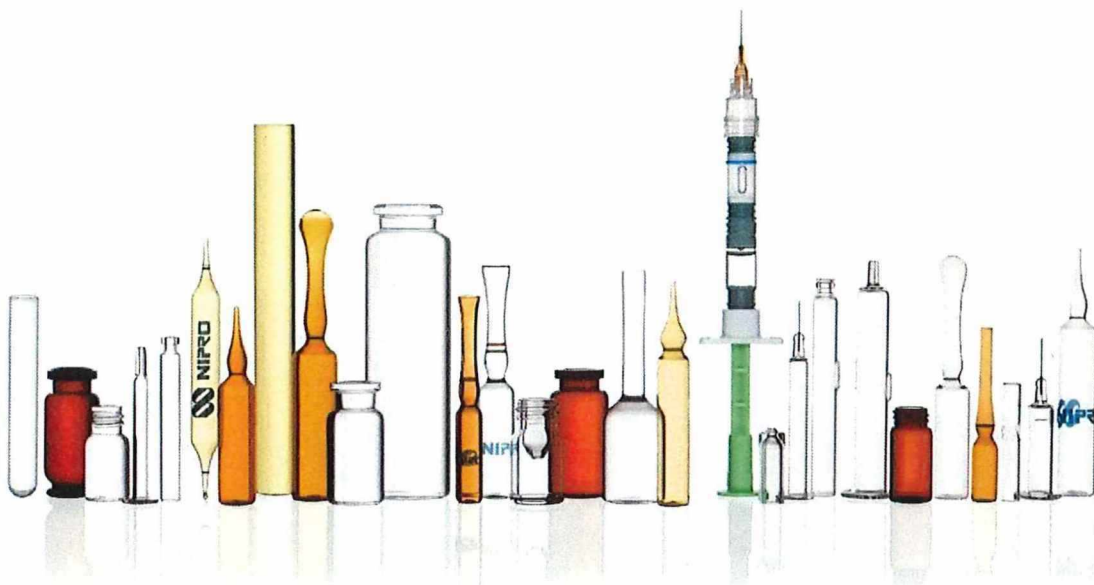




Sustainability Report 2024

Nipro PharmaPackaging Germany GmbH



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1. About this report

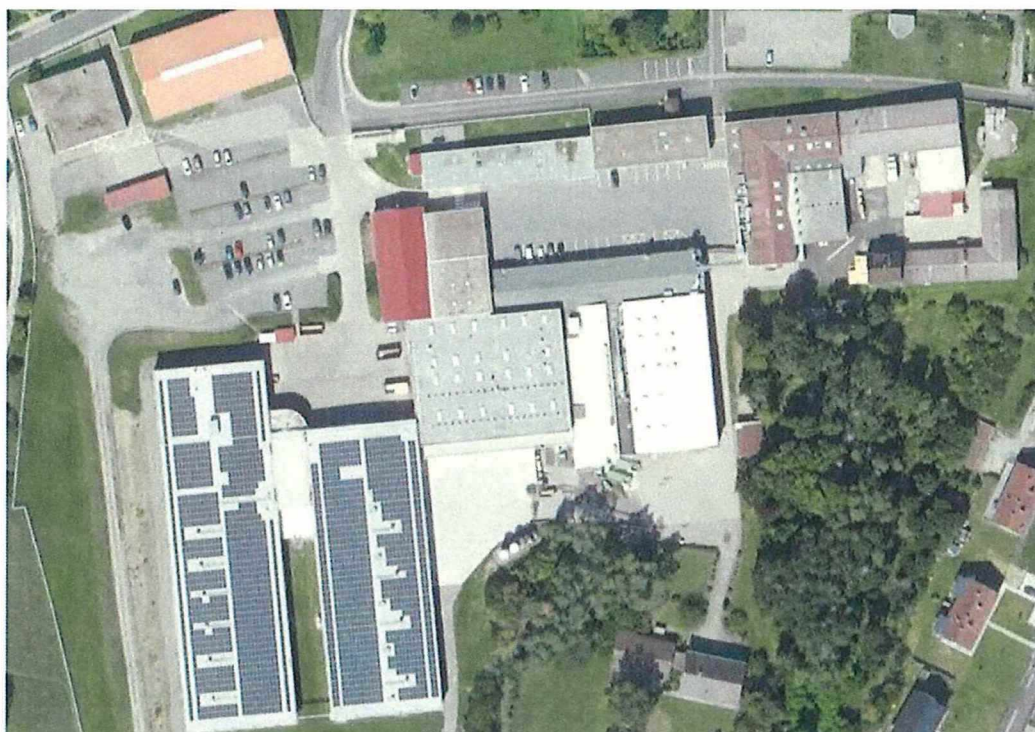
This report provides an update of our environmental and social as well as energy efficiency performance against our 2025 goals, during the year 2024. We report annually on our sustainability performance. The last report was published in April 2023.

This report contains performance data on our operating facilities. We continually work to ensure that reporting on key sustainability performance indicators is as accurate and robust as possible.

To provide an update to our performance against the 2025 sustainability goals, this report also includes particulars about the carbon disclosure project.

The environmental and energy policy supports our sustainability vision with clear commitments to:

- ✚ improve the production conditions systematically and holistically with respect to their environmental compatibility and efficiency in the long term
- ✚ comply with all statutory environmental and energy requirements if feasible even beyond the obligations and to continually improve the efficiency of the management systems
- ✚ train and support the staff in their sustainability activities to implement the company policy and carefully use resources and energy



Picture 1: Areal image of the headquarter of Nipro PharmaPackaging in Germany

2. Environmental and Energy Management at NPG

The sites in Münnerstadt / Germany are successfully certified for the environment management system (ISO 14001) since 1998. Additionally both plants are certified in according to DIN EN ISO 50001 for their energy management system. We are preparing our commitment for the Science Based Target Initiative (SBTI) in 2025.

We have joined the EcoVadis Network in 2019 and again successfully rated with BRONZE in 2024.

Nipro Group has joined the Carbon Disclosure Project (CDP) in 2022 and was B+ rated.

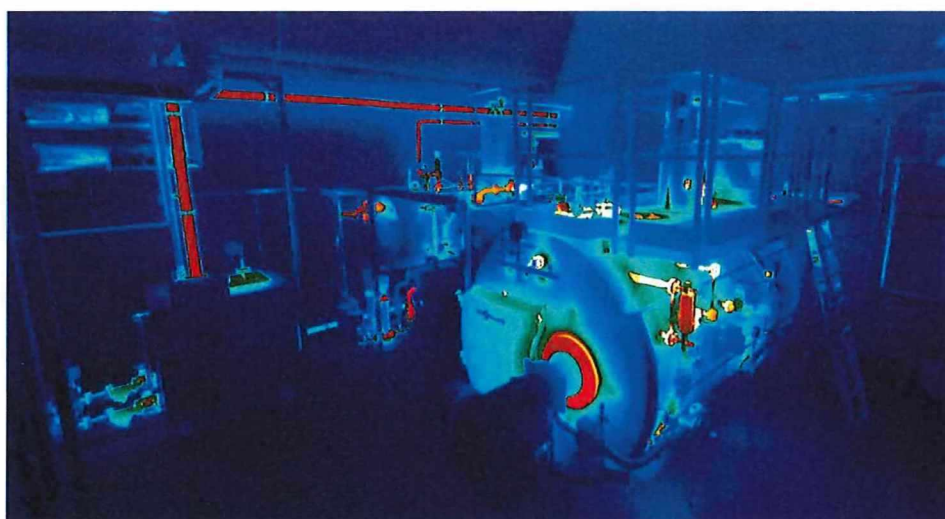


Picture 2: EcoVadis Ranking

Research and Development

During the last years Nipro has advanced several new developments at the site. We have actively supported the THWS (Technical University of Würzburg-Schweinfurt) with the development of the thermal head. The picture below shows this thermographic development impressively. Furthermore, the Scientia project of the University of Kassel was implemented at the site. The measurement technology with AI helps us to make compressed air generation more efficient. We are currently working with a consortium of technical universities on a hydrogen-based forming process for pharmaceutical glass.

We have developed and installed a new system for the generation of pharmaceutical water for injection. This system is fully operational since spring 2023 and is virtually CO₂-neutral in production, storage, and use of water for injection. In addition, a new laser-generated separation process was developed in the forming area, which helps to decarbonize this process step.



Picture 3: Thermal image of the steam generator and its economiser and feed water supply

3. Sustainability Goals 2025

Our sustainability strategy is centred upon our company purpose and is integrally tied to our business strategy.

We evaluated and prioritized the environmental, social and energy factors most relevant to our business and defined three areas to focus that provide the framework for our 2025 sustainability goals.

Efficiency

How we work across our value chain to minimize our greenhouse gas emissions and our energy consumption.

Environmental footprint

How we contribute to a sustainable future by improving outcomes and reducing our ecological footprint in manufacturing as well as in business operations.

Empowerment

How we train and support our employees to form a purpose-driven sustainable culture within our company.



Picture 4: Image of the large photovoltaic roof system which was installed in 2022.

3.1. Efficiency

Avoiding waste of energy is essential for the efficiency of our manufacturing and business operations. Our challenge is to continue and expand the manufacturing output while improving our energy performance and minimizing the use of natural resources.

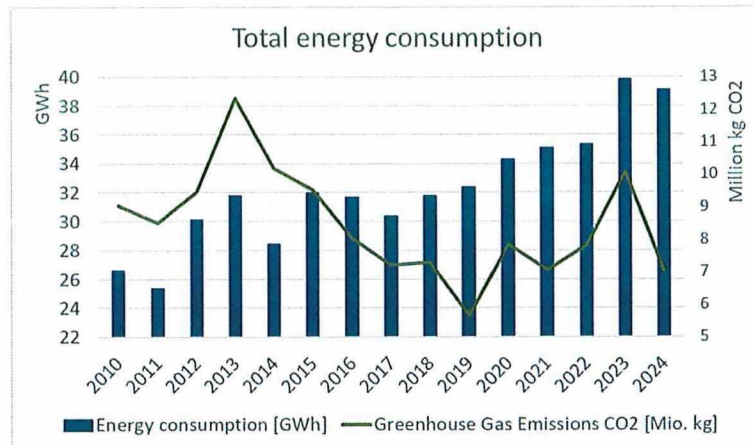
Emissions and energy conservation:

Reduction of Greenhouse Gas Emissions by 30% (Baseline 2015)

status
-26.1%

Conservation in total energy consumption by 15% (Baseline 2015)

status
+22.36%



The last 12 months have been characterized by developments that continue to drive us forward on our path to transforming pharmaceutical glass production and processing. The electrification of tempering furnaces in production is making further progress. Laser-based cutting of glass tubes is taking us further in glass forming. Cold generation of the WFI is helping us to successfully decarbonize at this point. The large photovoltaic roof system enables us now to generate up to 15% of the vials plant's electricity consumption from renewable sources. In addition, we have started to construct another large PV system on top of the syringes production building which will also help to decarbonize us further.

Total energy consumption [MWh]	2015	2023	2024
Plant I + II	31,963	39,834	39,111
Plant I	24,504	12,915	10,602
Plant II	7,459	25,274	26,612
Own Generation	0	1,645	1,897
CO ₂ - Emission [t]			
Plant I + II	9,519	10,072	7,033

Our energy consumption has fallen in 2024. The greenhouse gas emissions of both sites decline steadily. We have managed to decouple exponential growth in production from CO₂ consumption and we are currently on course to become CO₂-neutral by 2045.

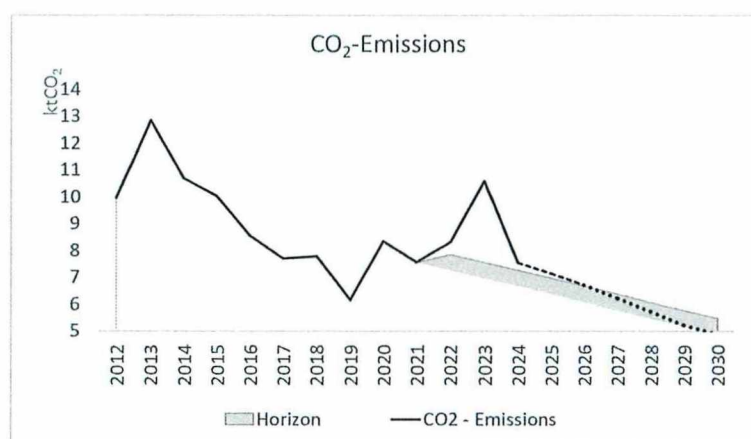
3.2. Carbon Disclosure Project

The Nipro group's entry into the carbon disclosure project marks the turning point and at the same time the exit from CO₂-intensive glass production. We have therefore decided to bundle our activities in this report and present the success of this transformation in new key figures. The CDP Target to become carbon neutral is currently set 2045.

Scope 1 and Scope 2 carbon emissions

Decrease of carbon emissions by -37.8%
(Baseline 2021)

status
-0.3%

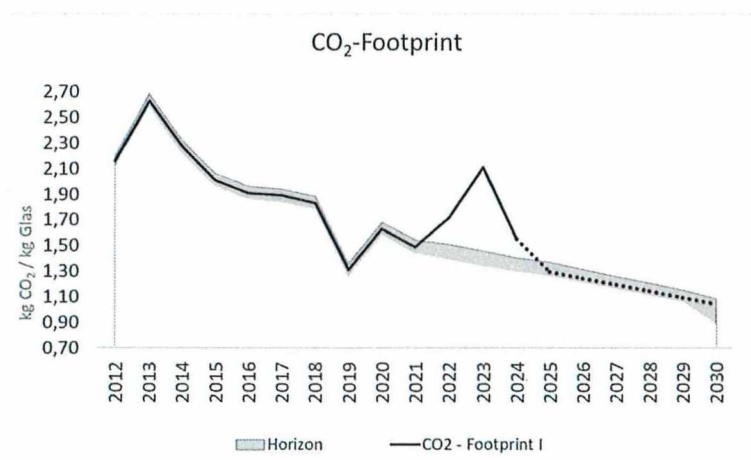


Since their peak in 2013, our emissions have fallen by 43%. Last year, renewable energies were purchased directly for the first time to reduce Scope 2 emissions. Scope 2 emissions will be completely CO₂ neutral by 2030. The transformation of our heating system will cut our emissions in scope 1 significantly.

Carbon efficiency

Increase of carbon efficiency by -30%
(Baseline 2021)

status
0.4%



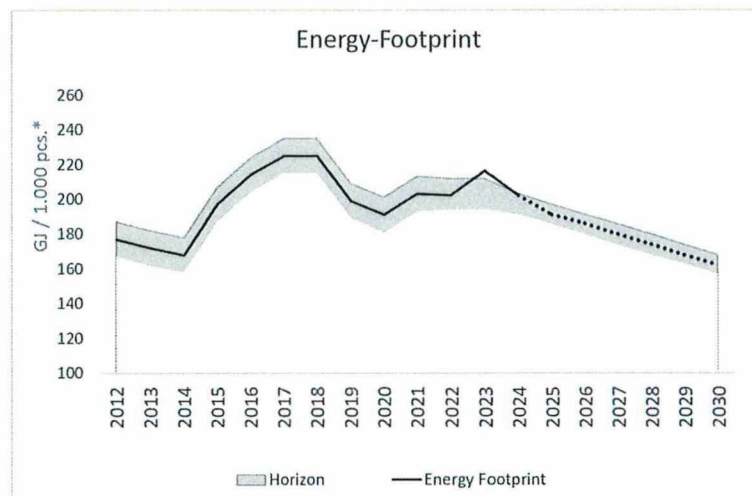
After two years of poorer carbon efficiency, we are now back at the same level as in the base year. The purchase of renewable electricity underlines our long-term commitment to achieve our goal in carbon efficiency.

Production efficiency

We are still on our pathway towards a lower energy intensity on both sides. Meanwhile we increased the share of energy intense products in our product portfolio. The sterile syringes production is twice as energy intensive compared to ampoules manufacturing. We have achieved a positive trend reversal towards more energy-efficient production. In addition to reduced consumption in the utilities and cleanrooms, production processes were improved and the energy efficiency of the systems increased. The even better use of waste heat processes for building management for heating and cooling purposes offers additional potential for greater energy efficiency. Preparations for the use of this potential will be made in 2025. The use of low pressure compressed air in production will bring a further increase in energy efficiency. Project planning for this has already begun and focuses on syringe production.

Reduction of the
Energy-Footprint by
20% (Baseline 2021)

status
-0.04%



The sulphur dioxide and nitrogen dioxide produced by NPG are mainly generated during the combustion processes using fossil fuels (natural gas) and during external electricity production. Both emitted gases have a damaging effect due to acidification of soil and water. The active admixture of oxygen in the combustion processes is practised at the sites to reduce harmful emissions to a minimum. Additional dust extraction systems are installed in all new exhaust air systems to prevent negative effects in the environment

Specific emissions	2015	2023	2024
SO ₂ - Emissions [kg]	4,676	5,237	5,269
NO ₂ - Emissions [kg]	9,848	11,505	11,357

3.3. Environmental footprint

As a location that is increasingly driven by research, a technologically innovative approach is important for us to achieve our sustainability goals, particularly due to the expansive expansion of production. The continuous decrease of our CO₂-Footprint confirms our way towards CO₂-neutral business operation.

SBTi and Scope 3

The site does not limit its activities to itself but also holds its suppliers accountable and works with them to develop reduction targets. Greenhouse gas emissions along the value chain are very important as they account for around approximately three-quarters of total emissions. As part of SBTi, we will for the first time scientifically determine the dimension of Scope 3 emissions in 2025 and have them reviewed by the independent Science Based Target initiative (SBTi).

Company fleet

The transition to electrical cars has started in 2020. Charging points for electric cars are installed at both sites in Münnerstadt. Public charging infrastructure was installed in 2022. We see the results in continued descending consumption of classical fuels and are fully on track to become carbon zero even before 2040. In addition, we are also allowing our staff to charge for free their electrical vehicles to speed up the transformation of the employee commuting.

Fuel consumption	2019	2024	2040
Petrol, Diesel [kWh]	352,425	224,987	ZERO
Motor Gas [kg]	16,141	576	ZERO

Biodiversity

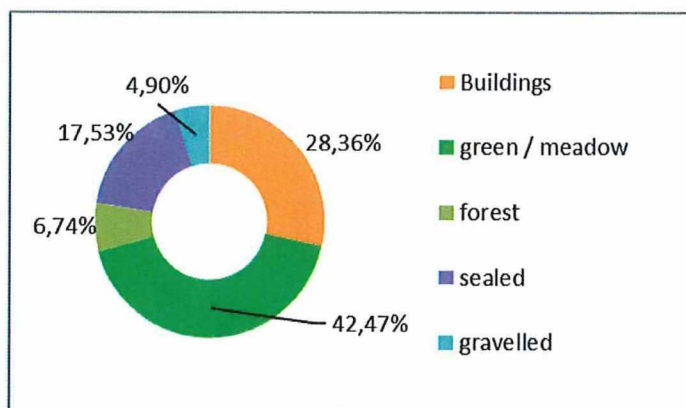
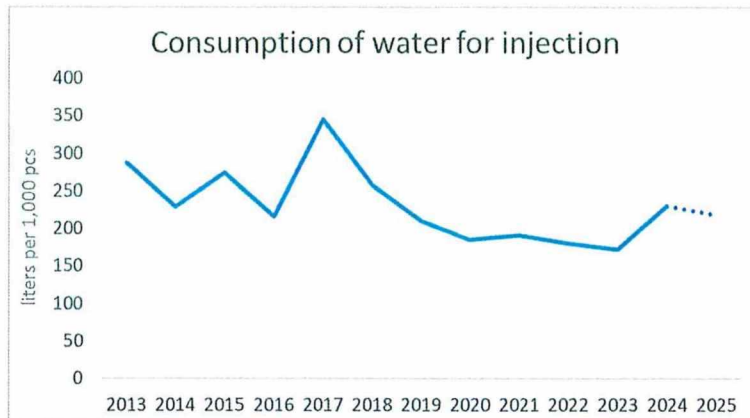


Figure 5: Premises by categories

The premises of NPG are 122,000 m² in total. They contain large areas of uncultivated meadows and forest that compensates eleven percent of our total emissions for the manufacturing processes. The rewarding cultivation of the company's own orchards also promotes biodiversity in the surrounding area.

Water consumption

Water is an essential resource, and we have a responsibility to use it effectively. As our plants operating in an area of Germany where ground water scarcity is already an issue, we have made water conservation an essential part of our operations.



Reduction of water for injection consumption per 1,000 pcs. by 20% (Baseline 2015)

status
-15.7%

Optimizing the water for injection (WFI) system is one the flagship projects in our sustainability activities. Thus, we have implemented a reverse osmosis system for cold WFI. We have completed the transition phase and in 2025 more pre-fillable syringes will be produced with the new system technology than with the old version. The new technology allows up to 40% higher yield of tap water. Unfortunately, we do not yet see the absolute savings as illustrated in the chart below. The figures will improve significantly again in 2025 with continuous production.

Water consumption [m ³]	2015	2023	2024
Plant I + II	31,899	53,983	63,335
Plant I	13,639	1,237	1,180
Plant II	18,260	52,312	62,155

Non-hazardous waste

Our total waste volume decreased last year although we significantly grew our output in both sites. We are still overachieving our long-term goals and in addition stabilized our recyclable waste. The reduction in glass rejects stalled in the last year but the sorting rate in the used glass sector stabilized on high levels. We are striving to improve the situation with the glass rejects to decrease further our total glass waste volume.



Reduce the total waste in kg per 1,000 pcs. by 10% (Baseline 2017)

status
-12.8%

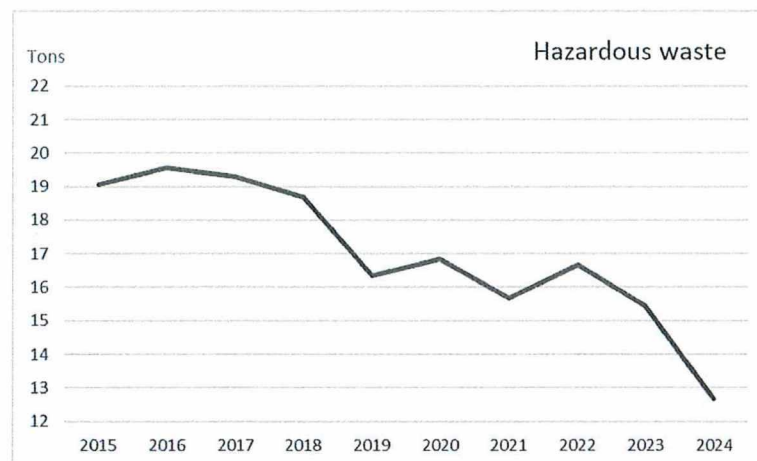
Increase the share of remunerated waste per total waste to 25%

status
+37.9%

Hazardous waste

Reduce of hazardous waste by 10% (Baseline 2015)

status
-33.5%



Last year again, we decreased our hazardous waste to a level not seen since recording started. This development is supported by the oil-free transfer in the moulding process and the significant reduction of cooling lubricants used for the mandrel cooling. Due to the rapid expansion of our production, we are again prospecting an increase in hazardous waste. Nevertheless, we are still within the 2025 target corridor.

Footprint reduction strategy

Our roadmap is to substitute our natural gas consumption that is required for heating of the buildings through the abundant waste heat from the production lines and the utilities. We have installed a trigeneration systems at plant II and use the waste heat to nearly cover two-third of the required heating energy for the buildings. The new installed absorption chiller uses the abundant heat during the summer months for the required building cooling. Additionally, we have installed water cooled compressors at plant II which generate additional waste heat for us to cover most of our requirements. Thus, we revised the target for the plants to down to 15 kWh/m²/a from 150 kWh/m²/a.

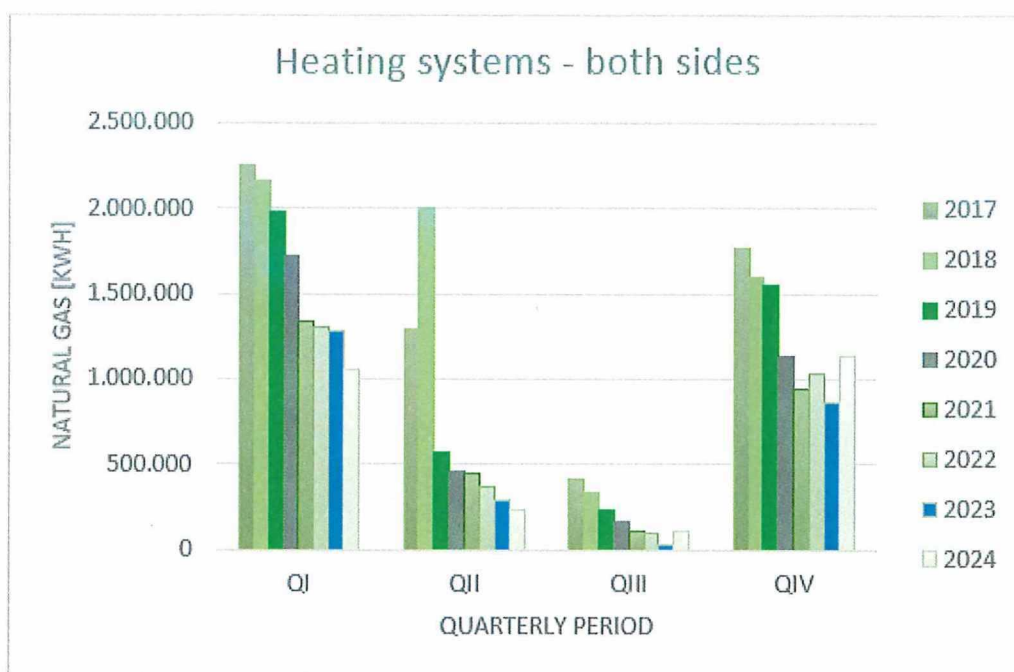


Figure 6: The heating energy of both sides adjusted with the degree-days figures.

We have revised the parameters at plant I which helped us to drop the energy consumption of the buildings significantly. The building control system is in operation. We still see a high natural gas consumption during winter times although the figures dropped to a much lower level.

Heating energy per square meter [kWh / m ² /a]	2016	2020	2024	2025-Target
Plant I	193	149	124	120
Plant II	149	35	11	15

Degree-days figures adjusted building heat energy per square meter.

It is a duty to improve the process heat recovery further to become neutral with our building heating systems within the next ten years.

3.4. Empowerment and Health and Safety

Training

Increase hours of training per employee (Baseline 2015)

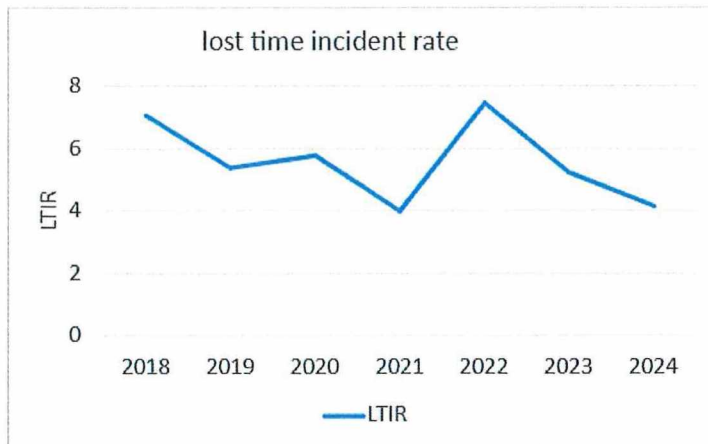
CSR to 4 hours status 2.8h

Safety to 2 hours status 1.8



The level of training per employee in CSR activities decreased, which is dissatisfying. Our intention is to hold additional fire protection and first responder training this year. We started the safety training sessions for the office last year and will increase this activity this year. We will also motivate the responsible managers to pursue their journey to a higher participation quote of their employees at CSR training.

LTIR



Decrease of LTIR (Baseline 2018)

Total bellow 1 accidents per 200.000 working hours

status 4.14

The LTIR (lost time injury rate) for all accidents again declined and normalized at a level of 4.14. This is the result of the increased safety measures and the investments in additional personal protection equipment. We did not face critical or severe injuries internally due to accidents on both sites. Commuting accidents also decreased, which is a result of the increased awareness training as part of the yearly safety training.

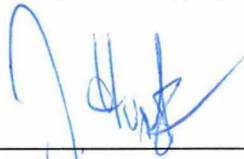
Compliance

We set and continuously refine our own standards as a matter of course to comply with statutory requirements as well as environmental and sustainable aspects. Another integral part of our compliance system is the training of our employees to improve the general awareness and encourage them to put compliance rules into practice. This fosters a culture of continuous improvement in compliance and sustainable topics and protect us against infringements.

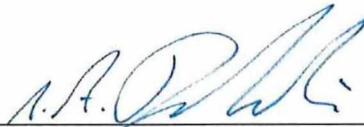
Responsibility statement

To the best of our knowledge, and in accordance with the applicable reporting principles, the sustainability report gives a true and fair view of the development and performance of the energy and environment management system at Nipro PharmaPackaging Germany. It can be shared with all our neighbors and business partners.

Münnerstadt, Germany, April 22, 2025



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