



# Environmental Taxes by Economic Activity

Methodological notes

September 2021

Guy Trachez, [gt@plan.be](mailto:gt@plan.be)

Guy Vandille, [gv@plan.be](mailto:gv@plan.be)

Jana Watelle, [wj@plan.be](mailto:wj@plan.be)

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e-mail: [contact@plan.be](mailto:contact@plan.be)

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**Federal Planning Bureau**

Rue Belliard – Belliardstraat 14-18, 1040 Brussels

phone: +32-2-5077311

e-mail: [contact@plan.be](mailto:contact@plan.be)

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**Abstract** - This report presents the methodology used to construct the environmental-economic account for environmental taxes by economic activity (ETEA). The ETEA is delivered on a yearly basis to Eurostat in the context of EU Regulation 691/2011.

**Jel Classification** - C80, H23, Q56

**Keywords** – Environmental economic accounts, environmental taxes

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# Introduction

Environmental taxes are a basic instrument of environmental policy. According to Eurostat (2013) every tax whose tax base is a (proxy of a) physical unit of something that has a proven, specific negative impact on the environment, and which is identified in ESA as a tax, is considered as an environmental tax. The first step in order to construct the environmental-economic account for environmental taxes by economic activity (ETEA) consists of the identification of environmental taxes in Belgium. This is discussed in Chapter 1. Once the environmental taxes have been identified they have to be attributed to the payers of these taxes (industries<sup>1</sup>, households and non-residents). This is discussed in Chapter 2.

The methodology to construct the ETEA for Belgium takes into account the Eurostat guidelines on this subject, as explained in Eurostat (2013). This implies that environmental taxes are divided into four categories, namely energy taxes, transport taxes, pollution taxes and resource taxes.<sup>2</sup>

Energy taxes include all taxes on energy products used for both transport and stationary purposes. Transport taxes include taxes related to the ownership and use of motor vehicles, except for the use of energy for transport purposes. Pollution taxes include taxes on measured and estimated emissions to air and water, on management of solid waste and on noise. Resource taxes include taxes on water consumption, forestry and mining.<sup>3</sup>

An analysis of environmental taxes by economic activity in the period 1997-2008 was published in Vandille, G. and L. Janssen (2012). The corresponding data set can be consulted on the website of the Federal Planning Bureau.<sup>4</sup> The industries in this dataset are classified according to the NACE Rev.1.1 classification. In other words, the classification is different from the one used in the ETEA database which is delivered to Eurostat in the context of Regulation (EU) No. 691/2011, according to which the industries are classified according to the NACE Rev.2 classification.

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<sup>1</sup> The industries are classified according to the NACE Rev.2 A\*64 aggregation level.

<sup>2</sup> Note that value added taxes are excluded as this is a general tax that is levied on all products.

<sup>3</sup> Taxes on oil and gas extraction are excluded, but these taxes are irrelevant for Belgium anyway.

<sup>4</sup> [https://www.plan.be/databases/data-40-en-environmental\\_taxes\\_by\\_economic\\_activity\\_1997\\_2008](https://www.plan.be/databases/data-40-en-environmental_taxes_by_economic_activity_1997_2008)

# 1. Identification of environmental taxes

This chapter explains how the environmental taxes are selected and attributed to one of the four different tax types (energy, transport, pollution and resource).

In the context of the ESA95 transmission programme, EU member states deliver their National Tax List (NTL) to Eurostat each year. The NTL contains an overview of all taxes and social contributions and classifies them according to their economic function (consumption, capital spending, labour...). The NTL also indicates which taxes are environmental taxes. Three types of environmental taxes are distinguished in the NTL: energy, transport, and pollution and resources. Pollution and resource taxes are thus lumped together, and need to be split in order to fill out the ETEA standard tables.

The following **energy** taxes were identified in the Belgian NTL (with the national accounts codes in brackets):

- Excise duties on mineral oil (D2122CC01+D214AC01)<sup>5</sup>
- Excise duties on liquefied natural gas and liquefied hydrocarbon and benzol (D2122CC02+D214AC02)
- Contribution for the surveillance on domestic fuel oil (D2122CC13+D214AC13)
- Contribution on oil products for heating (D2122CC14+D214AC14)
- Contribution on energy (D2122CC15+D214AC15)
- Federal contribution on electricity and natural gas (D214AC16)
- Contribution for FAPETRO (D214AC28)
- Contribution for APETRA (D214AC29)
- Emission permits (D29FC04)
- Flemish charge on supply points of electricity (D214A)
- FED - surtax on transmission price for offshore wind energy (D214AC30)
- FC - green certificates delivery (D214AC31)
- FC - surtax on distribution prices to finance green certificates (D214AC32)
- WR - green certificates delivery (D214AC33)
- WR - surtax on transmission prices to finance green certificates (D214AC34)
- BCR - green certificates delivery (D214AC35)

The excise duties on mineral oil are paid per liter of diesel, petrol, light fuel and kerosene, per ton of coal, heavy fuel, LPG and methane gas, and per MegaWatt-hour of electricity and natural gas.<sup>6</sup> The excise duties on liquefied natural gas and liquefied hydrocarbon and benzol are zero. The contribution for the surveillance on domestic fuel oil is a tax paid per liter of household fuel purchased. The contribution on oil products for heating is a tax paid per liter of diesel, kerosene and propane used for heating purposes. The revenue is to be used to support poor people's heating needs. The contribution on energy is a tax to be paid on the use of low-tension electricity and natural gas, as well as on each liter of petrol, light fuel oil and lamp petrol, and on each ton of butane and propane. The federal contribution on electricity

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<sup>5</sup> Taxes of which the code starts with D21 are taxes on products.

<sup>6</sup> See OECD/EEA Database on instruments used for environmental policy. <http://www2.oecd.org/econst/queries/>

and natural gas is to be paid per MegaWatt-hour. The contribution for FAPETRO is to be paid per liter of petrol, diesel and kerosene. It serves to finance the Fund for the Analysis of Petroleum products, which controls the quality of the petroleum products entering the Belgian market. The contribution for APETRA is to be paid per liter of petrol, diesel, kerosene and heavy fuel. It serves to finance an institution which manages the strategic petroleum stocks which are not managed by the large operators on the Belgian petroleum market. Emission permits need to be purchased by enterprises which do not operate on international markets in order to cover (part of) their emissions of carbon dioxide. The Flemish charge on supply points of electricity is paid per supply point of electricity in the Flemish region. The tariff of the charge depends on the voltage of the supply point and whether one is a residential or non-residential consumer. The revenue is to be used to execute the energy policy of the Flemish government. This tax was introduced in 2016 and discontinued in 2017 due to legal problems concerning double taxation by two levels of government. Since 2002, the federal government and the three Regions have implemented a system of green certificates (GC) to promote energy from renewable sources. This system is comparable to a mechanism in which a public administration grants a subsidy to green energy producers (subsidies on products (D.31) and levies a tax on electricity suppliers and consumers (excise duties and consumption taxes (D.214A)), thus resulting in six energy taxes. The federal government grants green certificates to producers of offshore electricity. They will then sell those certificates at a given minimum price to the high-tension network operator, who removes the certificates from the market and passes on the costs in its transmission prices. As a result, the federal surtax on the transmission price for offshore wind energy is paid by the electricity consumer. On the regional level, electricity suppliers are obliged to surrender a GC quota in proportion to the green power that they have supplied over a given period. Those who do not comply with the quota obligations, must purchase GC. Suppliers will pass these costs on to the consumer via the electricity bill. In the Flemish Region a surtax is paid on distribution prices to finance green certificates. This allows distribution system operators to recover part of the costs resulting from the public service obligation. The obligation implies that distribution system operators are required to purchase certificates from producers of renewable energy at a fixed minimum price. This ensures a minimum level of support for the production of electricity from renewable energy sources to installations that are connected to the grid of the system operators. A similar scheme of support can be found in the Walloon Region, where the costs associated with the public service obligation are passed on through the transmission fees by the high-voltage system operator.

The following **transport** taxes were identified in the Belgian NTL:

- Taxes on registration (D214DC01)
- Taxes on traffic (D214DC02)
- Additional levy on car insurance premiums (D214GC03)
- Traffic taxes paid by corporations (D29BC01)<sup>7</sup>
- Traffic taxes paid by households (D59DC01)<sup>8</sup>
- Euro tax disc (D29BC03)
- Taxes equal to excise rights paid by corporations (D29BC04)

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<sup>7</sup> Taxes of which the code starts with D29 are taxes on production other than taxes on products.

<sup>8</sup> Taxes of which the code starts with D59 are current taxes except on income. They include taxes on wealth as well as payments for licenses by households. Remark that for households taxes on the possession of a vehicle are considered a payment of a license, while for enterprises they are considered a tax on their production.

- Taxes equal to excise rights paid by households (D59DC02)

Taxes on registration are zero. The taxes paid when a car, minibus, motorcycle, boat or aircraft is brought into traffic are registered under the heading taxes on traffic. Traffic taxes have to be paid annually by all users of cars, coaches and (mini)buses, motorcycles, motor vehicles intended for road haulage, and trailers and semi-trailers. The Euro tax disc is paid annually for each truck of which the maximum authorized weight is at least 12 tons. The taxes equal to excise rights are annual taxes which have to be paid by the users of diesel cars and minibuses. The extra charge on car insurance premiums is paid by each economic agent which buys car insurance. One could argue that insurance is not a physical unit harmful to the environment. However, no one buys car insurance when he does not own a car. And a car is a physical unit harmful to the environment. Eurostat therefore considers the extra charge on car insurance premiums as an environmental tax.

The following **pollution and resource** taxes were identified in the Belgian NTL:

- Packing contribution (D2122CC16+D214AC25)
- Environmental charge (D2122CC17+D214AC26)
- Ecotax (D2122CC18+D214AC27)
- Taxes on water (D214AC17+D29FC03)
- Tax on waste products (D29FC01)
- Tax on manure (D29FC02)
- Tax on household waste (D59BC01)

The packing contribution has to be paid per hectoliter of beverages packed in individual (non)reusable packages. The environmental charge is to be paid for each kilogram of aluminium sheets and strips for household use, disposable plastic bags, disposable plastic kitchenware, and plastic plates, sheets, strips, tape, foil, and other flat shapes for household use. The ecotax has to be paid on each purchase of a battery, disposable camera, and package of certain types of glue, ink and solvents for professional use.

Taxes on water consist of Flemish, Walloon and Brussels-Capital taxes. The Flemish groundwater tax is paid on each cubic meter of groundwater used. The Flemish waste water charge is paid per cubic meter of drinking water. The Flemish water pollution tax is paid per unit of pollution. The Flemish charge on water capture is to be paid by users withdrawing over 500 cubic meters of water a year from waterways. The Walloon tax on water withdrawals is to be paid per cubic meter of groundwater used. The Walloon waste water charge is paid per cubic meter of drinking water for domestic waste water, and per unit of pollution for industrial waste water. The Brussels-Capital waste water charge is paid per cubic meter of drinking water for domestic waste water, and is calculated on the basis of a formula which combines the volume of water used with the units of pollution discharged for industrial waste water.

The tax on waste products consists of Flemish and Walloon taxes on the collection and treatment of waste.<sup>9</sup> The Flemish tax on the landfilling and incineration of waste is paid per ton of waste which is incinerated or landfilled, as well as on waste exported<sup>10</sup> for incineration or landfilling. The Walloon tax

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<sup>9</sup> It is rather peculiar that this tax is called “tax on waste products” instead of “tax on waste production”, since it is classified under D29 instead of D21, the tax code which regroups all taxes on products.

<sup>10</sup> In the case of exports only the difference between the Flemish tax and the tax paid outside of the Flemish region is charged.

on waste collection generally has to be paid per ton of commercial and household waste landfilled or (co-)incinerated. It also has to be paid per ton which is collected<sup>11</sup>, and per cubic meter for waste in illegal waste depots and for household waste possession. For collection and transport of dangerous waste, as well as for imports and exports of waste a transport license has to be obtained. The tax on household waste is a Walloon tax which used to be paid by Walloon households. It was discontinued in 2007.

The manure tax is a Flemish tax paid per kilogram of nitrogen and phosphorus produced or imported, as well as on each kilogram which is not processed or exported.

The detailed regional tax data are necessary to split the taxes marked as pollution and resource taxes in the NTL in their two constituting components. Most of these taxes have been introduced to tackle pollution. However, among the water taxes there are three regional taxes which are linked to resource use rather than pollution, namely:

- Flemish groundwater tax
- Flemish charge on water capture
- Walloon tax on water withdrawals<sup>12</sup>

All of the taxes identified as environmental need to be allocated to the economic agents paying them. This is the subject of Chapter 2.

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<sup>11</sup> The tax is paid by companies collecting waste, as well as by local authorities in the case they cross a certain threshold of non-selective waste collection.

<sup>12</sup> The Walloon tax on water withdrawals is a tax on potable groundwater as well as on non-potable surface water.

## 2. Allocation to the taxpayers

In order to be able to link the environmental tax data to other environmental accounts data, we need to allocate these data to industries<sup>13</sup>, households and non-residents. For some taxes this is quite straightforward, for others we need to look for a distribution key.

### 2.1. Energy taxes

All energy taxes, except the emission permits, are attributed to industries and households on the basis of a detailed tax study undertaken in the context of the construction of the monetary supply-and-use tables as part of the compilation of the monetary input-output tables for the years 2010, 2015 and 2020. The detailed tax study for the 2010 input-output tables is the first one according to NACE Rev.2. The supply-and-use tables for 2008 and 2009 were used in combination with the detailed tax study of 2010. As such, we obtained different allocation percentages for these two years. For the period 2010-2017 the detailed tax studies for the corresponding years were used. The 2017 allocation percentages were also applied to the energy tax totals for the years 2018 and 2019 in anticipation of the 2018 and 2019 supply-and-use tables.

#### 2.1.1. Excise duties on mineral oil (D2122CC01+D214AC01)

The excise duties on mineral oil are available in the NTL as one value for all the different products on which these excise duties are due. Excise duties on the different mineral oils are of course not identical. For diesel there is even a different rate depending on whether it is used for heating or for transport purposes. The value therefore not only has to be allocated to the industries and households, but also has to be split over the different products on which excise duties have to be paid. This is achieved by first calculating theoretical excise duty payments, on the basis of the use of the different products, an average price of these products<sup>14</sup>, and the differentiated tax rates on these products, taking into account the existing tax exemptions. In a second step the payments by the industries and the households are adjusted proportionally to the actual excise duty payments per product, obtained from the FPS Finance.

Part of the excise duties on mineral oil for transport purposes ought to be allocated to non-residents, which fill their tank in Belgium. However, the use of mineral oil for transport purposes is only calculated for Belgian residents. No information is available on the amount of fuel tanked by foreigners in Belgium. Nor is there any information on the amount of fuel tanked by Belgian residents abroad. As a consequence, excise taxes paid in Belgium by both residents and foreigners, or in other words territorial excise tax payments, are allocated to Belgian residents only.

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<sup>13</sup> EU Regulation 691/2011 requires that taxes paid by producers need to be allocated to industries at the A\*64 level of the NACE Rev.2 classification.

<sup>14</sup> An average price has to be taken into account because the excise duties are paid per liter or ton. In order to calculate the theoretical excise duties paid, the monetary use of the different products has to be transformed into the appropriate physical units by means of this average price.

### **2.1.2. Contribution for the surveillance on domestic fuel oil (D2122CC13+D214AC13)**

The contribution for the surveillance on domestic fuel oil is restricted to only one product, namely diesel for heating purposes. A theoretical contribution is calculated on the basis of the use of diesel for heating purposes and the tax rate differentiated according to the user of the diesel. In a second step the payments by the industries and the households are adjusted proportionally to the actual level of the contribution's total value.

### **2.1.3. Contribution on oil products for heating (D2122CC14+D214AC14)**

The contribution on oil products for heating is levied on diesel, kerosene and propane for heating purposes. No data is available to allocate the tax to the three different fuel types. Since the use of kerosene and propane for heating purposes is negligible compared to the use of diesel, the allocation is based on the use of the latter only. A theoretical contribution is calculated on the basis of the use of diesel for heating purposes and the tax rate differentiated according to the user of the diesel. In a second step the payments by the industries and the households are adjusted proportionally to the actual level of the contribution's total value.

### **2.1.4. Contribution on energy (D2122CC15+D214AC15)**

The contribution on energy has to be paid on many different energy products. As a consequence, just like for the excise duties, the total value not only has to be allocated to the industries and the households, but also has to be split across the different products. Differentiated tax rates are applied to the use of the products. Theoretical tax payments are calculated. And finally, the payments by the industries and the households are adjusted proportionally to the actual level of the contribution's total value by product obtained from the FPS Finance.

### **2.1.5. Federal contribution on electricity and natural gas (D214C16P)**

The federal contribution on electricity and natural gas is split across the two products in the supply table. Since there is no differentiation in the tax rate, the contribution was directly allocated to industries and households on the basis of their use of electricity and natural gas.

### **2.1.6. Contribution for FAPETRO (D214AC28)**

The contribution for FAPETRO has to be paid on petrol, diesel and kerosene. As a consequence, the total value not only has to be allocated to the industries and the households, but also has to be split across the different products. Differentiated tax rates are applied to the use of the products. Theoretical tax payments are calculated. And finally, the payments by the industries and the households are adjusted proportionally to the actual level of the contribution's total value by product obtained from the FPS Finance.

### **2.1.7. Contribution for APETRA (D214AC29)**

The contribution for APETRA has to be paid on petrol, diesel, kerosene and heavy fuel. As a consequence, the total value not only has to be allocated to the industries and the households, but also has to be split across the different products. Differentiated tax rates are applied to the use of the products. Theoretical tax payments are calculated. And finally, the payments by the industries and the households are adjusted proportionally to the actual level of the contribution's total value by product obtained from the FPS Finance.

### **2.1.8. Emission permits (D29FC04)**

The emission permits have to be bought by enterprises which are considered not to be confronted with foreign competition in order to cover (part of) their emissions of carbon dioxide. We made use of Belgian data on verified emissions and free emission allowances by industry to distribute the NTL total over the industries which have to pay for their emission permits. From 2013 to 2016, NACE 35 was the largest contributor by far, with a share of at least 80%. This share should fall over time as more and more industries no longer receive free emission permits or receive only a smaller part of their allowances for free.

### **2.1.9. Flemish charge on supply points of electricity (D214A)**

Pending data on the number of customers of electricity per category (residential customers of low voltage, non-residential customers of low voltage, customers of medium voltage and customers of high voltage), the Flemish charge on supply points of electricity is currently allocated to the households and industries on the basis of their use of electricity.

### **2.1.10. FED - surtax on transmission price for offshore wind energy (D214AC30)**

The federal surtax on transmission price for offshore wind energy is levied on the use of electricity. As a distribution key, we therefore rely on the use table, and distribute the total value among the various users of electricity.

### **2.1.11. FR - green certificates delivery (D214AC31)**

The costs of the electricity suppliers to comply with the quota obligations are largely passed on to electricity users via the electricity bill. They can be found under the heading 'Renewable Energy Contribution (+CHP)' and are calculated on the basis of electricity consumption. In 2016, this contribution will amount to approximately 2.65 euro cents/kWh. On 23 September 2017, the Flemish Government decided to increase this contribution (increase of about 4 euro per year). All households and businesses are charged, regardless of whether they are connected to the high-voltage grid (the thirty largest consumers of electricity in Flanders), the medium-voltage grid (most large and medium-sized businesses) or the low-voltage grid (all households and part of the tertiary sector). However, electricity supplies to energy-intensive businesses are often exempted. The total amount is allocated to industries and households on the basis of the use of electricity.

### **2.1.12. FR - surtax on distribution prices to finance green certificates (D214AC32)**

Distribution system operators recover the cost of the guaranteed purchase of certificates at minimum prices by selling them again on the market. The difference between the minimum price and the sales price, is what the operators pass on through the distribution fees. Thereby allocating the total value of the surtax to industries and households on the basis of the use of electricity.

### **2.1.13. WR - green certificates delivery (D214AC33)**

The costs to comply with the obligation to surrender an allocated quota as an electricity supplier will appear on the electricity bill as a contribution to renewable energy. In the Walloon Region, however, there are so many exemptions from this tax that the total value is attributed to the households as a rough estimate.

### **2.1.14. WR - surtax on transmission prices to finance green certificates (D214AC34)**

The costs associated with the task granted to the operator of the high-voltage grid to purchase GC and take them off the market, are passed on through the transmission fees. Because there are many exemptions from this surtax, the total value is attributed to the households as a rough estimate.

### **2.1.15. BCR - green certificates delivery (D214AC35)**

The acquisition of GC represents an additional financial burden for suppliers. They will recover the costs of their obligation via their customers. These costs are mentioned on their invoices under 'green energy contribution'. The total amount is allocated to industries and households on the basis of the use of electricity in the use table.

## **2.2. Transport taxes**

Some of the transport taxes are linked to the purchase of a product, others are not. Other sources than the use table therefore had to be used in order to allocate the taxes to industries and to households.

### **2.2.1. Taxes on traffic (D214DC02)**

This is a tax which is linked to the purchase of a vehicle. For industries the purchase of a vehicle is an investment, however. This implies that in the use table, all purchases of vehicles by industries are added together in the investment column. The share paid by the households can be derived from the use table, but the allocation to the different industries requires extra data. We used data from the DIV<sup>15</sup> on the registration of vehicles by industries classified according to NACE Rev.2. These taxes on traffic, which are taxes on the entry into service of the vehicles, are very diverse. In order to calculate theoretical tax payments, as is done for the energy taxes, very detailed data on the types of vehicles purchased by the different industries are required. These data are not readily available. The taxes on traffic paid by the

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<sup>15</sup> Dienst Inschrijvingen Voertuigen (Vehicle Registration Service)

industries are therefore distributed over the different industries on the basis of the total number of newly registered vehicles.

### **2.2.2. Additional levy on car insurance premiums (D214GC03)**

This tax is linked to the purchase of car insurance. The total tax is distributed over the buyers of car insurance according to the monetary use tables.

### **2.2.3. Traffic taxes paid by corporations (D29BC01)**

The yearly traffic taxes are not linked to the purchase of a vehicle, as rather to the possession of a vehicle. In order to distribute the traffic taxes paid by corporations, vehicle park<sup>16</sup> data were used. Just like for the taxes on traffic, these traffic taxes are very diverse. Detailed data on the distribution of different types of vehicles is not available. The traffic taxes paid by corporations are therefore distributed across the industries on the basis of the total number of vehicles registered as being owned by the different industries in a particular year.

### **2.2.4. Traffic taxes paid by households (D59DC01)**

The traffic taxes paid by households are separately identified in the NTL and can thus be attributed directly to the households.

### **2.2.5. Euro tax disc (D29BC03)**

Payments for the Euro tax disc are distributed over the industries on the basis of vehicle park data with respect to the ownership of trucks. Again, only the total number of trucks is taken into account, due to the fact that the detailed industry data on the different classes of trucks are not readily available.

### **2.2.6. Taxes equal to excise rights paid by corporations (D29BC04)**

The taxes equal to excise rights are paid by the owners of diesel cars. Most of the cars owned by Belgian corporations are diesel cars. The taxes equal to excise rights paid by corporations are therefore distributed across the industries on the basis of vehicle park data on the ownership of cars.

### **2.2.7. Taxes equal to excise rights paid by households (D59DC02)**

The taxes equal to excise rights paid by the households are identified separately in the NTL, and can thus be attributed directly to the households.

## **2.3. Pollution taxes**

The majority of pollution taxes are linked to the purchase of products, but it is not always possible to determine the user of these products.

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<sup>16</sup> The distribution of the vehicle park over the industries is calculated by the transport team of the FPB.

### **2.3.1. Packing contribution (D2122CC16+D214AC26)**

The packing contribution has to be paid upon the purchase of beverages in particular types of packing. The distribution across industries and households is achieved on the basis of the use table. The use table contains different types of beverages for which the packing contribution needs to be paid. There is a differentiation in the rate between reusable and non-reusable packing. However, it is impossible to take this into account, since the use table does not include this differentiation. The packing contribution, the total of which is split over the different products in the use table, is distributed over industries and households on the basis of their use of the different beverages.

### **2.3.2. Environmental charge (D2122CC17+D214AC26)**

The environmental charge has to be paid on a set of products for household use, and is entirely allocated to the households.

### **2.3.3. Ecotax (D2122CC18+D214AC27)**

The ecotax has to be paid on batteries, disposable cameras, and certain types of packing of glue, ink and solvents for professional use. The tax does not have to be paid if certain recycling objectives are met. The income generated by the ecotax is all but negligible. Information from the FPS Finance showed that in the period 2011-2013 on average 96% of the ecotax was paid on batteries.<sup>17</sup> The ecotax was therefore attributed entirely to the households.

### **2.3.4. Taxes on water (D214AC17+D29FC03)**

Most of the taxes on water are pollution taxes. They have been introduced in order to limit water pollution. The part linked to domestic water use is taxed according to the physical units of water used. This is not the case for the industrial use of water, for which the pollution is directly measured.

Taxes on water are regional taxes. The distribution across the different taxpayers starts off with the calculation of the part paid by the households. As a matter of fact, the part of domestic water taxes not paid by the households, but paid by the enterprises was almost nil in 2010-2013, the years for which the detailed tax studies on which the allocations are based, were performed.<sup>18</sup> This part of the water taxes was therefore completely allocated to the households.

Taxes on the industrial use of water are allocated to the individual industries on the basis of their use of water found in the use table.<sup>19</sup>

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<sup>17</sup> Data by product is not available for years prior to 2011.

<sup>18</sup> Flanders was the only region where taxes on domestic water use had not fallen to zero. Information provided by the Flemish administration showed that the part paid by enterprises was all but negligible.

<sup>19</sup> These taxes should really be linked to measured pollution. However, this is only possible if water pollution accounts exist, in which the pollution linked to the activities of the individual industries is registered. No such accounts exist at the moment in Belgium.

### **2.3.5. Tax on waste products (D29FC01)**

The Flemish and the Walloon tax on waste products is entirely paid by NACE 38<sup>20</sup>.

### **2.3.6. Tax on manure (D29FC02)**

The tax on manure is entirely allocated to agriculture (NACE 01).

### **2.3.7. Tax on household waste (D59BC01)**

The Walloon tax on household waste is completely allocated to the households.

## **2.4. Resource taxes**

There are only few resource taxes in Belgium. They are part of the taxes on water, of which the pollution taxes were discussed in section 2.3. These resource taxes are the Flemish groundwater tax, the Flemish charge on water capture and the Walloon tax on water withdrawals.

The sum of the different regional resource taxes can be allocated to the different industries by using water statistics. As these regional taxes apply to water directly extracted from nature, the use tables from the national accounts cannot be used for that purpose because this kind of water is not considered as a product. It is not sold or distributed by water companies. However, the Eurostat data on annual freshwater abstraction by source and sector [env\_wat\_abs] can be used<sup>21</sup>.

The level of detail as concerns the industries which abstract freshwater from the environment in this dataset does not correspond to the NACE Rev.2 A\*64-level, however. The industries are only available at a more aggregated level. In what follows, we explain how the data on freshwater abstraction were allocated to the industries at the level required by Regulation 691/2011.

First the water abstraction for public water supply is deducted from the total gross abstraction. The item "Water abstraction for construction and other industrial activities" is allocated to construction only (NACE section F). Furthermore, the item "Water abstraction for production of electricity – cooling" is allocated to NACE section D. Section E - Sewerage, waste collection, treatment and disposal activities; materials recovery; remediation activities and other waste management services is not present in the table of annual freshwater abstraction, but since the amount of freshwater abstracted by this industry is zero or very close to zero for all years between 2008 and 2010<sup>22</sup>, none of the resource tax revenue has been allocated to NACE section E. Finally, the amount not allocated is calculated as the difference between total water abstracted and the sum of all components. Per NACE section the share of the total annual freshwater abstraction is then calculated. For sections B, D, and F no further disaggregation is required.

Other information or assumptions are required for further allocation of the resource tax revenue to the NACE division level. All tax revenue previously calculated for section A – Agriculture, forestry and

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<sup>20</sup> Information obtained from OVAM and SPW, the regional administrations responsible for waste policy.

<sup>21</sup> These data show the total annual freshwater abstraction in Belgium.

<sup>22</sup> The volume of water abstracted is calculated based on another Eurostat dataset [env\_wat\_cat].

fishing, is allocated to NACE 01 - Crop and animal production, hunting and related service activities. To allocate the resource tax revenue for section C - Manufacturing to the different divisions, a more disaggregated table is used on the water use in the manufacturing industry by activity and supply category. These data can be found in Eurostat dataset env\_wat\_ind. This dataset allows calculating the resource tax revenue for NACE divisions 10-12 - Manufacture of food products, beverages and tobacco products, 13-15 - Manufacture of textiles, wearing apparel and leather products, 17 - Manufacture of paper and paper products and 24 - Manufacture of basic metals<sup>23</sup>. For the remaining divisions in section C, we made use of the use of product 36A01 – Abstraction, treatment and distribution of water (in the Belgian monetary use table), in order to allocate the resource tax revenue<sup>24</sup>.

As far as the services sections G to U are concerned, the total amount of resource tax revenue paid is allocated to the different divisions in proportion to their use of product 36A01.

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<sup>23</sup> To estimate the total tax revenue paid by NACE divisions 10 – 11, the share of total manufacturing in total water abstracted and the share of divisions 10 – 11 in total manufacturing are combined and applied to the total resource tax revenue.

<sup>24</sup> To estimate the total tax revenue paid by NACE division 19, we combine three shares: the share of the use of product 36A01 by NACE 19 in the total use of 36A01 by NACE divisions 19-21, the share of total manufacturing in total water abstracted and the share of NACE divisions 19-21 in total manufacturing, and apply them to total resource tax revenue.

## References

- Eurostat (2013), Environmental taxes – A statistical guide, Eurostat Manuals and Guidelines, 2013, Luxembourg, 42p.
- Vandille, G. and L. Janssen (2012), De Belgische milieurekeningen – Milieu-economische rekeningen 1990-2008, Planning Paper 111, Federal Planning Bureau, Brussels, September, 99p.