

**Updated
Environmental Statement**

2 0 1 6

of

BEFESA

Befesa Salzschlacke GmbH

on behalf of

**Hanover Site
Am Brinker Hafen 6
30179 Hannover**

Phone: +49(0)5 11 / 63 03-0

**Lünen Site
Brunnenstraße 138
44536 Lünen**

Phone: +49(0)23 06 / 102-0

Contents

Preface	page	3
We and the Environment	page	4
The Sites of Befesa Salzschlacke GmbH	page	5
Environmental Policy	page	9
Integrated Environment Management System	page	12
Products of Befesa Salzschlacke GmbH	page	16
Environmental Aspects	page	20
Water Supply and Water Consumption	page	26
Energy Supply and Energy Consumption, Energy Efficiency	page	29
Wastes and Residues	page	34
Protection of Water/ Soil Protection	page	35
Transports and Traffic	page	36
Occupational Safety	page	36
Input/ Output Data, Materials Efficiency	page	37
IED Inspections	page	42
Environmental Targets and Programme	page	43
Statement of Environmental Experts/ Declaration of Validity	page	45

Preface

By means of this Environmental Statement we are informing the public about the current environmental situation of Befesa Salzschlacke GmbH, about pollution control measures already implemented based on the certification pursuant to DIN EN ISO 14001 and about the targets designed to reduce the impact of our activities on the environment.

This Environmental Statement has been prepared in accordance with the Eco-Management and Audit Scheme / EMAS III Regulation (EC) No. 1221/2009.

It has been drafted for the interested community and is intended to provide information in a concise and comprehensible form.

If you have suggestions and questions, please turn to:

Contacts:

Befesa Hanover

Ms Laura Ribera (Plant Manager)

Phone: +49(0)5 11 / 63 03-133

Fax: +49(0)5 11 / 63 03-177

Email: laura.ribera@befesa.com

Befesa Luenen

Mr Jürgen Steyer (Plant Manager)

Phone: +49(0) 23 06 / 102-114

Fax: +49(0) 23 06 / 102-199

Email: juergen.steyer@befesa.com

We and the Environment

Befesa Salzschlacke GmbH maintains an Integrated Management System which has been certified in accordance with DIN EN ISO 9001:2008, DIN EN ISO 14001:2004, DIN EN ISO 14064-1:2006 and OHSAS 18001:2007. The company is actively committed to the protection of the environment by converting the salt slag occurring as waste in connection with the production of secondary aluminium into marketable products. Befesa Salzschlacke GmbH pursues the goal to keep the level of the environmental impact of the production processes at its Hanover and Luenen Sites as low as possible or, preferably, to avoid it entirely. Moreover, we are making endeavours to confine the use of environmentally relevant ancillary agents to an unavoidable minimum. This is the only way to ensure sustainable development.

➤ Responsibility

We take responsibility for all our products, services and other business activities. We are aware of the importance of pollution control and are making the highest demands in this area.

➤ Openness

We foster the open dialogue on the topics of environmental protection and are anxious to arouse and enhance the awareness of our employees, suppliers and customers.

The Sites of Befesa Salzschlacke GmbH

The Hanover Site

The establishment of Befesa Salzschlacke GmbH in Hanover is located on the premises of a former forwarding company in Hannover-Langenhagen with the following mail address:

Befesa Salzschlacke GmbH

Niederlassung Hannover

Am Brinker Hafen 6

30179 Hannover

The site of the former Hanse GmbH or, respectively, Alsa GmbH and present Hanover Site has been active at Brinker Hafen since 1991. On an area of about 22,500 m² (thereof about 19,500 m² sealed up) designated as an industrial zone, a company-owned boiler house (natural gas < 10 MW) is operated. The drinking water required for the site is supplied by the City of Hanover whilst treated canal water is used for the plant.

The buildings were constructed new in 1991 and have been provided with their own access route.

In the land-use plan, the premises and their surroundings have been designated as industrial zone. The nearest open waterbody is Mittellandkanal at a distance of about 300 m in southern direction. The nearest residential area is located beyond the canal at a distance of about 500 m from the works boundaries.

Site Development

At present about 69 employees work on the site. The works buildings and the administrative building include a carpark for vehicles of the employees along with various garage facilities. In addition, the premises accommodate a workshop with depot. The incoming and outgoing quantities are weighed by means of the works' own truck weighing machine.

The following plant units are part of the works:

- Dry section with storage, grinding and screening facilities
- Wet section with dissolving unit, offgas treatment, alumina preparation and evaporative crystallization plant
- Storage of salt slag and products
- Steam boiler system

Jan 1989	Permit for operating the salt slag recycling plant
Jul 1990	Construction of the new crushing, grinding and screening plant
Apr 1997	Pilot operation of the new Serox storage facility
May 1998	Regular operation of the Serox storage facility
Oct 1998	Merger of Hannoversche Salzschlacke-Entsorgungsgesellschaft (Hanse) with Segl GmbH to establish Alsa GmbH
Jan 2009	Insolvency of the then parent company Agor AG
Jun 2009	Takeover of the activities by Befesa S.A.
Jun 2013	Sale of Befesa S.A. by Abengoa to Triton

The Luenen Site

The Luenen establishment of Befesa Salzschlacke GmbH is located on the premises of Remondis - Lippewerk (formerly Vereinigte Aluminiumwerke AG - Lippewerk) in Luenen with the following mail address:

Befesa Salzschlacke GmbH

Niederlassung Lünen

Brunnenstraße 138

44536 Lünen

The works is located in the sub-district of Lippholthausen, sector 3, plot 125. The premises were previously used by Vereinigte Aluminiumwerke. At that time, the buildings accommodated electrolytic plants. The Luenen establishment of Befesa Salzschlacke GmbH is making use of various infrastructural services of Remondis-Lippewerk. Access is controlled via the general gate. Transport operations are recorded at the gate, the trucks for delivery and collection are weighed on the Remondis scales. The plants and buildings of Befesa Salzschlacke GmbH are supplied with energy, water, steam, compressed air and drainage facilities by Remondis. The buildings and premises are partly owned by Befesa Salzschlacke GmbH and have partly been leased.

In the land-use plan, the premises are designated as industrial zone. In northern direction the Lippe river as an open watercourse is located at a distance of about 500 m from Befesa's production plants. In southern direction, the Datteln-Hamm-Kanal flows at a distance of about 1,000 m.

Site Development

Currently, about 70 employees (including permanently present subcontractors) work on the site. The works operating buildings and the administrative building include a carpark for vehicles of the employees and various garage facilities. In addition, the premises accommodate a workshop with depot. The incoming and outgoing quantities are weighed on the Remondis truck weighing machine.

The following plant units are part of the works:

- Dry section with storage, grinding and screening facilities
- Wet section with dissolving station, offgas treatment, alumina preparation and evaporative crystallization unit
- Serox product storage in Furnace Building I
- Storage of salt slag, smelting salt and Serox in Furnace Building III

Apr 1986	Start-up of Segl I
May 1988	Installation of pre-crusher and roller grate for pre-treatment
May 1989	Construction of the new salt slag storehouse
Apr 1991	Start-up of Segl II
Mar 1997	Modification of the plant permit to a recovery plant under no. 8.10 of 4 th BImSchV (plant regulation)
Oct 1998	Merger of Salzschlacke-Entsorgungsgesellschaft Lünen mbH (Segl) with Hannoversche Salzschlacke-Entsorgungsgesellschaft mbH (Hanse) to establish Aluminium-Salzschlacke Aufbereitungs-GmbH (Alsa)
Jun 1999	Start-up of the wet grinding unit
Jan 2009	Insolvency of the then parent company Agor AG
Jun 2009	Takeover of the activities by Befesa S.A.
Jun 2013	Sale of Befesa S.A. by Abengoa to Triton

Environmental Policy

Befesa Salzschlacke GmbH is actively committed to the protection of the environment. Its goal is to achieve the continuous improvement of pollution control besides the enhancement of quality, occupational safety, health protection and the economic efficiency of the business. The Company undertakes to comply with valid legislation and regulations which are in many areas complemented by voluntary performance.

As a leading company for the recycling of waste from the primary and secondary aluminium industries, Befesa Salt Slags with its activities strives for excellence through safe, efficient and effective management aiming at sustainable corporate development.

The Management of Befesa Salt Slags has recognized that the key success factor for its activity presupposes the satisfaction of all stakeholders (i.e. customers, suppliers, shareholders, direct and indirect staff, the social environment, etc.) and on these lines it pursues the policy described below which defines the corporate principles.

- We foster the sense of responsibility of all our employees and their contribution to the continuous improvement of our products and processes geared to the minimization of their impact on the environment and elimination of risks by creating the proper organizational structure which enables us to improve our performance, maximize participation and safeguard knowledge management in addition to creating safe and sound jobs.
- We identify and assess risks, define programmes and allocate resources with a view to eliminating or confining such risks. We ensure that all direct and indirect personnel are given the necessary information, instructions and trainings in order to enable them to do their job safely.
- We identify, investigate and remedy all accidents, incidents and near misses in cooperation with all parties involved (employees, contractors, line managers, process managers, etc. ...). The company pursues the goal to reduce accidents to zero.

- We enhance sustainable development by minimizing the amount of waste and keeping the air clean and we contribute to the saving of resources.
- We identify, investigate and remedy all major environmental accident hazards in cooperation with all stakeholders (employees, contractors, line managers, process managers, etc. ...). The company pursues the goal to reduce environmental accident hazards to zero.
- We provide comprehensive waste reuse services for the entire aluminium industry by applying the best available technologies, making available suitable resources in order to thus attain full satisfaction of our internal and external customers.
- To this end we provide our customers with quality products and consultancy services by continuous development of new applications.
- We identify, investigate and eliminate all and any deviations from quality and customer requests in cooperation with all stakeholders (employees, line managers, process managers, etc. ...). The company pursues the goal to reduce deviations to zero.
- We set and review our targets with a view to continuous improvement in the fields of health and occupational safety, the environment, quality and energy efficiency.
- We promote the procurement and use of energy-efficient products and services.
- We focus on energy efficiency in designing and modifying our processes.
- We ensure compliance with legal provisions and safeguard the fulfilment of any other commitments entered into by our company.

Befesa Salzschlacke GmbH

- We optimize all activities of the organization by controlling it through acknowledged documented processes, striving for continuous improvement, setting measurable targets and assessing periodically the results achieved.
- We create value for our shareholders in a reasonable and sustainable manner in order to secure the future of our company. We take advantage of our leading position to achieve the best possible results for the company.
- We develop effective channels of communication in order to maintain sustainable and stable long-standing relations with our employees, customers, suppliers and all stakeholders.

The Management of the Befesa Salt Slags Division will see to it that this policy is adhered to and lived and that all employees and subcontractors internalize and accept it. A copy of this corporate policy is distributed to all employees and explained to them directly. The policy will be made available to all interested parties on request.

Integrated Environment Management System

The integrated environment, quality and occupational safety management system of Befesa Salzschlacke GmbH determines the procedure to be adopted for the protection of the environment, for quality assurance and for ensuring occupational health and safety in all corporate areas, thus contributing to a harmonized understanding for all activities that are relevant for the environment, quality and safety in the company.

The integrated environment, quality and occupational safety management (IMS) describes the system and determines the measures required to ensure proper application, monitoring and documentation of the IMS.

It serves:

- to determine the environmental policy and install the management structure for implementing the environmental policy. This includes organizational elements such as the Environment Management System (EMS), the allocation of tasks and material resources to positions, the definition of responsibility and competencies, the regulation of information flows, the information of the employees and communications with the public,
- to measure and assess the environment-relevant impact,
- to monitor environment-relevant processes and initiate corrective action if required. This includes procedures designed to reduce the environmental impact, avoid and reuse wastes and to make careful use of raw materials and energy,
- to review the functional and performance capabilities of the structural and procedural organization and to assess whether environment-relevant rules are complied with and targets have been achieved.

Befesa Salzschlacke GmbH

Ongoing implementation of the Integrated Management System will ensure that environmental protection, quality and the working environment are improved continuously, that all customer demands, laws, legal remedies, regulations, requirements, standards and our own specifications are fulfilled in order to protect the people in the company, constantly minimize the impact on the environment and warrant long-standing business relations with our customers.

An essential prerequisite for achieving environmental protection targets is the organization of the protection of the environment within the corporation.

The Integrated Management System embraces all disciplines and areas pertaining to Befesa Salzschlacke GmbH.

Eco-Management audits and Internal Audits

EMAS, the Eco-Management and Audit Scheme, specifies that the company should be regularly submitted to an environmental audit. Such audits are planned and performed by the environment management officer, UMB. The items audited derive from the regulation and standard and focus on the areas of waste and disposal management, resource and safety management, training and PR. Statutory and internal regulations are considered additionally.

Within the scope of an existing audit plan, audits are performed for all areas at least once per year. Actions designed to improve environmental protection are taken up in an action plan based on the audit results. Completion periods and responsible parties are determined accordingly.

At our company, the following functionaries bear responsibility for environmental protection:

Befesa Salzschlacke GmbH

- Responsibility for the environment and quality policy, for creating the preconditions for their implementation and the integration of the employees into the environmental policy is incumbent on the Management.

- The Environment Management Officer for the Hanover and Luenen Sites is responsible and duly authorized for applying and maintaining the Environment Management System.

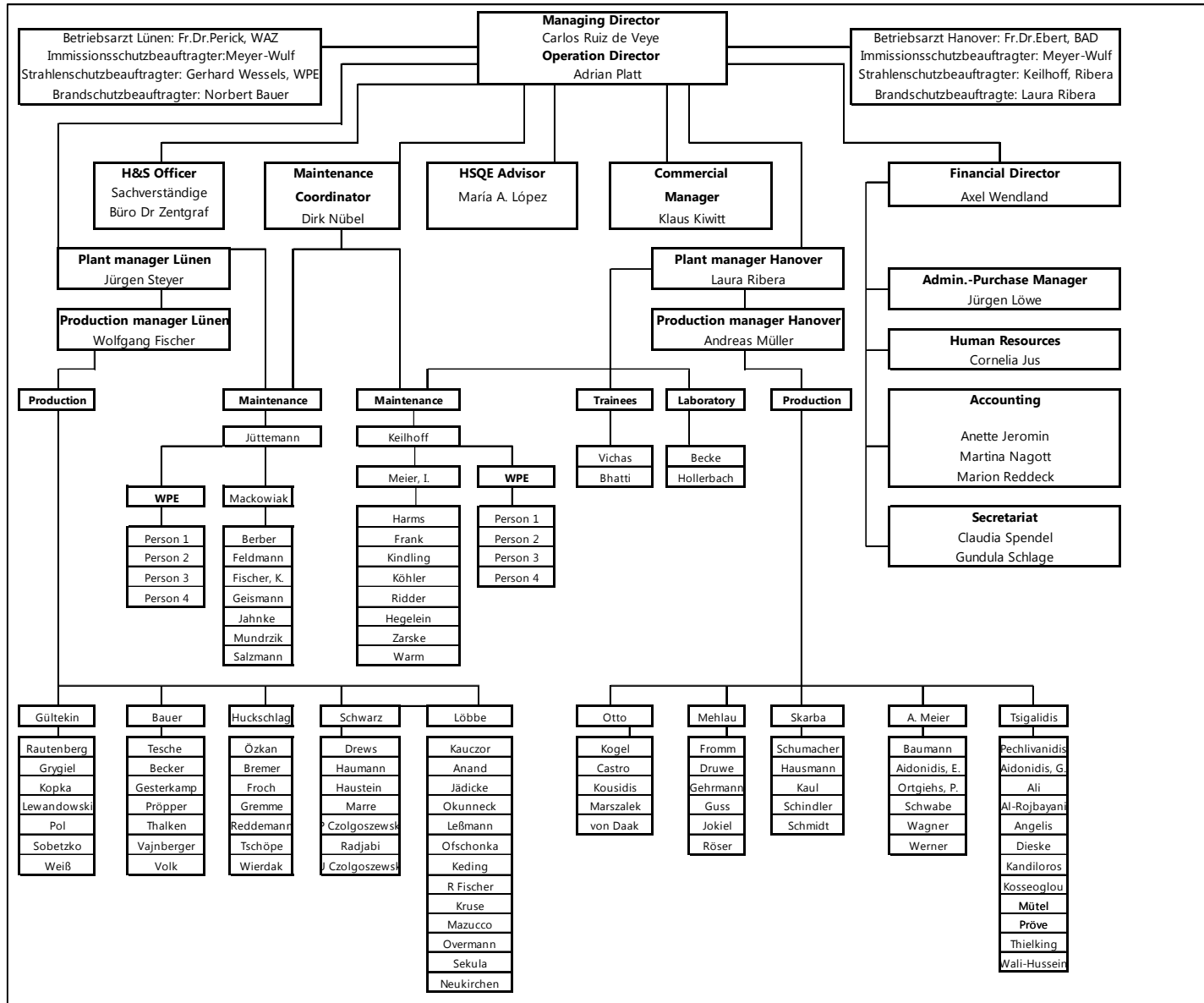
- The appointed environment managers for the sites are responsible for enforcing and managing the Integrated Management System locally.

- The plant delegates for pollution control, water protection and radiation protection bear responsibility for legal compliance at both Sites.

- An occupational health and safety specialist has been appointed with responsibility for both Sites.

- The production manager and shift foremen bear responsibility for the designated operation of the plant and for corrective action in the event of deviations.

- The head of purchasing is responsible to environmentally compatible procurement.



Products

of Befesa Salzschlacke GmbH

Impact of the Technological Processes on the Environment

The technological process has been designed such that an environment-impairing influence on the environmental components air, water and soil is virtually excluded.

Input materials and products

At the two sites of Befesa Salzschlacke GmbH, aluminium-containing salt slag and dross are recycled completely. Based on these input materials, four products are obtained. These are in detail:

- Aluminium granulate (input material for aluminium smelters)
- Resal smelting salt (input material for aluminium smelters)
- Serox (input material for the cement and mineral wool industries)
- Ammonium sulphate (input material in the fertilizer and chipboard industries)

For smelting salt, diverse potassium chloride concentrations have been produced in Luenen since 2002. In this connection, sodium chloride is marketed as de-icing salt.

The auxiliaries and utilities used are mainly sulphuric acid, hydrochloric acid and caustic soda solution.

Befesa Salzschlacke GmbH

Detailed lists have been compiled in the "Environmental Data" tables relating to the individual fiscal years.

The input materials are processed by applying a combined method including mechanical and chemo-physical treatment.

In the first treatment stage, after pre-crushing the salt slags are selectively comminuted and the product, aluminium granulate, is separated.

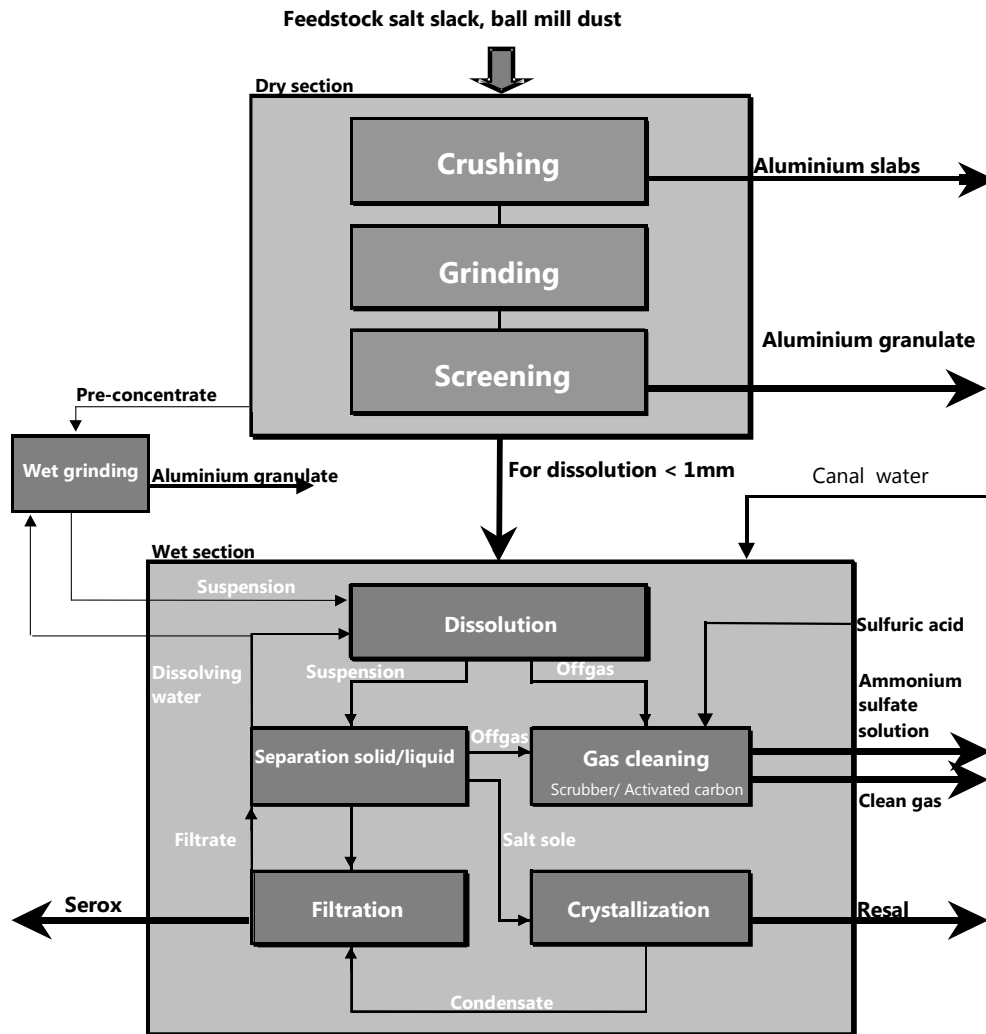
This is done in a mechanical preparation process. The aluminium granulate is sold to aluminium smelters.

The remaining material (salt and insoluble oxides) is treated further in downstream processes (dissolving and solid/liquid separation). The dissolved salts are recrystallized and represent the second product (Resal) of the process. The salt is reused in the aluminium smelters..

The insoluble oxidic components (Serox) are washed chloride-free and used in the cement industry and for the production of mineral wool.

The fourth product is ammonium sulphate. It is recovered from the NH₃-containing offgases of the process with the addition of sulphuric acid. At the Luenen site, the ammonium sulphate is recrystallized and sold as solid salt. At the Hanover site, the product is marketed as ammonium sulphate solution. The ammonium sulphate is employed in the fertilizer and chipboard industries.

Process Diagram Hanover

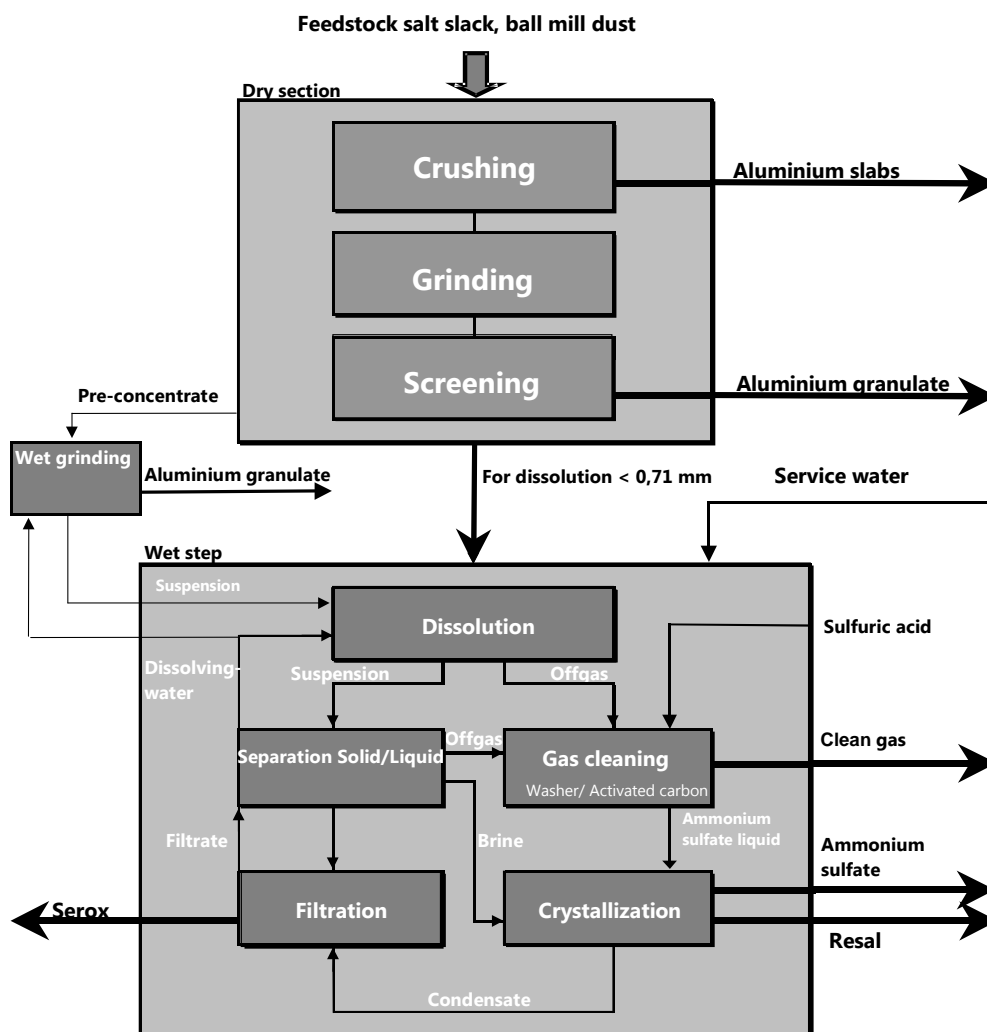


Feedstock: Salt slack and ball mill dust

Plant products::

1. Aluminium granulate/-slabs
2. Resal
3. Serox
4. Ammonium sulfate

Process Diagram Luenen



- Feedstock: Salt slack and ball mill dust
- Plant products:
1. Aluminium granulate/-slabs
 2. Resal
 3. Serox
 4. Ammonium sulfate

Environmental Aspects

Site Data

Biodiversity

Hanover Site:

Total operations area	25,380 m ²
thereof sealed or built-up areas	22,244 m ²

Luenen Site:

Total operations area	34,800 m ²
thereof sealed areas	8,000 m ²
thereof built-up areas	26,800 m ²

Emissions

Air Pollution / Odours

When treating the salt slags, dust (salt slag fines) and gases (hydrogen, methane, ammonia, phosphine, hydrogen sulphide) arise.

In both Luenen and Hanover, equipment of virtually equal design has been installed for offgas cleaning.

At both sites, dust is separated in bag filter units and gaseous impurities are captured in a central multi-stage offgas cleaning system each.

The bag filter units have a performance capacity of 120,000 m³/ h each. The captured dusts are returned to the process. The clean-gas side (stack) is monitored by means of continuous dust measurement and the data obtained are transmitted to the control room. In the period under report, the values measured were mostly below the limit levels except for Hanover where isolated cases of higher values occurred as a result of disturbances in the dust collection unit. In order to forestall any overruns of the limit values in the future, the plant personnel was instructed to exchange filters already when reaching an "intervention threshold" of 7 mg/m³.

The gases are routed to an efficient central gas cleaning unit. The capture and mixing of the individual offgas streams have been designed such that the hydrogen and methane concentrations are at all times below the bottom explosion limit. Ammonia is washed out with sulphuric acid to form an ammonium sulphate solution Phosphine and hydrogen sulphide are separated in activated-carbon adsorbers. The individual gases are measured and monitored semi-continuously on the raw-gas and on the clean-gas side.

The limit values for phosphine and hydrogen sulphide are undercut by far (typically by a factor of 10 to 100 – depending on adsorption capacity, i.e. the service life of the activated carbon). This applies mutatis mutandis to ammonia which is measured on a random basis.

Certain perceptions of ammonia may occur as a result of diffuse ammonia emissions inside and outside the production plant. Repeated ammonia measurements in the plant have demonstrated that the occupational exposure limit (OEL) of 20 ppm is safely complied with.

Outside the plant a former ammonia measuring campaign performed by the Lower-Saxon State Bureau for Ecology – Hanover at the premise boundaries during a representative production

Befesa Salzschlacke GmbH

operation and with representative Serox handling and loading during a 10-day period showed a value not exceeding 3 ppm.

More recent comprehensive measurements at a total of 12 measuring points were carried out in the 1st half of 2016. The results will be communicated in the next annual report.

Releases of heat, vibrations and optical influences are of minor significance.

Noise Impact

Large machines and units used for treating the salt slag are causing noise. To abate the noise impact, individual machines were equipped with noise absorption hoods and structural-engineering solutions were found for acoustic insulation. The area-related sound power level determined for Befesa Hanover of

during daytime 60 dB

at night 45 dB

is undercut.

At the Luenen Site, the respective limit values of "TA-Lärm" (German Technical Instructions for Noise Control) are decisive. In addition, the plants in Luenen and Hanover have been installed in enclosed buildings so that potential noise sources are shielded for the most part. Units that may lead to vibrations (e.g. pre-crusher, rod mill) have been mounted on vibration-isolated individual foundations.

Emissions also occur with an indirect impact on the environment through the operation of the company's own vehicle pool.

The company is making efforts to largely reduce such emissions by selecting a suitable vehicle pool composed of 5 forklift trucks, 3 wheel loaders and 1 company passenger car (low-emission diesel-powered vehicles). Emissions caused by on-site traffic are only of minor scope.

At the Hanover Site, a boiler system fired with natural gas is operated for generating steam. Thanks to the favourable combustion properties of natural gas, only carbon dioxide emissions are relevant there.

The Luenen Site is supplied with the various energy sources (steam, natural gas, compressed air and electricity) from the utility system of Remondis GmbH.

Emission Data

The following emission data were extracted from the GHG-validated Report 2015 on DIN EN ISO 14064-1:2006 Certification.

GHG emissions in the year 2015

Monthly inventory of greenhouse gas emissions		Lünen	Hannover	Total
		2015	2015	2015
		January - December	January - December	January - December
		t CO2 eq	t CO2 eq	t CO2 eq
Scope 1				
Fugitive emissions (grease, lubricating oil, coolant fluid, distribution of natural gas)	CO ₂	1,07	0,94	2,00
	TOTAL	1,07	0,94	2,00
Mobile combustion	CO ₂	153,74	72,27	226,01
	CH ₄	0,13	0,06	0,19
	NO ₂	0,62	0,29	0,91
	TOTAL	154,49	72,62	227,11
Stationary combustion	CO ₂	496,42	10.970,91	11.467,33
	CH ₄	0,04	0,79	0,82
	NO ₂	0,87	19,30	20,17
	TOTAL	497,33	10.990,99	11.488,33
Process emissions	CO ₂	0,00	0,00	0,00
	CH ₄	31.530,17	5.171,77	36.701,94
	TOTAL	31.530,17	5.171,77	36.701,94
Total by Scope 1		32.183,06	16.236,33	48.419,38
Scope 2				
Electrical energy		10.559,37	7.087,08	17.646,45
Thermal energy		13.264,25	0,00	13.264,25
Total by Scope 2		TOTAL 23.823,62	7.087,08	30.910,70
TOTAL by year (Scope 1+2)		56.006,68	23.323,41	79.330,09
Salt slag throughput (in t)		170.012,00	102.978,00	272.990,00
Specific emissions (in t of CO2e per t of salt slag throughput)		0,33	0,23	0,29

GHG emissions in the year 2013

Monthly inventory of greenhouse gas emissions 2013	January - December	January - December	January - December
	Hannover	Lünen	TOTAL
	t CO2 eq	t CO2 eq	t CO2 eq
Scope 1			
Fugitive emissions (grease, lubricating oil, coolant fluid, distribution of natural gas)	2.55	3.57	6.13
Mobile combustion	0.47	0.79	1.27
Stationary combustion	9,972.97	464.23	10,437.20
Process emissions	8,138.3	13,803.47	21,942.10
Total by Scope 1	18,114.63	14,272.06	32,386.69
Scope 2			
Electrical energy	6,008.89	9,848.23	15,857.11
Thermal energy	0.00	12,261.41	12,261.41
Total by Scope 2	6,008.89	22,109.64	28,118.53
TOTAL by year (Scope 1+2)	24,123.51	3,381.70	60,505.21
Salt slag throughput (in t)	98,650.00	167,315.00	265,965.00
Specific emissions (in t CO2e per t saltslag throughput)	0.24	0.22	0.23
Monthly inventory of greenhouse gas emissions 2013 (recalculated)	January - December	January - December	January - December
	Hannover	Lünen	TOTAL
	t CO2 eq	t CO2 eq	t CO2 eq
Scope 1			
Fugitive emissions (grease, lubricating oil, coolant fluid, distribution of natural gas)	2.55	3.57	6.13
Mobile combustion	0.47	0.79	1.27
Stationary combustion	9,972.97	464.23	10,437.20
Process emissions	5,208.81	31,107.33	36,316.14
Total by Scope 1	15,184.81	31,575.92	46,760.73
Scope 2			
Electrical energy	6,008.89	9,848.23	15,857.11
Thermal energy	0.00	12,261.41	12,261.41
Total by Scope 2	6,008.89	22,109.64	28,118.3
TOTAL by year (Scope 1+2)	21,193.70	53,685.56	74,879.26
Salt slag throughput (in t)	98,650.00	167,315.00	265,965.00
Specific emissions (in t of CO2e per t of salt slag throughput)	0.21	0.32	0.28

Water Supply and Water Consumption

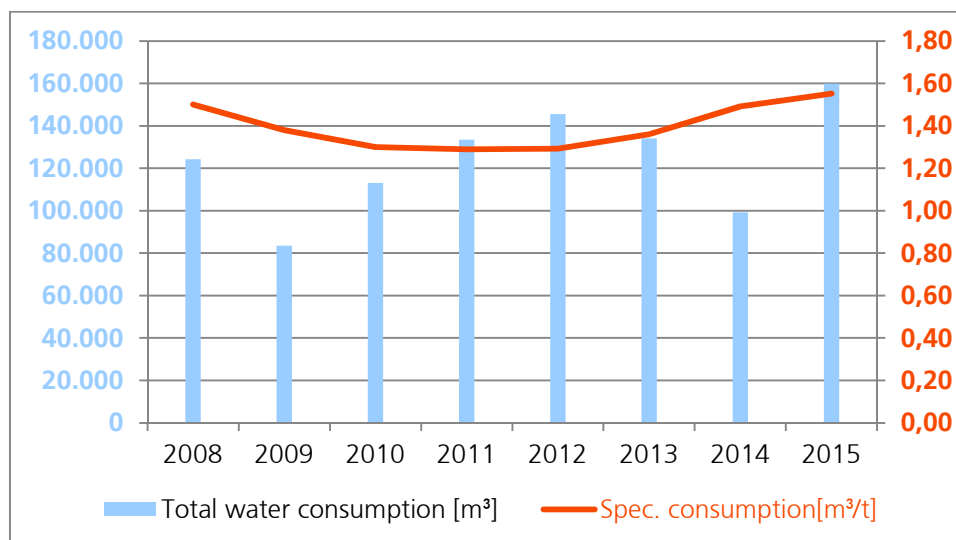
Water

On both sites, considerable amounts of water are required for production. For the most part, this consumption is not covered by drinking water, but by service water (Luenen) and canal water (Hanover).

In Hanover, water is supplied from the public network (drinking water) and by taking canal water (service water). In the year 2015, the consumption figures were 3,011 m³ for drinking water and 156,864 m³ for service water. The specific use of service water rose slightly as a result of the increase in Serox production.

Water consumption Hanover since 2008

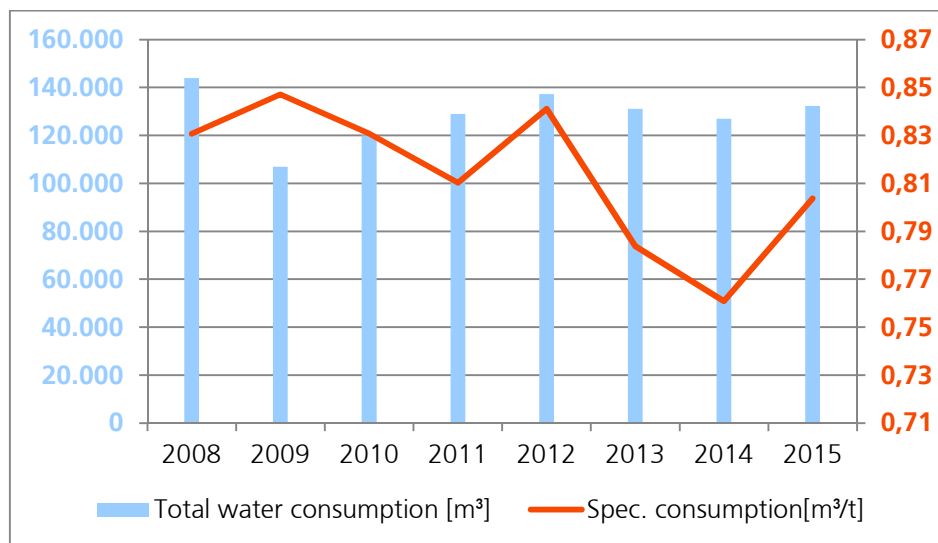
Hanover	2008	2009	2010	2011	2012	2013	2014	2015
Feed input [t]	124,421	67,853	105,036	103,104	112,660	98,650	66,546	102,978
Service water input [m ³]	120,630	80,407	110,057	130,048	142,551	130,659	97,018	156,864
Drinking water consumption [m ³]	3,638	3,076	3,119	3,395	3,029	3,479	2,271	3,011
Total water consumption [m ³]	124,268	83,483	113,176	133,443	145,580	134,138	99,289	159,875
Spec. consumption [m ³ /t]	1.5	1.38	1.3	1.29	1.29	1.36	1.49	2



Water consumption Luenen since 2008

At the Luenen Site, water is taken from the works system of Remondis. In the period mentioned, consumption amounted to 14,927 m³ for drinking water and to 117,337 m³ for service water. It was possible to reduce water consumption further compared to the preceding year, both in absolute and in specific terms, as a result to optimization measures in the solid/liquid separation sector.

Luenen	2008	2009	2010	2011	2012	2013	2014	2015
Feed input [t]	173,258	126,218	144,503	159,152	163,188	167,315	166,888	164,568
Service water input [m ³]	128,909	96,382	110,650	115,478	120,130	118,100	114,424	117,337
Drinking water consumption [m ³]	15,020	10,537	9,408	13,478	17,129	13,047	12,544	14,927
Total water consumption [m ³]	143,929	106,919	120,058	128,956	137,259	131,147	126,968	132,264
Spec. consumption [m ³ /t]	0,831	0,847	0,831	0,810	0,841	0,784	0,761	0,804



Waste Water

Sewage water and surface waste water occur on both Sites.

In Hanover, they are discharged into the municipal waste water system and in Luenen, into the works sewer system of Remondis.

In Hanover, in addition blow-down water occurs in connection with steam generation which until 2010 was returned to Mittellandkanal, based on the direct-discharge permit valid until then. Since 2011 the blow-down water has been discharged into the municipal sewer system in accordance with the Hanover Waste Water Treatment Services. The relevant application for a permit dated 6 Dec 2010 was approved on 25 Nov 2016 and the discharge limits are met and distinctly undercut.

In Luenen the cooling-tower blow-down water is treated at the works and reused as process water.

Production-induced waste waters do not occur at Befesa Salzschlacke GmbH.

Energy Supply and Energy Consumption

Energy Efficiency

At Befesa Salzschlacke GmbH, energy is used in the form of electricity, natural gas, steam and fuels.

Elektric power and natural gas are withdrawn from the public network.

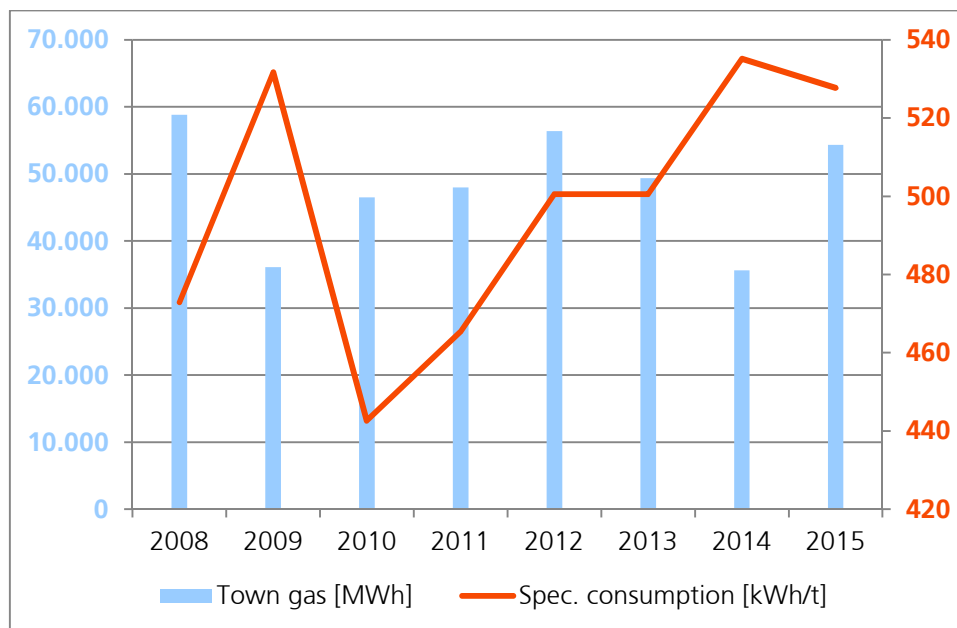
The energy source mix for both Sites is composed of 1:

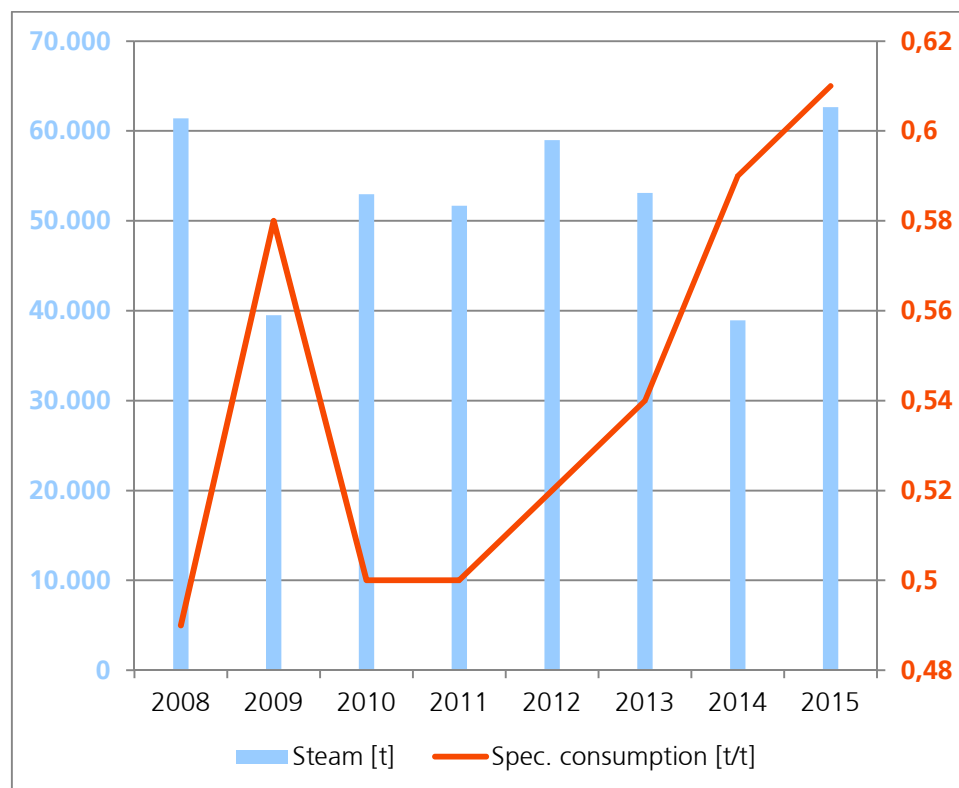
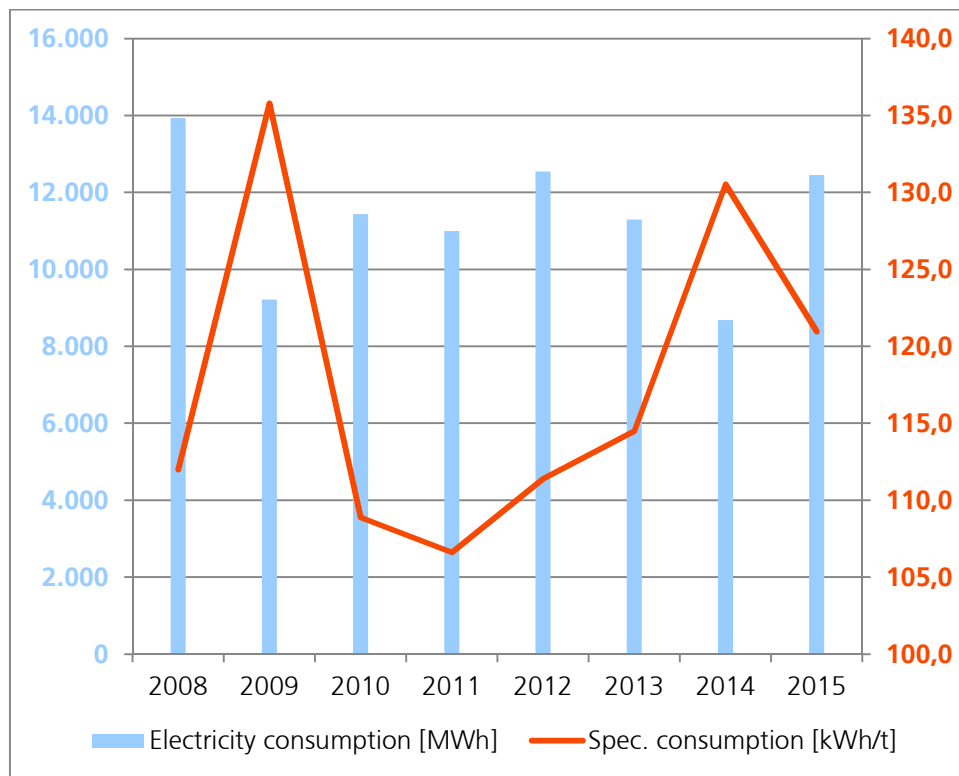
- Nuclear resources: 15 %
- Renewable resources: 35 %
- Fossil resources : 53 %

¹ Source: Power generation disclosure as per § 42 Energy Act of 7 July 2005 as amended in 2015

Energy consumption Hanover since 2008

Hanover	2008	2009	2010	2011	2012	2013	2014	2015
Feed input [t]	124,421	67,853	105,036	103,104	112,660	98,650	66,546	102,978
Town gas [MWh]	58,832	36,078	46,487	47,979	56,390	49,379	35,609	54,343
Spec. consumption [kWh /t]	473	532	443	465	501	501	535	528
Electric power consumption [MWh]	13,933	9,214	11,435	10,993	12,548	11,295	8,687	12,455
Steam [t]	61,406	39,506	52,961	51,690	58,974	53,116	38,948	62,662
Spec. consumption [t/t]	0.49	0.58	0.50	0.50	0.52	0.54	0.59	0.61
Spec. consumption [kWh /t]	112.0	135.8	108.9	106.6	111.4	114.5	130.5	121
Regenerative part, total in %	2.9	3.5	3.6	3.5	3.7	5.8	6.4	6.1

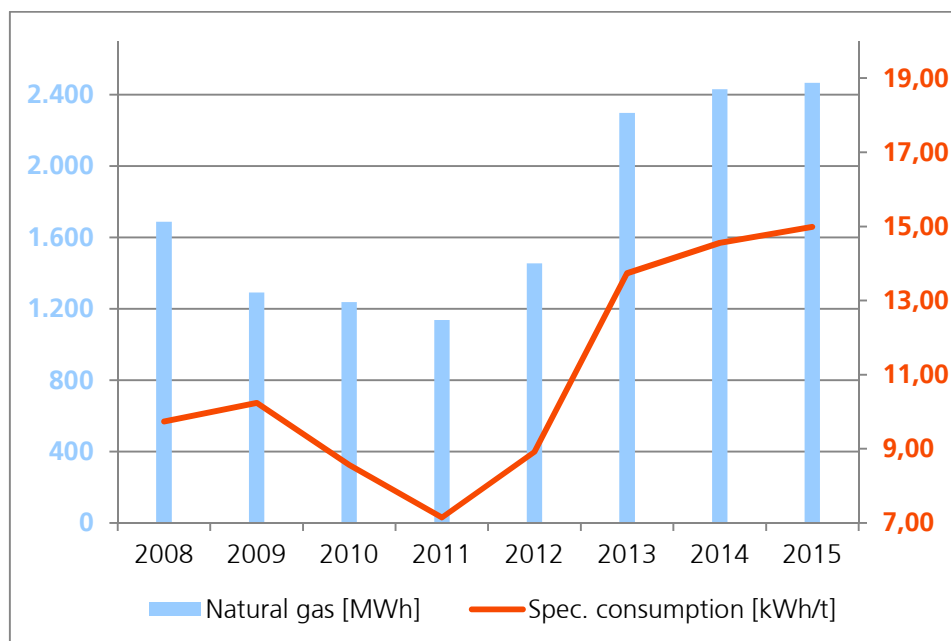


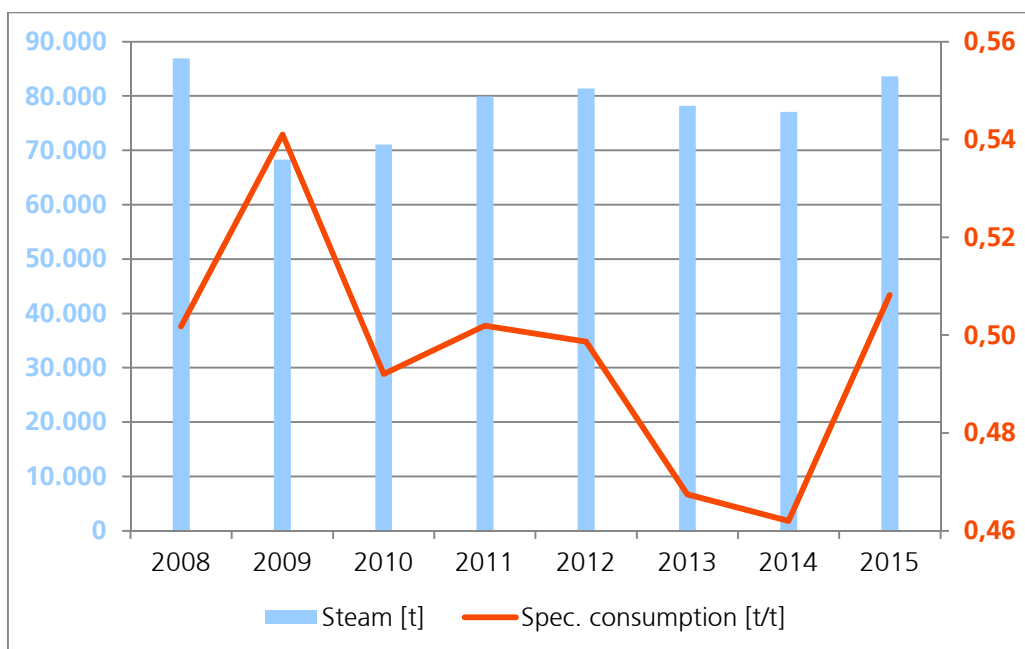
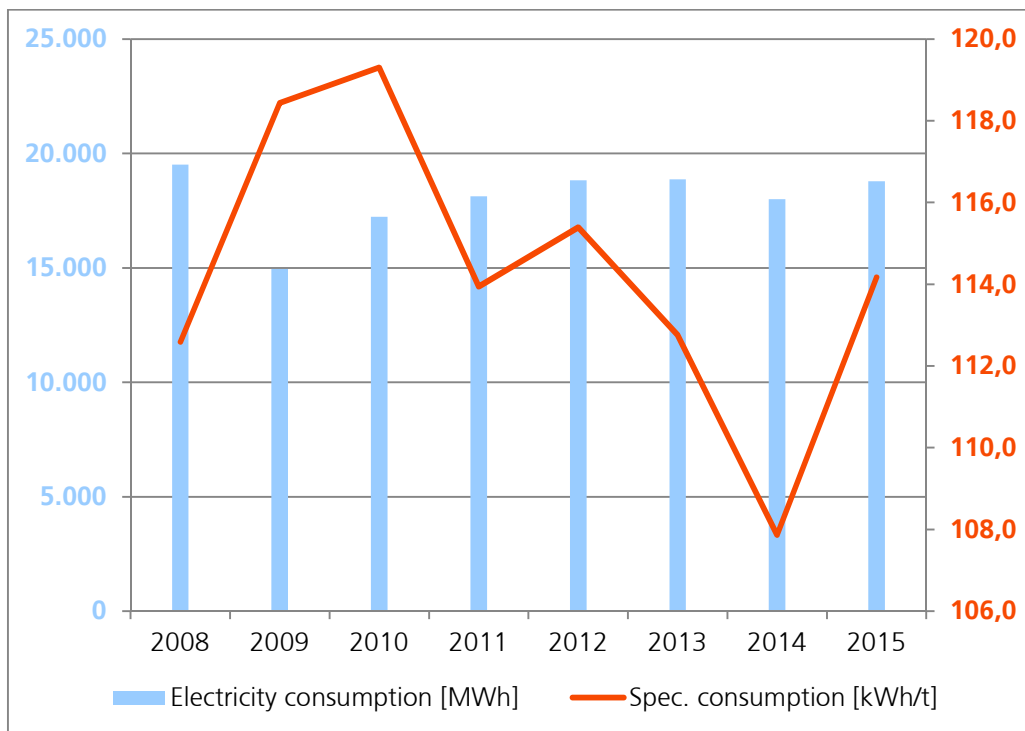


The main energy consumers are the evaporative crystallization plant and the machine drives. The slightly increased energy consumption figures for the Hanover Site are attributable to unscheduled cleaning and repair work.

Energy consumption Luenen since 2008

Luenen	2008	2009	2010	2011	2012	2013	2014	2015
Feed input [t]	173,258	126,218	144,503	159,152	163,188	167,315	166,888	164,568
Natural gas [MWh]	1,688	1,292	1,238	1,138	1,455	2,299	2,430	2,467
Spec. consumption [kWh / t]	9.74	10.24	8.57	7.15	8.91	13.74	14.56	15.0
Electric power consumption [MWh]	19,506	14,948	17,239	18,135	18,831	18,866	18,002	18,558
Spec. consumption [kWh / t]	112.6	118.4	119.3	113.9	115.4	112.8	107.9	112.8
Steam [t]	86,940	68,284	71,099	79,883	81,371	78,205	77,104	83,633
Spec. consumption [t / t]	0.50	0.54	0.49	0.50	0.50	0.47	0.46	0.51
Regenerative part, total in %	13.8	15.6	16.8	17.9	19.3	27.5	28.6	28.7





The higher gas consumption in Hanover in absolute terms is attributable to the internal production of steam whereas the Luenen Site acquires the steam needed for the process from Remondis GmbH. The climate-neutral share of the fuel input at Remondis GmbH is 54.7 %.

The slightly higher energy consumption figures for the Luenen Site are attributable to repair work and resource optimization for the central offgas cleaning system.

Wastes and Residues

The input materials of Befesa Salzschlacke GmbH are recovered at 100 %. The process does not originate solid waste nor waste water.

The only wastes originate from:

- Used greases and oils from the machines
- Exchange of the activated carbon for the offgas cleaning unit
- Packaging and pallet materials
- Industrial waste similar to municipal waste

In Luenen, however, part of the Serox output is stored at the works depot of Remondis due to missing outlet markets.

Data concerning the nature, amount and origin of the wastes have been summarized in the waste balance sheets and the annually compiled Output Analysis.

The amounts of hazardous wastes occurring at both Sites are negligible.

On the two Sites, waste is classified and collected separately. The waste collecting points have been identified. The employees are regularly instructed about the in-plant waste classification.

Protection of Water / Soil Protection

The aluminium salt slags delivered for treatment are stored in enclosed buildings on both Sites. The soils are sealed by means of concrete and plastic sheets. Operations areas of the so-called wet section are additionally sealed with mastic asphalt and sheets. There is no hazard for the groundwater.

The Luenen Site is located at a distance of about 500 m from the Lippe River on the premises of the former VAW Lippewerk (now: Remondis GmbH). The premises are protected from flooding influence by dike constructions alongside the Lippe River.

Hazardous materials are stored in purpose-installed operations areas and protected from uncontrolled leaks by means of catch basins or double-wall tanks. Oil-binding agents are available in sufficient quantity.

For hazardous substances, technical and organizational safety facilities have been installed.

Water-polluting, environment-relevant materials and hazardous substances have been recorded in the hazardous substances register.

Safety data sheets have been deposited for each hazardous substance and operating instructions developed.

Transports and Traffic

Incoming delivery traffic and outgoing product transports mainly take place with trucks on the road.

Only Serox and in rare cases also Resal are additionally delivered by ship transport.

Wheel loaders and forklift trucks are used for on-site transports.

Occupational Safety

For Befesa Salzschlacke GmbH occupational safety is of the same significance as the protection of the environment. The company has been certified according to OHSAS 18001. The frequency of accidents is extremely low at Befesa Salzschlacke GmbH. We continuously sensitize and motivate our employees with the aim to prevent accidents further.

Process instructions and work procedures of the Integrated Management System constantly incorporate issues of occupational safety.

Measures geared to safety and health at the workplace are not limited to the company's own employees. The employees of contractors working for us are protected in the same way and are subject to our safety claims.

Legal and environmental requirements in terms of construction and safety technology for handling and storage of mentioned substances are strictly complied with at the sites of Befesa Salzschlacke GmbH.

Befesa Salzschlacke GmbH has established an effective organization for averting danger and hazards (alarm and emergency plan) in order to be able to promptly take the necessary safety measures in connection with impending or occurring hazards emerging from the substances processed although such hazards are not to be anticipated.

Input /Output Data

The data for the input / output statement have been developed in cooperation with the environment management officer, the environment experts of the sites and the Plant Managers of the company. To this end, the respective measuring records, official assessments and accounts were evaluated. In the absence of other options, the data were assessed on the basis of statistical methods.

The following input / output tables represent the results of our examinations and analyses:

Input Data 2015

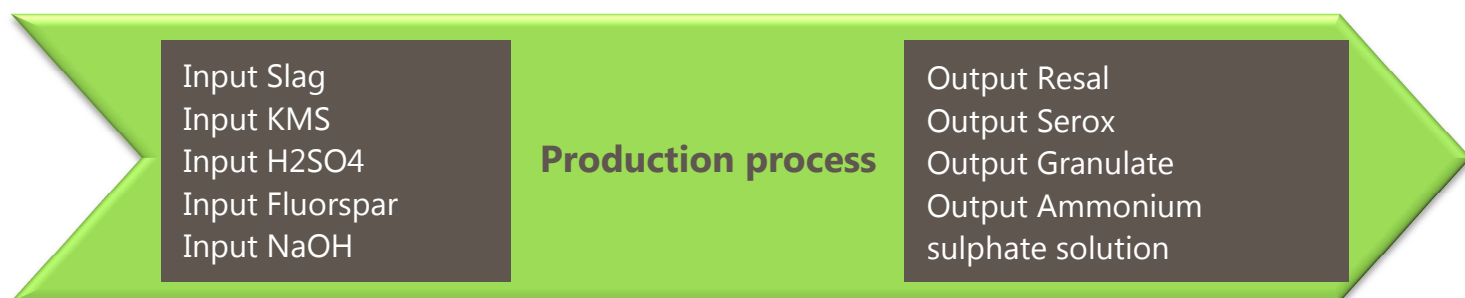
		Quantity		Unit
		Hanover	Luenen	
Input for Material Efficiency	1. Feed Materials Input			
	- Salt slag	102,978	164,568	t
	- Ball mill fines	0	0	t
	2. Auxiliaries Input*1			
	- Sulphuric acid (96 %)	6,601.20	9,195.7	t
	- Fluorspar	247,2	253.5	t
	- Caustic soda solution	450.6	551.8	t
	- Polyelectrolyte	6.35	9.8	t
	- Hydrochloric acid	249.9	54.7	t
	- Diesel fuel	26,430	57,232	L
	- Hydraulic and lubricating oils	3.5	3.3	t
	Water			
	- Service water input	156,864	117,337	m ³
	- Drinking water input	3,009	14,927	m ³
	Energy			
- Electricity	12,455,333	18,557,760	kWh	
- Steam	62,662	83,633	t	
- Compressed air	5.22	5.17	million m ³	
Gases/fuel oil				
- Natural gas input	54,342,570	2,463,377	kWh	
- Fuel oil consumption	-	545	t	

Output Data 2015

		Quantity		Unit
		Hanover	Luenen	
Output for Materials Efficiency	Products			
	- Resal (moist)	39,754	68,053	t
	- Serox (moist)	73,751	102,198.75	t
	- Aluminium granulate	8,860	14,671	t
	- Ammonium sulphate crystalline	-	11,930	t
	- Ammonium sulphate solution	15,820	-	t
	- Condensate return	-	50,420	m ³
	Wastes			
	- Municipal waste	51	77.6	t
	- Fluorescent lamps	0.13	-	t
	- Batteries	-	-	t
	- Paper	27.31	9.75	t
	- Wood	5.86	7.96	t
	- Waxes and grease	1.612		
	- Waste oil	0.64	-	t
	- Oily waste	0.508	2.08	t
	- Demolition waste	3.44	2.16	
	- Activated carbon	23.32	49.04	
	- T.E.R (alumina residues)	-	37,540.25	
	Cooling-tower Blow-down	31,024	-	m ³
	- COD	66	-	kg/m3
	- AOX	-	-	
	- TOC	-	-	
	- BOD5	-	-	
	- Nitrogen	-	-	
	- Phosphorus	-	-	
	Sewage Water	1,254	1,039	m ³
	Emissions			
	- Total dust	1,483	494	kg

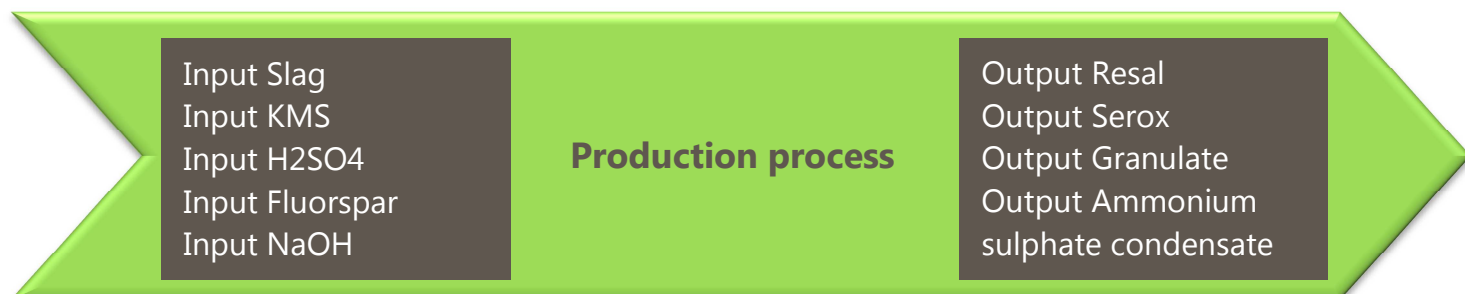
Materials Efficiency

Materials efficiency Hanover



Materialeffizienz Hannover	2012	2013	2014	2015
		0,99	0,93	1,01
Input Schlacke	112.660	98.650	66.546	102.978
Input KMS	0	0	0	0
Input H2SO4	4.227	3.991	3.564	6.601
Input Flussspat	24	51	75	247
Input NaOH	358	236	239	451
Input Flockungsmittel	9	7	5	6,35
Input HCl	20	20	20	249,93
Summe	117.298	102.955	70.448	110.533
Output Resal (-2,4% Feuchte)	54.625	49.756	29.377	38.800
Output Serox (-37% Feuchte)	51.904	49.816	31.451	46.463
Output Granulat	7.293	7.369	5.741	8.860
Output Ammonsulfatlösung 40%ig	4.260	3.981	3.261	6.328
Summe	118.081	110.922	69.830	100.451

Materials efficiency Lünen



Materialeffizienz Lünen	2012	2013	2014	2015
	1,00	0,96	0,98	0,99
Input Schlacke	162.837	167.315	166.888	164.568
Input KMS	350	0	0	0
Input H2SO4	9.878	9.304	8.775	7.458
Input Fluorapatit	227	228	155	25
Input NaOH	355	564	611	461
Input Flockungsmittel	14	13	12	8,6
Input HCl	15	55	13	8
Summe	173.676	177.479	176.454	172.529
Output Resal (-3% Feuchte)	62.372	67.073	66.299	56.311
Output Serox (-35% Feuchte)	85.430	91.135	88.375	90.830
Output Granulat	13.961	15.139	12.975	14.671
Output Ammonsulfat kristallin	12.756	10.599	11.850	11.930
Output Ammonsulfatlösung 40%ig	0	1.133	0	0
Summe	174.519	185.079	179.498	173.743

IED Inspections

At the Hanover Site, an IED Inspection was performed on 7 May 2015 by the State Factory Inspectorate [*Staatliches Gewerbeaufsichtsamt*] of Hanover in cooperation with the Municipal Water Department [*Stadtentwässerung*] of Hanover and the water and soil protection team of the Hanover region. No deficiencies were identified.

Deficiencies were not found either on the occasion of an inspection of the Luenen Site on 28 May 2015 by the Regional Government of Arnsberg with a focus on soil (waste, handling of water-polluting substances) and air (emissions).

Environmental Targets and Programme

Targets 2016 through 2018

Hanover

1. Assessment of the impact of ammonia emissions and follow-up actions

Assessment made by the external company Aneco in cooperation with the Factory Inspectorate of Hanover in the course of the year 2016.

Responsible: Plant Manager

2. Reduction of gas consumption by 3%

Installation of an eddy-current separator instead of the wet mill. Removal of the dryers.

Responsible: Plant Manager

3. Abatement of noise and dust emissions

Exchange of doors and rolling gates of the production building and the salt slag storehouse to reduce dust and noise nuisance.

Responsible: Plant Manager

4. Reduction of specific energy by 2% until the end of 2018 compared to 2015

Installation of frequency converters for the exhaust air blowers of Gr. 300 to save about 500 MWh/a.

Responsible: Plant Manager

Luenen

1. Reduction of ammonia odours by 90 % and elimination of emissions by 99,999 % by installing and operating a Serox dryer.

Responsible: Plant Manager

2. Dust and noise abatement programme Group 100

Technical analysis of the plant by an expert to identify need for action and potential technical improvement measures. Evaluation of technical and organizational actions followed by the implementation of an appropriate action plan.

Responsible: Plant Manager

IMS

Introduction and certification of an Integrated Energy Management System in accordance with DIN EN ISO 50001 until the end of 2016.

Statement of Environmental Experts / Declaration of Validity

Gültigkeitserklärung

Erklärung des Umweltgutachters zu den Begutachtungs- und Validierungstätigkeiten

Der
Umweltgutachter
Dipl.-Ing. Henning von Knobelsdorff
Mozartstraße 44
53115 Bonn

hatt das Umweltmanagement-System, die Umweltbetriebsprüfung, ihre Ergebnisse, die Umweltleistungen und die aktualisierte Umwelterklärung der Organisation

Befesa Salzschlacke GmbH

an den Standorten
Am Brinker Hafen 6 in 30179 Hannover
Brunnenstraße 138 in 44536 Lünen

mit dem NACE Code 20.1 „Herstellung von chemischen Grundstoffen, Düngemittel und Stickstoffverbindungen“ auf Übereinstimmung mit der Verordnung (EG) Nr. 1221/2009 des Europäischen Parlaments und des Rates vom 25. November 2009 über die freiwillige Beteiligung von Organisationen an einem Gemeinschaftssystem für das Umweltmanagement und die Umweltbetriebsprüfung (EMASIII) geprüft und die vorliegende Umwelterklärung für gültig erklärt.

Es wird bestätigt, dass

- die Begutachtung und Validierung in voller Übereinstimmung mit den Anforderungen der Verordnung (EG) Nr. 1221/2009 durchgeführt wurde,
- keine Belege für die Nichteinhaltung der geltenden Umweltvorschriften vorliegen,
- die Daten und Angaben der Umwelterklärung der o.b. Standorte mit jeweils 55 Mitarbeitern im begutachteten Bereich, ein verlässliches, glaubhaftes und wahrheitsgetreues Bild sämtlicher Tätigkeiten der Standorte innerhalb des in der Umwelterklärung angegebenen Bereiches geben.

Die nächste konsolidierte Umwelterklärung wird der Registrierstelle spätestens bis zum 10. Dezember 2018 vorgelegt. Im Jahr 2017 wird eine aktualisierte Umwelterklärung veröffentlicht.

Die EMAS-Registrierung kann nur durch eine zuständige Stelle gemäß der Verordnung (EG) Nr. 1221/2009 erfolgen. Diese Erklärung darf nicht als eigenständige Grundlage für die Unterrichtung der Öffentlichkeit verwendet werden.

Bonn, den 09. Dezember 2016



Henning von Knobelsdorff
Umweltgutachter
DE-V-0090

45 u