

Sustainability Certificate 2024

Liveo Research GmbH, Bötzingen

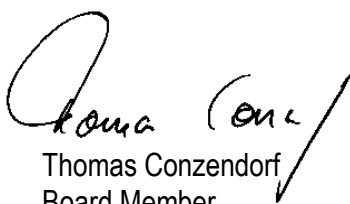
made valuable contributions to climate and environmental protection through its collaboration with the REMONDIS Group again in 2024.*

- Raw materials savings:
 - Fossil resource savings amounting to 44.7 t oil equivalent
 - Consumption of metals amounting to 3.2 t copper equivalent
 - Biogenic resource savings amounting to 25.6 t wood equivalent
- Energy savings amounting to 700.8 MWh
- Greenhouse gas emission savings amounting to 37.1 t CO₂ equivalent

According to the Waste Balance 2024, the following waste streams were taken into account in the evaluation process: building rubble // EBS - alternative fuel from waste // glues & printing waste // kitchen & canteen waste // materials contaminated with oil // mixed waste for recycling // paper from files which have been destroyed // paper, card, cardboard // plastic film, plastics spray cans.

The environment thanks. We thank you for your trust.

REMONDIS SE & Co. KG


Thomas Conzendorf
Board Member

REMONDIS Sustainable Services GmbH


Sven Averhage
Managing Director

* The data was determined by the REMONDIS Group using a scientific calculation tool developed by the Fraunhofer Institute for Environmental, Safety, and Energy Technology UMSICHT, Institute Branch Sulzbach-Rosenberg. As of: 01.2025

Waste report 2024

Customer: Liveo Research GmbH, Bötzingen

Customer ID: 313403

Waste Code	Waste Designation	Container Type	Amount	Unit	Transports
07 02 08*	other still bottoms and reaction residues	containers of different sizes	111.00	KG	1
07 06 08*	other still bottoms and reaction residues	1000 l ASF	3.73	TO	2
08 04 09*	waste adhesives and sealants	200 l bung-hole lid drum	4.67	TO	9
		800 l ASP - safety container	1.36	TO	9
15 01 01	1.04 cardboard	20.0 cbm roll-off tippers press	18.92	TO	6
15 01 02	EBS - alternative fuel from waste	37.0 cbm roll-off tippers container	1.68	TO	2
	PE-foils, colourful	20.0 cbm roll-off tippers press	34.12	TO	6
15 01 06	mixed waste for recycling	10.0 cbm skip-loaders container	2.72	TO	4
		20.0 cbm roll-off tippers press	59.22	TO	15
15 01 10*	packaging containing residues of or contaminated by hazardous substances	800 l ASP - safety container	103.00	KG	4
15 02 02*	absorbents, filter materials	800 l ASP - safety container	2.47	TO	18
16 05 04*	gases in pressure containers containing hazardous substances	120 l drums with lock rings	55.00	KG	2
16 10 01*	aqueous liquid wastes containing hazardous substances	AS 1000 IBC	67.43	TO	6
		delivery loose amounts	46.26	TO	
16 10 02	aqueous liquid wastes	containers of different sizes	537.00	KG	1
17 01 07	mixed building rubble	10.0 cbm skip-loaders container	6.48	TO	1
20 01 01	data and file destruction	pallet goods	1.43	TO	2
		T7 data security container	6.00	PCS	6
20 01 08	kitchen and canteen waste	120 l wheelie bin	58.00	PCS	58

Addendum to the evaluation tool used for REMONDIS' Sustainability Certificate Liveo Research GmbH, Bötzingen

The REMONDIS Group's Sustainability Certificate follows the central principle of a life cycle assessment and looks at the impact that the treatment of waste streams has on the environment and climate. As a rule, recycling waste to recover materials for reuse and/or to recover energy are both associated with saving virgin raw materials, energy and greenhouse gas emissions, compared to the use of primary resources. All process steps are taken into account to calculate the figures for the Sustainability Certificate – from the moment the waste is generated, all the way through to the materials being recycled for reuse and/or to recover energy and the substitution of virgin raw materials.

These savings are calculated with the help of this evaluation model by offsetting the negative and positive factors using a method based on the DIN EN ISO 14040 life cycle assessment. The values calculated are reported in line with the GHG Protocol.

The following equivalent values are shown to illustrate the figures documented on the certificate:

- The energy savings amounting to 700.8 MWh are equivalent to the volumes of energy needed to cover the annual electricity and heat requirements of 41 average households in Germany.
- The greenhouse gas savings amounting to 37.1 tonnes CO₂ equivalent are the same as the equivalent emissions caused by a car travelling 0.2 million kilometres.

Breakdown of the environmental impacts into positive and negative factors in 2024

- Consumption of raw materials:
 - Consumption of fossil resources amounting to 11.9 t oil equivalent
 - Consumption of metals amounting to 5.2 t copper equivalent
 - Consumption of biogenic resources amounting to 8.5 t wood equivalent
(with an average density of 537.5 t/m³)
- Energy consumption amounting to 266.5 MWh
- Greenhouse gas emissions amounting to 96.7 t CO₂ equivalent



- Raw materials savings:
 - Fossil resource savings amounting to 56.5 t oil equivalent
 - Metal savings amounting to 2.0 t copper equivalent
 - Biogenic resource savings amounting to 34.1 t wood equivalent
(with an average density of 537.5 t/m³)
- Energy savings amounting to 967.4 MWh
- Greenhouse gas emission savings amounting to 133.8 t CO₂ equivalent

Calculation methodology of the REMONDIS sustainability certificate



The calculation model for the assessment of savings of primary resources, energy and greenhouse gases by waste disposal and utilization is oriented towards the life cycle assessment methodology of DIN EN ISO 14040. The model takes into account the following process steps:

- Collection
- Transportation
- Pretreatment
- Utilization

Regarding waste recycling, the calculation model implicates the respective savings of primary resources.

Regarding energetic recovery of waste, the calculation model considers the energy gained from incineration or fermentation as well as the raw material savings achieved through the substitution of the German electricity and heat mix.

Regarding the savings of greenhouse gas emissions, the calculation model implicates the emissions and savings of all process steps.

Fraunhofer UMSICHT, Institute Branch Sulzbach-Rosenberg, assumes responsibility for the calculation model. Displayed results are based on customer-specific input data.



Dipl.-Ing. Katharina Reh
- Fraunhofer UMSICHT, Institute Branch Sulzbach-Rosenberg -
- Head of Department Secondary Resources and Assessment -

Sulzbach-Rosenberg, 23rd of January 2025