Befesa Aluminio, S.L.

Erandio plant

Befesa Aluminio, S.L.
Ctra. Lutxana-Asúa 13
48950 Erandio, Bizkaia - Spain
Tel: (+34) 94-4530200
Fax: (+34) 94-4530097
E-mail: aluminio.bilbao@befesa.com

This document constitutes the environmental declaration of Befesa Aluminio, S.L.-Erandio plant corresponding to the year 2017. It has been made considering the requirements established by the regulations (CE) Nº 1221/2009 and (CE) Nº 1505/2017 of the European Commission, concerning the voluntary participation of organizations in a community environmental management and audit system (EMAS).

Contents

1. EMAS registration

1.1 Regulation (EC) nº 1221/2009 and nº 1505/2017

Regulation no. 1221/2009 on the EMAS (Eco-Management and Audit Scheme) is a system by which organizations can voluntarily adhere to a community management system and environmental audits. In 2017, Regulation no. 1505/2017 is published and enters into force, which partially modifies (Annex I, II and III) the aforementioned Regulation.

These regulations have three fundamental commitments:

- Internal control of the environmental impacts of the process and registration under the basic assumption of compliance with the environmental legislation applicable.
- Continuous reduction in impacts, defining and publishing the objectives and actions to achieve them, as well as the control and results through continuous environmental audits.
- Commitment to full transparency regarding society and other sectors.

1.2 Environmental declaration

It is the essential element of the system, since it involves making the company's environmental data available to society:

- Consumption of raw materials, water, electricity, fuel, emissions, effluents, waste, etc.

- The company's environmental policy, ensuring compliance with the applicable regulations and, at the same time, the commitment to continuous improvement based on quantifiable objectives and the prevention of pollution.
- Validation of the system audit, as well as compliance with the regulations, all through an authorized verifier.

In short, to inform society about our activity, provide key data and ensure environmental compliance of our company.

1.3 Befesa Aluminio, S.L. as a member of the system

Voluntarily Befesa Aluminio, S.L. with NACE code 2453 (light metal casting) has decided to join the system, to make its environmental commitment clear to society in the development of its daily activity. This is defined as:

"Solid and liquid aluminium alloys production. Aluminium waste treatments. Design, development and installation of equipment and technology for the aluminium industry. Trading of by-products of aluminium and other non-ferric metals".

2. The company's activities, products and services

The company Befesa Aluminio, SL, has 4 work centers of recognized international prestige, located in the towns of Erandio (Bizkaia), Les Franqueses del Vallés (Barcelona), Bernburg (Germany) and Valladolid, with the first three centers being referenced refineries of aluminum and the fourth a salt slag recovery. All of them are within the sector of the so-called eco-industry, because they are dedicated to recycling, recovering and valorizing of all types of waste from the aluminum industry. The total recycled process, allows the recovery of the free metal of all the materials that it processes, as well as the oxide that inevitably accompanies them, providing an important alternative to the aluminum of primary type and the high consumption of energy that demand its obtaining and assuming consequently an inexhaustible source of obtaining metals in front of the mining extraction, consequently prolonging the rate of depletion of the planet's natural resources.

The activities developed by Befesa Aluminio, S.L. constitute an important and fundamental link in the life cycle of aluminium. The activities carried out in primary aluminium production plants, aluminium processing and finishing plants, or aluminium smelters in general, would be totally unfeasible without the presence of industries such as Befesa Aluminio, SL, in charge of the treatment, recovery and recycling of waste that they generate by converting mentioned waste into assimilable raw materials. Befesa Aluminio, S.L., since its beginnings, has focused its activities on the production of aluminium alloys under any type of specification for the injection molding of parts for the automotive, household appliances and construction sectors.

The overall calculation of its activities has placed Befesa Aluminio S.L. as the main company in its activity in Spain and one of the largest in Europe. The link that Befesa Aluminio, S.L. has maintained and maintains with groups and companies of worldwide recognition and the use of the acquired knowledge, has contributed to Befesa Aluminio, S.L. be an aluminium recycling industry with suppliers and customers all over the world such as manufacturers of the automotive sector and foundries supplying these.

3. Environmental management system

Our environmental management system consists of the following elements:

- Environmental policy: formally describes the guidelines and objectives of Befesa Aluminio, S.L. in its relation to the environment.
- Environmental management program, which includes the necessary activities to be carried out to achieve the objectives.
- Documentation of the environmental management system, which mainly consists of:

  - Context of the organization: describes the external and internal issues that are relevant for the company and that affect its ability to achieve the expected results of its environmental management system.
  - Scope of the organization: determines the limits and applicability of the environmental management system.

- Procedures: describe the development of the activities carried out by the company.

- Internal environmental audits, such as management tools to evaluate the development and effectiveness of the implemented environmental management system and identify opportunities for improvement.
- Annual Management review of the system to evaluate the implementation and effectiveness and establish new objectives for continuous improvement.
- Evaluation of direct and indirect environmental aspects throughout the life cycle of the manufactured product.
- Registration of the legislation and identification and evaluation of the applicable legal requirements.

In addition, it has three main objectives:

- The commitment to comply with the legal requirements and others that apply to this facility.
- Carry out our recycling activity in a manner that respects the environment, paying special attention to those activities and products that could entail risks for the environment.
- Continuous improvement from the environmental point of view.

These bases come from the guidelines established by our management policy,

which has been revised at the end of 2016.

Quality, safety, environment and energy policy

Values

We promote the Quality of our products and processes, the defense of the Environment, the Safety and Health of our direct and indirect workers and the Sustainable Development of our environment.

Policy

Befesa Aluminio, S.L. aspires to become a world leader in the aluminium sector in the areas of Quality, Prevention, Environment and Energy Efficient Management, convinced that it is the only path towards its productive excellence.

Principles

The General Manager of the company and all the Processes Responsible must be the first example of compromise, image and zero tolerance and we assume the final responsibility in the Quality, Health, Safety, Environment and Energy Management of the company.

We consider our human resources the main and key factor of our economical business so we train them and give them action availability in the Quality, Health, Safety, Environment and Energy Management. of the company.

We assume all employees' involvement as the main question for the company´s success, pushing the dialog and continuous and active participation.

To keep Health and Safety of our employees and the preservation of our Environment is part of the diary work of each of our employees.

We do never put ahead Production of Economic benefit to Health and Safety.

We assume as objective of the company the principle of “Zero accidents”.

We consider that all accidents are avoidable and that all accidents and incidents must be communicated and investigated as a way to the continuous improvement.

We assume the compromise of getting all the necessary human and technical resources to ensure the continuous protection of our Environment and the development of a safety and free accidents place of work.

We ensure the fulfilment of all the applicable legislation as well as all the external and internal stablished standards and requirements,

We develop a Quality, Health, Safety, Environment and Energy integrated management system which is periodically revised and audited according to well-known international standards.

Erandio, November 2016

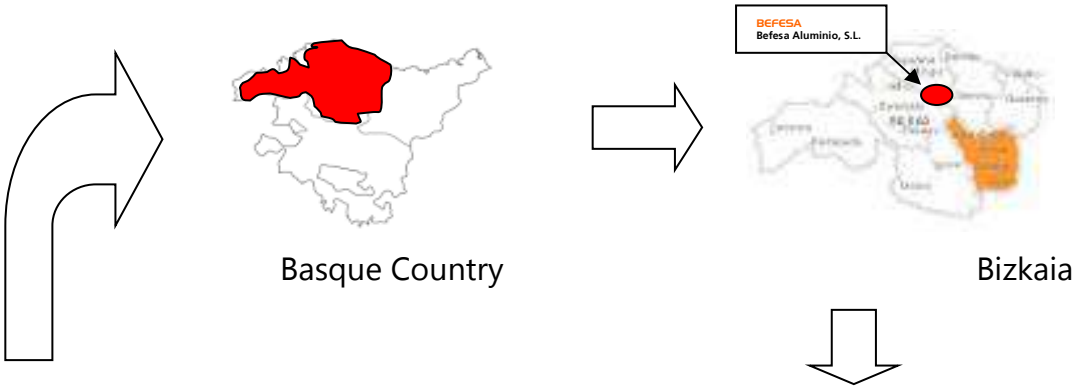
In accordance with the requirements imposed by the internationally recognized ISO 14001: 2015 standard, the Managing director of Befesa Aluminio, S.L. has

appointed the following person to ensure the implementation and maintenance of the established environmental management system:

- **Oskar de Diego Rodríguez, Environmental Manager,** as a delegate of the management to establish, implement and maintain the environmental management system up to date and at the same time guarantee compliance with all applicable environmental requirements.

It must be mentioned the integrated management that is currently being carried out of the quality, prevention, environment and energy systems with the aim of progressing jointly in the four fields, simplifying efforts, but maintaining the rigor and seriousness characteristic of the four individualized concepts that does not compromise the well-being of our future generations.

4. Befesa Aluminio, S.L.- Erandio plant



Basque Country

Bizkaia

Spain

Befesa Aluminio, S.L.- Erandio

The Befesa Aluminio S.L. plant in Erandio makes the following end products:

* 10 kg ingots of aluminium and aluminium alloys for molding.
* 1,000 kg ingots for remelting.
* Aluminium in liquid form.

The Erandio plant also builds and develops its own in-house technology for recycling aluminium in all phases, and has built turnkey facilities in over 40 countries all around the world.

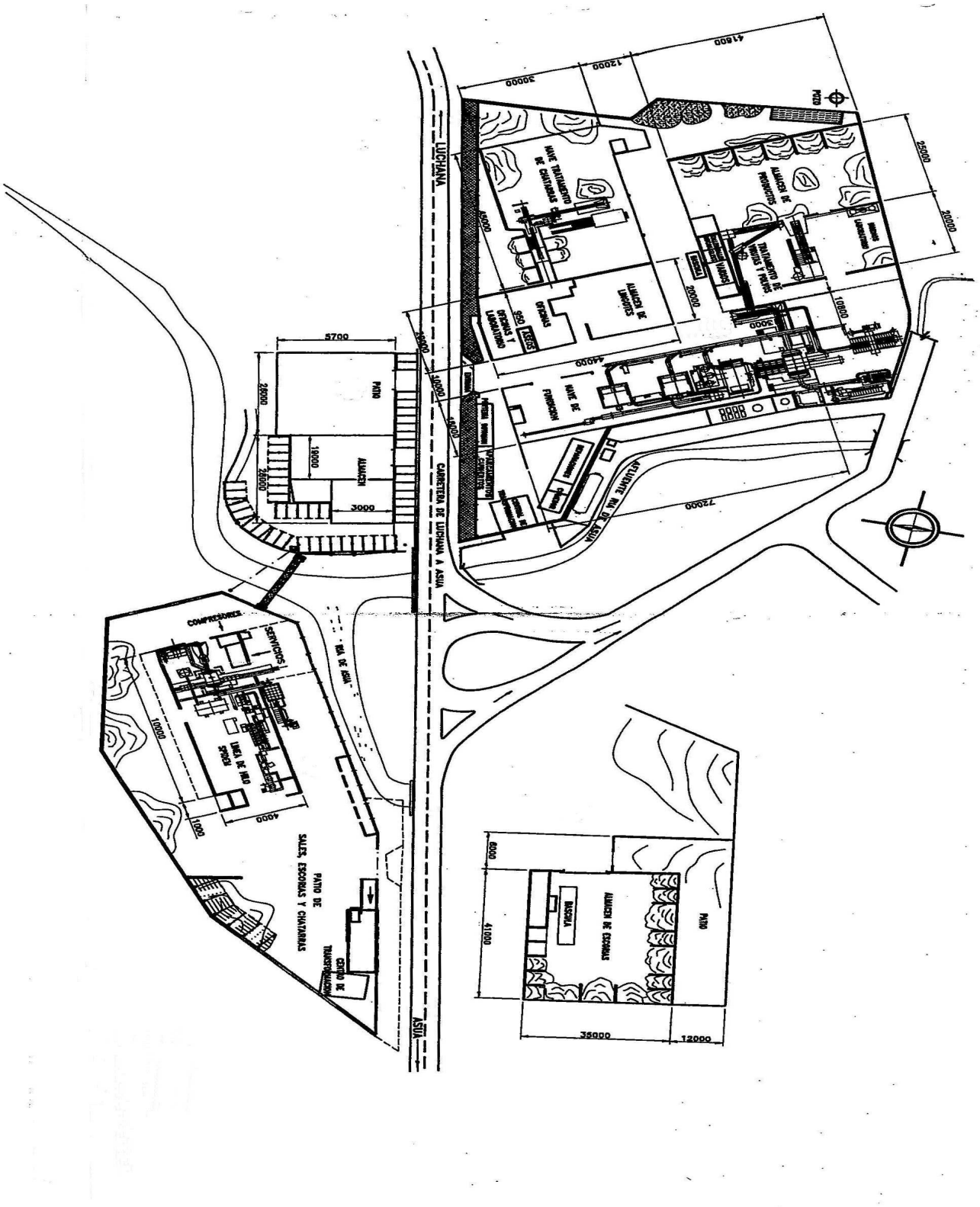


Illustration 1: Layout of the facilities at the Erandio plant.

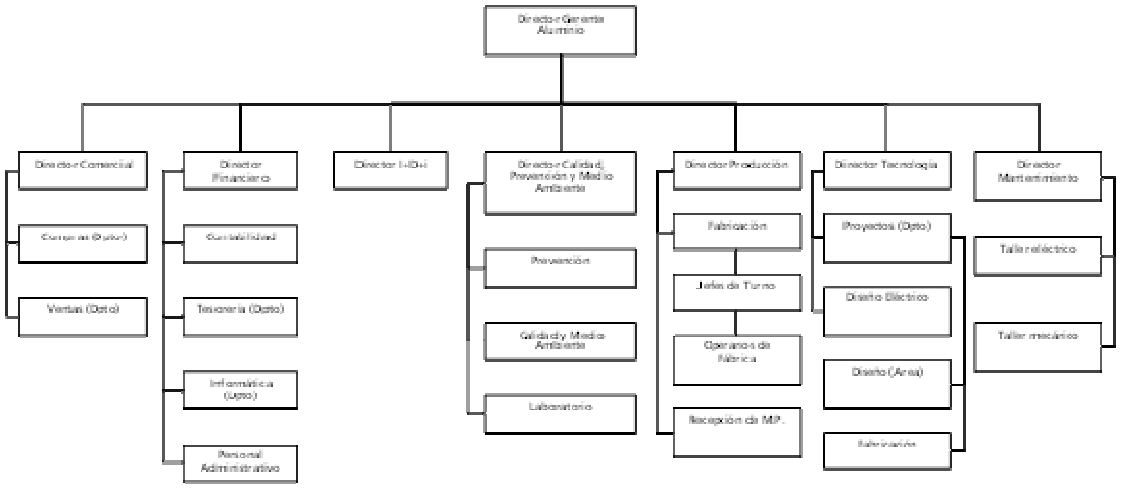


Illustration 2: Organization chart of Erandio plant.

The recycling and recovery process developed at the Erandio plant consists of two main processes: one of initial fusion of the materials in rotary furnaces and another of refining the final product in holding furnaces. Both these processes are carried out using equipment classified as BAT (Best Available Technology) in the European Commission's Reference Document on Best Available Technologies for non-ferrous metallurgy.

The first step in the production process is a correct selection of the right raw materials. These include offcuts, cables, sumps, pans, cans, foil, chippings, shavings and aluminium industry scrap and waste in general. These raw materials, once selected, are melted in the appropriate proportion to obtain the specification requested by the final customer, using for this purpose rotary furnaces to which also certain amounts of salt are added as flux and protector of the molten aluminum. The fusion of these materials well understood, is not only to bring to the liquid state the raw material, but also to dissolve the metal

elements in suspension and promote some cleaning reactions of the material. It is this last feature that distinguishes rotary furnaces from other types of furnace. Verifying that the temperature of the furnace is adequate, that the material is melted and that the quality of the flux that is supernatant is that foreseen, the furnace is emptied in two stages, firstly removing the metal and ending with the melted molten salt or salt slag.

The gases produced during this smelting process are evacuated through separate purification systems, consisting of cooling systems and bag filters, where the solid particles are retained and where the acid combustion gases neutralization treatment is carried out at the same time by the controlled addition of sodium bicarbonate or lime.

All the salt slag obtained because of the use of salt during the described fusion process, is completely recycled and recovered, generating an aluminium oxide (paval) that has various applications in multiple industrial sectors (cement industry, ceramic industry, insulation industry, etc.), definitively closing the circle of recovery of the aluminium waste described.

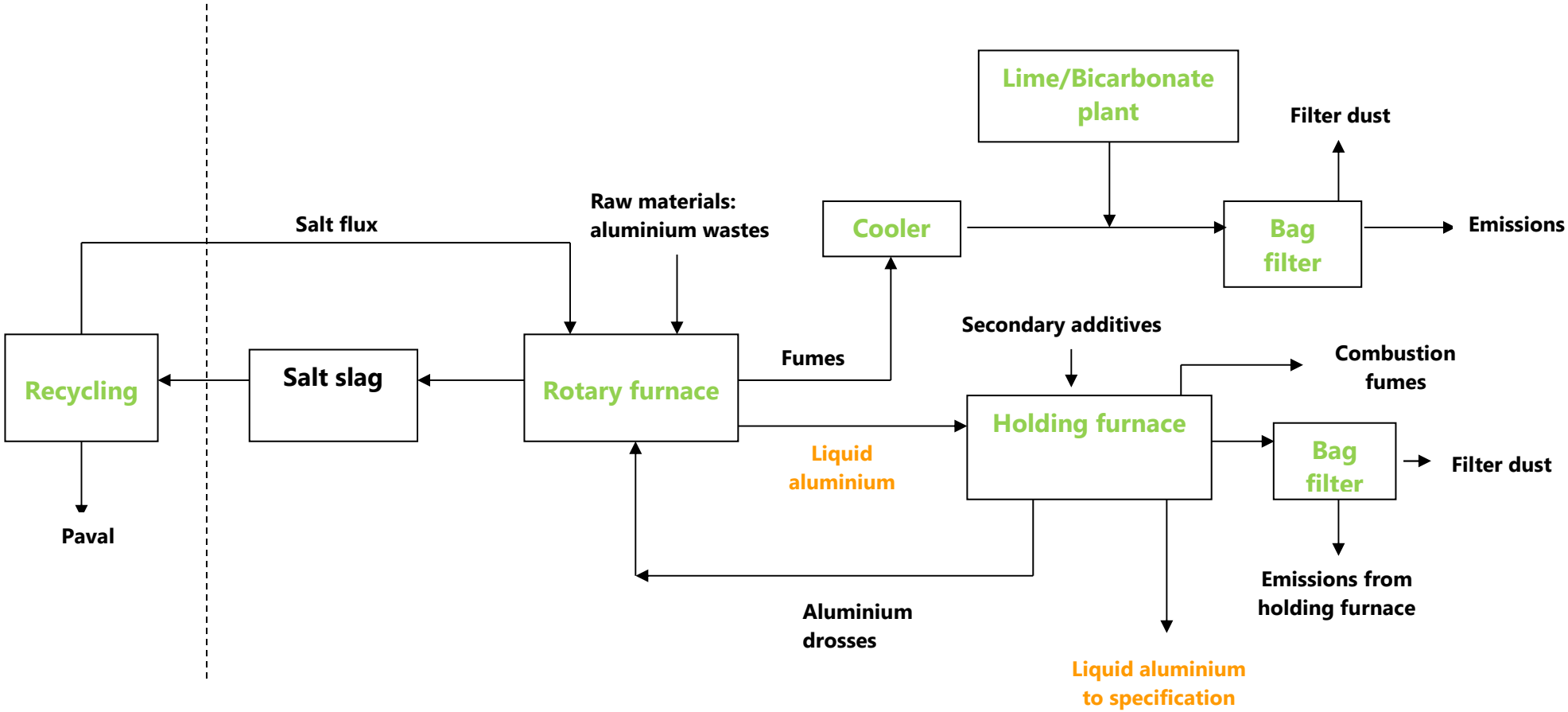


Illustration 3: Flow diagram of the process for obtaining aluminium in liquid form.

The raw materials, once melted in the rotary furnaces, are transferred in a second phase to the holding type furnaces, where the liquid aluminum is definitively adjusted to the requested specifications by means of fusion of addition elements such as Si, Cu or Mg. The holding furnaces are appropriate for this final phase of production, since they provide a metal at rest and that is adjusted in its quality parameters under controlled thermal conditions.

Once the metal has been skimmed and the temperature adjusted, the casting operation is carried out. Depending on the final product requested, the liquid aluminum is routed to the installation of liquid aluminum for road transport or to the casting wheel for the casting of ingots. The casting wheels are in turn made up of a chain of ingot molds that allow, with total reliability and high production sequence, the obtaining of high quality surface ingots. The ingots are cooled, turned over and transported to the layered stacking machine, in which the formation of the stacks is completely automatic, by means of the use of a powerful computer that allows to obtain different formats of packages according to the requirements of the customers.

The water used during the cooling process is recirculated through cooling systems that consist of the corresponding filtering system in parallel. The waters coming from the purge of cleaning of the filtering systems previously referenced, are homogenized with the runoff waters, generating a single point of discharge to municipal sewer, that complies with all the limits imposed in the corresponding integrated environmental authorization.

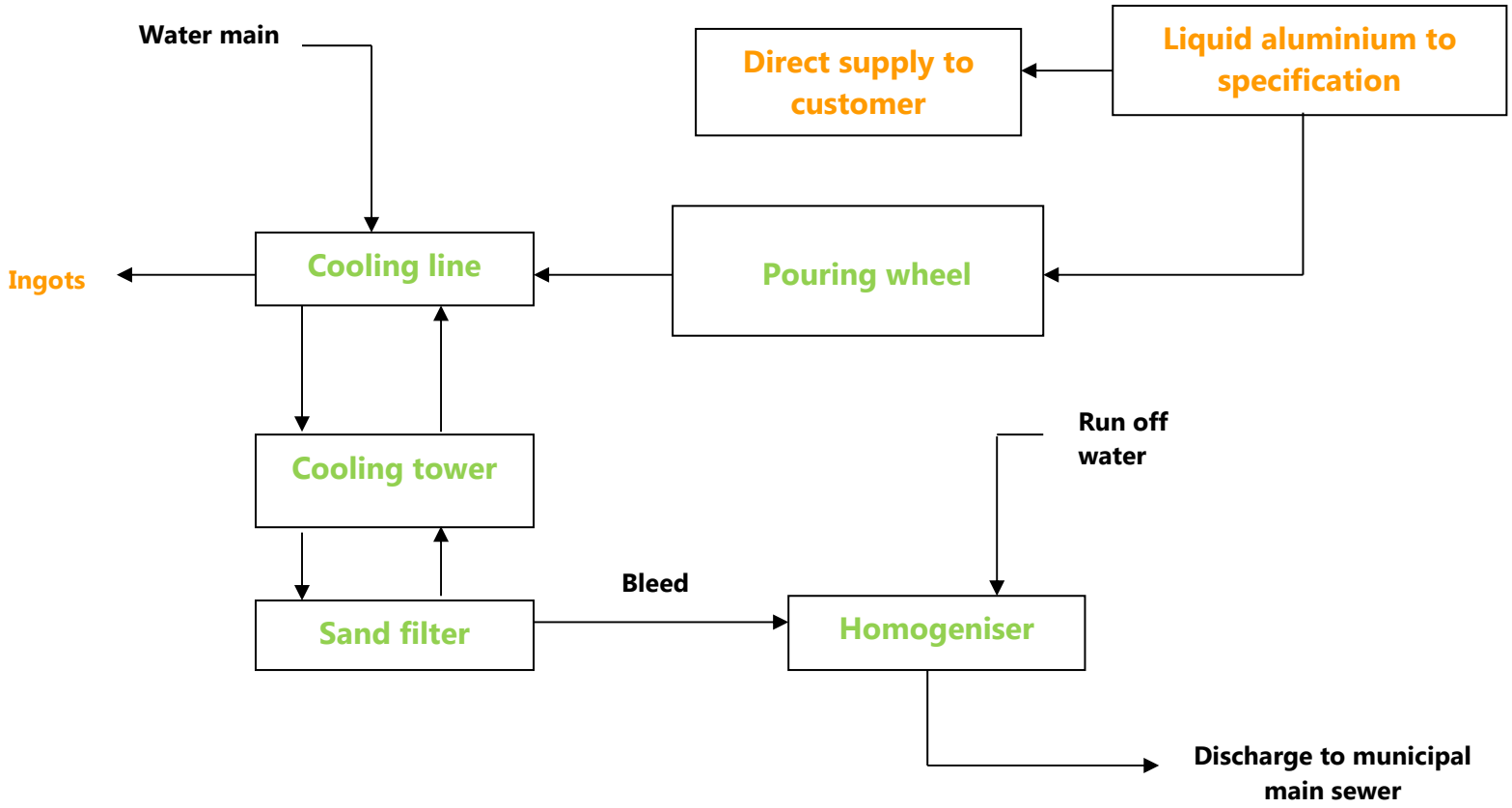


Illustration 4: Flow diagram of the ingot and liquid aluminium manufacturing process.

The company has two production lines, with the total average production of finished product in recent years (2015/2017) at 56,852 t (see page 31), with approximately 50% of its market being foundries in the Basque Country, 20% in the national market and 30% foreign customers.

All the products supplied by the company go through a previous control of final quality and are perfectly identified in such a way that it is possible to maintain the total traceability of the same in relation to the manufacturing process, raw materials used and controls carried out. All this is managed through our quality management system with ISO 9001 certification since 1995.

In addition, in accordance with its activities aimed at the conservation of natural resources and the protection of the environment, we consider it necessary to carry out our activity with the least possible local environmental impact. Aware of this need, we decided to implement an ISO 14001 environmental management system in 1999, which was subsequently verified according to the European EMAS regulation in 2004 with the registration number ES-EU-000023.

5. Representative environmental aspects of Erandio´s plant

The most representative environmental aspects of the company are the following:

A) Emissions into the atmosphere

The plant currently has five smokestacks associated with the facilities that are part of the production process, which correspond to the combustion gases from rotary furnace nº 1, the combustion gases from rotary furnace nº 2, gases from the holding furnace loading pit area, combustion gases from the holding furnaces and the laboratory furnaces.

Periodically an officially approved laboratory (OCA) performs sampling of the emissions produced in these described smokestacks, analyzing later the compounds that in each case mark the integrated environmental authorization.

To ensure the proper functioning of the purification systems, internal procedures have been developed, which are part of the integrated environmental management system, in which the continuous and periodic controls that must be carried out at the plant level are defined. to detect any anomaly, as well as the establishment of appropriate corrective actions.

B) Waste production

The company holds an integrated environmental authorization, which includes the previous hazardous and inert waste producer and recycler permit (EU/1/4-97).

- **Hazardous wastes**

The main hazardous wastes produced by the company are the following:

- Salt slag: as a result of the use of salts (ClNa, ClK) in the form of flux to prevent unwanted oxidation of liquid aluminum inside the furnaces in contact with the atmosphere. Mentioned salt slag is totally recycled in what constitutes a fully integrated process of aluminum waste treatment within the Befesa business group, giving rise to a new salt capable of being used in new production processes and an inert waste rich in aluminum oxide, called paval, which has countless applications in the industry.

- Filter dust: as a consequence of the treatment of combustion gases through the purification systems present in the factory. They are stored under cover in big-bags until their final shipment to an authorized agent.

- Aluminium dross: as a consequence of the oxidation process of the aluminum inside the holding type furnaces. They are used as raw material in new production processes due to the corresponding self-management authorization for this type of material.

- Filter bags: as constituents of the combustion gas purification systems. Damaged bags are replaced and self-managed by the company itself when counting the company with the corresponding permit.

- Used oils: from the maintenance operations of the facilities and machinery, they are stored in duly identified and dated drums awaiting their shipment to an authorized manager.

- Empty metallic and plastic containers: containers that have contained paints, solvents, oils, etc. They are stored in perfectly identified and dated cages for shipment to an authorized manager.

- Industrial sprays: as a consequence of the use of sprays in the process of identifying the stacks of finished product ingots. They are stored in perfectly identified and dated big-bags waiting to be sent to an authorized manager.

- Absorbents, rags and contaminated clothing: from maintenance operations, they are stored in properly identified and dated drums until their final shipment to an authorized manager.

- Used batteries: dry mercury batteries / button cells, coming from calculators and watches, as well as saline and alkaline batteries that are selectively collected.

- Luminaires: lighting lamps from maintenance operations (breakage, cast lamps, etc.). They are stored in a properly identified container.

The company has the corresponding acceptance documents from each of the authorized managers with whom it manages the aforementioned hazardous waste.

- **Inert wastes**

The industrial inert waste produced in the plant is basically that coming from the repairs, reforms or improvements that comply with the aforementioned definition. It is managed as follows:

- Scrap: It is available in a container enabled for this purpose. When this is full capacity, it is notified to a company dedicated to the removal of this type of materials.

- Refractory bricks, wood, plastics and rubbers: The refractory used is generated as a consequence of the maintenance of the coating of the rotary and holding type melting furnaces. On the other hand, wood, plastics and

rubber appear as a consequence of civil works carried out in the company. This type of waste is managed properly.

C) Depletion of natural resources

The company's integrated management system includes a method for identifying, monitoring and controlling the resources used during the manufacturing processes, being the most representative ones, oxygen, nitrogen, natural gas, electricity, water, raw materials and fluxes.

6. Significant environmental aspects of Erandio´s plant

As a basis for the definition of environmental objectives, direct and indirect environmental aspects are evaluated on an annual basis. For this, criteria such as probability and severity are applied, obtaining the individual degree of significance of each of them. This allows to determine the future work areas on which to centralize efforts, in order to minimize the company's global environmental impact.

Considering the criteria of severity and probability previously referenced and after applying the rest of the criteria applied by the company in the process of internal evaluation of all its environmental impacts, the direct impacts defined as significant for the year 2017 are summarized below:

- Generation of filter dust as a consequence of the treatment of combustion gases generated in productive furnaces.
- Confined emission of SO_2, NO_x, HCl, HF, heavy metals and particles, as a consequence of the routine operation of fusion of materials in rotary, holding and laboratory furnaces.
- Generation of used refractory bricks as a consequence of civil works.
- Consumption of natural gas in the melting and holding furnaces.
- Consumption of oxygen used in the melting processes of rotary and holding furnaces
- Consumption of sodium bicarbonate and lime for the treatment of acidic combustion gases.

For all the impacts classified as significant, Befesa Aluminio, S.L. establishes a strict and periodic control of the same, associating at the same time strategic objectives and environmental indicators of control and improvement, which allow it to guarantee the present and future environmental performance of the company.

Befesa Aluminio, S.L. also monitors and evaluates indirect environmental aspects, including those aspects for which it does not have full capacity to act. As main indirect environmental aspects in the year 2017, we highlight the following:

- Generation of used oils and batteries by subcontracted transport companies.
- Generation of emissions and ammonia odor associated with potentially wet raw materials.
- Potential presence of radioactivity associated with the raw materials received.
- GHG emissions associated with services and suppliers.

7. Outline of environmental targets and goals 2017

Every year, a series of environmental objectives are established, which are included in the annual environmental plan, where the goals associated with each of them are defined, as well as the corresponding definition on of human and material resources. Below is a table showing the degree of achievement of the objectives established in 2017, as well as a brief summary of the causes that justify this degree of compliance:

Aspect	Goal	Expected value	Result
CO_2 emissions	To reduce by 2% the emissions of greenhouse gases associated with secondary aluminium production.	-2 %	- 4.42 %
Natural gas consumption	To decrease by 2% the total consumption of natural gas used in the activity associated with the production processes of the plant	-2 %	- 13.38 %
Salt slag generation	To decrease 2% the generation of salt slag generated during the activity associated with the production processes of the plant	-2 %	- 6.06 %
Electricity consumption	To reduce by 2% the electrical consumption used during the activity associated with the productive processes of the plant	-2 %	+ 3.48 %
Fluxes consumption	To reduce by 2% the consumption of flux used during the activity associated with the productive processes of the plant	-2 %	- 2.05 %
Oxygen consumption	To reduce by 2% the oxygen consumption used during the activity associated with the productive processes of the plant	-2 %	- 16.67 %
Diesel consumption	To reduce by 2% the consumption of diesel used during the activity associated with the productive processes of the plant	-2 %	- 14.29 %
Total emissions generation	To reduce total chimney emissions by 2%	-2 %	- 4.00 %
Water discharge	To reduce by 2% the pollutant content of wastewater discharges	-2 %	- 81.18 %
Filter dust generation	To reduce filter dust generation by 2%	-2 %	- 17.86 %

- **To reduce by 2% the emissions of greenhouse gases associated with secondary aluminium production.**

At the beginning of 2017, a joint objective of minimizing GHG emissions was defined for the centers that make up Befesa Aluminio, S.L. This objective was associated with emission sources corresponding to the two types of scope that are included in the company's inventory and which refer to direct emissions (scope 1) and indirect emissions (scope 2). After computing the emissions of these sources throughout the year 2017, it has been observed that Befesa Aluminio, S.L. has met the objective of minimization proposed, presenting a percentage of relative improvement of 4.42% (0.2789 teq CO2/ t in 2017 versus 0.2918 teq CO2/ t in 2016), mainly due to the actions aimed at improving the energy efficiency proposed for 2017, together with the temporary evolution of the variables with a direct effect on the mentioned energy efficiency.

- **To decrease by 2% the total consumption of natural gas used in the activity associated with the production processes of the plant.**

The relative consumption of natural gas has improved substantially in the year 2017 (1.23 MWh/ t), with respect to the values reached in 2016 (1.42 MWh/ t), mainly due to the replacement of the fixed holding furnace nº2 for the new tilting type furnace, which is much more efficient, in addition to the equally positive contribution of a lower percentage of supply in liquid form and a greater average metallic yield of the raw materials used in the production processes. This has made the energy efficiency of our processes in terms of natural gas consumption, improved by 13.38%.

- **To decrease 2% the generation of salt slag generated during the activity associated with the production processes of the plant.**

The objective of reducing the generation of salt slag has been achieved, mainly due to the quality of the less pulverulent raw materials and with a higher metallic yield that have been used in the production processes. The relative value of salt slag in the year 2017 was 0.93 t/ t, compared to the value of 0.99 t/ t in 2016.

- **To reduce by 2% the electrical consumption used during the activity associated with the productive processes of the plant.**

The relative electricity consumption during the year 2017 (0.086 MWh/ t) has increased with respect to the values obtained in 2016 (0.083 MWh/ t). The initially proposed decrease objective has not been achieved, mainly due to the slight decrease in production in 2017, as well as to the significant decrease in the percentage of supply in liquid form (greater use of casing belts), with the consequent increase of relative electrical consumption.

- **To reduce by 2% the consumption of flux used during the activity associated with the productive processes of the plant.**

The relative consumption of flux salt has improved in this year 2017 (0.48 t/ t) a total of 2.05%, with respect to the values of the year 2016 (0.49 t/ t). The objective has therefore been achieved, mainly as a consequence of the reasons stated in the attainment of the objective associated with the generation of salt slags previously mentioned. That is, type of materials used with greater metallic percentage and less pulverulent characteristics.

- **To reduce by 2% the oxygen consumption used during the activity associated with the productive processes of the plant.**

The relative oxygen consumption in the year 2017 reaches a value of 0.15 t/ t of the year compared to the 2016 value of 0.18 t/ t. The reduction objective initially

established has been achieved, mainly due to improvements in the management of production processes and infrastructure improvements carried out throughout the year 2017.

- **To reduce by 2% the consumption of diesel used during the activity associated with the productive processes of the plant.**

Throughout the year 2017 the relative consumption of diesel has been 1.56 L/ t, compared to the consumption of 2016 of 1.82 L/ t. The objective set at the beginning of the year has been achieved more than ever, due to the substantial improvement in the metallic performance of the raw materials used, which has meant less need for the transfer of materials through the company's fleet.

- **To reduce total chimney emissions by 2%.**

The total emissions of all the smokestacks present in the facilities, taking into account the HCl, HF, NO_x, SO_2 and solid particles pollutants, have reached a value throughout the year 2017 of 0.48 kg/ t compared to the value of 0.50 kg/ t of 2016, which means a decrease of 4.00%. The goal has been widely achieved.

- **To reduce by 2% the pollutant content of wastewater discharges.**

The total pollutant content of the water discharged throughout 2017, considering the SST, NH_3, Zn, Fe and Cu contaminants, has risen to 33.04 g/ m^3, which represents an improvement of 81.18% against the polluting content of the year 2016 (175.60 g/ m^3). All the parameters of the water discharge meet the limit values established in the Integrated Environmental Authorization of the company.

- **To reduce filter dust generation by 2%.**

The relative amount of filter dust generated during the year 2017 has reached values of 0.023 t/ t, which represents an improvement of 17.86% with respect to the values of the year 2016 (0.028 t/ t). This has been due to the use of less dusty materials as raw materials throughout the year 2017.

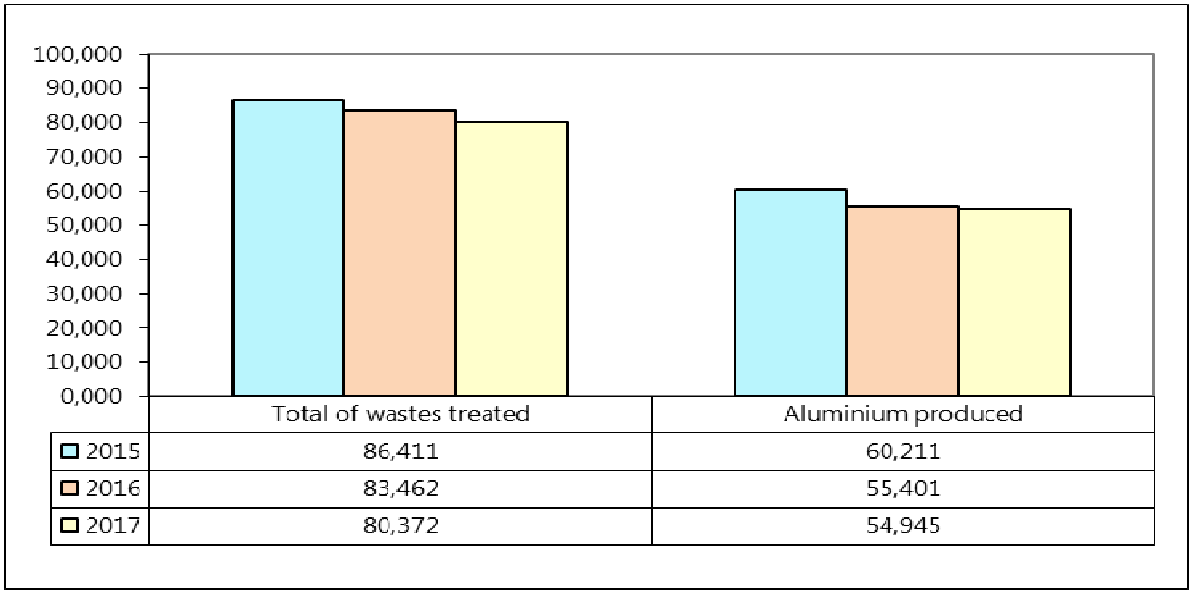
8. Environmental performance of the company

The following sections reflect the environmental performance of the company:

8.1 Aluminium waste recycling for aluminium recovery

All materials received except the so-called fluxes (NaCl and KCl), are considered as waste according to national and European regulations currently in force. These materials come mainly from other primary and secondary aluminium smelters and from aluminium scrap collectors that have their origin in the market of parts machining, scrapping of vehicles and household appliances and product cuts. The main function and motivation throughout our production process is the total recovery of mentioned secondary waste as a direct alternative to primary aluminium obtained from the transformation of natural resources.

The total quantities of waste treated in the last 3 years, as well as that of secondary aluminium obtained as a consequence of the recycling operation carried out, are detailed below.



	Total of wastes treated	Aluminium produced
2015	86,411	60,211
2016	83,462	55,401
2017	80,372	54,945

Graphic 1: Comparison of waste treated and aluminium produced (t) in the last 3 years

8.2 Energy consumption

The absolute (MWh) and relative consumption (amount per ton of product manufactured) of the main energy resources used in the production process corresponding to the last 3 years are shown below. Throughout the year 2017 there has been a total direct consumption of renewable energies amounting to 18.5%, corresponding to the renewable part of the total electricity consumed.

- **Natural gas**

The fuel used is the natural gas used in the smelting and refining processes of the rotary and holding type furnaces. The supply of natural gas is carried out through a regulation and measurement station (ERM) with a capacity of 2,825 m^3/ h and a distribution pressure of 2,5 kg/ cm^2. This installation has a document accrediting the start-up date of January 2, 1992.

Natural gas	2015	2016	2017
Consumption (MWh)	79,231.5	78,885.0	67,703.6
Relative consumption (MWh/ t)	1.32	1.42	1.23

The relative consumption of natural gas has decreased in 2017 (1.23 MWh / t), with respect to the values reached in 2016 (1.42 MWh / t), mainly due to the replacement of the fixed holding furnace nº 2 by the new tilting furnace much more efficient, to which is added the equally positive contribution of a lower percentage of supply in liquid form (less need for heating) and a higher average metal yield of the raw materials used in the production processes

- **Electricity**

The electricity supply to the facilities is carried out through a transformation center of 2,500 kW with control and distribution board, which is located in a perfectly delimited enclosure, and through a substation of 2,000 kW outdoors, perfectly signposted and isolated from the rest of the plant. There is an energy network at 220 and 380 V throughout the factory.

Electricity	2015	2016	2017
Consumption (MWh)	4,688.2	4,605.0	4,746.5
Relative consumption (MWh/ t)	0.078	0.083	0.086

The consumption of electricity per ton of manufactured product has increased in 2017, due to the slight decrease in production in 2017, as well as the significant decrease in the percentage of supply in liquid form (greater use of casting belts), with the consequent increase in relative electrical consumption.

8.3 Secondary materials consumptions

The absolute (t) and relative consumption (amount per t of manufactured product) of the main secondary materials used in the process production corresponding to the last 3 years are included in the following points.

- **Salt flux**

The fluxing salt is mainly a mixture of NaCl and KCl, which is added to the interior of the rotary type furnaces, together with the rest of the main raw materials. The mission of the flux salt is to protect the molten aluminium from possible unwanted

oxidations, while being a recipient of the impurities that can potentially accompany the raw materials used. The use of the flux salt generates a hazardous waste called salt slag, which is completely recycled inside Befesa, giving rise in turn to an aluminium oxide that has various applications in the industry.

Salt flux	2015	2016	2017
Consumption (t)	23,512	26,962	26,244
Relative consumption (t/ t)	0.39	0.49	0.48

The relative consumption of flux salt has decreased slightly in 2017 with respect to the values reported in 2016, mainly due to the less pulverulent nature of the raw materials used in obtaining the final product, which have also presented an average yield metallic greater.

- **Oxygen**

In the facilities there are two oxygen tanks that are owned by gas supplier. Oxygen is used as an integral part of the fuel used in the melting processes of rotary furnaces. The storage tanks are located in a fenced area outside the facilities. There are networks of the aforementioned gas throughout the factory.

Oxygen	2015	2016	2017
Consumption (t)	10,085.4	10,192.0	8,257
Relative consumption (t/ t)	0.17	0.18	0.15

The specific consumption of oxygen has improved substantially with respect to the data reported in 2016, mainly due to improvements in the management of production processes and infrastructure improvements carried out throughout the year 2017.

- **Diesel**

In Befesa Aluminio, S.L. diesel is used exclusively as a supply for mobile machinery (forklifts and front loaders). The company has two diesel tanks that comply with the provisions of current legislation.

Gasoil	2015	2016	2017
Consumption (GJ)	4,265	3,631	3,499
Relative consumption (GJ/ t)	0.071	0.066	0.064

As can be seen in the table, the specific consumption of diesel in 2017 has decreased compared to 2016, mainly due to the substantial improvement of the metallic performance of the raw materials used, which has meant less need for material transfer through the company's fleet.

- **Lime and sodium bicarbonate**

Lime and sodium bicarbonate are used for the treatment of acid gases that are generated during the combustion process (HCl and HF).

Lime	2015	2016	2017
Consumption (t)	77.74	90.76	79.56
Relative consumption (kg/ t)	1.29	1.64	1.45

Sodium bicarbonate	2015	2016	2017
Consumption (t)	48.0	72.0	48.0
Relative consumption (kg/ t)	0.80	1.30	0.87

8.4 Water consumption

The Erandio plant does not perform any pre-treatment of the received water. Nor does the plant takes water from any public well, spring or other watercourse. The water used, both in the productive processes and in the supply of the offices, comes entirely from the municipal network of the Bilbao Bizkaia Consortium.

Industrial waters are used for the cooling processes of the casting of liquid metal in the manufacturing lines of aluminium ingots. They are recirculated through semi-closed circuits, in which the water used is cooled and prepared for reuse, through cooling towers. The percentage of recirculation is practically 100% (except the back-washings of the sand filters in parallel to the cooling towers). The water consumption figures in the table below thus reflect the amount of water evaporated during the process cooling described. It is estimated that 90% of the water used in the cooling process evaporates during these operations. On the other hand, the use of office supply water focuses on consumption for offices, workshops, laboratories and changing rooms.

The company has a general meter, as well as partial meters distributed throughout the plant, which allow knowing the total consumption of water entering the factory, as well as partial consumption for each of the facilities or uses.

Water	**2015**	**2016**	**2017**
Consumption (m^3)	22,421	31,613	40,051
Relative consumption (m^3/ t)	0.37	0.57	0.73

The relative consumption of water during the year 2017 has been higher than the consumption of the year 2016.

8.5 Waste management

Throughout the year 2017 a total of 52,536 t of hazardous waste have been generated and a total of 2,307 t of non-hazardous waste. The evolution of the generated and managed hazardous waste most representative of the activity carried out over the last 3 years is shown in the following table:

Waste managed	2015	2016	2017
Salt slag produced (t)	48,773	54,690	51,257
Relative salt slag generation (t/ t)	0.81	0.99	0.93
Filter dust produced (t)	1,357	1,556	1,277
Relative filter dust generation (t/ t)	0.023	0.028	0.023
Aluminium dross produced (t) (*)	2,400	2,000	1.900
Relative aluminium dross generation (t/ t) (*)	0.039	0.036	0.035
Refractory bricks generation and debris (t)	_	_	351
Refractory bricks generation and debris (t / t)	_	_	0.006

(*) Estimated figure. All of the aluminium drosses generated as waste was incorporated into the production process

The relative amount generated of salt slag and filter dust has been reduced due mainly to the less pulverulent nature of the raw materials used in obtaining the final product, which have also presented a higher metallic yield.

The amount of refractory bricks and debris becomes significant in 2017 due to the specific civil works carried out throughout the year 2017.

8.6 Impact on the biodiversity

The total occupation of our facilities is 32,614 m2 of which 12,675.9 m2 are built.

Taking into account that the occupied surface built has not changed in the last 3

years, the relative occupation of soil per ton of product manufactured is the one represented below:

Land area	2015	2016	2017
Relative land area (m^2/ t)	0.21	0.23	0.23

8.7 Emission of pollutants into the atmosphere

8.7.1 Greenhouse gases (GHGs)

Since 2008, Befesa Aluminio, S.L. has implemented a global GHG emissions inventory for the three centers that make up the aluminium business line (Erandio, Les Franqueses and Bernburg). In it, both direct and indirect emissions are calculated, following the methodology indicated in the ISO 14064 standard. An independent verification report of the mentioned inventory is available.

Direct emissions are defined as those associated with those sources that are under the control of society, such as emissions from the combustion process in furnaces, emissions from machinery or vehicles, emissions from process equipment and fugitive emissions from equipment and facilities. Indirect emissions are those derived from the consumption of electrical energy. The direct and indirect emissions of the last three years are shown in the following table:

GHG emissions	2015	2016	2017
Annual total for direct emissions (t CO_2 eq)	32,447.9	48,199.4	45,777.9
Relative annual total for direct emissions (t CO_2 eq/ t)	0.2615	0.2645	0.2486
Annual total for indirect emissions (t CO_2 eq)	2,851.5	4,972.8	5,577.7
Relative annual total for indirect emissions (t CO_2 eq/ t)	0.023	0.027	0.030

8.7.2 Emissions of other pollutants into atmosphere

The total emissions of SO_2, NO_x and particles corresponding to the last years in absolute and specific values per ton of product manufactured are shown in the following table. In none of the smokestacks is CH_4, HFC, PFC or SF_6 emitted:

Emissions of other pollutants	Year	Emissions (t)	Relative emissions (kg/ t))
SO_2	**2015**	11.76	0.20
	2016	9.44	0.17
	2017	< 9.85	< 0.18
NO_x	**2015**	21.46	0.36
	2016	15.94	0.29
	2017	14.83	0.27
Solid particles	**2015**	3.04	0.050
	2016	2.01	0.036
	2017	1.18	0.021
HCl	**2015**	0.87	0.014
	2016	0.33	0.006
	2017	0.59	0.011
HF	**2015**	0.45	0.007
	2016	0.04	0.0007
	2017	0.09	0.002
Heavy metals	**2015**	1.08	0.018
	2016	--	--
	2017	0.009	0.0002

8.8 Environmental performance regarding legal provisions

8.8.1 Emission-Smokestacks

The following tables show the values measured during the last 3 years in all the smokestacks present in the facilities according to the periodicity established in the Integrated Environmental Authorization, as well as their comparison with the maximum permitted limit values.

- **Combustion fumes from rotary furnaces nº 1 and nº 2**

The treated gases from the rotary furnaces are expelled through these smokestacks. The rotary type furnaces use natural gas and oxygen as fuel for the operations of fusion of the materials and adjustment of the process temperatures. The first part of the treatment systems comprises a cooler which reduces the temperature of the gases coming from the combustion process. In a second step, the cooled combustion gases are conducted through a bag filter where solid particles are retained and acidic gases are neutralized by the controlled addition of sodium bicarbonate or lime.

Parameters		SO_2	NO_x	HCl	HF	CO	Zn+Pb+ Cr+Cu+ Mn	Ni+As	Cd+Hg	Solid particles	PCDD/ PCDF	COT
Limit as per integrated environmental authorization (mg/ Nm^3)		50	300	30	5	625	5	1	0.2	20	0.5 (*)	50
Average for rotary furnace nº1 (mg/ Nm^3)	**2015**	27.2	68.48	5.23	0.54	209.25	0.21	0.079	0.0016	16.42	_	_
	2016	20.17	45.19	1.05	0.18	375.21	_	_	_	3.24	_	_
	2017	26.34	34.83	4.31	0.57	336.50	0.0484	0.0009	0.0007	2.47	0.38	10.50
Average for rotary furnace nº2 (mg/ Nm^3)	**2015**	20	30.81	0.41	1.19	97.69	2.39	0.005	0.0019	1.24	_	_
	2016	20	30.81	0.31	0.07	104.59	_	_	_	2.31	_	_
	2017	20	31.00	0.46	0.04	294.00	0.019	0.0007	0.0011	2.37	0.005	10.77

(*) Limit of PCDD / PCDF expressed in ng TEQ / Nm3

Throughout the year 2017, all the parameters measured are below the established limits.

- **Combustion gases from holding furnaces**

Holding furnaces also use a mixture of natural gas and oxygen as fuel. The combustion gases produced in the combustion chambers of the holding furnaces are eliminated directly into the atmosphere because only clean raw materials of high metallic percentage are smelted inside.

Parameters		SO_2	NO_x	HCl	HF	CO	Zn+Pb+Cr+Cu+Mn	Ni+As	Cd+Hg	Solid particles
Limit as per integrated environmental authorization (mg/ Nm^3)		130	616.2	_	_	625	_	_	_	20
Average for holding furnaces (mg/ Nm^3)	2015	20	37.79	0.88	0.39	18.75	1.049	0.022	0.0065	5.87
	2016	20	31.16	2.03	0.06	18.75	_	_	_	23.51
	2017	20	36.29	1.93	0.44	18.75	_	_	_	11.67

Throughout the year 2016 there has been a small uncompliant for the particle parameter in the measurements corresponding to the first semester. After the corresponding internal study, it is verified that the measurements corresponding to the second semester, comply perfectly with all the limits applicable to the measured parameters (6.38 mg/ Nm3). Throughout the year 2017, all the parameters measured are below the established limits.

- **Holding furnace loading pit area**

Given the nature of the emissions produced in the loading area of the holding type furnaces, the collection is only constituted by a bag filter in charge of the elimination of possible solid particles in suspension, since the previous step of cooling gases is totally unnecessary.

Parameters		SO_2	NO_x	HCl	HF	CO	Zn+Pb+Cr+Cu+Mn	Ni+As	Cd+Hg	Solid particles
Limit as per integrated environmental authorization (mg/ Nm^3)		130	616.2	_	_	625	_	_	_	20
Average for holding furnace loading pits (mg/ Nm^3)	**2015**	20	30.81	0.73	0.68	22.06	2.732	0.009	0.0015	3.57
	2016	20	30.81	0.83	0.06	31.68	_	_	_	5.14
	2017	20	30.81	0.25	0.12	67.08	_	_	_	1.00

Throughout the year 2017, all the parameters measured are below the established limits.

- **Laboratory furnaces**

The installation of laboratory furnaces consists of 2 crucible furnaces of reduced size, which are used in the characterization of the raw materials received. The associated purification system is constituted by a bag filter in which the solid particles are retained, marking a biennial periodicity for their measurements.

Parameters		HCl	COT
Limit as per integrated environmental authorization (mg/ Nm^3)		30	_
Figures for laboratory furnaces (mg/ Nm^3)	**2015**	1.47	_
	2016	_	_
	2017	0.13	1.83

8.8.2 Emissions discharge into the sewer

The water outlets of the plant are divided according to their origin as follows:

• Industrial origin.

These are the waters that come from the semi-closed cooling circuits (punctual purges in back-washings of the filters of the cooling towers), together with the runoff waters collected inside the plant.

• Domestic origin.

They are the sanitary waters coming from the offices and changing rooms.

At the beginning of 2007, the definitive connection to the municipal water sewer of the Bilbao Water Consortium was made of all the waters previously described.

The company has a single point of discharge which discharges directly into the municipal sewer. The total calculation of the discharge waters during the year 2017 reaches the value of 12,766 m^3.

The characterization of the spill is carried out based on the quarterly analyses carried out by the Bilbao Water Consortium itself. The values referenced in the attached table are average values of the 4 annual analyses. Below are the measurements corresponding to the last 3 years carried out by the

aforementioned entity, as well as the legal limits imposed by the integrated environmental authorization:

Parameters	Limits set in integrated environmental authorization	Average readings for discharges		
		2015	2016	2017
PH	6.5-9.5	7.90	8.33	8.13
Ammonia	300 mg/ L	8.23	18.34	7.03
Oil	50 mg/ L	8.50	8.25	6.50
Zn	15 mg/ L	0.09	0.50	0.12
Cu	7.5 mg/ L	0.06	0.50	0.07
Fe	150 mg/ L	0.50	2.76	0.57
Solids in suspension	600 mg/ L	93.75	153.50	25.25

As it can be seen, none of the parameters analysed exceeds the limits set.

8.8.3 Other environmental performance indicators

The integrated environmental authorization establishes a three-year periodicity for measurements of external noise associated with the activity of the company. Throughout the year 2017, environmental noise measurements were taken, measuring at 7 specific points in the company's environment. The results obtained were the following:

Noise levels measurements 2017			
Limits set in integrated environmental authorization db(A)	Morning	Evening	Night
	78	78	68

Point 1	57.4	54.9	55.4
Point 2	69.1	68.6	67.8
Point 3	63.7	56.6	54.7
Point 4	60.2	59.9	58.7
Point 5	74.8	68.8	67.1
Point 6	74.4	66.6	65.9
Point 7	68.5	67.9	67.0

As can be seen, no point exceeds the legally established limit.

9 Environmental targets 2018

In order to comply with the commitment of continuous improvement in environmental action in accordance with what is established in the environmental policy and in terms of the environmental aspects identified as significant, environmental objectives are defined for the 2018 period, which are the following:

- To reduce by 2% the emissions of greenhouse gases associated with the production of secondary aluminium.
- To reduce by 3% the total consumption of natural gas used in the activity associated with the production processes of the plant.
- To reduce by 3% the generation of salt slag generated during the activity associated with the production processes of the plant.
- To reduce by 2% the electricity consumption used during the activity associated with the production processes of the plant.
- To reduce by 3% the consumption of flux used during the activity associated with the production processes of the plant.

10 Applicable environmental legislation

Befesa Aluminio, S.L. is part of sectoral associations that, on a monthly basis, identify, supply and update legal texts. With this information, the new requirements or their modifications are extracted and the own legislative database is updated, with the particular requirements applicable to the company. Befesa Aluminio, S.L. performs a continuous check of compliance with its legal requirements and it is found that there is no non-compliance of environmental or industrial safety.

The following is a non-exhaustive list of the most relevant applicable environmental legislation:

- Integrated environmental authorization

  - Resolution of April 30, 2008 granting an integrated environmental authorization to Befesa Aluminio, S.L.

  - Resolution of June 3, 2010 by the Basque Government Environment Office amending and implementing the integrated environmental authorization granted to Befesa Aluminio, S.L. This resolution was passed following an inspection by the said Office.

  - Resolution of July 19, 2011 by the Basque Government Environment Office modifying the integrated environmental authorization granted to Befesa Aluminio, S.L., incorporating the new liquid aluminium line, and the substitution of the fixed rotary furnace for the new tilting rotary furnace. Both non- substantial changes.

- Resolution of November 14th, 2013 by the Basque Government Environment Office modifying the integrated environmental authorization as a consequence of the inclusion of new LER codes, new noise limits and increase of the production capacity of the company.

- Resolution of February 14th, 2017 by the Basque Government Environment Office, which substantially modifies the integrated environmental authorization of Befesa Aluminio, S.L. as a consequence of the request for an increase in the annual production capacity of the plant.

- Latest modification (in 2010) of the permit from Consorcio de Aguas de Bilbao-Bizkaia to discharge water into the main sewer.

- Legislation applicable to industrial security (firefighting systems, oil installations, high voltage, low voltage, air conditioning, etc.).

- Legionella control associated to cooling systems to produce solid aluminium alloys.

- Royal Decree 252/2006, of March 3, which revises the recycling and recovery targets established in Law 11/1997, of April 24, on packaging and packaging waste, and which modifies the Regulation for its execution, approved by Royal Decree 782/1998, of April 30.

- Law 22/2011 of Wastes and contaminated floors.

- European Agreement for the international road transport of dangerous goods.

11 Cooperation with environmental organizations

Befesa Aluminio, S.L. is an active member of the following environment-related associations:

- ACLIMA (Basque Environment Industry Cluster Association). The company has signed up to the Commitment to Sustainable Development (1999) and the Declaration of Bizkaia on the Right to the Environment (1999).

- ASERAL (Spanish Aluminium Recovery Association).

- Confemetal (Spanish Confederation of Metal Industry Organizations). The company is an active member of the Environment Committee of this organization.

- EAA (Organization of the European Aluminium Recycling Industry).

- ASEGRE (Spanish Association of Special Waste Managers): This association brings together hazardous waste managers based in Spain.

- Technical Committee of AENOR.

Befesa Aluminio, S.L. regularly participates in R&D programs with various research centers and other European firms, mainly for the improvement of recycling, valorization and the best possible use of aluminium industry waste.

12 Participation

Befesa Aluminio, S.L. enhances the participation of all its workers in the determination of key environmental processes. In order to do so, it facilitates ways

of communicating problems and suggestions for improvement, while at the same time employing the Company Committee established for participation and direct communication with all the members of the company.

13 Availability

This environmental declaration is accessible via the corporate website www.befesa.es.

14 Next environmental declaration

This environmental statement is intended to inform employees, authorities, customers, suppliers, media and neighbors about our management policy and also to propose a constructive dialogue.

It is a public document validated by Bureau Veritas Iberia, S.L. environmental verifier accredited by ENAC with the number ES-V-0003 and domiciled in the street Valportillo first 22-24 mahogany building- 28108- Alcobendas (Madrid).

The environmental declaration is valid for 12 months, with the following declaration validated in June 2019.

If you want to know more details about Befesa Aluminio, S.L. Erandio plant and its products, see our page www.befesa.es. If you would like additional information in the future, please do not hesitate to contact Mr. Oskar de Diego Rodríguez at:

Tlph: 94-4530200

Fax: 94-4530097

e-mail: oscar.diego@befesa.com

Glossary:

kg: kilogram.

Si: silicon.

Cu: cooper.

Mg: magnesium.

mm: millimeters.

t: ton.

t CO_2 eq: CO_2 equivalent tons.

MWh: megawatt per hour.

m^3: cubic meter.

HCl: hydrochloric acid.

HF: hydrofluoric acid.

NO_x: nitrogen oxides.

SO_2: sulphur dioxide.

SST: solids in suspension.

NH_3: ammonia.

Zn: zinc.

Fe: iron.

g: gram.

NaCl: sodium chloride.

KCl: potassium chloride.

cm^2: square centimeter.

h: hour.

kW: kilowatt.

V: volt.

R&D: research and development.

m^2: square meter.

GHG: greenhouse gases.

mg/ Nm^3: milligram per normal cubic meter.

Pb: lead.

Cr: chromium.

Mn: manganese.

Ni: nickel.

As: arsenic.

Cd: cadmium.

Hg: mercury.