

Rules for filling out the questionnaire on environmental protection 2008

- **Definitions and rules of assessment**
- **Listing of equipment and installations for environmental protection activities**

1 Definitions and rules of assessment

Environmental protection includes all activities that have as their main objective the prevention, reduction and removal of contamination and any other degradation of the environment. **Excluded are those activities which, although they are beneficial to the environment, principally respond to technical needs, hygiene or company safety, like personal anti-noise protectors.**

The following are included among environmental protection activities:

- Air and climate protection
- Wastewater management
- Waste management
- Soil, groundwater and surface water decontamination
- Noise and vibration reduction
- Biodiversity and landscape protection
- Protection against radiation (excluding external safety)
- Environment related research and development
- Other environmental protection activities

The questionnaire collects information on employment, revenues from the production of environmental goods and services, current expenses and investment in environmental protection activity. Likewise, it includes other operations relating to the Public Administrations, such as the payment of environmental taxes and fees, subsidies received (current and capital) and deductions for investment in environmental matters. The following includes the definitions and assessment norms of some of the sections of the questionnaire:

1.1 Employment

Occupied persons who work exclusively in environmental protection activities within the company or establishment and those who, on a part time basis, carry out these types of activities are accounted for herein. The Number of persons Employed corresponds to the average of the natural year considered in the survey and the number of hours to the annual total.

Example:

For example, an establishment with the following data related with environmental protection activities:

Persons	Total yearly worked hours
1	1,800
1	700
1	300

The data to fill out in the questionnaire would be the following:

1. Employment (personnel occupied full-time and/or part-time in environmental protection activities)

1.1 Average number of persons occupied in environmental protection	1+1+1=3
1.2 Total number of hours worked in environmental protection activities	1800+700+300=2800

1.2 Operations related to the Public Administrations

1. **Rubbish collection bill.** Amount paid to the granting company or municipal council corresponding to the rubbish collection item.
2. **Sewerage and wastewater purification fees.** Amount paid o the company or municipal council, corresponding to the item of sewerage and wastewater purification. This refers to the wastewater discharged into a public sewerage network.
3. **Other fees relating to the environment.** Amounts paid for environmental services provided by the Public Administrations with consideration.
4. **Dumping tax.** Amount paid to the competent body (Hydrographical confederation) as a dumping control tax. The amount to be paid is calculated with the volume, nature and polluting charge of the dumping.
5. **Sewerage tax.** Amount paid to the competent body (Autonomous Community) for the sewerage tax: Aragón, Asturias, Illes Balears, Comunitat Valenciana, Galicia, La Rioja, etc.
6. **Other taxes (sections 2.6-2.9).** This must include all those payments to the Public Administrations related with the environment and without consideration. Worth noting are the Autonomous taxes in the areas of atmospheric emissions, coastal and wastewater dumping, taxes on activities affecting the environment, etc.
7. **Income related to the environment.** This must include those payments of the Public Administrations to cover current costs (section 2.10) and capital costs (section 2.11). The amounts must be broken down by origin of the funds.
8. **Deductions of associated taxes and investments in environmental protection.** This must include the deductions in the Capital Tax and Income Tax.

1.3 Environmental goods and services (ecoindustry)

This heading refers to the goods and services produced in the establishment with an environmental purpose as a main or secondary activity. This includes clean technologies, products and/or services that reduce environmental risks, that minimise pollution and the use of resources. Among others, this considers the following goods:

- Purifiers, rubbish bins, filters, reactive products for wastewater treatment, etc.

More examples may be found in section 2 of this manual (listing of equipment and installations for the environmental protection activities).

1.4 Investment in environmental protection

Investment is defined as capital resources acquired by the company for environmental protection with the purpose of dedicating them to this productive process for more than a year. There are two elements in this concept: real increase of assets (purchases of capital goods or intangible assets) and reduction of assets (sales or cessions of capital goods or intangible assets) performed by the company during the reference year.

Appraisal of the investment:

1. Asset purchases are appraised at the price of acquisition, including transport costs, installation costs and non-deductible taxes, not including the deductible VAT. Tasks performed by the company using their own produced tangible goods are valued at production cost and using tangible goods acquired through financial leasing at the spot price of the goods purchased.

2. Sales and asset cessions are accounted for at sales prices, excluding the VAT charged.

Regarding environmental protection investments, two types should be distinguished:

A. Integrated equipment and installations

B. Non-integrated or independent equipment and installations of the production process (treatment of pollution)

The main difference, in general terms, is that, while equipment and independent facilities are dedicated to treating already generated pollution, integrated equipment units undertake to prevent pollution production by the introduction of modifications in productive processes.

A. Integrated equipment and installations (prevention of pollution)

Equipment integrated in the production cycle are those which have a dual purpose, industrial and control of the contamination. Their main objective is to reduce the load of polluting agents generated in the productive process, in other words, to achieve a productive process which generates less pollution requiring independent equipment treatment. In the case of the acquisition of new integrated equipment, **the cost to be considered is exclusively the cost corresponding to contamination control.** In case of modifying of existing equipment, the cost to be considered is the cost of the modification for the control of the contamination.

The following considerations regarding this type of equipment should be taken into account:

- In order to figure out the amount to be included in the questionnaire, the part of the equipment dedicated to environment protection should be separated.
- With the purpose of calculating additional values for pollution control, it would be correct to consider a regular equivalent equipment unit, and to determine the difference as the extra cost.
- A regular equipment unit is defined as the cheapest purchase alternative, whose productive functions and features are similar, except in as far as environmental protection is concerned.

Example:

Purchase of a productive equipment has been decided upon, dedicated to the A establishment. Two alternatives are available with such purpose:

1. The unit X costs 1,000 €. Manufacturing 10 units of the product, 1 ton of waste is generated.
2. The unit Y costs 750 €. Manufacturing 10 units of the product, 2 tons of waste are generated.

The equipment Y comprises standard technology.

The Amount to be written down in the questionnaire is the following:

4.1. Equipment and installations integrated in the production process (prevention of pollution)

equipment integrated in the production cycle are those which have a dual purpose, industrial and control of the contamination. In the case of the acquisition of new integrated equipment, the cost to be considered is **exclusively the cost corresponding to the control of the contamination**. In the case of existing equipment modifications, the cost to be considered is the cost of the modification for the control of the contamination.

Environmental scope	Acquisitions and major improvements	Sales
1. Installations for the reduction of atmospheric pollutant		
2. Installations for the prevention of wastewater		
3. Installations that generate less waste	1000 €-750 €= 250 €	
4. Installations to prevent pollution in land and water		

B. Independent equipment and installations in the production process (treatment of pollution)

Independent or non-integrated equipment and installations are those that operate independently in the production process and are intended to reducing and processing pollutants generated during said process. In investment expenditure it is necessary to consider the price of the purchases of equipment, large repairs effected in the existing equipment and / or costs of the construction of the installation carried out by the company itself, including, where appropriate, the costs relative to design, the assembly of the equipment and the purchase of the land necessary for their positioning.

The amount of investment to be registered in the questionnaire is the total amount.

1.5 Current expenditure related to environmental protection

Current **expenditure on environmental protection** covers all operating costs which are included in the General Accounting Plan profit and loss account, whose main objective is to reduce, prevent, treat or eliminate pollutants and pollution or any other degradation of the environment resulting from the operating activity of the establishment. The value of acquired goods and services consists in the purchase price less the deductible VAT.

– **5.1 Purchases of environmental services from other companies:** payments made to other companies for the provision of environmental protection services related with the environmental impact of the establishment's productive activity. Internal expenditure shall not be accounted for. For example, if the establishment processes wastewater with its own resources (does not hire another companies to do it), current expenditures (labour, raw materials, etc.) should be included in the corresponding sections (5.2, 5.3, etc.), and not within 5.1.3.

– **5.2 Expenditure associated with environmental protection equipment:** should only include expenditure arising from the use of environmental protection equipment, and not expenditure related to other type of equipment. The total amount resulting from adding registered values in headings 5.2.1 (repair and maintenance of environmental protection equipment), 5.2.2 (energy consumption in environmental protection equipment) and 5.2.3 (raw material consumption on environmental protection equipment) should be broken down by the environmental field where these systems belong (air and weather protection, wastewater management, waste management, soil protection and decontamination, subterranean water and surface water, noise and vibration reduction...).

– **5.2.1 Consumption of raw materials in environmental protection equipment:** change of equipment filters reducing atmospheric emissions, repairs of pumps used for wastewater processing...

– **5.2.2 Energy consumption of environmental protection equipment:** energy consumed by atmospheric emission reducing equipment, energy for aeration in wastewater treatment...

– **5.2.3 Consumption of raw materials of environmental protection equipment:** reactive products used for wastewater treatment or in the reduction of atmospheric emissions...

Example:

The establishment Z has two environmental protection equipment units installed in it:

- 1- Wastewater Treatment Plants (WTP).
- 2- Equipment for self-treated waste

Current expenditure associated to these equipment for year 2008 is the following:

Current expenditure(€)	WTP	Waste treatment equipment	Total
Repair and maintenance	100	73	173
Energy consumption	150	15	165
Consumption of raw materials	20	0	20
Total	270	88	358

The amounts to write down in the questionnaire are the following:

5.2 Expenses associated with environmental protection equipment

5.2.1 environmental protection equipment repair and maintenance

(filter substitution, pump repair... in environmental protection equipment) 100+73=173

5.2.2 Energy consumption of environmental protection equipment

(energy consumed by equipment used in wastewater purification, atmospheric emission reduction....) 150+15=165

5.2.3 Raw materials consumption of environmental protection equipment

(Reagents used in the treatment of wastewater or atmospheric emissions ...) 20

Total 5.2 **358**

Breakdown of the total of 5.2 in the following areas:

Air emissions		
Wastewater		100+150+20=270
Waste		73+15=88
Other environmental fields: noise, land (specify):		

– **5.3 Costs of personnel dedicated to environmental protection activities:** is referred to remuneration received by personnel working in environmental protection activities, considering the number of hours worked in this type of activities. Wages, salaries and social security costs will be considered with this purpose.

Example:

For example, an establishment with the following data related with workers dedicated to environmental protection activities:

Persons	Hours worked in environmental protection activities	Amount received per hour worked.
1	1,800	17 €/h
1	700	15 €/h
1	300	14 €/h

The amount to be included in heading 5.3. is the following:

5.3. Expenses on personnel dedicated to environmental protection activities:
 $(1,800 \text{ h} \times 17 \text{ €/h}) + (700 \text{ h} \times 15 \text{ €/h}) + (300 \text{ h} \times 14 \text{ €/h}) = 45,300 \text{ €}$

– **5.5 Additional costs for the use of clean products.** This accounts for the extra cost (not the total cost) due to using this type of product. These are the least contaminating when they are used or disposed of than the normal equivalent products (for example, cost of BIA fuel- cost F01).

– **5.6 Expenses on products that protect the environment.** This accounts for the total cost due to using these products, whose main objective is the protection of the environment (for example, rubbish bags, reactive products for septic tanks, etc.)

– **5.7 Payments by integrated management system.** This counts the payments carried out to different bodies in return for taking charge of their products or packages when disposed of. It includes payments to ECOEMBES, ECOVIDRIO, SIGRE, SIGAUS, SIGNUS, ECOPILAS, etc.

– **5.9 Other current expenses.** This must include those expenses on environmental protections not considered previously, and specifically the value thereof.

General expenditure of the establishment should not be considered in the different sections, only those specifically destined to environmental protection activities.

2 Listing of equipment and installations for environmental protection activities

1 Non-integrated equipment and facilities

1.1 AIR EMISSIONS

1.1.1 Equipment and installations for the treatment of polluting gases

- Separation by gravitation or momentum methods (including cyclones and centrifugals)
- Electrofilters (electrostatic precipitators)
- Screen filters, wax filters, absorption filter
- Biofilter and biocleaners
- Special filters for radioactive polluting gases
- Filters for damp dust and gas cleaners
- Sulphur recovery from gas processing
- Venturi effect separation
- Pollution Coolers and Condensers and gas ventilation to avoid polluting the air
- Thermal and catalytic combustion of polluting gases
- Installations for filtering and the ventilation of gases

1.1.2 Equipment and facilities for reducing the production of polluting gases

- Insulation or cooling deposits
- Measures for reducing dust appearance during storage, handling or transport
- Steam collection and recovery systems
- Balance pressure systems
- Buoyant vessels in storage tanks

1.1.3 Equipment and installations for improving the scattering of pollutants in the atmosphere

- Increasing the height of existing chimneys
- Extra height of new chimneys
- Extra heating for chimney gas

1.1.4 Flare systems

- Steam or water injection systems which improve combustion
- Flare control systems for preventing air pollution

1.1.5 Equipment for measuring emissions, smells and concentrations outside buildings.

1.2 WASTEWATER

1.2.1 Equipment and installations for the storage and transport of wastewater

– Construction or separation of existing wastewater systems or cooling systems using water for treating wastewater in a more efficient way.

Neutralization tanks and other wastewater storage facilities to avoid maximum loads and dumping (peak)

Deposits for collecting radioactive dumping

– Main wastewater connections with pressure circuits for carrying collected water towards municipal processing networks and processing plants.

1.2.2 Equipment and facilities for the physical treatment of wastewater

– Grids for solid waste of considerable size, sand filters, screening facilities, filters,...

– Buoyancy and flocculation, sedimentation and septic tanks

– Separation of oil and grease

– Separation by inertia including hydraulic and centrifugal cyclones

1.2.3 Equipment and facilities for the biological and chemical treatment of wastewater

– Ion separation (metal, phosphates, fluorides)

– Hyperfiltering and ultrafiltering (reverse osmosis)

– Neutralization

– Heating treatment (heating)

– Ionic absorption and exchange

– Desorption

– Dispersants

– Biological treatment for waste water (aerobic and anaerobic)

1.2.4 Equipment and facilities for treating sludge

– Aerobic sludge stabilization

– anaerobic sludge stabilization (sludge anaerobic digestion)

– Sludge heating treatment

– Sludge incineration

– Sludge de-watering and drying

– Sludge treatment with metal recovery

– Sludge storage

1.2.5 Equipment and facilities for reducing and avoiding accidental wastewater dumping

– Dumping and leakage prevention

– Floating screens

1.2.6 Equipment and facilities for reducing thermal contamination

– Cooling towers

– Cooling facilities for heater water and steam condensation

– Equipment for increasing scattering of dumped cooling water

1.2.7 Equipment for measuring dumping and concentrations in surface water

1.3 WASTE (SLUDGE TREATMENT IS EXCLUDED)

1.3.1 Equipment and facilities for self storage and transport

- Special vehicles
- Own containers
- Transfer stations
- Waste storage
- Storage for the collection of cleaning liquids (including those used in trains, boats and trucks)
- Deposits and other facilities for collecting bilge and ballast water

1.3.2 Equipment and facilities for self-treatment

- Classification and separation
- Thermal treatment (dry distillation, pyrolysis)
- Condensation, compaction
- Detoxification, neutralization, de-watering
- Radioactive waste treatment (glass or concrete sheathing)
- Separation of heavy metals
- Own controlled dumping (including facilities for protecting and treating subterranean water)
- Waste incineration
- Floor waterproofing, including ditches, walls and drain systems
- Biological treatment (composting, fermentation) excluding wastewater sludge

1.4 LAND AND SUBTERRANEAN WATER

1.4.1 Equipment and facilities for self-treatment

- Improvement of subterranean storage facilities for floor protection conducts and subterranean water
- Runoff water and leakage
- Floor waterproofing
- Measures aimed at reducing the use of subterranean water

1.4.2 Equipment for measuring dumping and concentration in surface water and in the soil

1.5 NOISE AND VIBRATIONS

1.5.1 Equipment and facilities for:

- Sheathing and acoustic insulation of machinery and conducts
- Combustion adjusting devices to reduce noise production
- Anti-noise screens and barriers
- Double glazing windows
- Supervision devices

- Constructions for noise and vibration absorption
- Oscillation mitigator
- Openings with silencer
- Humidifier

1.5.2 Equipment for measuring noise and vibrations

1.6 NATURE.

- Land purchases with nature preservation purposes
- Reforestation
- Landscape recovery after excavations
- Green areas surrounding industrial plants
- Structure adaptation for the prevention of animal collisions

2 Integrated equipment

2.1 AIR EMISSIONS

2.1.1 Facilities (or sections thereof) for:

- Reducing emissions and odours caused by fuel combustion
- Reusing waste gases for the reduction of air pollution
- Using non-polluting raw materials in productive processes
- Using more expensive and less polluting equipment
- Applying more expensive and less polluting processes
- Tank sheathing (with paint) to avoid evaporation
- Additional costs of special mechanisms (keys and valves, sealed pump sleeves, welded joints,...)
- Tanks with floating screens
- Vacuum pumps instead of steam injectors
- Steam exchange systems

2.2 WASTEWATER

2.2.1 Facilities (or sections thereof) for

- Reducing water consumption and reusing water
- Using non-polluting raw materials and materials in productive processes
- Use more expensive and less polluting equipment
- Apply more expensive and less polluting processes

2.2.2 Additional costs of facilities (or sections thereof) for:

- It is better to cool using air than using water (to reduce thermal contamination)
- Closed cooling circuits (to reduce thermal pollution)
- Special mechanisms (including switches, valves,...).

2.2.3 Facilities (or sections thereof) needed for:

- Extra maintenance (e.g. Cleaning) of cooling systems if chlorination of cooling water is not allowed due to environmental reasons

2.3 WASTE

2.3.1 Facilities (or sections thereof) for:

- Reuse materials in productive processes
- To reduce the use of raw and regular materials in order to reduce the volume of waste
- Use non-polluting raw and regular materials
- Apply more expensive and less polluting processes which generate less waste

2.4 LAND AND SUBTERRANEAN WATER

2.4.1 Facilities (or sections thereof) for:

- Apply more expensive and less polluting processes

2.4.2 Additional costs of facilities (or part thereof) for:

- Constructing double wall tanks with the purpose of protecting the soil and subterranean water

2.5 NOISE AND VIBRATIONS

2.5.1 Facilities (or sections thereof) such as:

- Flexible joints and ducts
- Specially designed foundations for the absorption of vibrations
- Equipment and Machinery conceived for emitting low levels of noise and vibrations
- Low noise level burners
- Extra-costs linked to the grouping of buildings and/or facilities in order to reduce noise and vibrations
- Special equipment for the construction or re-construction of buildings (including insulating materials and special foundation structures)