BELGIAN DEBT AGENCY

Green OLO
Impact report
2019 - 2021

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1 CONTEXT

1.1 EXECUTIVE SUMMARY

In February 2018, the Kingdom of Belgium issued its first series of Green Bonds ("Green OLO") amounting to EUR 4.5 bn. The allocation report published in June 2019 by the Belgian Debt Agency, gives an overview of the expenditures funded by the Green OLO. Multiple socio-economic and environmental benefits accrue from this Green OLO.

This impact report addresses six significant expenditure categories, or parts thereof, amounting 44% of the total EUR 5.9 billion issuance. The calculation of expenses related to the Green OLO project focused only on the expenditures that could be determined using the available data and the involvement of stakeholders who provided the necessary information. The assessment of the project's impact primarily concentrated on addressing the global issue of climate change by estimating the reduction in greenhouse gas (GHG) emissions. It is important to mention that this assessment relied on available data and is based on emission factors to calculate the environmental impact. However, it should be acknowledged that assessing qualitative aspects and biodiversity impacts proved challenging due to limited data availability and the reliance on various assumptions. However, through international cooperation and the reduced package charge, it has been possible to evaluate environmental impacts other than GHG emissions savings.

To estimate GHG emissions savings, specific methodologies were developed. These were based on the principles of environmental evaluation and are aligned with the work of the EU Commission's Technical Expert Group on Sustainable Finance. Where applicable, the methodologies were based on market practices and are in line with other impact reports already published covering similar expenditures, such as the SNCF Réseau impact reporting.[1]

For the sake of clarity and accessibility, the complexity of the assessment was reduced to what was strictly necessary to ensure rigorous results and data availability. Clear documentation and the use of publicly available data allow for the replication of the exercise, and the testing and comparison of different hypotheses.

The period covered by the assessment depends on the type of expenditure. For investments, an assessment over the lifetime of the investment was produced, as in the case of the new SNCB/NMBS rolling stock and the maintenance of the railway infrastructure. These two expenditures in the railway sector, totalling 433 and 1090 M EUR of allocated funds, are estimated to avoid GHG emissions of 126 and 525 kt of CO_2eq over the lifetime of M7 trains and the average life of the maintenance investments respectively.

The impact computed for the M7 trains stems from the higher energy efficiency of the new train, while in the case of maintenance, the impact of the deterioration of train services due to lack of maintenance was estimated.

The federal support to windfarms was funded with 525 M EUR of the Green OLO. Its GHG savings are estimated at 2547 kt of CO_2eq and they were calculated based on the amount of offshore electricity production the expenditure supported.

The tax exemption and deduction to promote clean transportation, funded with 409 M EUR of the Green OLO, amounts to 358 kt of avoided CO_2eq emissions. The impact stems from a modal shift from cars to cleaner transport modes such as buses and trains.

For Bio invest (Belgian Investment Company for Developing countries) only the expenditures in specific investments, totalling 27 M EUR of allocated funds, were investigated because they enable a detailed calculation of the CO_2 emissions avoided per project. They were found to avoid emissions of 230 kt of CO_2eq.

The reduced packaging charge, funded with 87 M EUR of the Green OLO, was found to avoid emissions of 262 kt of CO_2eq. In addition, this expenditure permits savings of natural resources (sand, caustic soda and limestone) of almost 344 kt. The impact stems from a positive effect of the charge on the reuse of glass drink packaging.

These results confirm the significant contribution of the evaluated expenditures to the Belgian environmental objectives. Investment decisions are of course not solely based on their foreseen environmental impact but are also driven by larger societal objectives (gender dimension, capacity building) that are part of the overall evaluation of expenditures.

[1] Finances : Green Bonds, programme de financement vert | SNCF https://medias.sncf.com/sncfcom/finances/sa/Green-Bond-reporting-2021-FR.pdf

Expenditure	Allocated amounts 2019-2020-2021 (M EUR)	Period covered by the assessment	Assessed Impact	Assessment (kt)
SNCB/NMBS Investment Program – New Rolling Stock (M7)	433	Impact all over the lifetime of M7 trains (45 years)	Avoided GHG emissions	126
INFRABEL Investment Program – Maintenance of Railway Infrastructure	1090	Impact over the lifetime of maintenance investments (40 years)	Avoided GHG emissions	525
Federal support for offshore windfarms	525	2019-2021	Avoided GHG emissions	2547
Tax exemptions and deductions to promote clean transportation	409	2019-2021	Avoided GHG emissions	358
Reduced package charge for using individual reusable drink packages	87	2019-2021	Avoided GHG emissions	262
			Avoided extracted materials (caustic soda, sand, limestone)	344
Green investments by BIO INVEST	27	2019-2021	Avoided GHG emissions	230
TOTAL AVOIDED GHG EMISSIONS	2568			4048

1.2 THE GREEN OLO FRAMEWORK

1 Use of Proceeds	• Eligible Green Expenditures related to a large number of assets, in line with the State's role, and targeting different beneficiaries: households, companies, local authorities and public agencies. • Five Green sectors have been defined: Clean Transportation; Energy Efficiency; Renewable Energy; Circular Economy; and Living Resources and Land Use. • Investment expenditures, operating expenditures and tax expenditures are eligible.
2 Process for Project Evaluation and Selection	• The selection of Eligible Green Expenditures is annually managed by an Inter-Ministerial Working Group. • Selection has been done in order to be representative of Federal State's missions and in line with the Federal budget. • Each FPS (Federal Public Services) is responsible for identifying Eligible Green Expenditures • An overlay in the selection process aimed at excluding expenditures mainly related to selected sectors (fossil fuel, armaments, nuclear, large scale hydroelectric developments). • Green Expenditures that other Belgian agencies may plan to use themselves for issuing their own Green Bonds are excluded.
3 Management of Proceeds	• Tracking the allocation of the bond proceeds will be done by the Belgian Debt Agency. • Eligible Green Expenditures from the previous year and the current year are included.

4 Reporting	• The Kingdom of Belgium is committed to provide two levels of reporting:
	  ○ The management and allocation of bond proceeds: Allocation report
	  ○ The assessment of environmental impact of Eligible Green Expenditures: Impact Report.

5 External review	• Second Party Opinion on the Green OLO Framework provided ex-ante by Moody's. • The allocation report will be reviewed by an independent audit firm.

1.3 METHODOLOGY

The assessment of the Green OLO's impact is overseen by the Inter-Ministerial Working Group, which is an ad hoc Steering Committee. This committee is coordinated by the Belgian Debt Agency and the Ministry of the Environment.[2] It consists of senior representatives from various departments and institutions that are responsible for the expenditure being assessed. These representatives contribute their input and provide advice on the methodologies used in the impact assessment.

For this report, the environmental impact assessment for the Green OLO allocated proceeds focused on several eligible expenditure items covering different global challenges and green sectors.

Six out of nine categories of eligible expenditure, or parts thereof, were assessed. The categories were selected based on the availability of the necessary data for their evaluation, with the view to cover a balanced set of green sectors, on the basis of the availability of established assessment methodologies. In total, the assessed expenditure represents 43% of the total allocated amount for 2019, 2020 and 2021. For all but one of the assessments, climate change was the focus of the quantitative analyses.

Expenditures	Assessed impact	% of total allocated amount		
		2019	2020	2021
SUBSIDES TO SNCB				
Infrastructure Fee	-	**26.5%**	**25.3%**	**17.9%**
Rolling Stock	-			
SUBSIDIES TO SNCB (INVESTMENT PROGRAMME)				
Rolling stock				
M7	✓	**7.2%**	**7.1%**	**7.6%**
Reception of clients	-			
Maintenance	-			
SUBSIDIES TO INFRABEL (INVESTMENT PROGRAMME)				
Railway Infrastructure				
Maintenance	✓	**17.2%**	**20.4%**	**17.5%**
Capacity expansion	-	**2.3%**	**5.2%**	**6.8%**
European Train Control System (ETCS) Investments	-	**13.2%**	**11.2%**	**7.8%**
FEDERAL SUPPORT FOR OFFSHORE WINDFARMS	✓	**4.8%**	**6.4%**	**18.5%**
TAX EXEMPTIONS AND DEDUCTIONS TO PROMOTE CLEAN TRANSPORTATION				
Commute by public transport	✓	**7.3%**	**5.1%**	**3.9%**
Bicycle allowance	✓	**1.6%**	**1.1%**	**0.9%**
Electrically powered vehicles	-			
INCREASE TAX DEDUCTIONS FOR GREEN INVESTMENTS	-			
REDUCED PACKAGE CHARGE	✓	**1.8%**	**1.1%**	**1.5%**
GREEN INVESTMENTS BY THE SFPI-FPIM	-			
GREEN INVESTMENTS BY BIO INVEST				
Funds	-			
Projects	✓	**0.7%**	**0.2%**	**0.4%**
CONTRIBUTIONS TO DEVELOPMENT COOPERATION	-			

[2] Federal Public Service Health, Food Chain Safety and Environment – DG Environment

2
IMPACT REPORT-ING

2.1 FEDERAL BUDGET EXPENDITURE

2.1.1. EXPENDITURES RELATED TO RAILWAY TRANSPORT

Clean transportation represents the bulk of the green expenditures that is funded by the Green OLOs.

In Belgium, the transportation sector accounted for 21.5% of the total greenhouse gas emissions in 2021, compared to 14.4% in 1990. This rise is primarily driven by road transport, which contributes to 96.0% of the total emissions within the sector in 2020.[3] Given Belgium's location as a transit country, transport is a growing sector. Road transport in particular consumes the highest amount of energy among all modes of transportation in Belgium. The number of passenger cars continues to increase, with a high motorization rate of one car for every two inhabitants. Additionally, road transport remains the primary method for moving goods over land.

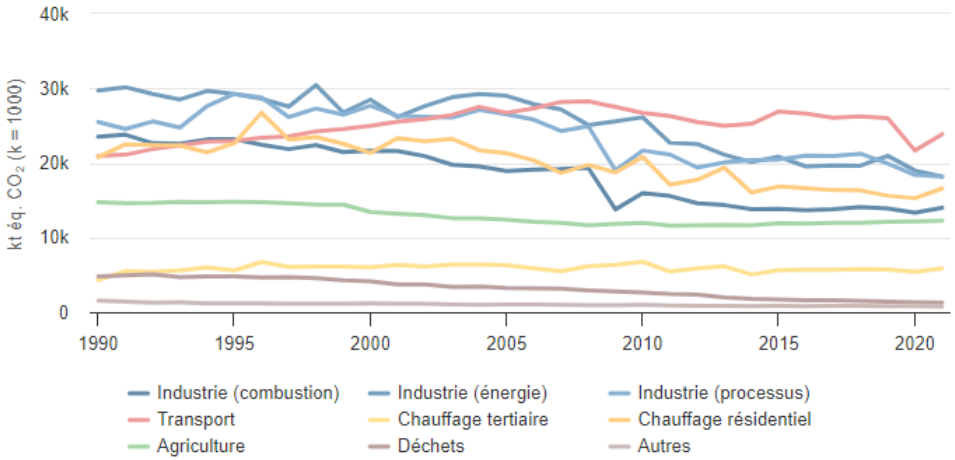

Figure 1 : GHG emissions per sector in Belgium (1990-2021) [4]

To reduce emissions from the transportation sector, a dual transformation is necessary. Firstly, it is essential to decarbonize polluting modes of transportation. Secondly, there needs to be a significant shift from polluting modes of transportation to less polluting ones. For instance, each person who chooses to drive a car generates 126 to 160 grams of CO_2 per kilometer, whereas the same kilometer traveled by train only produces an average of 23.8 grams of CO_2 per kilometer. This rate is even lower when trains are well-occupied. Thus, a train passenger has a CO_2 impact at least 6 times lower than that of a car driver.[5]

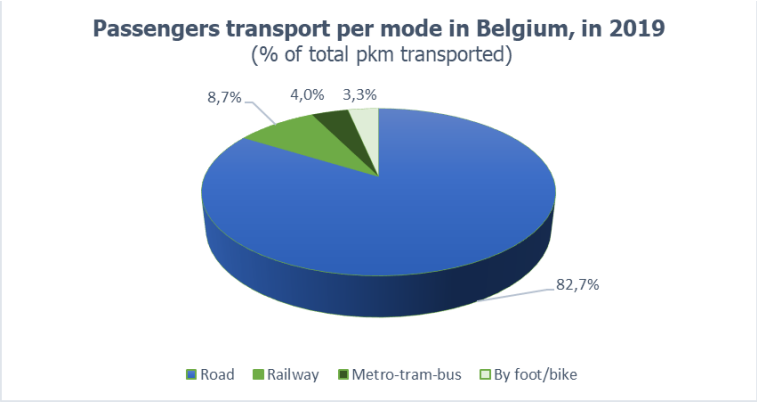

Figure 2: Passenger transport per mode in Belgium, in 2019 [6]

PURCHASE OF M7 DOUBLE-DECK TRAINS

One of the major investment programs remains the continuing purchase program of M7 double deck coaches to increase the capacity on the busiest lines. Under these budget lines only the M7 purchasing was subject to an impact assessment because of data availability reasons.

SNCB/NMBS's new M7 rolling stock is modern, high-performance equipment with superior speed, capacity and comfort. M7 trains are not intended to be used to establish new rail links or to increase the frequency of trains. The commissioning of the M7s will contribute to increasing the energy efficiency of rolling stock and thus to reducing

[3] https://klimaat.be/doc/nc8-br5.pdf p.38
[4] https://climat.be/en-belgique/climat-et-emissions/emissions-des-gaz-a-effet-de-serre/emissions-par-secteur
[5] https://www.belgiantrain.be/-/media/corporate/pdfs/ondernemingsplan-2023-2032-nl.ashx?la=nl&hash=4FE266EA273E0EFCC361FD88BB5E58555319170B, p.7

[6] Chart computed by ICEDD, based on Table 1 of "Vooruitzichten van de transportvraag in België tegen 2040" https://www.plan.be/uploaded/documents/202204280911120.FOR_TRANSPORT2040_12634_N.pdf p.5

its carbon footprint. In fact, a 20 to 30% energy consumption reduction can be achieved thanks to the higher efficiency of the M7s compared to old trains that reached the end of their operational life. On the other hand, the use of M7 trains on the network's busiest lines, and especially in Brussels, could increase the capacity on these lines.

However, the main purpose of the M7 trains is to maintain railway capacity. In 2020, a second order of 304 M7 trains was placed, in addition to the first 445 M7 trains that were purchased to replace the old trains. The new M7 trains will account for 20% of the overall train capacity, effectively replacing a fifth of the existing train fleet.

The impact assessment was carried out by comparing emission factors per seat for old trains and new M7 vehicles in order to calculate avoided GHG emissions over the whole lifetime of the M7s (45 years).[7]

As only part of the investment in M7s was made in 2019-2021, a coefficient for the 2019, 2020 and 2021 share of investment in M7s of the total investment in M7s was calculated.

An underlying assumption of the calculations is a stable emission factor for electricity production during the lifetime of the M7 trains. Although the share of renewable energy in total electricity production is expected to increase over the coming years and decades in Europe, the Belgian electricity production infrastructure will most likely have higher CO_2 emissions due to the nuclear phase-out between 2022 and 2035.

Since no clear scenario for electricity production following the nuclear phase out exists, for reasons of simplicity and to avoid double counting (e.g. with the support mechanism for offshore wind production), the evolution of the emission factor was not taken into account in the calculations for the impact assessment.

Overall 120.18 ktCO_2eq will be avoided during the whole lifetime of the M7 trains financed by the Green OLO in 2019, 2020 and 2021.

PURCHASE OF M7 DOUBLE-DECK TRAINS	
Allocated amounts of Green OLO to M7 2019-2021 [Meuros)	432.84
Improvement in energy efficiency of M7 trains (per seat)	25%
Avoided CO_2 emissions related to Green OLO over the lifetime of M7 trains [kt]	**126.43**

MAINTENANCE OF RAILWAY INFRASTRUCTURE

Infrabel, the network operator for the Belgian railways, annually carries out maintenance activities on the railway network, including tracks, overhead lines, and signage. These maintenance efforts are crucial to ensure safe, reliable, and comfortable train operations. Without regular maintenance, the reliability and safety of the network would progressively decline, resulting in increased travel times on various sections of the railway system. This undesirable situation would likely lead passengers and freight operators to opt for alternative modes of transportation, which often have a higher environmental impact compared to trains. Thus, maintaining the railway network through regular maintenance is essential to promote sustainable transportation and minimize the negative environmental effects associated with alternative transport options.

The federal government contributed to the investment program of Infrabel :

Allocated amount of green OLO [Meuros]	2019	2020	2021
Railway Infrastructure	410.49	415.005	264.259

[7] Source : SNCB, internal calculations. The new M7 trains enable an average saving of 8.5 kt of CO_2 over a period of 45 years.

A lack of investment in the maintenance of a section of the railway network will affect the mean speed of trains on that section and, consequently, a reduction in the mean speed will decrease the attractiveness of rail transport along that part of the network. Therefore, passengers and freight operators will move to other transportation means such as cars or buses for passengers and trucks or inland navigation for freight.

The different sections of the railway network are supposed to be completely renovated according to an annual renovation programme.[8] Therefore, it is assumed that a lack of renovation investment in a given section of the network in a given year will not be offset in subsequent years but only once all the rest of the network has been renovated. In other words, the unrenovated section of the railway network will 'miss its maintenance turn'. Hence, its reliability will be affected until the next 'maintenance turn' occurring after a period equal to the technical lifetime of the equipment (tracks, catenaries, signage), which has been established at 40 years.

To translate this reasoning into figures, the assumptions below were made. The total Belgian railway traffic is homogenously distributed over the whole Belgian network. The annual maintenance investment budget of Infrabel, which is assumed to cover 1/40 of Belgian railway infrastructure, impacts 1/40 of the demand.[9] In the first two years of the period without maintenance there are no impacts. Conditions of the line will only deteriorate from the third year onwards, hence impacting the service conditions of the line. The deterioration of the line implies that the traffic on that section will gradually (linearly) disappear in 20 years' time. Much of the traffic on the lines will be diverted to cars (for passengers) or trucks (for freight), based on a diversion factor of 87% and 100% for passengers and freight respectively.[10]

Between 2019 and 2040, the latest projected railway traffic figures from the Federal Planning Bureau[11] indicate a 30% increase in freight transported by the Belgian railway system, while the number of passengers transported is expected to decrease by 3.3% due to the slowdown in sociodemographic dynamics and the ongoing progression of teleworking, assuming unchanged policies. These trends have been taken into account to build the reference scenario.

Results of the long-term outlook for passenger transportation under unchanged policy	**2019**	**2030**	**2040**
Billion passengers-kilometers per year – rail	15.0	15.0	14.5
Billion tons-kilometers per year – freight	6.5	7.5	8.4

Bureau Fédéral du Plan, Perspectives de la demande de transport à l'horizon 2040, avril 2022.

These figures allow the calculation of the total amount of passenger traffic (in terms of pkm) and of freight traffic (in terms of tkm) which is diverted from trains to cars and trucks due to the lack of maintenance investment.

By multiplying these pkm and tkm numbers by the difference between the emission factor of the railway system and that of cars and trucks, the total amount of avoided emissions in the 2019-2045 period was calculated.

Moreover, in the 2018 impact report, a constant passenger road transport emission factor of 101.33 g CO_2/pkm was used, as a baseline, to calculate avoided greenhouse gas emissions between 2030 and 2040. However, this edition seeks to improve the methodology and, at the time of writing this report, the EU has announced a ban on the sale of new petrol and diesel cars from 2035.[12] Therefore, this actualised impact report considered updated emission factors that take into account these bans and the increasing electrification of the vehicle fleet for passengers.[13]

Emission factors / Years	2018	2019	2030	2040
Passenger road transport [g CO_2 / pkm]	**130,94**	**124.18**	**81.20**	**23.95**
Railways, passengers [g CO_2 / pkm]	16.30	16.30	16.30	16.30

[8] Infrabel, internal documents.
[9] Infrabel, internal calculations.
[10] It should be noted that this hypothesis does not take into account road network saturation.
[11] Bureau Fédéral du Plan, *Perspectives de la demande de transport à l'horizon 2040,* avril 2022.

[12] Reference : EU ban on the sale of new petrol and diesel cars from 2035.
[13] Calculated by the Federal Planning Bureau for 2019, 2030 and 2040. A simple linear regression analysis was conducted among the various emission factors to obtain intermediate values between the ones available.

Railways, freight [g CO_2 / tkm]	7.00	7.00	7.00	7.00
Freight road transport [g CO_2 / tkm]	70.00	70.00	70.00	70.00

The share of these emissions related to the Green Bond allocated amount of investment in maintenance amounts to 1512 ktCO_2eq.

MAINTENANCE OF RAILWAY INFRASTRUCTURE	
Allocated amounts of green OLO 2019, 2020 and 2021 [Meuros]	1 089.755
Avoided CO_2eq emissions related to Green OLO over the lifetime of maintenance investments [kt]	525.4

2.1.3. FEDERAL SUPPORT FOR OFFSHORE WINDFARMS

Electricity consumption in Belgium has been relatively stable since 2011 at around 84 TWh, with the exception of 2020 when consumption decreased to 81 TWh due to the COVID pandemic. Since 2010, renewable electricity generation has increased significantly reaching more than 21 TWh in 2021 (see figure 3). The offshore share of renewable electricity generation has been constantly increasing in recent years and will most probably continue to increase as offshore power is seen as a major source of renewable electricity for Belgium in the coming years. The slight decrease in renewable electricity generation in 2021 can be traced back to a year with an abnormal low level of wind.

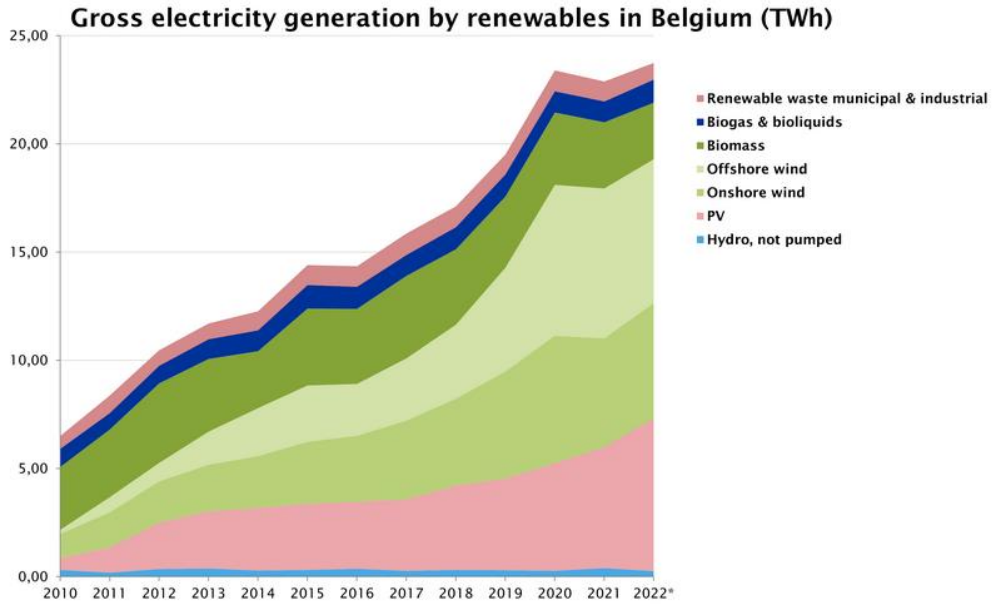

Figure 3: Evolution of gross electricity generation by renewables in Belgium by source since 2010 (TWh)[14]

The cost of developing offshore wind farms off the North Sea coast is supported by a surcharge paid by the power users. However, so as to prevent those surcharges becoming uneconomically high, the federal government intervenes through a system whereby this surcharge is on a sliding scale and capped.

Offshore (as well as onshore) wind production support schemes are based on green certificate mechanisms. It means that wind generation is supported by final consumers. To prevent companies from supporting too much of the offshore green certificate mechanism, their contribution is reduced and capped. Therefore, the Federal authorities finance these reductions. This intervention is settled (see Figure 5) through payments by the Federal State to the CREG (the Commission for Electricity and Gas Regulation).

[14] Source: FEBEG https://www.febeg.be/fr/statistiques-electricite

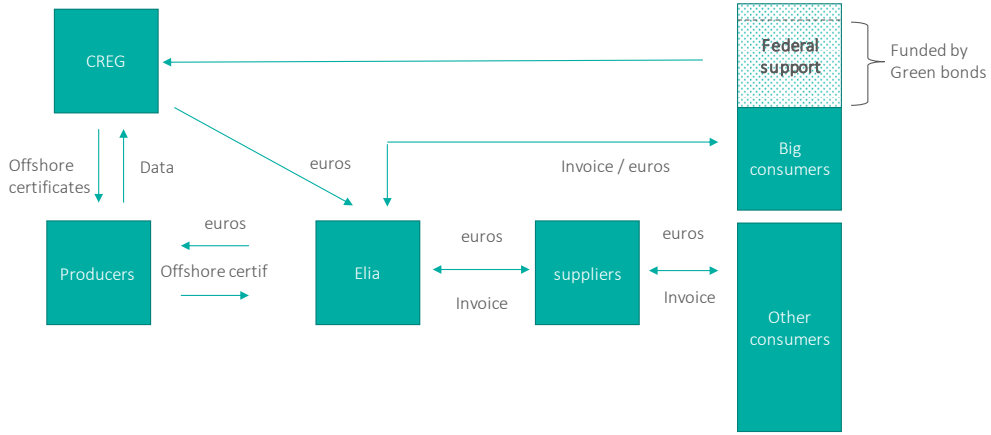

Figure 4 : Financing of the offshore wind support scheme in Belgium [15]

The federal contribution to the offshore support scheme was 138 million euros in 2019, 175 million euros in 2020 and 243 million euros in 2021 while the whole support mechanism paid to offshore producers was 466 million euros in 2019, 564 million euros in 2020 and 473 million euros in 2021.[16]

It should be noted that, starting from January 1st, 2022, there will be no more green bonds allocated to support offshore electricity production in 2022.

Allocated amounts in MEUR	2019	2020	2021
Offshore windfarms	114	130	281

Federal support for offshore windfarms funded by the Green OLO amounted to 114 million euros in 2019, 130 million euros in 2020 and 281 million euros in 2021, that is 24%, 23% and 59% of the whole green certificate mechanisms in 2019, 2020 and 2021 respectively.

Offshore electricity production amounted to 4773 GWh, 6967 GWh and 6896 GWh in 2019, 2020 and 2021.[17] As mentioned, a slight decrease in electricity production due to a year with an abnormally low level of wind can be noted in 2021. We assume that only a share of this production equal to the share of the Green OLO (allocated) to the whole offshore green certificate mechanism can be attributed to the Green OLO. This amounts to 1,163 GWh of offshore wind electricity production in 2019, 1,569 GWh in 2020 and 3,971 GWh in 2021. The increase in offshore generation supported by green bonds in 2021 is the result of a substantial increase in the allocated amounts of green bonds in that year (see table below). This production avoided the equivalent electricity production of a gas-fired power plant with an electrical capacity of around 500 MW. Considering a Combined Cycle Gas Turbine (CCGT) power plant with an emission factor of 380 t of CO_2 per GWh, the impact of the Green OLO can be estimated at saving the emission of 2547 kt of CO_2, of which 442 kt of CO_2 in 2019, 596 kt in 2020 and 1,509 kt in 2021 (see table below). Thanks to the increase in allocated amounts of green bonds, the amount of emissions avoided through their use more than doubled by 2021.

	2019	**2020**	**2021**
Offshore production [GWh]	4773	6967	6896
Total support amount [Meuros]	466	564	473
Part of offshore production supported by green bonds [GWh]	1163	1569	3971
Emission factor of CCGT [t CO_2 / GWh]	380	380	380
Avoided CO_2 emissions related to Green OLO [kt]	442	596	1509

2.2 FISCAL EXPENDITURES

[15] Drafted by ICEDD, validated by CREG
[16] CREG annual report for 2019, 2020 and 2021 are available at :
https://www.creg.be/sites/default/files/assets/Publications/AnnualReports/2020/CREG-AR2019-FR.pdf;
https://www.creg.be/sites/default/files/assets/Publications/AnnualReports/2020/CREG-AR2020-FR.pdf;
https://www.creg.be/sites/default/files/assets/Publications/AnnualReports/CREG-AR2021-FR.pdf

[17] *Idem.*

2.2.1. TAX EXEMPTIONS AND DEDUCTIONS TO PROMOTE CLEAN TRANSPORTATION

The Belgian personal income tax code provides for a series of exemptions and tax deductions that promote the use of cleaner means of transport. These fiscal expenditures include the following three elements:

- the total exemption (for taxpayers who declare their professional costs on a lump sum basis) of a reimbursement paid by the employer for the costs of commuting, to the extent that this transfer is made by public communal transport;[18]
- the total exemption (up to a maximum amount per kilometer) of a bicycle allowance paid by the employer for an employee's commuting by bicycle;[19] and
- the tax deduction for the purchase of a purely electrically powered vehicle or for expenses related to the installation of a charging point for electric vehicles.[20]

Allocated Expenditures in EUR [in Meuros]	2019	2020	2021	Assessed Impact
Commute by public communal transport	175.321	103.072	58.703	√
Bicycle allowance	37.519	21.790	12.879	√
Electrically powered vehicles	0.458	0.337	0.216	

EXEMPTION FOR REIMBURSEMENT OF COMMUTING BY PUBLIC TRANSPORT

According to FPS Mobility figures, in 2021 the large majority (64,6%) of commuting between home and work was done by car.[21]

This expenditure covers the total exemption (for taxpayers who declare their professional costs on a lump sum basis) of a reimbursement paid by the employer for the costs of commuting, provided that this transfer is made by public transport.

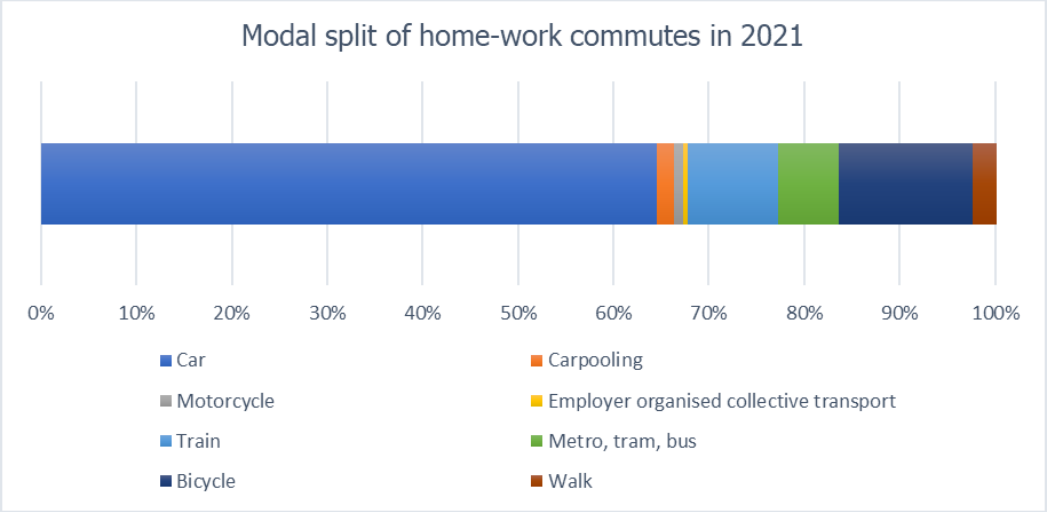

Figure 5: Modal split of home-work commutes in 2021, Belgium.[22]

As a first step for the impact assessment, the number of commuters that would not have used public transport without the reimbursement was estimated based on the price elasticities from a FPB study.[23] Then, based on the average distances travelled by commuters and the transport mode used before switching to public transport, an estimate of the emission reduction was calculated using the differences in emission factors.[24]

Overall, the CO_2 emissions avoided in the period 2019-2021 were estimated at 313 $ktCO_2eq$.

EXEMPTION FOR REIMBURSEMENT OF COMMUTING BY PUBLIC TRANSPORT	2019	2020	2021

[18] Art. 38, §1, section 1, 9° a) of the direct tax code (CIR/WIB92),
[19] Art. 38, §1, section 1, 14° a) of the direct tax code (CIR/WIB92)
[20] Art. 145/28 of the direct tax code (CIR/WIB92)
[21] SPF Mobilité et transports, Enquête fédérale sur les déplacements domicile-travail 2021-2022, p 9.
[22] *Idem.*
[23] Coraline Daubresse et al. Description et utilisation du modèle PLANET, 2018.
[24] The baseline is established by considering the modes of transportation that people were using before. This includes cars, motorcycles, walking, biking, and other modes, each having different emission factors. With the implementation of tax exemptions, people have shifted towards alternative modes of transportation such as trams, metros, buses, and trains. These modes may have lower or higher emission factors compared to the previous modes used. It's important to note that cars constitute the largest portion of the baseline

Mpkm travelled by train due to policy	8486.3	7478.11	7563.51
Mpkm travelled by bus, tram and metro due to policy	1561.39	1460.27	1476.95
Pkm travelled by train, bus, tram, metro due to policy from ex-car users [%]	83%	83%	83%
Avoided CO_2 Eq emissions related to Green OLO [kt]	**141.28**	**106.98**	**65.54**

BICYCLE ALLOWANCE

The impact assessment for this expenditure was carried out in three steps. First, we obtained the bicycle pkm since 2016.[25] Second, we calculated what share of those km are due to the policy and travelled by previous car drivers (rather than public transport users). Finally, we applied the difference in emission factors between cars and bicycles. We do not measure any emission reduction for the switch by public transport users to bicycles.

Most companies that provide an allowance also implement additional measures to promote cycling.

Overall for 2019, 2020 and 2021 the measure is found to have avoided 44 kt of CO_2eq.

BICYCLE ALLOWANCE	2019	2020	2021
Mpkm travelled by bicycle due to policy	367.15	216.29	210.43
Pkm travelled by bicycle due to policy from ex-car users [%]	67%	67%	67%

[25] Base index = 2016.

Avoided CO_2 Eq emissions related to Green OLO [kt]	**23.40**	**13.26**	**7.28**

2.2.2. REDUCED PACKAGE CHARGE FOR USING INDIVIDUAL RE-USABLE DRINK PACKAGES

Belgium introduced a packaging charge on beverage containers in 1993 alongside other environmental taxes. The packaging charge is a tax equivalent to excise duty that is levied on individual packaging containing beverages (except for milk and flavoured milk-based drinks).[26]It was designed to encourage consumer behaviour change to promote re-use through deposit refund systems and recycling by changing the relative prices of products. In practice, the reduced package charge applies only to glass packaging.

Reusable packaging is subject to a reduced packaging tax, provided that the natural or legal person who distributes beverages in such packaging has applied for and received the necessary approval.

For packaging to be considered reusable, it must be refillable at least seven times, collected via a deposit system, and actually reused.

Allocated amount in Meuros	2019	2020	2021
Reduced Package Charge	42.874	21.944	22.688

The reduced package charge helps prevent waste generation, pollution, and GHG emissions, while contributing to the circular economy. By promoting the reuse of packaging, it reduces pollution compared to producing new packaging and helps conserve extracted materials, resulting in various environmental benefits.

[26] Established in Art. 371 of the Law of 16th July 1993 aimed at completing the state structure, as modified last by law of 28th March 2007.

The assessment of the reduced package charge was done in terms of avoided CO_2 emissions and avoided extracted materials. Based on the charges for re-usable containers and non-reused containers an estimation of the reused containers (1000l) was carried out.

As a first step, a reference scenario was established where reuse is at zero: all beverage packaging is used only once. This implies that all the beverage containers are produced with primary and/or recycled materials according to the actual recycling rate for this kind of glass. Then a reuse scenario was established, where we take into account that glass packaging is all used 7 times. But the first time it is used, it needs to be produced. So 1/7 of the beverage containers are assumed be produced with primary or recycled material (according to the actual recycling rate for this kind of glass).

For each scenario, we calculated the materials needed and emissions related to the production and re-use of glass. The impact on GHG emissions is assessed based on emission factors ($kgCO_2eq/1000l$) linked to the type of production (new or recycling) and to the kind of collection (deposit system or collection point).[27] For reused bottles, emissions are only linked to the collection (we assume a deposit system) and to the washing of the bottles. The inputs in terms of materials and energy used took into account recycling rates in Belgium as well as the limit for the use of recycled materials when producing new glass bottles.

With regard to the total results, only the share that is due to the allocated amount of the tax expenditure to Green OLO was taken into account.

The reduced packaging charge is estimated to have avoided 261 kt of CO_2eq in 2019, 2020 and 2021 as well as 200kt of sand, 79kt of limestone and 65kt of caustic soda.

REDUCED PACKAGING CHARGE FOR USING INDIVIDUAL REUSABLE BEVERAGE CONTAINERS	2019	2020	2021
Avoided CO_2 emissions related to Green OLO [kt]	128.19	65.61	67.83
Avoided use of materials related to Green OLO [kt]:			
• Sand	98	50	52
• Limestone	39	20	20
• Caustic soda	32	16	17

[27] Simon, B., et al., Life cycle impact assessment of beverage packaging systems: focus on the collection of postconsumer bottles, Journal of Cleaner Production (2015), http://dx.doi.org/10.1016/j.jclepro.2015.06.008

2.3 INVESTMENTS BY GOVERNMENT AGENCIES

2.3.1. GREEN INVESTMENTS BY BIO INVEST

Bio Invest is a private company whose capital is held by the Belgian federal government. Its mission is to support a strong private sector in developing and/or emerging countries, to enable them to gain access to growth and sustainable development within the framework of the Sustainable Development Goals.

To this end, BIO invests directly in private sector projects and, as such, makes a structural contribution to the socio-economic growth of those host countries. Its mandate requires strict criteria in terms of geographical targets, financing tools and, above all, impact on development. One of the major challenges for Development Finance Institutions (DFIs) is to help financed companies to become aware that environmental and social performance as well as good governance (ESG) are essential components for their success and sustainability, and that these elements must be permanently integrated into their strategy. BIO takes the environmental and socio-economic implications into account throughout the lifecycle of the project, and incorporates good practice principles at all levels, from the commercial strategy model through to daily decision-making.

The central focus of BIO's mission to invest in private sector projects is to contribute in a structural and positive way to the socio-economic growth of the host countries and their population, aligned with the UN's Sustainable Development Goals.

Disbursements during 2019, 2020 and 2021 were considered as green eligible expenditures. These were either in the form of loans to projects in renewable energy, solar and hydro projects (< 25 MW) or by contributions to renewable energy funds.

Allocated amounts in Meuros	2019	2020	2021
Investments by Bio Invest	15.9	4.4	6.2

The impact assessment only covers renewable energy, solar and hydro projects (< 25 MW), which are either already in operation or under development. The sums invested in funds finance several projects for which information is not readily available, hence it was not possible to assess their impacts.

For projects in operation, avoided CO_2 emissions, for 2019, 2020 and 2021 are calculated by multiplying the electricity production by local margin emission factors. These figures depend on the local power generation fleet and are provided by the UNFCCC[28].

In total, for projects in operation, avoided CO_2 emissions attributable to Green OLOs for the years 2019, 2020 and 2021 are evaluated at 230 kt.

[28]Source : IFI default grid factors 2021 v3.1 https://unfccc.int/docments/437880?gclid=Cj0KCQjwlPWgBhDHARIsAH2xdNfdTTNB1XQUBJl3Lrk7c5Ax9Ngtnln-vuOVbX4danZkPBT20KeLIElwaAkC_EALw_wcB