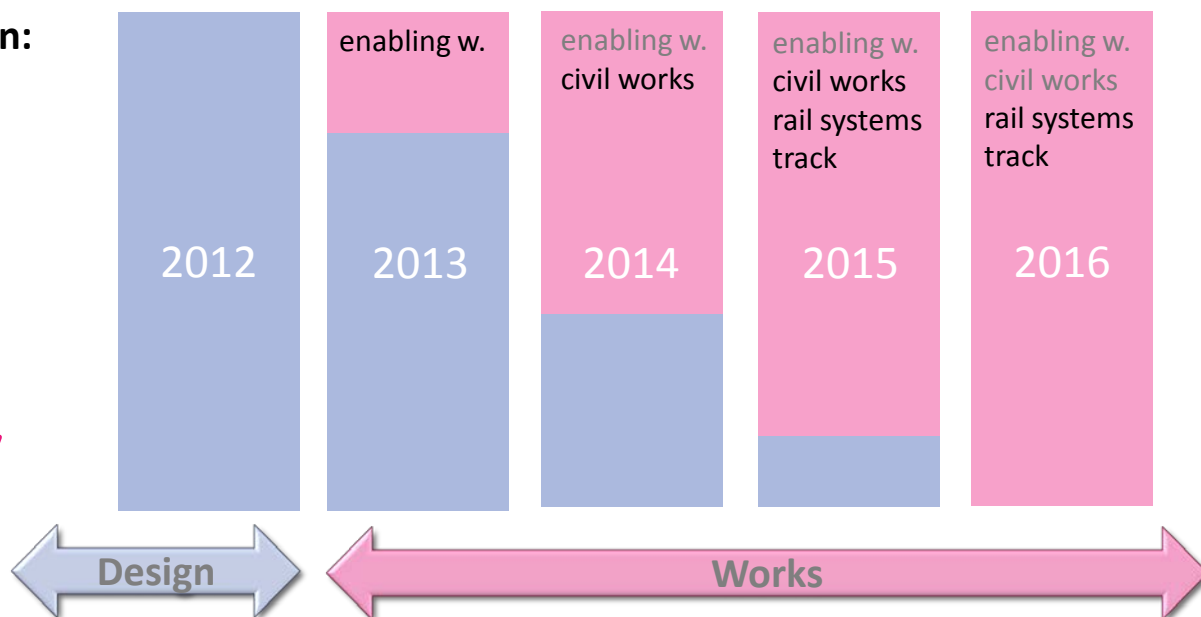
1st step:



- Measure & monitor the carbon footprint

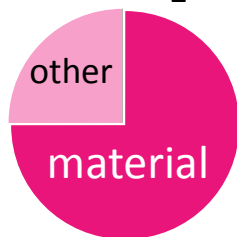
Carbon assessment based on:

- Forecast quantities
- Real quantities



BPL emissions :

7,000 tCO₂ eq/km



2nd step:



How to reduce these residual emissions?



2nd step:



Constraints to change

- Reducing carbon emissions is often costly
- Input materials dominate the carbon footprint
- Restrictive technical standards for high-speed trains
- No carbon tax or incentive regulations



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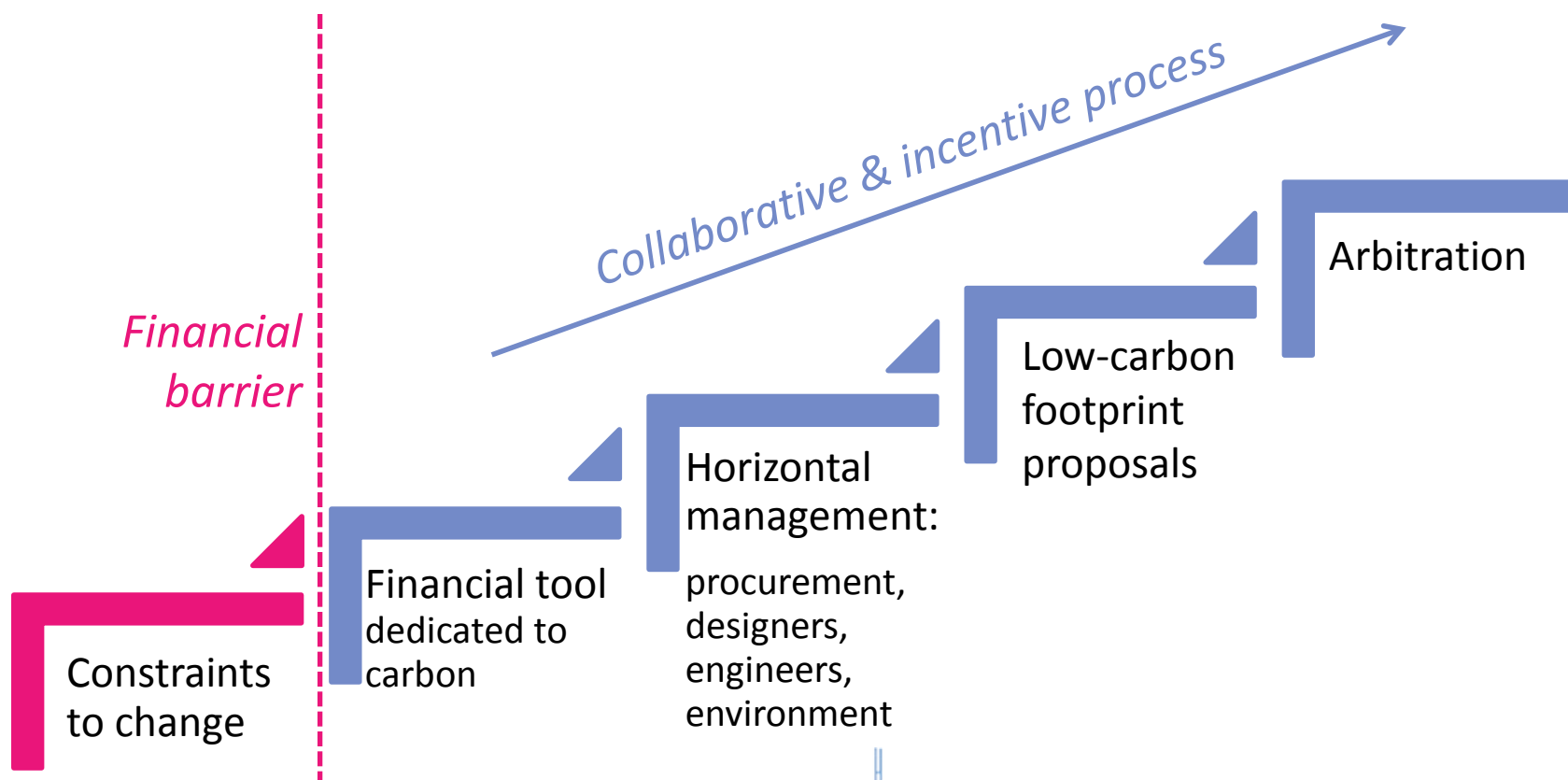


A Carbon Arbitration process and fund:

- To question the ways of doing (planning, building,...)
- To stimulate eco-innovations
- To finance cost differences between traditional solutions and low carbon-footprint solutions



2nd step:



2nd step:

- Arbitration process:



Initial solution



= xxx € / TeqCO₂



xxx € / TeqCO₂ saved

Alternative low- carbon solution



= xxx € / TeqCO₂



800€

500€

optimum

50€



OK



The BPL project



182 km new HSL
320 km/h
25 years PPP contract
26 M m³ earthworks
11 viaducts + 220 civil structures
820 km of rails
1.6 M tons of ballast

6 M€
dedicated
in CAPEX

54
proposals
(2012-2015)

21
solutions
funded

14,000
tCO₂ eq
saved

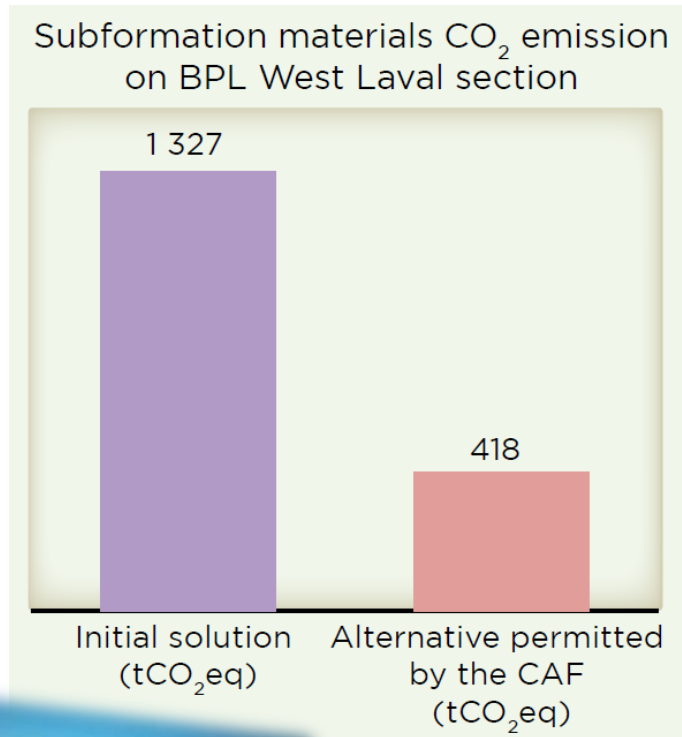
Average of
350€ /
TeqCO₂
avoided



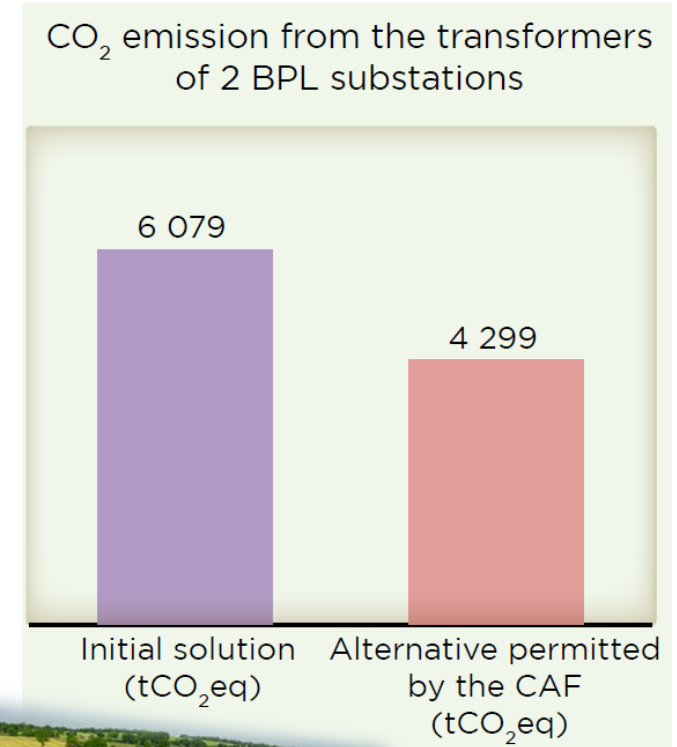
The BPL project



- Case 1:



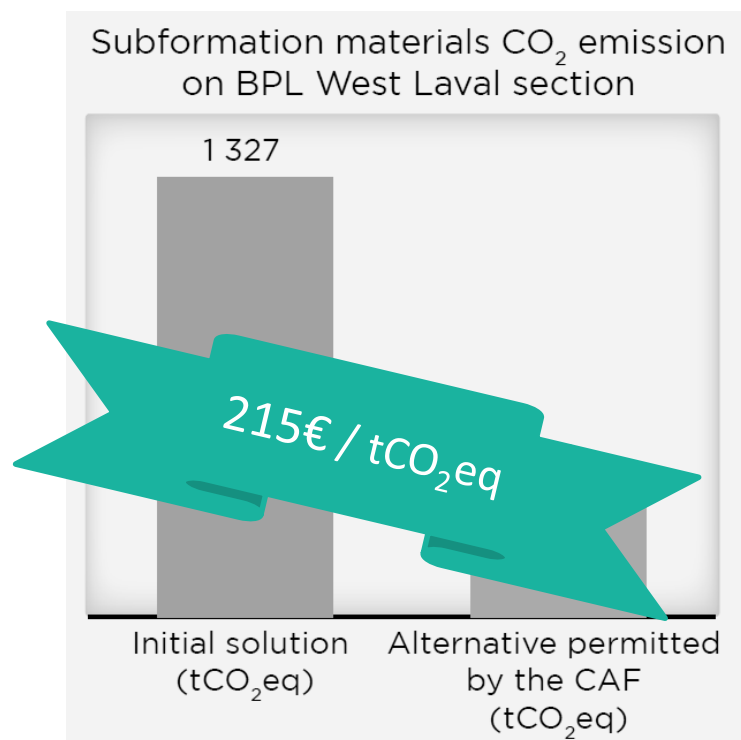
- Case 2:



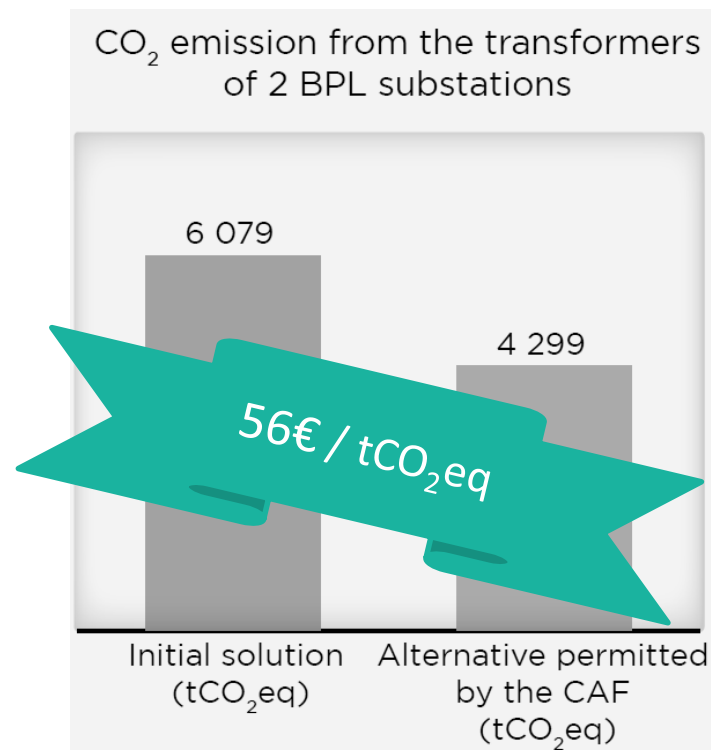
The BPL project



- Case 1:



- Case 2:





Thank you for your attention

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