



Sustainability Report

2020



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AIMING TO BE THE BEST IN THE WORLD

Cengiz Holding, whose roots were laid with the foundation of Cengiz İnşaat in 1987, has a strong and dynamic approach which has driven its expansion into a group of 35 associated companies

Cengiz Holding continues to grow steadily, especially in the construction, energy and mining industries. Its innovative structures will undoubtedly catch your attention, perhaps while on a subway ride or during a trip to the airport.

We were proud to construct the Taksim-4. Levent metro line in Istanbul, introducing Turkey to its first metro line. We completed work on the Ordu Giresun Airport way ahead of schedule. The airport was the first airport-on-the-sea in Turkey and Europe and only the third in the whole world. When you travel to the region and your plane lands on the runway in the middle of the sea, you will see what the workers and engineers who are members of the Cengiz Holding family have achieved with their determination

We have aimed to be the best since day one and, as we progress along our road, we will continue to put our signature to the biggest, best and most influential projects..

With this vision, in 2013, the Joint Venture Group we set up was awarded with one of our biggest projects yet: construction work for the "Istanbul Airport Build-Operate-Transfer Project" along with 25-year operating rights. When the project is completed, it will be one of the world's largest airports, with a passenger capacity of 150 million. Cengiz Holding continues to put its signature to projects that Turkey can be proud of, not only in construction, but also in the energy and mining industries.

When the natural gas combined-cycle plant we built in Samsun opened in January 2015, we achieved two records: We took the efficiency record from Germany and brought it to Samsun. We also set an all-time record for the fastest built power plant in the world by completing the plant 9 months ahead of schedule. With environmental aspects that are way above global standards, the plant brought Turkey the grand prize for power plants in Europe, the Middle East and Africa. Our initiatives in the energy industry continue with strong partnerships, particularly in electricity distribution.

Today, we provide approximately 30% of Turkey's electricity in four power distribution regions.

In the mining industry, we took over the Eti Bakır A.Ş. and Eti Alüminyum A.Ş. plants just before they were about to be shut down, renovated them throughout with the latest technologies and elevated them to a position among Turkey's industrial giants. Today, Eti Bakır A.Ş. is the only smelting plant in Turkey capable of producing copper from the ore.

Eti Alüminyum A.Ş. is also the only integrated plant in Turkey capable of producing aluminum from the ore. The Company is listed among the Top 500 Industrial Institutions in Turkey, compiled by Istanbul Chamber of Industry, and takes the utmost care regarding the environment and occupational safety in all its work.

Each member of the Cengiz Holding Family is committed to safety, high quality and good service. Together with this, all our work is approached with respect for the accumulation of knowledge, education, ethics and environmental values.

The company aims to be not only a leader in every industry it operates in, but also a pioneer, and also plans to repeat this success on an international level, turning into a global brand that will bring added value to our country through its achievements.

With its commitment to operating standards, and together with its valued personnel who work in harmony like a huge family, I firmly believe that Cengiz Holding will reach all its objectives

Mehmet CENGİZ

Chairman of the Board



ETİ ALÜMİNYUM A.Ş. CORPORATE PROFILE

Corporate Resume

The Mineral Research and Exploration Institute following the detection of bauxite reserves suitable for aluminum production in Seydişehir and Akseki in 1962, transferred this reserve to ETİBANK in 1965. Thus, under operation of the present bauxite deposits in Turkey, the ore is processed to be removed from reservoirs contained aluminum and it is decided that the facilities to produce aluminum products. Thereupon, in the framework of Turkish-Soviet bilateral agreement signed on March 25, 1967 on behalf of Turkey ETİBANK General Directorate and the Union of Soviet Socialist Republics (USSR) under the name of TIAJPRO-MEXPORT, with the agreement signed on May 9, 1967 to 60,000 tons / year of the establishment of primary aluminum plant works started.

The installation works started on 13 October 1969, the Alumina factory was commissioned in March 1973, the first electrolysis house in August 1974, the second electrolysis house in October 1975, the third electrolysis house in August 1976, and further to the fourth electrolysis house in January 1977, and the liquid aluminum 100% capacity was reached in production. On the other hand, the regeneration department of the cryolite unit within the company, along with the electrolysis plant, the rotation department started its operation in November 1975.

In May 1974, the Foundry was completed, between February 1976 and March 1979 and different units of the Rolling Mill factory were completed and put into operation. In addition, the Aluminum Sulphate Factory with a capacity of 45,000 tons / year started production in 1980 as a sub-unit of the Alumina Factory in order to meet the domestic paper, textile, chemical industry, water treatment plants' needs. The Anode Pastry Factory, which meets the anode paste requirement of the electrolyzers, was put into operation in May 1977.

Full Capacity Production That Takes Only 8 Months

Working time with full capacity in aluminum production was limited to only 8 months, the first and second electrolysis plants were closed in September 1977 due to the energy shortage of our country and the capacity was reduced to 50%. During this closure, anode / cathode contact was preserved by freezing some of the aluminum in most of the cells with a method that is not common in the world. In this way, the cells were protected from being put into operation without any major repairs and efforts being made to reduce the damages. Although the first electrolyzer was re-energized in July 1980, the production reached 75% capacity, but fluctuations in this capacity were observed due to the ongoing energy bottleneck starting from August 1981. In June 1983, the first electrolyzer was deactivated and the total capacity in the third and fourth electrolyzers operated with the missing number of cells was reduced by down to 35%.

Since the beginning of 1984, there has been a relief in the use of electricity thanks to the increase in the production of electricity. In January 1984, 50% capacity usage was reached. Then, in July 1984, the first electrolyzer was commissioned, reaching 75% capacity, and in May 1985, the second electrolyzer was commissioned, reaching 100% capacity.

The Oymapınar Hydroelectric Power Plant, which was included in the scope of privatization on September 8, 2003, was transferred to Eti Alüminyum A.Ş. in order to meet the energy needs of the facilities and the auto-producer license numbered EO / 247-3 / 380 was obtained by the Board decision on October 14, 2003. In addition, Eti Alüminyum A.Ş. It was included in the scope and program of privatization with the decision of the Privatization High Council dated 13 August 2003 and numbered 2003/49.

After Privatization

Eti Alüminyum A.Ş., the privatization of which was completed on July 28, 2005, continues its production activities without interruption within Cengiz Holding.

The facility, which continues its modernization studies, was built almost from the beginning with an investment of \$ 540 million in 10 years. In the closing stages of the meat, which at the time of privatization of Aluminum Inc., Konya property in Seydişehir, meets today to 13.5% of Turkey's aluminum needs. After the investments, Eti Alüminyum A.Ş., which has proved to be an environmentally and humanly sensitive business as the newest and best emission values facility in Europe; by stopping the consumption of fuel oil and switching to natural gas and domestic coal; need to save energy, result of the increase in energy production as well as a \$ 70 million contribution to Turkey's economy has provided.

Eti Alüminyum A.Ş., was rebuilt with an investment of \$ 540 million in the 10-year period after Cengiz Holding was incorporated.

OUR CORPORATE HISTORY



<p>1962</p> <ul style="list-style-type: none">• Bauxite Reserve Detection <p>1973</p> <ul style="list-style-type: none">• Transfer of Reserve to Etibank <p>1967</p> <ul style="list-style-type: none">• Bilateral Agreement (EtibankTia-jropromexport) <p>1969</p> <ul style="list-style-type: none">• Laying the Foundation <p>1973</p> <ul style="list-style-type: none">• First Alumina Production <p>1974</p> <ul style="list-style-type: none">• Primary Primary Aluminum Production <p>1976</p> <ul style="list-style-type: none">• First Profile Production <p>1977</p> <ul style="list-style-type: none">• First Hot Rolling Product	<p>1979</p> <ul style="list-style-type: none">• First Rolling Products and Foil Production <p>1980</p> <ul style="list-style-type: none">• Aluminum Sulfate Production <p>2005</p> <ul style="list-style-type: none">• Transfer to Cengiz Holding in the Scope of Privatization <p>2006</p> <ul style="list-style-type: none">• The use of natural gas from fuel oil started at the facilities. <p>2007</p> <ul style="list-style-type: none">• Coal fields were bought and purchased.• Renewal of work machines	<p>2008</p> <ul style="list-style-type: none">• Foundry Production facility completely renewed. <p>2009</p> <ul style="list-style-type: none">• The modernization of Oymapınar• The new steam boiler operating with coal and natural gas was commissioned.• Environmental Management System Certificate was received.• The control filtration auxiliary chemical has been developed in the Autoclaves and Red Mud Division of the Alumina Directorate and the physical and chemical purity of the aluminum hydroxide	<p>2010</p> <ul style="list-style-type: none">• ISG Management System Certificate was received.• With the commissioning of plate heaters, hydro cyclones, thin and thick vaccine decomposers at the Alumina Directorate Decomposer and Hydrate Department, the production of sandy-alumina began. <p>2011</p> <ul style="list-style-type: none">• The filter of aluminum hydroxide product was changed in the Decomposer and Hydrate Department of the Alumina Directorate, and the pan filter was put into operation.	<p>2013</p> <ul style="list-style-type: none">• Customer Satisfaction Management System was purchased.• Renovation Works for Aluminum Electrolysis Plant <p>2014</p> <ul style="list-style-type: none">• SRS was completely renewed and commissioned.• Alumina Directorate compressor unit was commissioned.
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OUR CORPORATE HISTORY



2015

- Primary Aluminum Production Process was commissioned with “Pre-baked” technology.
- Alumina Directorate Dry Hydrate and Grinding Department was commissioned and dry aluminum hydroxide and ground aluminum hydroxide products started to be produced. Flame retardant and smoke suppressor halogen-free Special Aluminum Hydroxide with the production of ground products production started.
- Machinery Equipment Directorate was renewed.
- Obtaining Dangerous Goods Activity Certificate.
- Induction furnaces and conveyor ingot casting machine was commissioned.

2016

- Production of Special Aluminum Hydroxide with Viscosity Adjusted at the Alumina Directorate Dry Hydrate and Grinding Department started.
- Disc filters were put into service as vaccine filters in the Alumina Directorate, Decomposer and Hydrate Department.
- Information Security Management System Certificate was received. (To Oymapınar HEPP)
- Renewal of laboratory devices.
- One melting / holding furnace was commissioned at the Foundry Directorate.
- A continuous homogeneous furnace was put into operation at the Foundry Directorate.
- The 2nd casting line (degassing unit, ceramic foam filter box, runner and casting machine system) was commissioned at the Foundry Directorate.

2017

- Installation and commissioning of Wet Anode, Anode Cooking and Anode Roding facility.
- Installation of special filters.
- Red mud (Waste) press filter (FFP) was commissioned in the Alumina Directorate Autoclaves and Red Mud Section.
- The new fluidized bed calcination furnace (CFB) was commissioned in the Alumina Directorate Calcination Department.
- 10% caustic production unit out of soda ash was put into operation in the Alumina Department Evaporation Division.
- Slag press unit was commissioned at the Foundry Directorate.
- Magnetic stirrer is activated.

2018

- Alumina Directorate fine Crystallized Aluminum Hydroxide (FPH) Production facility setup.
- Calcined lime dosing system was commissioned in the Raw Materials Preparation Department of the Alumina Directorate.
- Production of High Calcined Alumina special products started at the Alumina Directorate Calcination Department.
- The Quality Control and R&D Directorate started serving in the new laboratory building.

2019

- Fine Crystallized Aluminum Hydroxide (FPH-fine Hydrate) special product production started.
- The calcined lime factory was commissioned.
- Vertical pressure filter (VPF) was commissioned for the filtration of sodium aluminate solution in the Alumina Directorate Autoclaves and Red Mud Division.
- Distributed System Control (DCS) was commissioned to effectively control and monitor the alumina process.
- Cengiz Holding R&D building was completed and started R&D studies.

ETİ ALUMİNYUM CORPORATE PROFILE

Eti Alüminyum A.Ş. Facilities

Konya/Seydişehir

Bauxite Mine
Aluminum Refinery
Foundry Premises
Rolling Mill
Power Unit
Colliery

Antalya

Hydroelectric Power Plant
Import Export Directorate
of Antalya

Investment Amount

Total specific to 2017	114.253.000 TL
Total specific to 2018	270.411.000 TL
Total specific to 2019	73.904.000 TL

Of investment was realized

Total Available Production Capacity At Eti Alüminyum A.Ş. Seydişehir Site

Installed Capacities

Bauxite Processing	550.000 tons/year
Aluminum Hydrate	40.000 tons/year
Dry Hydrate	13.500 tons/year
Milled Hydrate	3.600 tons/year
Calcined alumina	200.000 tons/year
Wet Anode	54.000 tons/year
Baked Anode	46.660 tons/year
Rodded Anode	40.856 tons/year
Primary Aluminum	82.000 tons/year
Casting Capacity	160.000 tons/year

Production Amount in 2018

Bauxite Processing	378.661 tons/year
Aluminum Hydroxide (Hydrate)	346.236 tons/year
Dry Hydrate	19.550 tons/year
Milled Hydrate	4.923 tons/year
Aluminum Oxide (Alumina)	162.814 tons/year
Wet Anode	57.306 tons/year
Baked Anode	48.882 tons/year
Rodded Anode	38.732 tons/year
Primary Aluminum	73.291 tons/year
Round Ingot/Plate Ingot	82.898 tons/year
Alloyed/Unalloyed Ingots	4.733 tons/year



ETİ ALUMİNYUM PRODUCTS

Aluminum Products

- Alloyed Ingot
- T-Ingot
- Strip
- Billet
- Round

Chemical Products

- Wet Aluminum Hydroxide
- Dry Aluminum Hydroxide
- Milled Aluminum Hydroxide
- Fine crystalline aluminum Hydroxide
- Viscosity Optimized Aluminum Hydroxide Aluminum Oxide (Alumina)
- High Calcined Aluminum Oxide
- Lime



THE MARKETS SERVED

Alloy Ingot Usage Areas

- Cylinder Heads
- Mixed and Thin Wall Pressure Castings
- Combustion Engine Crank Covers
- Pistons and Other Engine Parts
- Kitchen utensils
- Permanent Castings
- Food Transport Equipment
- Iron Base Strength castability corrosion resistance pressure sealing
- Motor Bodies
- On Airplanes
- Measurement
- Pistons of Internal Combustion Engines
- Pump Parts
- Used in making pressure sealing wheels in automotive industry
- Corrosion-resistant cast kitchen and office machine bodies instruments decorative casting parts and pressure die-casting

Usage areas of Ground, Viscosity Adjusted and Fine Crystallized Aluminum Hydroxide (EtiFine)

- Unsaturated polyester, epoxy, acrylic, silicone, melamine systems
- In polyolefin or PVC
- In rubber or latex materials
- BMC (Bulk molding compound) and SMC (Sheet molding compound) components
- Cable, thermoplastic insulation compounds, thermoplastic, elastomer sheath compounds
- Carpet mats and upholstery materials
- Exterior cladding and decorative building materials

Aluminum Hydroxide (Hydrate), Dry Aluminum Hydroxide (Dry Hydrate) Usage Areas

- Aluminum Sulfate
- In Insulation and Insulation Industry
- Poly Aluminum Chlorider
- In Glass Industry
- Aluminum Chloride
- **In Petrochemical Industry**
- Aluminum Fluoride
- In Textile Industry
- Zeolite
- **In Paint Industry**
- Sodium Aluminate
- Flame Retardants (ATH)

Aluminum Oxide (Alumina) and High Calcined Aluminum Oxide Usage Areas

- In Ceramic Industry
- In Glass Industry
- In Refractory Industry

In Abrasive and Polishing Industry

- Grinding Material Production
- Primary Aluminum Productio, Transparent Armor Production
- Ceramic Cutter Production , Various Catalysts Production

Slab Ingot Usage Areas

- Rolling Mill Industry
- Automotive

Billet Ingot Usage Areas

- Automotive
- Household appliances
- Construction



Aluminum hydroxide products called EtiFine are used in different polymer systems as fire retardant and smoke suppressor filling materials.

VISION : TO BE BOTH A LEADER AND A PIONEER

Operating since 2005 within the body of Cengiz Holding, a leading industry and infrastructure group, Eti Alüminyum A.Ş. adopts the corporate understanding of the Group, to which Cengiz Family is a member.

Eti Alüminyum A.Ş. as a Cengiz Holding corporate, we consider ourselves obliged to be both an example and a pioneer, conducting all our business in the most competent way and in compliance with international standards and the applicable legislation in every area we operate. We start our work with this basic approach and complete our projects with no compromises.

- Trust, Quality, Service: these have taken shape as the natural outcome of our experience.

OUR VISION

To be not just a leader, but also a pioneer by adding new projects abroad to our achievements in our country and becoming a global brand.

OUR MISSION

Ensuring that our values of “Trust, Quality and Service” are applied to all our operations in full.

OBJECTIVES

Eti Alüminyum A.Ş. determines its targets in parallel with its production activities;

- To produce products with the alloys used in the production of non-strategic importance of the products produced in Turkey.
- To renew the rolling mill unit within the framework of modernization, to ensure the production of the parts of strategic importance.
- To produce different special aluminum hydroxide and alumina products not produced in Turkey has strategic importance.
- Alumina Factory Modernization.
- To complete the Sinter TÜBİTAK Project in Red Mud Waste.
- Setting up a solar power plant.



ORGANIZATION CHART



CERTIFICATES



OPERATIONAL STRUCTURE

PLANNING

- Strategic Planning
- Annual Management Program
- Annual Investment Plan
(Environmental Impact Assessment Report, Environmental Dimensions)
- Power unit for compliance with legal and other requirements

PREVENTION

- Suggestion Systems
- Corrective / Preventive Actions (CAPA)
- Trainings
- Conformity Assessment

PRACTICE

- Management by Process
- Providing documentation conditions
- Follow-up of action plans

CONTROL AND REVIEW

- Strategic Planning
- Annual Management Program
- Annual Investment Plan (Environmental Impact Assessment Report, Environmental Dimensions)
- Power unit for compliance with legal and other requirements

AWARDS

SOME OF OUR AWARDS

- Second Prize by Istanbul Iron and Non-Ferrous Metals Exporters' Association. İMMİB 2006
- Second Prize in Inorganic Chemicals export. İMMİB 2007
- Third Prize in Inorganic Chemicals export. İMMİB 2007
- Second Prize in Inorganic Chemicals export. İMMİB 2009
- First Prize of Ferrous and Non-Ferrous Metals Industry Export in 2011.
- Leading Employer Award in 2012 Konya Economy Awards.
- First Prize of Ferrous and Non-Ferrous Metals Industry Export in 2012.
- First Prize by Antalya Exporters' Association in 2012.
- First Prize for Export of Chemical Materials and Products in 2012
- First Prize in Exports by Iron and Non-Ferrous Metals and Base Metals Industry Export in 2013
- First Prize by Western Mediterranean Exporters Association in 2013
- First Prize by the Export of Ferrous and Non-Ferrous Metals Sector in 2014.
- Second Prize by Western Mediterranean Exporters Association of 2014.
- Second Prize in the Export of Chemicals and Products in 2014.
- First Prize by Ferrous and Non-Ferrous Metals Industry Export in 2017
- Second Prize in Export of Chemicals and Products in 2017.
- Fourth Prize by Western Mediterranean Exporters Association in 2018.
- Second Prize in the Export of Chemicals and Products in 2018
- First Prize of Iron and Non-Ferrous Metals Industry Export in 2018.
- The Fifth Company Award in the most Increasing Export of Anatolia.

WORK PROCESSES

Production Processes

Mine Extraction and Stocking

• Bauxite is removed from the bauxite mining sites, located approximately 30 km from the factory on the Seydişehir - Antalya road, and brought to the factory with the help of trucks. Here, according to the analysis result, it is stored in different boards.

Crushing Blending

• Considering the chemical and mineralogical analysis of different quality bauxite ore stored in different panels, it is passed through the crushing phase in the Raw Material Preparation Department and taken into the closed bauxite warehouse in order to provide homogeneous and stable raw materials that can be processed in the Bayer Process.

Production Process

• Bauxite is subjected to two-stage closed-circuit wet grinding to reduce the broken bauxite to the grain size required for solubilization in the Bayer process.

• In the autoclave and red mud section, bauxite is subjected to chemical reaction with caustic under high temperature and pressure in autoclave batteries, and alumina (Al_2O_3) in bauxite is taken into solution and sodium aluminate solution is obtained. The insoluble residue is called red mud waste. In the red mud stage washing circuit, it is washed with hot water according to the reverse current principle and the caustic and alumina in the liquid phase is recovered. The red sludge from the 6th stage is dehydrated with the help of a press filter and the resulting filter cake is sent to the red sludge waste dam by trucks.

• Sodium aluminate solution obtained from Autoclave and Red Mud Section is crystallized as a result of hydrolysis reaction in Decomposition and Hydrate Section and Aluminum Hydroxide (Hydrate) is obtained.

• The water in the weak solution obtained from the Decomposition and Hydrate Section is evaporated in the Evaporation Section to increase the Na_2O concentration of the solution and the strong solution obtained is fed back to the Raw Material Preparation Section.

Product Received

• Some of the obtained Aluminum Hydroxide (Hydrate) is sent to the Calcination Department to be calcined, some to the Drying and Grinding Department to be dried, and some to the warehouse for sale.

• In the Drying and Grinding Department, dry aluminum hydroxide (Dry Hydrate) product is obtained by blowing the physical moisture of the hydrate in the fluid bed dryer. Some of the dry hydrate is taken to the grinding silo, while some is shipped to the other silo for sale. Grinded offered for sale with the EtiFine 500 registered trademark by grinding dry hydrate to certain grain sizes Viscosity Adjusted Aluminum Hydroxide products are obtained by mixing Aluminum Hydroxide (Milled Hydrate) with ground and crystallized hydrates by applying a specific recipe.

• Sodium aluminate solution obtained in the Autoclave and Red Mud Section for the production of Fine Crystallized Aluminum Hydroxide (Fine Hydrate) product is subjected to hydrolysis reaction in the conditions determined by the addition of the active vaccine prepared specially after the special filtration processes and the crystallized fine product is special filtration. and shipped to silos for sale after drying.

• After the Aluminum Hydroxide (Hydrate) calcined in calcination furnaces is converted to Aluminum Oxide (Alumina) product, some of the alumina is sent to the Electrolysis silos for use in Primary Aluminum production and some of it is sold to the commercial silo for sale.

Lime Production

Limestone (CaO) is obtained by calcining the high-calcium limestones ($CaCO_3$) at $900-1000^\circ C$ in double-shaft, circular cross-section, vertical lime kilns. Lime crushed to grain sizes desired by the process is delivered to the silo by the air handling system. It is shipped to the hydrate unit from the silo.

Anode Production and Roding

• The production of wet anodes is made by mixing the imported calcined petroleum odor and hard coal bitumen with the recycling anodes coming from electrolysis under certain temperatures and mixing them under certain temperatures. The produced wet anodes are shipped to the cooking unit.

• The anode blocks coming from the wet anode unit are grouped and loaded into the cooking ovens, and the cooking process is performed by subjecting them to a pre-heating, heating and cooling process for a certain period of time. Cooked anodes are cleaned and shipped to the roding unit.

• Cooked anodes coming to the roding unit are cast iron with anode forks and roding is performed. Rodded anodes are shipped to electrolysis. At the same time, the used anodes extracted from the electrolysis cells in the roding unit and the covering material on it are subjected to crushing and screening processes and regained as return material and used in the related processes.

Obtaining Raw Aluminum

• The cells are charged with alumina, anode block, cryolite, aluminum florid, Soda Ash and Bath Cryolite. Raw aluminum is obtained by melting it with electrolysis method by using electrical energy.

• With the help of the raw aluminum crucibles obtained, they are transferred to the foundry directorate. Preparing Products by Order Sales

• The raw aluminum shipped to the Foundry Directorate is taken to the relevant furnace in accordance with the production plan, which is made to produce suitable qualities and products according to the orders from the customers.

• Raw to the oven according to the ordered product After the aluminum charge is completed, it is prepared for casting by making alloy charge at the required rates.

• Cast iron round ingots are homogenized in homogeneous furnaces in order to homogenize unbalanced structures from casting and remove segregation. After the weighing process is completed, it is put into stock and stacked in the stock area.

• If an unalloyed product order is available, ingot casting is carried out directly from the ladle on the conveyor.

• Casting products taken to the stock area are sold.

Raw Material Purchase

Input quality control processes of the purchased raw materials are carried out. In case the raw materials comply with the quality standards, product entry processes are completed.

Quality Control Analysis

Necessary analyzes are carried out within the scope of the quality control process at every stage during production.

Sales

In case the product is found suitable, it is taken into stock after the related process is completed and becomes ready for sale. In case the product is not suitable, by keeping the "Inappropriate product forms", the process required for the process is determined and the process is intervened to be corrected.

Periodic Maintenance

In line with the planned periodic maintenance graphics prepared at the beginning of each year, periodic maintenance is carried out in each unit. As a result of the maintenance, maintenance costs, etc. are followed. The BEAM Maintenance Program commissioning works, the installation of which started at the end of 2018, continue and all units are planned to be used by the end of 2019. After the program has been implemented in the whole factory, all kinds of maintenance analysis will be instantly available through this program.

Marketing and Sales Process

Separate process follow-ups are made for the sales and marketing processes by the Sales and Marketing unit, and the processes are monitored to be finalized.

**MARKETING AND SALES PROCESS
SEPARATE PROCESS FOLLOW-UPS
ARE MADE FOR THE SALES AND
MARKETING PROCESSES BY THE
SALES AND MARKETING UNIT, AND
THE PROCESSES ARE
MONITORED TO BE FINALIZED.**

INVESTMENTS

ETI ALÜMİNYUM INVESTMENTS

Investment Area	Investment Amount (USD)
NATURAL GAS TRANSFORMATION	5.419.000
BUILD	51.372.000
FINE HYDRATE BUILDING CONSTRUCTION	1.603.000
FOUNDRY	25.100.000
STEAM PLANT	52.714.000
COAL FIELDS PURCHASE	8.207.000
13 MW STEAM TURBINE	7.500.000
CALCINATION KILN CONSTRUCTION	10.500.000
ALUMINA ELECTRO FILTER	2.500.000
ALUMINA PRESS FILTER	6.500.000
ELECTROLYSIS + ANODE PASTE	221.500.000
ENERGY DISTRIBUTION UNIT	38.500.000
HEAVY EQUIPMENT	19.819.000
LAB	1.600.000
OYMAPINAR HPP	14.664.000
ISOLATION	2.600.000
ENVIRONMENT AND INFRASTRUCTURE	17.875.000
MACHINERY EQUIPMENT	19.208.890
MAJOR REPAIR	14.710.000
FINE HYDRATE INVESTMENT	6.849.000
OTHER	27.250.000
TOTAL	555.990.890,00

Factory Inside Factory

Machine Equipment Factory benches inside the facility have been modernized to meet the spare parts need of Eti Aluminum Plants. CNC lathes, welding machines, saws and 2 induction furnaces were purchased for the factory, which was renewed for \$ 17.8 million. Thus, production quality and production diversity were increased.

Waste Gas Gets Below EU Norms
After the privatization of Seydişehir Integrated Facilities for gas emission, an investment of 15 million dollars was made. After this investment, the EU norms reached a level below the gas emission values.

70 Engineers and 200 Technical Staff from China
While using the latest technologies in its facility, Eti Alüminyum has received consultancy services from the leading foreign companies of the sector within the scope of renovation. In this context, investments in start-inserted-mai step in the important critical equipment and material purchases made by Germany, Switzerland, Sweden, France, Canada, Finland, Japan, England, as supervisors from countries such as Poland as from China 70 engineers and commissioning element to Turkey was introduced.

Saving Electricity and Water

During the renovation works of Eti Aluminum, the environmental factor was also considered to the finest detail. With the investments, serious savings were achieved in the use of electricity and water. While 17,500 kW electricity was used for 1 ton of aluminum before privatization, this figure was reduced to 13,000 kW as a result of the new investment. Water use was reduced by 50 percent. Oymapınar 5 Percent More Efficient
Oymapınar Dam, which is within the scope of privatization, was renewed with the investments made. By cooperating with the Austrian company VA-TECH, the power and hydraulic control systems of the power plant were completely replaced, thus gaining a modern identity. In Oymapınar, where \$ 14.6 million was renewed, electricity production was increased by 5 percent.

221 Million Dollars Investment in Electrolysis Center
When urgent things to be done in 2005, when Eti Aluminum was incorporated into Cengiz Holding; It has been determined that the facility can stop at any time due to no renovation investment until that day. Especially since the electrolysis cells will freeze with the 2-hour stop of the cells in the electrolysis, the risk of the system facing a 4-year shutdown period has been identified and therefore an investment of 221 million dollars has been made only for the electrolysis room. The newest aluminum electrolysis plant in Europe, which has the ability to produce a minimum of 99.8 percent purity aluminum in metal quality, and which has been designed and installed with SAMI technology, is also in European Union standards in terms of environmental emissions.

Saving \$ 70 Million
Natural gas conversion was made with an investment of 5 million dollars in order to prevent Fuel-Oil, which has a high sulfur and SO2 ratio of 6, used in the facilities to cause no further damage to the environment. After 2008, natural gas was started to be used in the facilities. Domestic coal at 70 million dollars per year with the introduction of the fuel amount was maintained in Turkey. Seydişehir and Çumra Have Natural Gas
The natural gas line that was towed to Seydişehir for Eti Alüminyum was started to be used by obtaining the necessary permissions. After the facilities switched to natural gas, EMRA finalized the distribution tender of the Seydişehir and Çumra district and the district gained natural gas.

13 MW Energy from Waste Steam

The steam turbine was renewed for 7 million 500 thousand Dollars and the steam needs of the facilities started to be met with a reliable and economical system. Thanks to the newly built steam turbine, 13 MW energy was generated and costs were also reduced.

\$ 200 million in 10 years
As a result of the investments made in Oymapınar and Seydişehir, an additional 62 million Kwh / year energy production increase was achieved. A total of 180 million Kwh / year of energy was saved in all facilities. Thus, electricity production increase and all energy saving was 242 Million Kwh / year. If electricity was produced with the natural gas power plant, 60 million m3 / year natural gas would be consumed to produce this energy. This meant paying out \$ 20 million a year and \$ 200 million in a 10-year period. This payment was prevented and a significant contribution was made to the national economy.

New Systems Commissioned
Electrolysis produced with Prebaked System was commissioned. GTC (Gas Cleaning System) was activated. In addition, the installation of Anode Roding, Wet Anode Preparation, Anode Cooking and FTC (Gas Cleaning System) units has been completed and it has been put into operation in 2017. With the commissioning of the new fluidized bed calcination furnace, the physical and chemical quality of the alumina product has been increased and a more stable and stable raw material has been provided for the aluminum production process. In addition, over 20% savings were made in energy consumption due to natural gas use during the calcination process.
Within the scope of the dewatering project of red mud waste, with the commissioning of the press filter, the red mud moisture has been reduced from 70% to 30%, therefore the amount of waste thrown into the waste dam has been reduced by at least 55%. At the same time, with the liquid phase remaining in the process, up to 3000 tons of caustic and 1500 tons of alumina are recovered annually.

FOLLOWING INCORPORATION OF ETI ALUMINUM FACILITIES BY THE PRIVATIZATION, CENGİZ HOLDİNG HAS MADE INVESTMENTS TOTALİNG 556 MILLİON DOLLARS.

CONTRIBUTION TO THE SECTOR AND NATIONAL ECONOMY

Contributions to the Sector and the National Economy

Further to the completion of Electrolysis Facilities Investment in 2015 at Eti Aluminum A.Ş. 13.5% of Turkey's aluminum requirement started to be met.

- Eti Aluminum Co., 13.5% of Turkey's needs Turkey as the only primary aluminum plant has the capacity to meet.
- Company, up to 1 micron Halogen Free Flame Retardant (halogen containing flame retardant) are capable of producing aluminum hydroxide can be used Turkey's first and only one of the few companies in Europe.
- not produced in Turkey 2000, 5000 and 7000 set of cast alloy, special alloy ingot flat and round ingot, Ethyl Aluminum Co. It started to be produced with. Thanks to these products used in the field of defense, aircraft and automotive, millions of dollars have been left in the country.
- Natural gas conversion was realized with an investment of 5 million dollars in order to prevent the fuel oil number 6, which has a high sulfur and SO2 ratio used in the facilities, to cause further damage to the environment.
- After 2008, natural gas was started to be used in the facilities. Domestic coal at 70 million dollars per year with the introduction of the fuel amount was maintained in Turkey.

Export

Eti Alüminyum exports approximately 38% of its products to 55 countries. Eti Alüminyum A.Ş., which exports all products, especially Aluminum Hydroxide (Hydrate) and Round ingot; It reaches all over the world with its products, mainly Argentina, Spain, Italy, Chile, Colombia, Egypt, Tunisia, USA and Indonesia.

Aircraft and Automotive Sector

Eti Alüminyum exports approximately 38% of its products to 55 countries. Eti Alüminyum A.Ş., which exports all products including Aluminum Hydroxide (Hydrate) and Round ingot; It reaches all over the world with its products especially in Argentina, Spain, Italy, Chile, Colombia, Egypt, Tunisia, USA and Indonesia.

In this way, with the development of industrial and chemical products, gave the possibility of placing on the market of new products in Turkey. Through the modernization studies quality standards rose they consequently opened the door to new markets in the world by offering new products, the alloys which were not produced in Turkey before such as the groups of 2000, 5000 and 7000 casting alloys, special alloy flat and billet ingots their production was thereon launched.

Eti Alüminyum, stands as the only in Turkey and one of the few companies in Europe, capable to produce down to 1 micron Halogen Free Flame Retardant.



ETİ ALÜMİNYUM SUSTAINABILITY APPROACH

Planning

Strategic planning, annual management program, annual investment plan EIA, Environmental aspects), Compliance with Legal and Other requirements)

Application

Control and review, improvement (Management control, internal-external audit, official institution audit etc.)

Prevention

(suggestion system, trainings etc.)

Memberships to Chambers

Union of Chambers and Commodity Exchanges of Turkey
Konya Chamber of Industry
Seydişehir Chamber of Industry and Commerce
Antalya Exporters Association
İstanbul Chamber of Commerce
Central Anatolian Exporters Association
İstanbul Exporters Association
İstanbul Chemicals and Products Exporters' Association
Hacı Şaban Cengiz Foundation

Awarded Quality Certifications

TS EN ISO 9001 Quality Management System
TS EN ISO 14001 Environmental Management System
TS ISO 45001 Occupational Health and Safety Management System
TS ISO 10002 Customer Satisfaction Management System
TS ISO 50001 Energy Management System
27001 Information Security Management System (Oymapınar HEPP Facility)



ETİ ALÜMİNYUM SUSTAINABILITY APPROACH

Alloyed Ingots Equivalent International Standard

ETİ NORM	TSE	GERMANY DIN	USA AA	FRANCE NF	ENGLAND BS	ISO	CSA	A.S.T.M
ETİAL-110	AlSi5Cu3	-	319	319	LM4	AlSi5Cu3	SC53	BC640
ETİAL-120	AlSi 5	AlSi5	B443	B443	LM18	AlSi 5	S5	S5A
ETİAL-140	AlSi 12	G-AlSi 12	A413	A413	LM6	AlSi 12	-	A13
ETİAL-141	AlSi 12Fe	GD -AlSi 12Fe	413	413	LM 20	AlSi 12Fe	S12P	S12C
ETİAL-145	-	-	A332	A332	LM 13	-	L2551	SN122A
ETİAL-147	-	-	-	-	-	-	-	-
ETİAL-150	-	-	-	-	-	-	-	-

Conductive Ingots And Unalloyed Ingots Equivalent International Standards

STANDARDS	ETİ NORM	TSE	GERMANY DIN	USA AA	FRANCE FF	ENG. BS	ITALY UNI	ISO	CSA	A.S.T.M
ECG Conductive	ETİAL- 7E	-	EAl99,07	EC	A6/L	1E	-	-	-	-
	ETİAL- 6E	-	EAl99,6	EC	A6/L	1E	-	-	-	-
	ETİAL- 8/1	-	-	-	-	-	-	-	-	-
UNALLOYED	ETİAL- 8	Al99,8	Al99,8	1080	A 8	1 A	P-ALP99,8	AL99,8A	-	-
	ETİAL- 7	Al99,7	Al99,7	1070	A 7	L 48	P-ALP99,7	AL99,7	-	-
	ETİAL- 6	-	-	1060	A 6	-	-	Al99,6	9970	ER1060
	ETİAL- 5	Al99,5	Al99,5	1050	A 5	1 B	4507	Al99,5	9950	-
	ETİAL- 3	-	-	1030	A 4	-	-	Al99,3	-	-
	ETİAL- 1	Al99	Al99,0	1200	-	-	-	AL99,0	-	-
	ETİAL- 0	Al99Cu	Al99,0	1100	A 45	1 C	P-ALP99,0	Al99,0Cu	9900	1100



ETİ ALÜMİNYUM SUSTAINABILITY APPROACH

Equivalent International Standards for Process Alloys

ETİAL	TSE	GERMANY DIN	USA AA	FRANCE NF	ENGLAND BS	ITALY UNI	ISO	CSA	A.S.T.M
ETİAL-20	AlCuBiPb	AlCuBiPb	2011	A-U5PbBi	FCI	P-AlCu5,5Pb	AlCu6BiPb	CB60	CB60A
ETİAL-21	AlCuSiMn	AlCuSiMn	2014	A-U4 SG	H15	P-AlCu4,SiMnMg	AlCu4SiMg	-	2014
ETİAL-22	AlCuSiMg1	AlCuSiMg1	2017	A-U4 G	-	P-AlCu4MgMn	AlCu4MgSi	CM41	CM41A
ETİAL-24	AlCuMg2	AlCuMg2	2024	A-U4G1	L97	P-AlCu45MgMn	AlCu4Mg1	CG42	2024
ETİAL-30	AlMnCu	AlMnCu	3003	A-M1	-	P-AlMn1,2Cu	AlMn1Cu	MC10	3003
ETİAL-31	AlMn1Mg1	AlMn1Mg1	3004	A-M1G	-	P-AlMn1,2Mg	AlMn1Mg1	-	3004
ETİAL-33	AlMn1	AlMn1	3103	A-M	N 3	3568	AlMn1	-	-
ETİAL-35	AlMn0,5Mg0,5	AlMn0,5Mg0,5	3105	-	N 31	-	AlMn0,5Mg0,5	-	-
ETİAL-43	-	-	7178	-	-	-	AlZn7MgCu	-	-
ETİAL-44	AlZnMgCu1,5	AlZnMgCu1,5	7075	A-Z5Gu,5	DDT5074A	P-AlZn5,5MgCu	AlZn5,5MgCu	ZG62	7075
ETİAL-50	AlMg0,8	AlMg1	5005	A-G0,6	N 41	P-AlMg0,8	AlMg1	B57S	G1B
ETİAL-51	AlMg1,5	-	5050	A-G1,5	-	P-AlMg1,5	AlMg1,5	ER50	ER50
ETİAL-52	AlMg2,5	AlMg2,5Cr	5052	A-G2,5C	N 4	P-AlMg2,5	AlMg2,5	5052	5052
ETİAL-53	AlMg3	AlMg3	5754	A-G3	N 5	P-AlMg3,5	AlMg3	5154	5154
ETİAL-58	AlMg4.5Mn,3	-	5083	-	-	-	-	-	-
ETİAL-54	AlMg2Mn0,3,5	AlMg2M	5251	A-G2m	L 80	P-AlMg2Mn	AlMg2	-	-
ETİAL-60	AlMgSi0,5	AlMgSi0,5	6063	A-GS	H 9	-	AlMg0,7Si	6063	6063
ETİAL-61	AlMgSi I	AlMgSi I	6351	A-SGM	H 30	P-AlSiMgMn	AlSiMg0,5Mn	-	-
ETİAL-62	AlMgSi 1	AlMgSi 1	6082	A-SGM 0,7	H-30	P-Al Si 1 Mg Mn	-	-	-
ETİAL-64	-	E-AlMgSi	6463	A-GS/L	91-E	P-AlSi0,5Mg	-	-	-
ETİAL-65	AlMgSiCu	AlMgSiCu	6061	6061	H-20	P-AlMgSiCu	AlMgSiCu	-	-
ETİAL-98	AlFeSi	AlFeSi	8011	-	-	-	-	-	-

ETİ ALÜMİNYUM SUSTAINABILITY APPROACH

Quality and Customer Satisfaction Policy

Our company in the world and Turkey is one of the integrated plants producing aluminum in order to produce the appropriate standard of our country and the world.

- In line with corporate policy and legal regulations with continuous improvement studies and customer-oriented approach,
- Individual and technological development of employees is ensured through continuous training,
- Aiming to reach measurable and achievable process values,
- We approach complaints with the principle of transparency, confidentiality and objectivity, and do not impose financial obligations on our customers to resolve complaints,
- Supported with Other Management Systems,
- Will comply with legal, customer and QMS requirements,

By establishing a Quality Management System, it is our main policy to continuously improve quality in all products we produce and to prioritize customer focus.

Environmental and Occupational Health and Safety Policy

For this purpose;

- We will comply with national and international legal regulations and regulations regarding environment and ISG,
- We will carry out activities to increase the level of knowledge and awareness about the environment and ISG, especially the employees, customers, suppliers, subcontractors and other operational stakeholders, and we will carry out activities to increase the level of knowledge and awareness about the environment and ISG, especially stakeholders,
- We will make continuous improvements to prevent repetitions of incidents and accidents,
- We will take measures for environmental pollution, we will constantly improve environmental performance,
- To be a pioneer in realizing environmentally sensitive investments, by determining and assessing the environmental effects of new investments and the dangers that may come to human health, we will ensure the protection

• In order to provide an environment-friendly, safe and zero-accident work environment for all our employees, we will continue by improving the performance of Environment and ISG Training, Risk and Opportunity Analysis, Health surveillance,

• We will support the active participation of employees and employee representatives in the Occupational Health and Safety processes and we will be transparent in sharing information,

• We will continue to cooperate with Management, Employee Representative and Employee in order to eliminate the dangers in the working environment and provide a safer working environment,

• We will reduce the need for treatment or disposal by controlling natural resource consumption, climate change and emissions, reduce waste at the source and use natural resources efficiently by using clean technologies in production,

• We are committed to the continuity of the Environment and ISG Management System and to ensure continuous improvement through periodic reviews

Energy Policy

Our company is one of the integrated aluminums producing plant in the world and Turkey, produced according to world standards, reduce energy consumption and costs, in the long-term environmental activities and is working to promote economic sustainability.

For this purpose;

- To continuously improve our energy performance and ENYS,
- To provide individual and technological development through continuous energy training of employees,
- Providing the necessary information and resources to reach our energy goals and objectives,
- To comply with legal and other requirements related to energy,
- In order to improve energy performance in our facilities; working for the design and modification of equipment, systems and processes,

Human Rights

Eti Alüminyum; has been acting in harmony with the Universal Declaration of Human Rights in its relations with all its stakeholders since its establishment. It takes the respect for each of these rights into account at every stage of the business process.

To this understanding; scholarship, internship and job placement procedures, personnel directive, outreach regulation, staff advance regulation, performance management system, employee satisfaction feedback and suggestion studies can be given as examples.

Fighting Corruption

Eti Alüminyum, one of the Cengiz Holding companies, working with a management style that is included in all details in every project that it takes responsibility, acts with a complete planning and basic principles in all processes with its corporate approach. Experienced, confident, taking risks that it can control and demonstrating a business complementary management skill, Eti Alüminyum A.Ş. takes its precautions in order not to allow corruption cases to be encountered in business processes, while continuing its studies by prioritizing accountability, transparency criteria and moral values. Based on this understanding.

• In 2016, more effective protection is planned by equipping the factory site and its surroundings with security camera systems.

• Within the scope of deterrent measures against all kinds of incidents that may occur by the Private Security Unit in the factory area; Vehicle and personnel control at the door entrances and exits has been done continuously for 24 hours and continues to be done. Necessary legal action has been taken about the persons concerned by making effective interventions in the events that have occurred up to now.

• Work on 27001 Information Security Management system has been started for Oymapınar HEPP operation and a certificate has been obtained in 2016 after being audited.

• Internal audits and independent audits are carried out financially at certain periods throughout the year.

Internal Audit Firms:
Birleşik Uzmanlar Certified Public Accountancy Inc.

PRODUCT LIABILITY

Determining and Increasing Product Quality Standards

While quality standards are determined in the Alumina directorate products according to customer needs, Eti Alüminyum manufactures in the foundry directorate products according to both customer needs and world-class quality standards. In order to increase the quality and meet the needs of the market, product development studies are continuing. As a result of product development studies, filter purchases were made to provide better quality products to the Alumina Directorate.

The continuous homogeneous system was purchased for the better quality of the homogenization-process performed after the production of round ingots to the foundry directorate, to obtain a better homogeneous product, and started its installation in 2015 and started to be fully used in 2016.

In order to increase product quality, efficiency and capacity and reduce costs in electrolysis, a modernization study was carried out from scratch, and the system was put into operation in 2015. At the same time, anode production technology has changed with the technology change of electrolysis, and accordingly, new anode production facilities have been established and put into operation in 2017.

Quality Management

Eti Alüminyum A.Ş. It has 9001 Quality Management System, 14001 Environmental Management System, 45001 Occupational Health and Safety Management System, 10002 Customer Satisfaction Management System, 50001 Energy Management System certificates and it regularly monitors the related works to improve the system by performing internal revisions within the scope of continuous improvement and to perform necessary revisions. . It is subject to audits by TSE every year and ensures document continuity successfully.

In 2015, the acquisition of 27001 Information Security Management System certificates started at Oymapınar HEPP and this document was received as a result of the successful audit in 2016.

R&D Activities

Cengiz Holding, which has made significant R&D investments in the mining and metallurgical sectors, is also at the center of its foreign investments, which are targeted in the future. Moving from this point, the Holding aims to achieve commercial growth by collaborating with organizations related to its fields of activity abroad and to continue its development by collaborating in terms of know-how. In this way, Cengiz Holding is attempting to bring a permanent and constantly developing research and development culture to the Group. While shaping its growth strategy, Cengiz Holding aims to increase its accumulation and strengthen its stance not only in financial growth but also in terms of knowledge, technological infrastructure, with the collaborations it aims to form.

Quality Control and R&D unit within Eti Aluminum, continue their activities more efficiently with the establishment of an independent R&D unit in 2019. The Quality Control and R&D Unit continues to work in the new laboratory building built on an area of 1500 m2, which was completed in 2018. It is aimed to obtain ISO 17025 certificate in its new campus.

Eight of the TÜBİTAK-TEYDEB projects, which were launched in 2009, have been successfully completed, and the CASTIC AND ALUMINUM BACK RECOVERY project continues with the application of the RED • MUD SINTER METHOD. The number of personnel employed as Quality Control and R&D unit is 43, and Cengiz R&D unit is 9. Chemical Engineers, Mineral Processing, Mining Engineers, Chemists, Physicists and Chemical Technicians. New products are developed according to their physical and chemical properties by researching the users of the products produced in different sectors since 2009. In this way, it is aimed to reduce imports and increase exports.

When Eti Alüminyum is taken over by Cengiz Holding, intermediate chemicals produced around 3-4 thousand tons per year are produced with an amount of over 200 thousand tons and exported to 60 countries. For special products with high added value, Eti Alüminyum A.Ş. It continues its R&D activities with R&D institutions both domestically and abroad. It increases the level of education by supporting the participation of its staff in master's and doctorate programs of universities.

Customer Satisfaction

Cengiz Holding, which has made significant R&D investments in the mining and metallurgical sectors, is also at the center of its foreign investments, which are targeted by the future, as well as R&D studies. Moving from this point, the Holding aims to continue its development by cooperating with organizations related to its fields of activity abroad, to achieve commercial growth as well as to cooperate in terms of know-how. In this way, Cengiz Holding is attempting to bring a permanent and constantly developing research and development culture to the Group. While shaping its growth strategy, Cengiz Holding aims to increase its accumulation and strengthen its stance not only in financial growth but also in terms of knowledge, technological infrastructure, with the collaborations it aims to form.

SUCCESSFUL TÜBİTAK TEYDEB SUPPORTED R&D PROJECTS!

- 3090512 - 2009 / 1-2011 / 2 - Improving the Purity and Whiteness of Aluminum Hydroxide
- 3090600 - 2009 / 2-2010 / 2 - Producing AA 7003 Aluminum Alloy Billet Using Wagstaff Air Slip Casting Technology
- 3090768 - 2010 / 1-2011 / 2 - Spot Feeding in Soderberg Technology
- 3100088 - 2010 / 1-2012 / 2 - Understanding the Formation Mechanism of Shells Occurring in Alumina Production Plant, Preventing Shell Formation in Evaporation Batteries and Autoclave Preheaters
- 3100092 - 2010 / 1-2012 / 1 - Phase Transformations During the Conversion of Aluminum Hydroxide to Al₂O₃, Changes in Physical Properties of Particles and Effects of Aluminum Oxide Type on Electrolysis Performance
- 3100296 - 2010 / 1-2012 / 1 - Determination of the Effects of Process Parameters on Grain Size Distribution in the Formation of Aluminum Hydroxide for the Development of Sandy Alumina Production Conditions
- 3100309 - 2010 / 2-2012 / 2 - Removal of Silicon from Bauxite by Physical and Chemical Reactions and Reducing the Caustic Amount Used in Alumina Production By This Way
- 3160623 - 2016 / 2-2017 / 2 - Fine Crystallized Aluminum Hydroxide Production and Process Design Used as a Flame Retardant Additive in Polymeric Materials
- 3190061 - 2019/1 - Ongoing - Caustic and Aluminum Recovery from the Red Mud Waste of Bayer Process with Sinter Method

Thanks to new products which have not been produced in Turkey and by meeting our customers' needs, expectations, quality standards, we continue our production and R & D activities with our high quality products.

COMPANY EMPLOYEES

Human Resources Policy

With the belief that human power is the most important capital of human power and success will be achieved with people;

Achieving the firsts in its sector, Eti Alüminyum A.Ş., with the spirit of entrepreneurship and innovation, to produce quality, meet customer expectations and increase competitiveness; In order to maintain its leadership position in the sector and to move itself into the future, it has adopted the improvement of existing processes, developing new processes and implementing them more effectively in line with supporting the vision, mission and business strategies of the company, by using different perspectives and ideas of its employees.

The principles formed in the direction of realizing these basic goals are as follows:

Bu temel hedefleri gerçekleştirme doğrultusunda şekillenen ilkeler ise şu şekildedir:

- Not allowing gender and racial discrimination
- Not having forced labor
- Not employing child labor
- Protecting the personal rights of the staff by valuing labor
- Using human resources efficiently by benefiting from different perspectives and new ideas
- To cooperate with employees who are sensitive to the environment, occupational health and safety and quality standards.
- Providing motivation for optimum efficiency
- To create an expert profile in the profession, highly motivated, socially competent, open to change and creating added value.

Based on these basic principles, Eti Alüminyum A.Ş. To improve the human resources, to manage, direct and to create family awareness by keeping the morale and motivation at the highest level in all situations, to support the market by creating trained workforce potential by giving internship opportunities to its employees and students through practices and vocational trainings that increase motivation.

Every year, trainees are regularly recruited from vocational high schools in the district of Seydişehir in Konya, where Eti Alüminyum A.Ş. operates, and priority is given to those who have previously completed their internship at the institution. In addition, students of the Ahmet Cengiz Engineering Faculty are provided with the opportunity to do their internship at the facility and university-industry cooperation is made when necessary.

WE ARE REACHING OUR OBJECTIVES THROUGH OUR EMPLOYEES WHO ARE NOT ONLY EXPERT IN THEIR PROFESSION, WITH HIGHEST MOTIVATION BUT ALSO HAVE SOCIAL COMPETENCE, AND ARE OPEN TO CHANGE AND CREATE ADDED VALUE.



ETİ ALÜMİNYUM A.Ş. EMPLOYEE PROFILE

YEARS	ELEMENTARY SCHOOL	SECONDARY SCHOOL	HIGH SCHOOLS AND THEIR EQUIVALENTS	INDUSTRIAL VOCATIONAL HIGH SCHOOL	OTHER VOCATIONAL HIGH SCHOOLS	ASSOCIATE DEGREE	UNDERGRADUATE	POSTGRADUATE/ DOCTORATE	TOTAL
2016	195	97	127	510	83	157	121	12	1302
2017	201	90	154	581	91	213	129	16	1475
2018	193	89	156	605	97	228	135	18	1521
2019	188	89	156	606	100	238	136	18	1531

As of 31.12.2018	Employee/ Labor Staff		Administra- tive Staff		Engineer		Total		Overall Total	White Collar	Blue Collar
	F	M	F	M	F	M	F	M			
ANTALYA	1	11	0	1	0	0	1	12	13	132	1389
OYMAPINAR	0	46	0	1	0	2	0	49	49		
SEYDİŞEHİR	11	1357	1	25	9	56	56	1438	1459		
TOTAL	12	1414	1	27	9	58	58	1499	1521	1521	
OREIGN STAFF	2	7	0	0	0	0	0	7	9		9

AGE DISTRIBUTION AS OF 21.12.2019	NUMBER OF EMPLOYEES
BETWEEN 20-25	154
BETWEEN 26-30	238
BETWEEN 31-35	257
BETWEEN 36-40	416
BETWEEN 41-45	307
BETWEEN 46-50	112
BETWEEN 51-55	16
BETWEEN 56-60	9
BETWEEN 61-69	12
TOTAL NUMBER OF EMPLOYEES	1521

EMPLOYEE AVERAGE AGE IN 2018	37	EMPLOYEE TURNOVER IN 2017	6,29
EMPLOYEE AVERAGE AGE IN 2017	36	EMPLOYEE TURNOVER IN 2018	3,25
EMPLOYEE AVERAGE AGE IN 2016	37		

ETİ ALÜMİNYUM A.Ş. EMPLOYEES

Work Standards

The Group, which was established as a family company and includes members of the Cengiz Family in its management levels; With its professional managers, each department-man expert and experienced human resources, it achieves sustainable success in its projects. Eti Alüminyum A.Ş., a Cengiz Holding company, works with the same commitment and discipline from all employees on the field to the top level.

The organization of Cengiz Holding has a transparent structure in which all units are aware of the processes from top management to the base. Believing that its most important capital is human resources, Eti Alüminyum A.Ş.'s human resources policy; is based on creating an expert profile in the profession, highly motivated, socially competent, producing added value, managing, directing and developing human resources correctly. In this framework, the main human resources policies of the Group are Eti Alüminyum A.Ş. It is also adopted by:

- To provide employment for the right people in the right positions,
- To evaluate the human resources within the Group for new positions,
- To ensure that employees take duties in accordance with their knowledge and abilities,
- To keep the morale and motivation of employees at all levels at the highest level, to create family awareness,
- To create a healthy, safe and peaceful working environment in terms of worker health and safety,
- Determining training needs for employees, preparing and implementing training programs,

- To evaluate and reward employee performances according to objective criteria,
- To offer internship opportunities to university students,
- To provide an open communication environment,
- To protect and improve all personal rights of the personnel.

Subject to the Labor Law No. 4857, Social Insurance and General Health Insurance Law No. 5510 and T.İ.S., fair working standards are provided to the employees within the framework of their working hours, working conditions and legal rights, taking into account their legal rights and freedoms.

Within the framework of legal legislation, it is not possible to start work without giving occupational health and safety training to new recruits. These trainings continue periodically. In addition, on-the-job training is provided in the units where the employees work. Occupational health and safety environment measurements (dust, noise, chemicals, thermal comfort, lighting, etc.) are made periodically in the work areas and the detected non-conformities are eliminated in a very short time.

Social Security and Social opportunities

Eti Alüminyum A.Ş. grants its employees' annual leaves as specified in the law, taking into account the progress payments. In addition, in case of overtime, overtime wages that the staff deserve are given and / or used as a leave at appropriate times. There is no timely, complete notification of social security premium payments and no premium debts to the Social Security Institution.T.İ.S. which is being implemented in our company As required, our staff enjoy different social rights and benefits.



TRAININGS

Trainings in 2018

TRAINING NAME	TRAINING CATEGORY	TRAINING TIME (PERSON X HOUR)
ADR TRAINING	INCREASING ENVIRONMENTAL AWARENESS	181
ENVIRONMENTAL RESPONSIBLE		130
ENVIRONMENTAL AND WASTE MANAGEMENT SYSTEM		885
ON-THE-JOB TALKS (ENVIRONMENT)		12.049
EKAT 380 Kv TRAINING	ENERGY TRAINING	2.766
ON-THE-JOB TALKS (ENERGY)		142
HYGIENE TRAINING (FOOD & WATER SECTOR)	INCREASING HEALTH AWARENESS	80
HYGIENE, FIRST AID, OCCUPATIONAL DISEASES AND PROTECTION, PSYCHOSOCIAL RISK FACTORS		5.560
FIRST AID TRAINING		912
ON-THE-JOB TALKS (ISG)	WORK SAFETY TRAINING	13.223
WORK SAFETY EDUCATION		1.166
FIRE TRAINING		780
CHEMICAL RISKS AND SAFETY MEASURES		5.772
WORK MACHINE TRAINING	WORK EQUIPMENT OPERATOR	30.839
SELF-IMPROVEMENT	VOCATIONAL TRAINING	1.140
VOCATIONAL TRAINING		2.696
VOCATIONAL QUALIFICATION	MANAGEMENT SYSTEMS TRAINING	2.195
MANAGEMENT SYSTEMS AND POLICY		1.337
OVERALL TOTAL		81.853

Trainings in 2019

IN 2019, 69,000 HOURS OF TRAINING WAS GIVEN TO ALL OUR EMPLOYEES AS 42 HOURS PER PERSON IN AVERAGE, AND MAXIMUM ATTENTION WAS PAID TO REALIZE THE 70% OF THE PLANNED TRAININGS.

Purpose of Trainings

Organizing training services to be carried out in-house and outside the company in order to increase the quality of workforce and to provide continuous training of the personnel in every level of the enterprise, in accordance with the developing and changing conditions as a requirement of Quality, Environment, OHS, Customer Satisfaction and Energy Management Systems, To create a system for creating conditions, keeping training records and evaluating training results.

Practices

The way of intervention of people at the scene of incidents in the incident and other work accidents that are likely to occur due to the fact that the field of activity of our business is mineral and mineral compounds and that chemical materials such as electrical energy, corrosive, flammable and explosive are used in order to obtain workforce in this field. In order to learn and apply what needs to be done, FIRE SEARCH AND RESCUE DISCHARGE AND FIRST AID trainings are given practically.

Arranging training services within the company and outside the company, creating the necessary conditions, training to increase the quality of the workforce and to provide continuous training of the personnel in every level of the business, in accordance with the developing and changing conditions as a requirement of Quality, Environment, OHS, Customer Satisfaction and Energy Management Systems. Continuous internal or external trainings are planned to create a system for keeping records and evaluating training results.

The trainings that can be collected under the headings such as In-Company, Out-of-Company, On-the-Job, Orientation Training include company employees and internship students. Of these, internal and external trainings are in the continuing education group. These trainings are technical trainings that will increase Occupational Health and Safety, Waste management and Environmental Training, Management Systems and Policy training, Customer Satisfaction Training, Professional competence, knowledge and skills.

On-the-job and Orientation trainings, new recruitment, promotion or job change, etc. This is the training given to highlight the elements of efficiency, efficiency and quality in their work so that a staff appointed for such reasons can adapt to the work environment in a short time.

In addition, the staff is sent to various fairs and abroad trainings, thereby increasing their knowledge and skills in professional matters. Training needs of the personnel are notified to the Human Resources in writing. The trainings that are approved are given to the staff on a date deemed appropriate by the unit and the trainer and recorded. After the training is completed, after the oral and written exams to measure the Training Effectiveness, a Training Participation Certificate is issued if deemed necessary. Training participation status is determined by the training polling form after the training and reported to the management systems department.

Employee Satisfaction

Eti Alüminyum has provided training to its staff on where and how to make their complaints. Complaints and suggestion boxes are placed in places where employees can see (dining halls, bathrooms)

Employee satisfaction surveys and internal customer satisfaction surveys are held within the company at regular intervals, with the help of these surveys, the expectations and satisfaction expectations and demands of the employees from the company-subordinates and superiors are determined, and the business relationship that continues continuously between the units is healthier. and quality.

These survey results are reported in reports and shared with managers in review meetings.

OCCUPATIONAL HEALTH AND SAFETY

Audits According to Legal Legislation

Continuous control and education is the key to creating a healthy and safe work environment. For this reason, occupational safety specialists at Eti Aluminum periodically inspect the business periodically within the framework of legal legislation. Non-conformities detected and measures to be taken after the audit are reported to the senior management and monitored.

Within the framework of TS ISO 45001 occupational health and safety management system, internal audits are carried out within the scope of a plan and regulatory and preventive actions are initiated regarding the detected nonconformities. External audits are carried out by TSE every year. The transition of the OHSAS 18001 ISG Management System Certificate received in 2010 to the TS ISO 45001 ISG Management Certificate was successfully completed in 2019. Eti Aluminum was inspected by the Labor Inspectors of the Ministry of Labor and Social Security in December 2015, and the nonconformities detected were eliminated in February 2016 control audit.

Occupational safety experts and workplace physicians provided 6,928 man / hour occupational safety to 1760 employees and 5,560 man / hour basic occupational health training to 1390 employees in 2018. 12 occupational health and safety training notes were prepared and sent to the employees periodically every month and they were provided with training. These trainings continue periodically.

Risk analysis

As a precaution to reduce occupational accidents and occupational diseases to zero, Eti Aluminum performed its first risk analysis in 2009. These risk analyzes are periodically updated within the framework of legal legislation. After these studies, a fatal work accident has not occurred since 2010. In the year-end management review meetings, all occupational health and safety studies carried out for one year are evaluated and continuous improvements are made as a result of the decisions made by the senior management for the next year.

Occupational Health Safety

An emergency action plan has been created in which actions, methods and responsible people are determined to be prepared in advance for potential and unexpected situations that may affect the environment and human health and to protect their safety, prevent loss of property and information, and minimize the risks that may arise. Studies and measures taken in this area are periodically updated within the framework of legal regulations. 22 emergency teams, consisting of fire, search-rescue-evacuation, first aid and group supervisors, have been formed within the framework of the plan to respond effectively to emergencies. The training of these teams is received from AFAD (Disaster and Emergency Management Authority) periodically every year. Our emergency drills are held periodically every year and an evaluation report is prepared at the end of the drills.

Eti Alüminyum adopts to provide a healthy and safe working environment as its primary responsibility to its employees. Eti Aluminum (ISG) policy, Eti Aluminum 221 Occupational Health and Safety Internal Regulation, TS ISO 45001 Occupational Health and Safety Stand and all work processes are binding for employees in order to fulfill this responsibility. .

Strategic orientations regarding principles and practices in OHS policy are determined by senior management. These trends are transformed into field applications by ISG unit managers and experts working in the facilities and the results obtained are followed. However, when it comes to human life, every employee is responsible for every employee. As part of this responsibility sharing, Eti Alüminyum has an Occupational Health and Safety Board. Not only ISG experts and relevant managers, but also employee representatives are included in these boards where the ISG studies are discussed and make binding decisions every month. Thus, information and opinions of all employees are evaluated in decisions regarding OHS management. As of 2019, 5 employee representatives and 58 occupational safety officers work at Eti Alüminyum.

**THE MOST VALUABLE ORE FOR ETİ
ALUMINUM IS HUMAN OWN.
EMPLOYEE HEALTH AND ENVIRON-
MENTAL PROTECTION ALL AS AN
INSTITUTION
IT IS THE CRITICAL ISSUES ON OUR
ACTIVITIES, RELEASED WITH
SENSITIVITY**



ENVIRONMENT

The main purpose of Eti Alüminyum on the environment; To make investments for a clean and sustainable environment and energy future, to minimize possible risks by considering the environmental impacts of its activities, and to use natural resources in the most efficient way thanks to high-efficiency technological applications and to ensure zero waste generation.

Quality, Environment and OHS performance at Eti Aluminum is carried out by the Management Systems and Survey Control Directorate affiliated to the General Directorate. In this context, all processes are reviewed once a year. Integrated Management Systems In line with the internal audit plan, it is audited by employees holding an internal auditor certificate. The results of these audits are evaluated in management review meetings and shared with all our employees.

Effective Management and Control on Environmental Impact

Eti Alüminyum A.Ş. carefully manages the effects of its activities on the environment. In order to measure and mitigate its environmental impacts, Eti Alüminyum A.Ş., which has passed the ISO 14001 Environmental Management System that was documented in 2009, follows its obligations regarding environmental legislation and regulations. This unit, which is responsible for the facilities to operate in compliance with environmental legislation, also provides regular training to the staff. All Eti Alüminyum A.Ş. for the identification of environmental impacts during the activities and their reduction. units have equal responsibility. Continuous Audit of Compliance Level Eti Alüminyum A.Ş. periodically evaluates the compliance level of its activities with the legal obligations and requirements such as the conditions of the creditors. These evaluations:

- Within the scope of the Integrated Management System, it is carried out both by internal audits and by the external organization, in accordance with the Environmental Audit Regulation, with the annual audits performed by the relevant institution (planned and combined audits) and environmental internal audits conducted in all fields by the Environmental Management Unit. While the follow-up of the detected nonconformities is carried out with corrective and preventive activities regarding the legislation and standards, it is recorded with the Environmental Internal Audit Reports and Monthly Evaluation Reports prepared in the format of the Ministry of Environment and Urbanization within the scope of the regulation. Thus, actions related to compliance with environmental legislation and improvements are followed.

Waste Management

Eti Alüminyum A.Ş. It continues its works by taking the necessary precautions in accordance with the Environmental Law and the Ministry of Environment and Urbanization regulations regarding waste management with the aim of preventing environmental pollution, protecting natural resources and Zero Waste. It ensures the disposal of solid wastes released during the activities on the basis of the separate collection principle at the source, with the minimum amount of waste.

Discharge of wastewater and emissions are carried out in accordance with relevant laws. The aim of the Waste Management is supported by effective projects and it is aimed to continuously improve the knowledge and awareness of the employees. Accordingly, environmental trainings on various subjects are carried out in the fields and training halls on Environmental Legislation and Waste Management.

Waste management is carried out in the field and offices in accordance with the Waste Management Procedure in line with the waste management plan. Within the scope of this procedure, waste records are filled by environmental officers on site, and they are transmitted to the Environmental Management Unit within the knowledge of supervisors and waste tracking is carried out. These wastes are stored in the Temporary Waste Storage Area, which has been built in accordance with the Environmental Legislation and which has storage permits. When the wastes reach a certain amount, they are transported and disposed by vehicles and companies licensed by the Ministry of Environment and Urbanization.

Eti Alüminyum A.Ş. The waste that emerges as a raw material of another product that emerges after its activities is primarily provided for on-site recycling, and those without on-site recycling are sent to licensed recycling companies. Thus, contribution is made both to the national economy and to reducing the use of raw materials. Eti Alüminyum A.Ş. Environment and Urban Planning Ministry 2018-2023 Back-mi phased in public institutions all over Turkey at, terminals, educational institutions, shopping malls, hospitals, implementation of leisure and recreational facilities and large businesses is to support the targeted Zero Waste Project.

Eti Alüminyum A.Ş. It aims to reach the zero waste target by focusing on the following studies:

- Transition to processes / materials that will not generate waste where possible by focusing on processes based on wastes, ensuring that the principle of generating minimum waste is complied where possible,
- Identifying opportunities for reuse by adopting the principle of using waste as a resource,
- Reducing waste sent to regular storage, incineration, disposal,
- To investigate the possibility of separating and evaluating food wastes that can be used in domestic wastes,
- Increasing the separation of waste at the source even more,
- To focus on reducing raw material / material / chemical consumption,
- Continuing education and awareness activities, and disseminating zero waste awareness sustainably.



ENVIRONMENT

Eti Alüminyum A.Ş. in the waste field it has made to reduce the effects of its wastes on the environment.

- There is a separate compartment for each type of waste and it writes the name and waste code of the waste that can be stored in each compartment.
- Our wastes are collected in waste pails on reinforced concrete sealing floors.
- The area is closed and there is no contact with the external environment.
- Despite the possibility of leaking, spilling and splashing of our liquid wastes, there are pool-shaped grills in the compartments where these wastes are located.
- Emergency extinguishers and warning signs are available.

Solid Waste

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As of the end of 2018, the distribution of hazardous wastes generated and disposed of at the Eti Alüminyum A.Ş. is below given

Waste Code ⁽²⁾	Waste Code Description ⁽²⁾	Total Waste Amount ⁽²⁾ (kg/year)
10 03 04*	Primary Production (Aluminum) Slag	2.152.120
10 09 07*	Core and sand casting molds containing cast hazardous materials	300.000
10 09 09*	Flue gas powder containing dangerous substances	250
10 10 09*	Flue gas powder containing dangerous substances	250
13 01 13*	Other Hydraulic Oils	3.310
13 02 08*	Other Engine, Transmission And Lubricating Oils	1.000
15 01 10*	Packages containing residues of dangerous substances or dangerous, contaminated with substances	47.150
15 02 02*	Absorbents Contaminated with Hazardous Substances, Filter Materials(Oil Filters If Not Otherly Described), Cleaning Cloths, Protective Clothing	4.600
16 02 13*	Scrap equipment containing dangerous parts except those from 16 02 09 to 16 02 12	8950
16 06 01	Leaded Batteries	1.700
18 01 03*	Wastes whose collection and disposal are subject to special treatment in order to prevent infection	5
20 01 21*	Fluorescent lamps and other mercury-containing waste	360
20 01 26	Oils and fats other than those mentioned in 20 01 25	460
20 01 33*	Batteries and accumulators stated under 16 06 01, 16 06 02 or 16 06 03 and unclassified mixed batteries and accumulators containing these batteries	15

ENVIRONMENT

Waste Recycling and Disposal

- Eti Aluminum employees also show their environmental awareness in the collection of recyclable waste.
- Approximately 200,550 kg in facilities in 2018. waste paper, plastic etc. recycled mixed packaging material was collected and delivered to the recycling company.

Paper Consumption and Recycling

Eti Alüminyum A.Ş. importance is given to all administrative offices in the facility, Head Office offices and social facilities and used papers are separated at the source by the employees. The papers are collected by the licensed recycling company and recycled - recycled by the licensed company.

Biological Diversity

- The impacts of capacity increases in newly established or existing facilities in our country on the protected areas and biodiversity may be subject to Environmental Impact Assessment (EIA) in accordance with the Environmental Law. In such projects, which are subject to the EIA Regulation, all aspects of biological diversity are taken into consideration, measures to reduce possible negative impacts are identified and targets are set and activities are carried out.
- In accordance with the EIA Regulation, Eti Alüminyum A.Ş. Necessary measures are taken and legal processes are followed in both investment and operation phases in order to minimize the negative impact of their facilities on the natural ecosystem.
- Over 150 thousand trees were planted in our facility, including walnuts, poplar, black pine and acacia, in order to enrich the natural life in the regions where the facilities are located, to afforest the land and reduce the negative impact of greenhouse gases.

Greenhouse Gas Emissions

Eti Alüminyum A.Ş. Greenhouse gas emissions from its activities are calculated in accordance with the Regulation on the Monitoring of Greenhouse Gas Emissions issued by the Ministry of Environment and Urbanization and the Accreditation of Verifying Institutions and Accreditation of Verifying Institutions and verified by an independent accredited institution. In this context, Eti Alüminyum A.Ş. Greenhouse gas emissions from its activities:

- Greenhouse Gas Emission 517.588,00 t / CO2 equivalent in 2017
- Greenhouse gas emission in 2018 was calculated as 504.909.11 t / CO2 equivalent.
- The amount of 20.678.89 tons of CO2 in greenhouse gas emissions decreased in 2018.
- In addition to planting trees, mining and rehabilitation works are also carried out in the Mining Fields.
- Eti Alüminyum A.Ş. investment has been made for gas emission at its facilities and after the investment, 50% lower gas emission level has been achieved than specified in EU norms.
- Waste water discharged from the domestic wastewater treatment plant is used in green area irrigation by passing through a filter system again in summer.



ENVIRONMENT

In parallel with these verification studies, «Green Aluminum Production» studies have been started. The necessary action plans are determined in order to produce in accordance with the TS EN ISO 14064 standard and it is aimed to realize the “Green Aluminum Production” by completing the necessary works as soon as possible.

Examples of investments made for the environment

Eti Alüminyum A.Ş. An investment of 15 million dollars was made after the privatization for gas emissions of Seydişehir enterprises. Thanks to this investment, 50% lower gas emission level than the EU norms was reached. One of the works that draw attention about environmental awareness is Eti Alüminyum A.Ş. More than 150 thousand trees have been planted on a 2.5 million square meter area where Seydişehir enterprises are located, especially walnuts, poplar, black pine and acacia, which reduce the negative effect of greenhouse gases. Afforestation studies are still continuing in this region. Moreover, in order to prevent fuel-oil, which is used in the facilities, with a high sulfur and SO2 ratio of 6 and no more harm to the environment, a natural gas conversion was made with an investment of 5.5 million dollars.

Red Mud Dam Dewatering Project

The dewatering project is based on increasing the solid ratio of the red sludge thrown into the red sludge dam and reducing the amount of liquid. In accordance with this purpose;

- By reducing the amount of caustic (NaOH) and alumina (Al₂O₃) in the liquid phase in the red slurry, both the effect on the environment and the caustic recovery are aimed. All alternative dewatering techniques have been investigated in detail and an investment decision has been made for the 'Press Filter' where the highest efficiency is obtained. The project was completed on 23.08.2017 and put into operation. During the period from the day it was commissioned until October 2019, a total caustic gain of approximately 5500 tons and alumina gain was around 2700 tons. It is clearly seen that 2500-3000 tons of caustic recycling will be achieved annually as a result of the efficient use of the press filter.
- The used dam life has been increased since there is less liquid amount, that is, the dam volume is used more efficiently. The waste sludge was removed with 30% solids content before the press filter, and then it was increased to 70% stiffness. Reducing the amount of liquid phase in the waste contributes to prolonging the life of the dam. A significant reduction in the liquid phase amount of the waste sent to the dam was realized with the Press filter put into operation in August 2017. In other words, the humidity of the waste has been reduced from 70% to 30%. 105 tons of waste is sent to the dam, 100% capacity of which is 73 tons of liquid and 32 tons of solid. With the dewatering project, 47 tons of waste, 15 tons of liquid and 32 tons of solid, are sent. Consequently, a reduction of up to 55% in mass was achieved. Thus, the amount thrown into the dam has been reduced and the lifetime of the waste dam in use has been increased.

- Certain regions were tried to be kept moist by means of water and pipes taken from the dam. Thus, in the summer months, moistening process is applied more effectively and in a wider area through the sprinkler system to the regions drying in the long-term dam. Thus, the dusting problem that will occur on the dry surface of the dam is prevented. In addition, thanks to this method, the evaporation rate of the water in the dam has been increased and the water level has been reduced.
- As regards consumption of natural resources, the use and management of natural resources, which are gradually decreasing in the world, is increasing day by day. For this reason, as the amount of water consumed in our factory will decrease, saving on resource consumption is provided.
- By applying the sediment method, the red sludge will be better bedded in the basin, and with the decreasing liquid volume, hydraulic load to the dam embankments is reduced and possible leaks and leakages are prevented.
- The red mud to be thrown has started to be transported by trucks as it contains more solids. The old system is put into operation during the breakdown maintenance processes of the press filter and it is pumped and sent to the red mud dam we discharge.
- The cake-shaped mud obtained after the press filter is stored regularly with the systematic filling project implemented in the dam. prospectively tightening is done through construction machines, so preparation for the dam closure project is made.

EIA (Environmental Impact Assessment)

- A Project Introduction File was prepared for the production of fine Crystallized Hydrate at the Alumina Directorate and the EIA Not Required Certificate was obtained.

Environmental Permit and License Studies

- Eti Alüminyum A.Ş. All the plants belonging to Environment Permits and Licenses are available.
- Eti Alüminyum A.Ş. Recycling License for aluminum and metal scrap recovery at the plant was obtained.
- Eti Alüminyum A.Ş. Planned Inspections were carried out by the Ministry of Environment and Urbanization and provincial Directorate of Environment at the facility.

Communiqué on Continuous Emission Measurement Systems

- The continuity of data transfer to the Ministry of Environment and Urbanization of the 'Continuous Emission Measurement System' devices in the Coal Boiler Chimney and Natural Gas Boiler Chimney in the steam plant was ensured.
- The 'Continuous Emission Measurement System' (CEMS) devices have been installed in the newly established Lime Facility, and work is underway for data transfer to the Ministry of Environment and Urbanization.
- There are 'Continuous Emission Measurement Systems' for process control purposes in newly established processes with investments.
- Feasibility report was prepared for the process chimney with CEMS available in the newly established Lime Facility and approved by the authorized laboratory and the Provincial Directorate of Environment and Urbanization.
- KGS2, KGS3 and YGT measurements of our facilities, which are connected to seöS applications, were made.

Chemical Data Inventory System (BEKRA)

- Eti Alüminyum A.Ş. used for the plant, Mordas-Doğankuzu Mine Field and Bayavşar Coal Field, and the SEVESO-BEKRA entries, which are the chemical data inventory system of the Ministry of Environment and Urbanization, have been updated through the system.

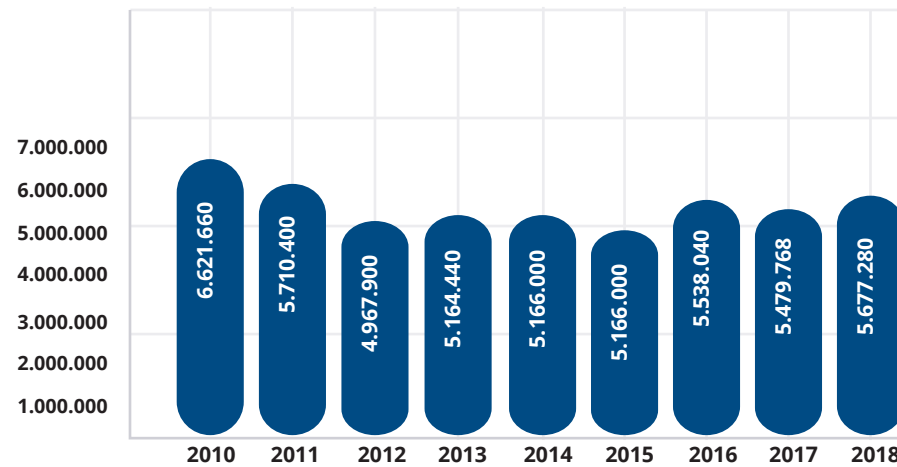
ETİ ALÜMİNYUM WHILE FOCUSING ON ACHIEVING ITS GOALS THE FIRST AND UNIQUE ONES, WITH THE STRENGTH IT GAINED FROM ITS DEEP-ROOTED HISTORY OF 43 YEARS, IT CONTINUES TO WORK WITH THE UNDERSTANDING OF CLEAN ENVIRONMENT AND IS COMMITTED TO IMPLEMENT THIS UNDERSTANDING CONTINUOUSLY

ENVIRONMENT AND ENERGY MANAGEMENT

Total Water Usage Amount by Eti Alüminyum

- The increase of water use in Eti Alüminyum A.Ş. in total is increasing due to new processes and buildings opened with new investments.

Water Usage Amount (m3)



- Domestic wastewater in Eti Alüminyum A.Ş. is treated and given to the receiving environment by respecting its discharge limits. In the summer months, wastewater discharged from the treatment is used in green area irrigation after filtration.

- The total purified water in 2018 is 288,720 m3, and the amount of treated water to be used in irrigation is 67,200 m3.

- Purified water discharged from the domestic wastewater treatment plant in accordance with the discharge limits is filtered for use in irrigation in summer, thereby saving natural resource use.

Increased amount of water for use in irrigation:

- 67,200 m3 in 2018
- 55,130 m3 in 2017
- 22,480 m3 in 2016

Energy Management

Audits According to Legal Legislation

- Within the framework of TS EN 150 50001 Energy management system, the units in our enterprise are constantly inspected within a plan and regulatory activities are initiated regarding the detected nonconformities.
- TSE conducts an external audit every year. In 2019, TS EN 150 50001: 2018 pass was made.

Audits According to Legal Legislation

Continuous training-awareness and control are the basis of creating a clean environment. For this reason, Eti Aluminum has carried out continuous environmental audits by the Environmental Management Unit officials within the framework of legal regulations, in the business, office and the entire field. Environmental unsuitable deficiencies and measures to be taken during the inspection are reported to the relevant department and the follow-up process is started to eliminate nonconformities.

Planned and unplanned inspections were carried out at our facility in 2016-2017-2018 by the Ministry of Environment and Urbanization and provincial Directorate of Environment and no incompatibility was detected.

Environmental Trainings

Awareness trainings given by our environmental engineers since 2016 have continued increasingly. It is ensured that the personnel working with training and awareness raising are more sensitive and conscious to the environment

Waste and Environmental Management System Training was provided for 126 people * hours in 2016, 504 people * hours in 2017, 12.779 people * hours in 2018

Risk Analysis

As a precaution to minimize environmental accidents, environmental dimensions were examined at Eti Alüminyum A.Ş., and risk and opportunity analyzes were conducted. Risk and opportunity analyzes are periodically updated within the framework of legal regulations. As a result of continuous training and awareness raising of its personnel, an environmental accident has not occurred until this time. During the "Management Review" meetings held every year, all environmental studies carried out for one year are evaluated and targets for the next year are determined. Continuous improvement is made in line with the decisions made by the senior management.

Trainings

Trainings are given to all personnel, especially the unit energy officers, with the aim of raising awareness on energy efficiency and creating an awareness of energy saving by our management system representative and energy managers.

Risk Analysis

In order to increase energy efficiency and minimize energy losses within the factory area, the first risk analysis was conducted in 2019. During the year-end management review meetings, all energy efficiency studies performed for one year are evaluated and continuous improvements are made as a result of the decisions made by the senior management for the next year.

Energy Team

The Energy Team, which was established in 2017 with the circular letter no YS-2017-15, consists of a chairman and secretary, and members updated as needed, where energy efficiency projects are evaluated, the decision is taken to decide on new projects, the energy survey results are evaluated and the operation of energy management is discussed. The energy team meets every 3 months throughout the year to ensure that energy management is maintained effectively

Energy saving and efficiency enhancing projects (EEP)

Energy efficiency projects are followed with 12 ongoing projects with different budgets and sizes, 6 with new projects in 2018 and 5 with new projects. In 2016, 2 VAP projects were applied for the Replacement of Existing Lighting Fixtures in the 1st and 2nd Parts with LED Luminaires and the Replacement of the Current Lighting Fixtures in the 3rd, 4th and 5th Parts with LED Luminaires and completed in 2017.

Energy Studies

The first energy study in our factory was carried out in 2018 at the Auxiliary Operations Directorate and the Foundry Directorate, and continued in 2019 at the Machinery Equipment Factory. All remaining units will be completed by the end of 2019. These studies are conducted once every 4 years within the scope of legal obligation.

Energy studies are carried out through companies licensed by the Ministry of Energy. As a result of the study, a kind of energy x-ray is taken through an external eye of the field and as a result, the points that will provide energy efficiency are determined.

Energy efficiency projects and training topics are planned by evaluating the survey reports.

STAKEHOLDER

Adopting the fundamental value of "beneficial to the society" of Cengiz Family extending from generation to generation, Eti Alüminyum A.Ş. It works with a sense of social responsibility and to contribute to the society. These studies take shape in many areas, from environmental regulation to student support, from heating assistance to cooperation with non-governmental organizations. The prominent studies made to contribute to the society are as follows:

- The construction and environmental planning of Ahmet Cengiz Engineering Faculty, which has 9 thousand square meters of indoor and 27 thousand square meters of open space, in the district center of Seydişehir, which is connected to Konya Necmettin Erbakan University, and following the existing high school land,

- Acting together with the Municipality of Seydişehir within the period, donating 5 thousand square meters of land in the neighborhood of Alaylar 1 neighborhood and adjacent to the social facilities of our company by our company, then the construction of a semi-olympic swimming pool open to the public on this land, and making it available to the people of Seydişehir, In addition, in order to contribute to the cultural and social development of the people of Seydişehir in cooperation with our company and the municipality, the construction of the district cultural palace by our company has been completed and delivered to the Mayor.

- Covering the district public market, the Municipality was supported in terms of covering material and workmanship for the construction of an exemplary public market, and the construction was completed and offered to the public.
- Cooperation with the Seydişehir municipality of the Beyşehir district connecting road, which passes in front of the Seydişehir district and the Eti Aluminum factory, is to provide assistance in terms of material and workmanship in the construction of the road's infrastructure.

- In the sense of socially improving the social development of the people of Seydişehir and the surrounding neighborhoods, towns and villages, the construction or repair activities of public places such as schools, Qur'an courses, mosques continue to be carried out by our company. As an example, Aliminyum Elementary School, which has been continuing its education and training in Alaylar 1 District recently, has been redesigned in line with the demand, and its renovation as a school service building, classrooms and educational materials; The construction of the education center in Hacı Seyitali Mahallesi location was completed and delivered to the Directorate of National Education and the price was covered by our company. The Hacı Şaban CENGİZ Mosque, which has a capacity of 3000 people, which is needed by the factory employees, is built and opened to the public for worship.

- Financial support to our Red Crescent Branch Presidency on 15.02.2019
- 2000 forms were distributed to the students studying in schools under the social responsibility project.

- Manager, engineer, single workers, subcontractor workers in the guest-houses, foreign personnel coming for investment, newly appointed officers in our district, athletes coming to our district; It was carried out smoothly by providing food, drinking and shelter services and will continue to be carried out in 2020.

- During Ramadan, iftar dinner was given to our staff, official protocol and families of martyrs and veterans separately, and it is planned to be given in 2020.

- 2000 packages of food aid were provided to needy citizens residing in Seydişehir and Manavgat districts during the month of Ramadan.
- To 100 Syrian families coming to the town of Seydişehir as refugees; goods, food aid were provided and the clothing needs of 193 children were met and an improvement was achieved in their social life.

- Syrian refugees, in particular; A total of 579,789 kg of solid fuel (wood) was distributed to the factory personnel, Seydisehir citizens, schools affiliated to the Ministry of National Education and Religious Affairs, and the quran courses were provided for winter fuel needs.

- A scholarship was given to 5 people from the factory employees and children of citizens residing in our district, and 75 more scholarships were planned in 2016. In 2017-2018, 107 students were given scholarships and this number continues to increase every year.

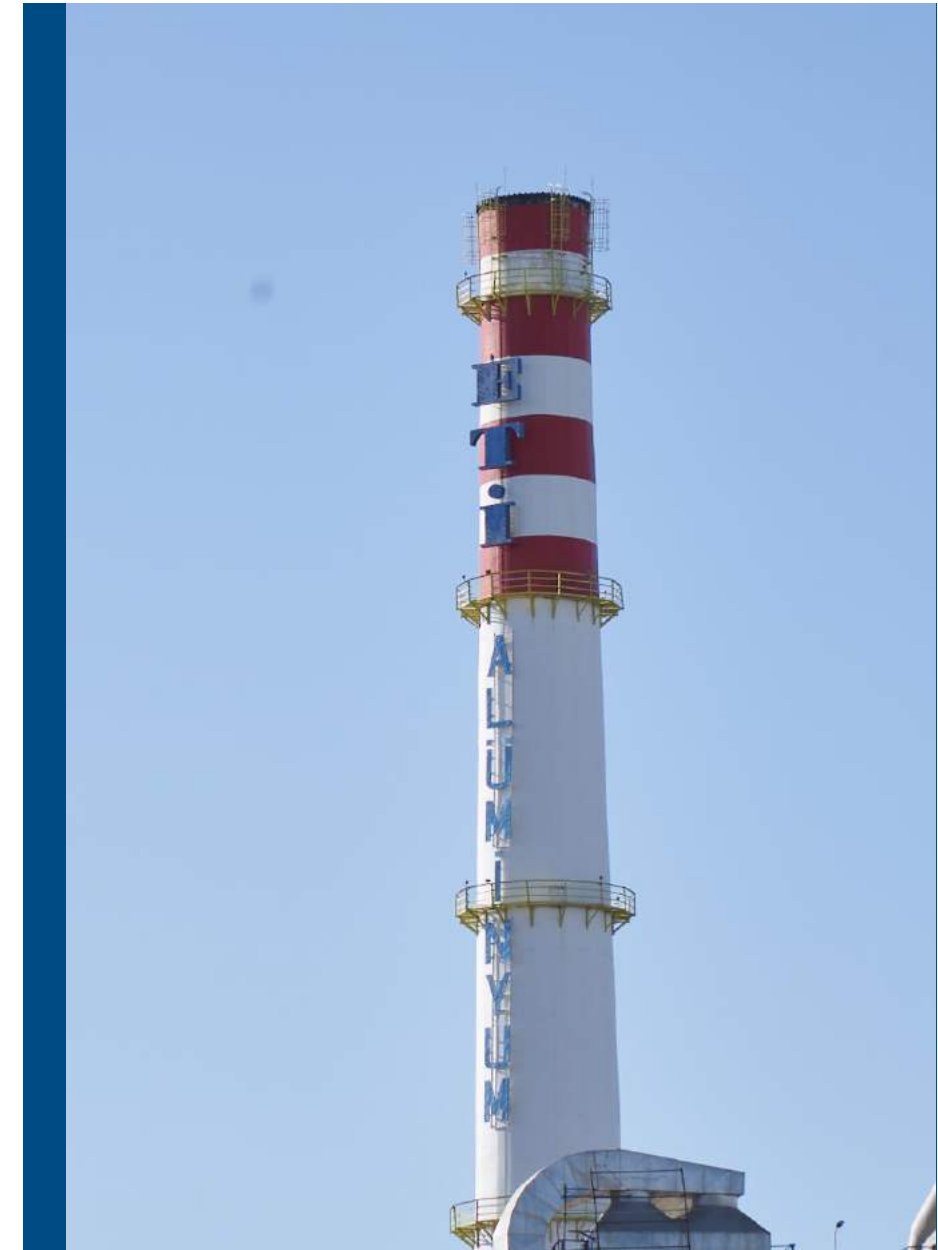
- Meetings or other initiatives with public representatives or public organizations during the reporting period, and the information and assistance regarding the dialogue and communication between the muhtars of the Seydişehir district and the Adile Baysal Culture House in June 2015 A meeting was held to ensure

Information given to the local community regarding the environment, social or safety during the reporting period;

- Small daily applications are solved immediately by contacting by phone. communication is made by phone with the people of the neighborhood instantly by phone. If necessary, one to one (face to face) is negotiated. Mukhtars and public relations located around the factory continue at a good level. Neighborhood muhtars and people from the public can easily reach our Factory over the phone and forward their applications, and these applications are evaluated and resolved.

Working with Civil Society Organizations

- Regarding the innovations, improvements and investments made in our factory of civil society organizations, meetings were held in previous years with the participation of the representatives of the civil society organizations and the public, this year (September 19), on the day of the Veterans, Martyr families, Veterans and their families, representatives of non-governmental organizations, muhtars, A dinner organization was held, where the mayor and district district governor were present, and the works and developments made by presenting a modernization presentation in our factory were also shared with various segments of our society.



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