ECO SCORING

ISSUING GREEN BONDS

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SNCF RÉSEAU’S GREEN BOND PROGRAMME
MAIN CHARACTERISTICS OF THE GREEN BONDS PROGRAMME

+ A programme focused on the network renovation...

+ ... for significant amounts (about € 1.5 bn / year) and recurrent (at least 1 issue / year)

+ ... bringing additionality (no refinancing of existing projects)

+ ... with two certifications (GBP and CBI) and an inclusion into the Barclays MSCI Index.
Since October 2016, SNCF RESEAU has already issued 3 Green Bonds, for an overall amount of €2.65 bn, becoming one of the top 15 issuers worldwide on the Green Bond market.

+ Climate Bond Award from the Climate Bonds Initiative in 2017.

+ Green Bond Award from Environmental Finance in 2018 (Impact report of the year).
GREEN BOND REPORTING
SNCF RESEAU’S REPORTING

+ Transparency

• Impact indicators in line with SNCF Réseau’s Framework and essentially focused on the carbon impact.

• Certification delivered by KPMG relying on:
  ✓ The adequate allocation of proceeds to Eligible Projects
  ✓ The adequate application of SNCF’s carbon impact computation methodology
  ✓ Management of proceeds before allocation to Eligible Projects

• Open source publication of the methodology and reporting

+ Standardisation

• Development with Carbone 4 of a specific methodology for valuation of the carbon impact of railways infrastructure projects that includes:
  ✓ The full life cycle of the project: building and operation
  ✓ Potential evolution of the energy mix and means of transport
  ✓ No double accounting
## IMPACT METRICS (2017)

<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>INDICATORS</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>INVESTMENTS IN MAINTENANCE, MODERNISATION AND ENERGY EFFICIENCY PROJECTS CONCERNING THE RAIL SYSTEM</td>
<td><strong>GREENHOUSE GASES (GHG) EMITTED AND AVOIDED EMISSIONS</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Greenhouse Gas emissions due to the renewal project</td>
<td>657 ktCO₂eq</td>
</tr>
<tr>
<td></td>
<td>– Greenhouse Gas emissions avoided thanks to the renewal project</td>
<td>6,329 ktCO₂eq</td>
</tr>
<tr>
<td></td>
<td><strong>PROTECTION OF RESOURCES</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Share of re-used and recycled rails (tons)</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>– Share of re-used ballast (tons)</td>
<td>30 to 50%</td>
</tr>
<tr>
<td></td>
<td>– Volume of wooden sleepers recycled for energy purposes</td>
<td>67,753 tons</td>
</tr>
<tr>
<td>INVESTMENTS RELATED TO NEW LINES AND LINE EXTENSIONS</td>
<td><strong>GREENHOUSE GAS (GHG) EMISSIONS</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Greenhouse Gas emissions due to the project</td>
<td>80 ktCO₂eq</td>
</tr>
<tr>
<td></td>
<td>– Emissions avoided</td>
<td>277 ktCO₂eq</td>
</tr>
<tr>
<td></td>
<td><strong>PROTECTION OF RESOURCES</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Number of hectares compensated</td>
<td>6,430</td>
</tr>
<tr>
<td></td>
<td>– Number of wildlife crossings created</td>
<td>1,253</td>
</tr>
</tbody>
</table>

**OTHER INVESTMENTS LINKED TO THE GLOBAL CLIMATE CHANGE CHALLENGES, THE PROTECTION OF BIODIVERSITY AND NATURAL RESOURCES**

The category is to be expanded as it groups several projects that are less significant in terms of amounts, but important for the overall corporate strategy.

<table>
<thead>
<tr>
<th></th>
<th>Maintenance (tCO2.eq)</th>
<th>Development (tCO2.eq)</th>
<th>Total (tCO2.eq)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>-2.727.800</td>
<td>-190.200</td>
<td>-2.918.000</td>
</tr>
<tr>
<td>2017</td>
<td>-5.671.700</td>
<td>-196.900</td>
<td>-5.868.600</td>
</tr>
<tr>
<td>Total</td>
<td>-8.399.500</td>
<td>-387.100</td>
<td>-8.786.600</td>
</tr>
</tbody>
</table>

(tCO2.eq = Tons of CO2 equivalent)

<table>
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<tr>
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<th>Maintenance (years)</th>
<th>Development (years)</th>
<th>Total (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Carbon</td>
<td>3,8</td>
<td>7,4</td>
<td>3,9</td>
</tr>
<tr>
<td>Neutrality</td>
<td></td>
<td></td>
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</tbody>
</table>
The impact of the €2,65 bn Green Bonds issued in 2016 and 2017 is equal to the carbon footprint of circa 18,000 French citizens over 40 years.
CONCLUSION
GREEN BOND – THE PRO’S AND CON’S

+ Indisputable advantages...

- Geographical diversification
- Investors quality (buy & Hold) et average maturity of funding (Mid to Long term)
- Better primary market traction and spread tightening on the secondary market
- Strong Financial & Corporate communication tool: emphasize our industrial successes and their positive impact for the climate
- Management tool to help internal transformation: collaboration between departments, inclusion of SRI criteria in the company’s governance

+ ... but also obvious constraints

- Several external costs, even though affordable (SOP, CBI certification, methodology, reporting)
- Significant and cross-department internal investment: business lines, sustainable development, finance, cost controlling, communication, etc.

+ ...that likely constitute an obstacle to the development of the Green Bond market, most of all in a low yield and high liquidity environment.
APPENDICES
CLIMATE STRENGTHS OF THE RAIL SYSTEM

A LOW GHG EMISSION MEANS OF TRANSPORT

CO2 emissions expressed in grams / traveller for 1 Km:

- Train: 8.6 g
- Carpooling: 23 g
- Bus: 69 g
- Aeroplane: 168 g
- Car: 207 g
AN INNOVATIVE METHODOLOGY

CARBON IMPACT

CARBON FOOTPRINT
Direct and indirect site emissions

AVOIED EMISSIONS
Thanks to the project, over the lifetime of the equipment

40 years
COMPUTATION OF AVOIDED GHG EMISSIONS ON A RENEWED SECTION

BALANCE BETWEEN PROJECT AND REFERENCE SITUATIONS