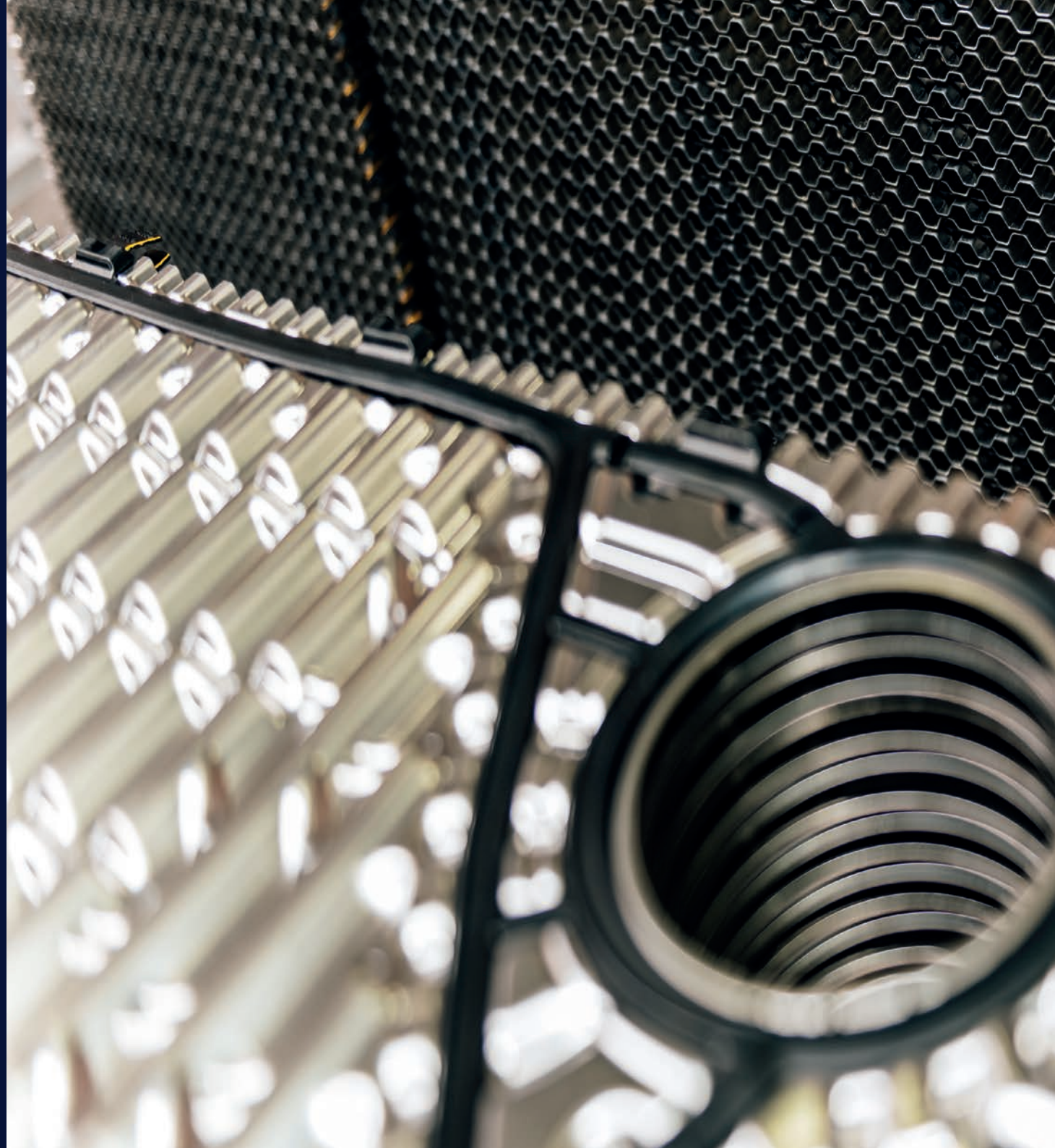
KAPP
HEAT TRANSFER ENGINEERS

Sustainability report 2022

KAPP

HEAT TRANSFER ENGINEERS

Becoming good at something is largely a matter of common sense. Thorough technical knowledge of our own products, understanding of the market and specific requirements are all necessary prerequisites. Having the brains and knowing the right things is one thing. What you also need to become a specialist is experience - and the mental ability to use that experience over and over again. Because the very companies that work in a differentiated market are able to use the experience they gain along the way to future challenges. We call this process adaptive thinking. By reusing our knowledge and experience every day, we have built up a huge advantage over our competitors. And we are honoured when you, and the environment, benefit from this.



INTRODUCTORY WORDS FROM OUR DIRECTOR

"We actively pursue our sustainability goals on a day-to-day basis.

TJARK DE LANGE - DIRECTOR

We are delighted to introduce to you our second sustainability report, marking a significant milestone as Kapp celebrated its 25th anniversary in 2022. This report builds upon the strong foundation laid in our inaugural report for the year 2021, showcasing the progress we have made and the new heights we are determined to reach. The journey of creating our first report had a profound impact on us, prompting deep reflection on our past performance and inspiring us to identify areas for further improvement. As a result, we have already implemented measures and initiated positive changes that will shape our sustainable future.

Even though as an SME, we are not obligated to meet CSR-requirements, we have voluntarily embraced this duty. We actively pursue our sustainability goals on a day-to-day basis and proudly take responsibility for them. Building upon the foundation set in our 2021 report, at Kapp, we remain steadfast in our belief that our greatest influence lies in inspiring our customers to reduce their energy consumption through the adoption of innovative heat transfer technology. While our own carbon footprint as a service organization may not be substantial, it does not defer our determination to take proactive measures towards achieving net-zero emissions by 2030. In this sequel report, we take great pride in showcasing the remarkable strides we have taken thus far, along with the ongoing actions we are wholeheartedly committed to. Our pursuit of fostering a more equitable and sustainable society continues to be our driving force. Through collaborative efforts with our esteemed partners, we eagerly anticipate making increasingly ambitious contributions that will leave a lasting social and environmental impact in the years that lie ahead.

With a quarter of a century under our belt, we are proud to have been at the forefront of sustainable practices. As we delve into the contents of this report, we invite you to join us on this remarkable journey of transformation. Together, we can catalyse change, inspire sustainable practices, and create a better world for generations to come.

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KAPP AT A GLANCE (2022)

Energy use

12,159 kWh
net bought electricity

43,278 kWh
used for our electric vehicles

38,819 kWh
solar power generated

Our own consumption

1,029 kg
company waste generated

515 kg
paper waste generated

17.5 metric tonnes CO_2
withing scope 1 & 2

Technology conversion

44 projects
with significant material use reduction realised

257 metric tonnes
material (steel) reduced versus conventional technology

627 metric tonnes
of CO_2 emissions diverted

Employees

14 employees
with a mean tenure of 12 years

50 hours
of professional development on avarage per employee

Heat recovery projects

64
heat recovery projects

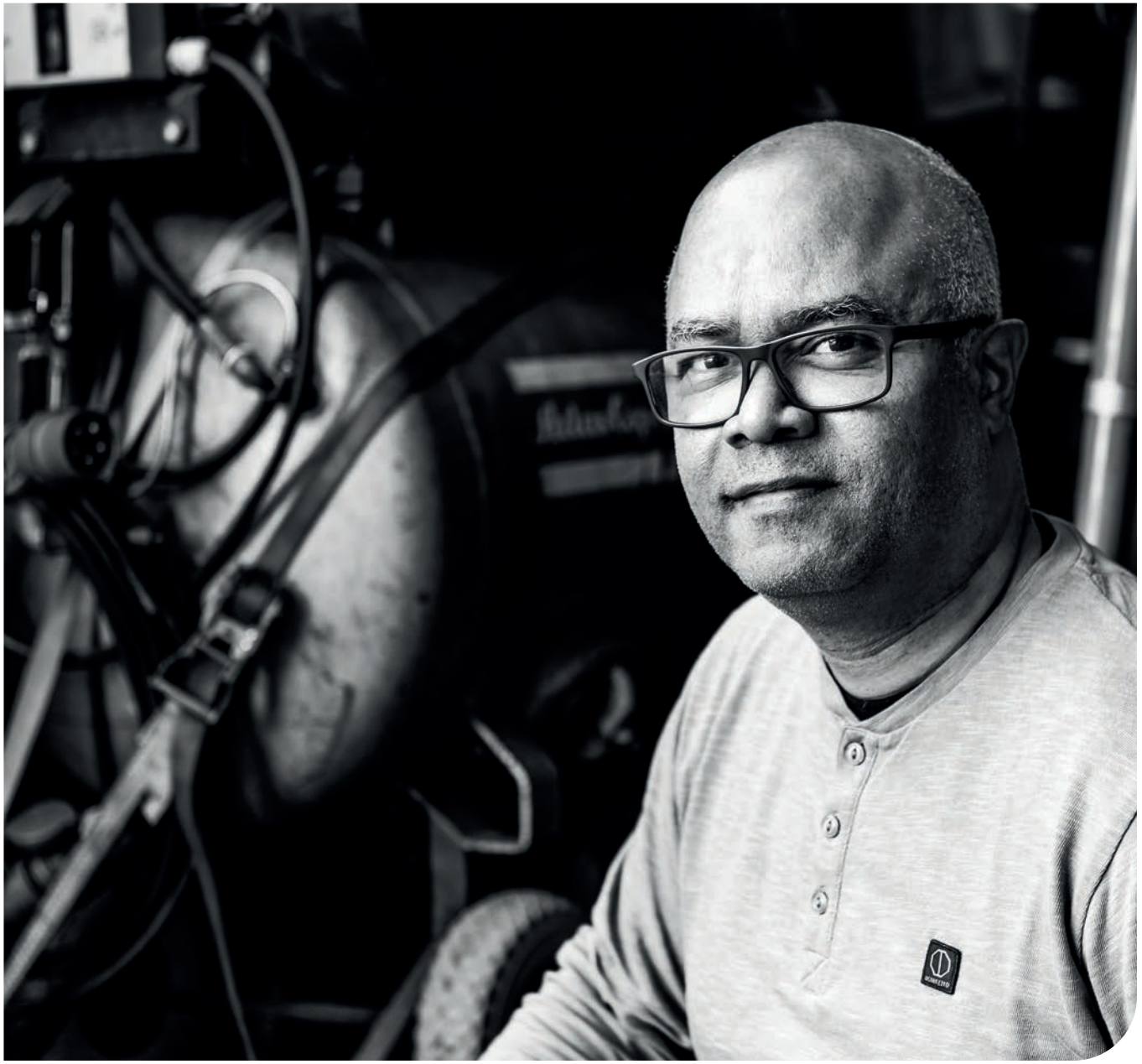
231 MW
additional heat recovery realised

1.82 TWh
total additional annual heat recovery from projects realised

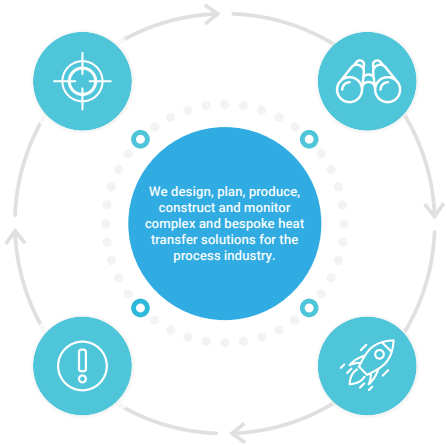
428,500 metric tonnes
CO_2 diverted for clients

OUR PROMISE

Becoming proficient in any field requires a combination of common sense and technical expertise. In our industry, it's essential to have a thorough understanding of our products, the market, and its specific requirements. However, possessing this knowledge is not sufficient. To become true specialists, we must have experience and the mental agility to apply it repeatedly. At Kapp, we use our knowledge and experience daily and we focus on heat transfer only, which has given us a significant advantage over our competitors. We are proud to use this advantage to benefit our clients and the environment.



VALUE CREATION MODEL

INPUTS	BUSINESS MODEL	OUTCOMES	IMPACT
Human Our team comprises 15 skilled and motivated specialists. Kapp boasts a flat organizational structure.	**Mission** To accelerate the energy transition by fundamentally optimize our clients' processes and projects. **Vision** "Here to teach, here to learn". A vision that stems from the realisation that time is pressing, and that we can accelerate the energy transition especially together with other experts.	Our employees serve as valuable ambassadors for the company. A collaborative and agile work environment, allowing for quick decision-making, effective communication, and enhanced employee autonomy.	A workplace that is highly desirable, an environment where employees are engaged and motivated.
Intellectual We possess extensive expertise in heat transfer and a deep understanding of the industry. Our "Here to Teach, Here to Learn" principle is taking shape through collaboration with startups, scale-ups, and new energy players.		Gaining lots of new insights by means of our HTTHTL-approach. Continuous growth and a culture of lifelong learning and development.	Continuous personal and professional growth for our employees, further enhancing their knowledge and skills.
Product Our product portfolio includes a wide range of heat exchangers. We hold a unique position in the market with our compact heat exchangers. Heat exchangers are inherently a sustainable product.		Every heat exchanger we deliver contributes to a significant reduction in CO_2 emissions. Our compact technology alone has already diverted 627 metric tonnes of CO_2 emissions in 2022.	Significant contribution to a more equitable and sustainable society through our products and services.
Financial Kapp maintains a solid financial foundation. Healthy cashflow.		Kapp is widely regarded as a reliable partner by both manufacturing partners and clients Our financial position gives us the opportunity to invest.	Creating value not only for our personnel, clients and partners but also for society and the environment.
Social We have established long-lasting relationships with five different manufacturers. We maintain a healthy ratio of key accounts.	**Risks** Resource scarcity Lack of technically skilled people Investments may be put on hold due to significant inflation. **Opportunities** Growing demand for energy efficient solutions. Electrifying industries Lots of promising start-ups and scale-ups	Our manufacturing partners rely on our capabilities and market insights within the Benelux region. (Key) accounts often act as ambassadors.	Stakeholder satisfaction; ensuring that the needs and expectations of our stakeholders are met effectively.

VISION & PURPOSE

Our vision remains unchanged: to create a CO_2-neutral industry where every aspect of energy is harnessed as efficiently and sustainably as possible. As we embark on our 2022 CSR report, we are fueled by our commitment to this transformative goal.

OUR APPROACH

Designing a heat exchanger and selecting its components requires thorough attention to numerous crucial factors. To ensure successful outcomes, it is crucial to identify your requirements upfront. During the quotation phase, we meticulously evaluate the process, installation, and parameters, which serve as the foundation for our proposal. Typically, we present multiple options with comprehensive details of the technical, sustainable and financial benefits and risks for each scenario. With 25 years of experience in the field of heat transfer, we are confident in our expertise. We provide a thermal guarantee backed by our precise calculations. You can trust us to deliver on our promise.

SUSTAINABLE IMPACT

Having established our CSR report in 2021, we now have a baseline against which we can measure our progress. In today's world, we recognize the energy transition as society's greatest challenge, and at Kapp, we are committed to making a meaningful impact. Heat transfer inherently embodies sustainability through its core function of energy conservation and efficiency. However, our ambition drives us to go further and embrace a more sustainable approach to business for the benefit of all our stakeholders.

In our 2022 report, we will showcase the steps we have taken on our sustainability journey, presenting tangible results and ambitious initiatives that foster positive change. Driven by our core values, we continuously explore innovative practices, collaborations and sustainable technologies, all with the aim of shaping a greener and more resilient future for generations to come. We will assess our progress against the previous report, highlighting the improvements we have achieved. Through these ongoing efforts, we are working towards a more sustainable and responsible way of conducting business.

MATERIAL TOPICS

A dynamic and adequate materiality matrix serves as a compass, guiding Kapp's sustainability journey. It illuminates the core sustainability themes that hold paramount importance - the ones that truly define our purpose. By maintaining consistency with these materiality topics in this report, we ensure a clear and precise depiction of our progress in driving sustainability forward.

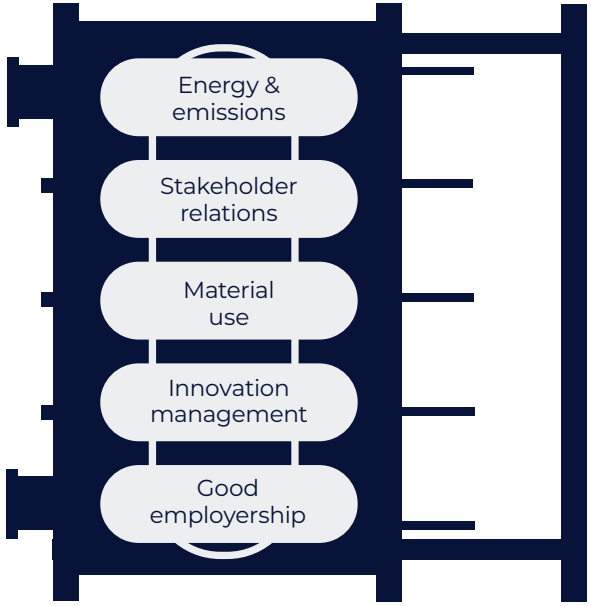
- **Energy & emissions:** At Kapp, we play a pivotal role in facilitating heat transfer, enabling our customers to significantly reduce their energy consumption and the associated CO_2 emissions. While our own energy usage and emissions as a service organization are relatively low, we understand the urgency of the current energy and climate crises. It is our responsibility to minimize our energy consumption and emissions to contribute to a sustainable future.

- **Stakeholder relations:** Kapp thrives on the strength of our enduring partnerships with suppliers and our commitment to fostering positive customer relationships. We recognize the indispensability of these connections in our operations. Ensuring customer satisfaction is of paramount importance to us, as we strive to exceed expectations and deliver exceptional service.

- **Material use:** Although we do not directly manufacture heat transfer systems, we actively advise our customers on reducing material usage in their systems. By proactively addressing material consumption, we make a substantial contribution to combatting the growing scarcity of resources. Our commitment to sustainable practices extends beyond our own operations to encompass the entire lifecycle of heat transfer systems.

- **Innovation management:** Innovation is the lifeblood of our projects, as often customer's unique context and requirements necessitate creative and tailored solutions. We invest significant time and resources into continuously developing innovative approaches, enabling us to stay at the forefront of the industry and meet the evolving needs of our customers.

- **Good employership:** Our employees are the cornerstone of our success, and their well-being and development are of utmost importance. We prioritize creating a positive work environment and fostering good working conditions, ensuring our employees feel valued, motivated, and empowered to thrive. By investing in our team, we cultivate a culture of excellence and nurture the future growth of our company.



ENERGY & EMISSIONS

IMPACT AMBITION

Since 2020, the United Nations has been actively promoting the decade of action, urging for significant reductions in greenhouse gas emissions, increased use of renewable energy, and improved energy efficiency. Similarly, the European Union has established targets within its Climate and Energy Framework 2030 to achieve these goals. We at Kapp are fully committed to these objectives, and we work diligently every day to minimize energy consumption and emissions for both our clients and ourselves. As we approach the year 2030, there is a stronger collective effort among organizations to address this pressing issue. We find this trend encouraging as it signifies a growing recognition that immediate changes are necessary. However, we are aware that there is still much work to be done. We acknowledge the magnitude of the task at hand and are determined to continue our efforts towards a more sustainable future.

COMMITMENTS

As part of our commitment to transparency, we have made significant efforts to track and monitor our scope 1 and 2 emissions. However, we recognize that our indirect impact, particularly in scope 3 emissions, holds the most significance. Therefore, starting in 2021, we have begun collecting data on our scope 3 emissions and quantifying the reductions we facilitate for our customers. This valuable information provides us with insights into the positive energy-saving contributions we enable on an annual basis. The substantial amount of energy saved in 2021 through our heat exchanger solutions has reinforced our belief in our position and the positive difference we make in combatting climate change. Looking ahead, we remain dedicated to our sustainability goals. We will continue to prioritize innovation, collaboration, and concrete actions to ensure we achieve full carbon neutrality by 2030, surpassing the goals set by the Paris Climate Agreement.our scope 3 emissions and reductions we create for our customers. Frankly, we were amazed at the amount of energy we help our customers save on an annual basis. Our heat recovery solutions really do make a difference.

ACTIONS TO MANAGE IMPACT

- Every year, we diligently track and report our scope 1 and 2 emissions to gain valuable insights into our progress towards sustainability.
- As part of our ongoing efforts, we actively track and monitor scope 3 emissions on an annual basis, recognizing the importance of shared responsibility in reducing our environmental impact.
- We have sustained our efforts in electrifying our vehicle fleet, leading to a further reduction in our scope 1 emissions.
- We're participating in Project 6-25. This cooperation underlines the crucial role technology will play in successfully addressing the climate & energy challenges faced by society. By reducing industry's carbon footprint and facilitating large-scale implementation of innovative technologies, it can make a lasting contribution to a more sustainable society. At the same time it can contribute towards a more competitive industry delivering innovative products and generating green jobs.
- We continuously strive to improve year after year, considering it a distinct objective to consistently enhance our sustainability practices.

TRACKING EFFECTIVENESS

In 2022, our own carbon footprint comprised the following aspects:

TOPIC	VALUE 2022	KG CO_2
Bought Electricity (Non-renewable)	0 kWh	0
Bought Electricity (Renewable)	37,988 kWh	0
Solar generated electricity total	38,819 kWh	0
Solar generated energy fed back to the grid	25,829 kWh	0
Net bought electricity	12,159 kWh	0
Natural gas	1,646 m^3	3,422
Fuel (E10)	2,485 liters	7,010
Fuel (Diesel)	2,039 liters	6,639
Electricity for mobility	43,278 kWh	0

We expanded upon our prior accomplishments by further diminishing energy usage and the consequent emissions of CO_2 for our clientele:

TOPIC	**2022**
Number of heat recovery projects	64
Total additional heat recovery realised	231MW
Total additional annual heat recovery from projects realised	1.82 TWh
Total CO_2 emissions diverted*	428,500 tonnes

** Diverted CO_2 emission based on natural gas equivalent in The Netherlands – Source: https://www.co2emissiefactoren.nl/lijst-emissiefactoren/*

CASE STORY 1

CO_2-REDUCTION THROUGH FULL HEAT INTEGRATION STUDY AND TECHNOLOGY SELECTION

This case study highlights our collaboration with Duiker Clean Technology, a company having its roots in the Oil & Gas industry but now dedicated using their technological lead to enable ammonia to hydrogen conversion at large scale into a green, efficient, and sustainable reality.

The Challenge: Duiker develops its innovative cracker process to convert imported green ammonia into hydrogen (H_2). This process is inherently endothermic, requiring high temperatures and substantial heat input for the efficient conversion of ammonia to its constituent elements. Duiker's goal was clear: achieve maximum heat integration to minimize energy use thereby eliminating the need to burn hydrocarbons, all while ensuring the most energy-efficient ammonia-to-hydrogen process.

Kapp, in collaboration with Duiker, embarked on a comprehensive heat integration study in parallel with the development of Duiker's cracking process. Our two primary objectives were to determine the maximum heat recovery feasible and select the best available technologies for the eight different heat exchangers required within Duiker's innovative process.

1. Full Heat Integration: We meticulously examined the process flows to identify opportunities for heat recovery and integration.
2. Technology Selection: Our engineers rigorously evaluated and selected the most advanced and efficient heat exchanger technologies available to ensure optimal performance.

Results: Through our collaborative efforts with Duiker, we achieved a remarkable energy efficiency that yields the lowest cost per unit of hydrogen while avoiding all carbon emissions associated with the ammonia-to-hydrogen conversion process.

RELATIONSHIP WITH STAKEHOLDERS

IMPACT AMBITION

In our 2021 sustainability report, we emphasized the immense value we place on our partnerships, which stand alongside our employees as our most cherished asset. These longstanding collaborations have been nurtured over the years, enabling us to provide our customers with exceptional service, enhance our business continuity and collaborate with our partners and customers on their sustainability journeys.

In our 2022 sustainability report, we continue to build upon this foundation, acknowledging the challenging times experienced alongside our partners and customers. Amongst other issues, the war in Ukraine disrupted supply chains and a surge in demand for basic materials resulted in material shortages, leading to extended lead times and increased prices for our heat exchangers. Navigating these complexities was no easy task, as we sought to manage these challenges with our customers while also maintaining positive relationships with our production partners.

One of the biggest issues during this time were delivery times, which came under significant pressure due to the disrupted delivery chains. Factors which were beyond our control, making it even more crucial for us to take action where we could. Despite the difficulties, we were determined to do our utmost in expediting our processes, providing transparency to both client and partners, and maintaining a clear overview of the situation at all times. Understanding the importance of timely deliveries for our customers, we implemented various measures to mitigate the impact of extended lead times. We worked closely with our production partners to streamline operations and identify alternative supply routes wherever possible. By proactively communicating with our customers, we provided regular updates on the status of their orders, ensuring transparency and managing expectations effectively.

COMMITMENTS AND GOALS

However, throughout these obstacles, we remained steadfast in our believes. We consider it our responsibility to stay abreast of our customers' technological needs and market trends. This knowledge is not kept to ourselves; we actively share these insights with our partners, fostering collaboration and mutual growth. Conversely, we maintain close and regular communication with our partners, establishing a strong working relationship that keeps us informed about our suppliers' technical advancements and potential opportunities. By maintaining this constant flow of information, we bridge the gap between our customers' needs and technical concepts, ensuring effective communication and alignment between all parties involved. Our role is to facilitate the translation of customer requirements into viable heat transfer solutions and vice versa, enabling seamless collaboration and driving meaningful progress.

ACTIONS TO MANAGE IMPACT

In the face of before mentioned challenges, we recognized the imperative to take decisive actions to manage their impact on our operations and relationships.

- Engaged proactively with production partners to streamline operations.
- Identified alternative supply routes to mitigate material shortages.
- Our "here to teach, here to learn" approach is ingrained throughout our company, fostering mutual learning and collaboration with all stakeholders.
- Established a new partnership with Nexson, a leading manufacturer of spiral heat exchangers, to enhance our product offerings and address evolving industry needs.

> *"We consider it our responsibility to stay abreast of our customers' technological needs and market trends.*

NEIGHBOURLY CONDUCT

We firmly believe that supporting local entrepreneurs, fostering community bonds, and reducing environmental impact are essential components of our mission. Our pledge to shop locally first and explore alternative sources only when necessary continues to be a cornerstone of our sustainable approach, reflecting our enduring commitment to our neighbours, the environment, and the well-being of all stakeholders in our community.

CASE STORY 2

HERE TO TEACH, HERE TO LEARN

When talking about stakeholders, one project that immediately comes to mind is our collaboration with an esteemed neighbour. The Flow Center of Excellence (FCoE), a platform dedicated to fostering innovation and education, reached out to Kapp and requested our help in advancing their installation. We personally delivered them a heat exchanger (pro bono in this case), and it's convenient that their location is just a stone's throw away from our headquarters in Dordrecht, the Netherlands.

FCoE provides easy access to unique, safe, and "real-life like" installations to facilitate companies and educational institutions in their activities, such as calibration, testing, (product) training, and education. The XCaliber flow-loop is a water-loop built based on the example of EuroLoop, the largest and most accurate calibration facility for high-pressure oil and gas meters in the world. Kapp supplied a Kelvion Plate & Frame heat exchanger for a new heat transfer loop in the existing setup.

The heat exchanger sits in a new loop of the Xcaliber setup and provides a solution for effective temperature control. Previously there was a small brazed heat exchanger here, but it proved inadequate for proper temperature control. We selected and delivered a Plate & Frame heat exchanger with a larger heat exchange surface area, fully dismountable and scalable. We chose this type partly because it offers numerous possibilities in the area of education and simulation, since the heat exchanger can be viewed not only from the outside, but also from the inside. By varying the number of plates in the heat exchanger, the effect on the installation can be simulated and determined. And it allows FCoE to simulate fouling in the plate heat exchanger to determine the effects on heat transfer in practice.

Kevin (Project Engineer at Kapp) mentioned that he found the project interesting for multiple reasons: "Not only are we assisting FCoE in expanding their installation, but we also gain new insights from students who optimize the system by empirically testing the very latest algorithms." We can't say it enough: "We're here to teach, here to learn."

MATERIAL USE

IMPACT AMBITION

The year 2022 brought forth a myriad of challenges, including the lingering effects of the pandemic and geopolitical tensions such as the war in Ukraine. These disruptions have significantly impacted the global raw material markets, exacerbating the complexities surrounding supply and demand dynamics. In light of these circumstances, Kapp recognizes the pressing need to reduce our reliance on materials and embrace sustainable practices throughout our operations and supply chain.
As we navigate the intricate landscape of raw material markets, we understand that every ounce of material used has far-reaching implications for the environment and exacerbates the existing crises we face. Therefore, it has become increasingly crucial for Kapp to prioritize sustainable material use and forge enduring relationships within our supply chain. By doing so, we can fulfil our brand promise while mitigating our environmental impact.
Moreover, we acknowledge the growing threats posed by climate change to global supply chains. In response, we are steadfast in our commitment to adopting more sustainable and circular approaches to material utilization. We continuously explore innovative options for sustainable material use in our heat transfer systems, ensuring that these benefits extend not only to our customers but also to our valued partners in the supply chain.

COMMITMENTS & GOALS

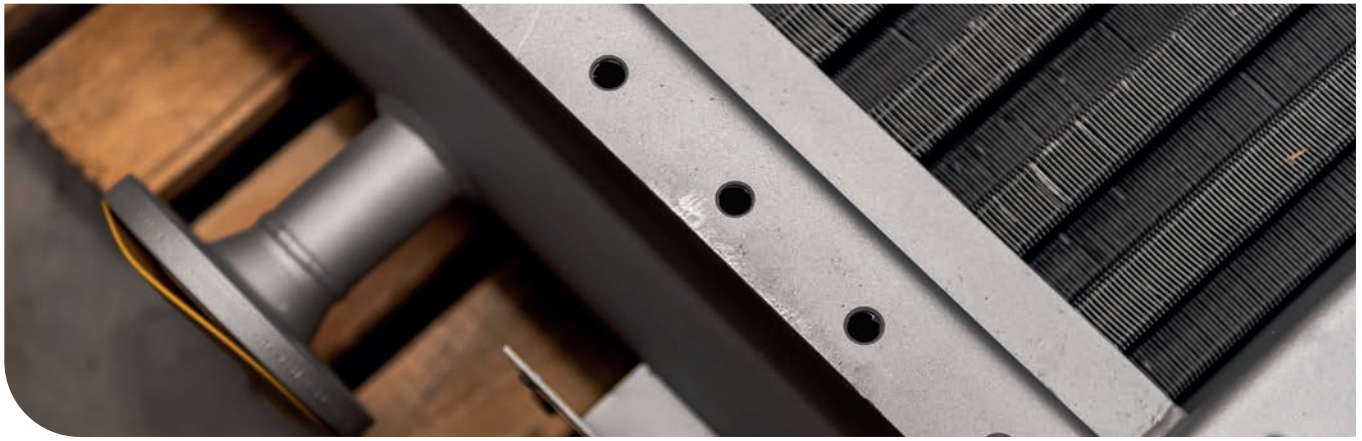
In line with our dedication to sustainable practices, we have established ambitious commitments and goals for the coming years:

- By 2025, we strive to achieve a 20% increase in the use of recycled materials in our production processes, promoting a more circular economy.
- We diligently monitor material savings per customer project, measuring our progress in reducing material consumption and waste.

ACTIONS TO MANAGE IMPACT

To effectively manage our impact and drive change, we have implemented a range of actions:

- We actively engage in partnerships and collaborations centered around the promotion of sustainable material use, fostering knowledge exchange and collective progress.
- Through our technology conversion program, we guide and support our customers in transitioning from conventional to compact heat transfer systems, which not only optimize efficiency but also reduce the overall material footprint.



TRACKING EFFECTIVENESS

In the face of evolving market complexities, Kapp remains resolute in our commitment to sustainable material use. We recognize that by utilizing fewer materials and embracing compact heat exchanger techniques, we can play a pivotal role in mitigating the strain on raw material markets and contribute to a more sustainable future for all.

Although traditional tube heat exchangers are still widely used in the process industry, they may not always be the optimal solution. While conventional heat exchangers such as Shell & Tubes have been a reliable workhorse for decades, they are also bulky, expensive, and have long lead times. At Kapp, we often encounter situations where plate heat exchangers are better suited for providing higher efficiency, reliability, and cost savings. Our solutions can weigh 70% less, cost 50% less, and recover more heat. We offer a Technology Conversion study that objectively evaluates whether a different type of heat exchanger can deliver improvements. We outline the benefits in terms of efficiency, reliability, and investment.

Since its introduction in 2021, our Technology Conversion Study has led to the successful implementation of multiple projects. Through the utilization of our compact heat transfer solutions, these initiatives have resulted in substantial savings of raw materials.

TRACKING EFFECTIVENESS

TOPIC	2022
Number of projects with significant material use reduction (technology conversion) realised	44
Total mass material (steel) reduced versus conventional technology	257 metric tonnes
Total CO_2 emissions diverted*	627 metric tonnes

** Diverted CO2 emission based on stainless steel equivalent – Source: https://worldsteel.org/wp-content/uploads/worldsteel_eco-profiles_global-Eng-Steel-2022_Construction.pdf*

CASE STORY 3

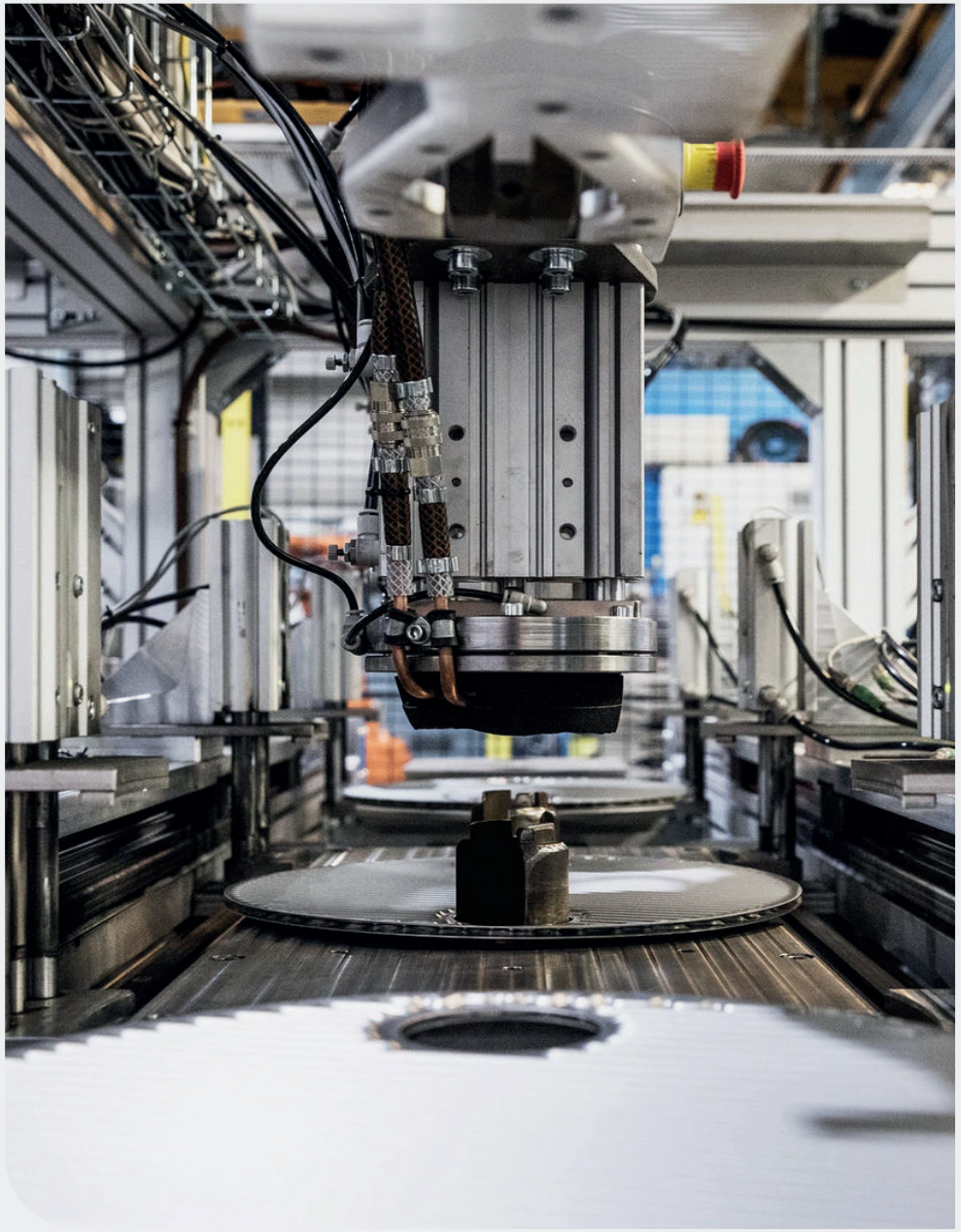
SUCCESSFUL TECHNOLOGY CONVERSION STUDY HELPED SAVE AT LEAST 16.000 KG STEEL, EQUIVALENT 39 METRIC TON CO_2

In our pursuit of environmentally responsible solutions, we embarked on a new endeavor: the Technology Conversion Study. This case study provides us with a valuable reference.

For their future hydrogen plant, our customer initially contemplated the utilization of conventional Shell & Tube heat exchangers. Through our Technology Conversion Study, we identified a more compact alternative. Kapp not only suggested but also meticulously designed a number of Plate & Shell heat exchangers as a superior alternative. These heat exchangers not only met the rigorous safety and compliance requirements but also brought significant environmental advantages.

The project comprised five distinct stages and was divided into two trains, totalling ten Plate & Shell heat exchangers. The precision engineering behind this design ensured optimal efficiency and safety.

The results speak volumes. Through this technology conversion, we achieved a remarkable 16-ton weight reduction, when compared to conventional Shell & Tube heat exchangers. This achievement is not just a testament to our dedication to sustainability but also highlights the efficiency of Vahterus' heat exchanger technique. As a ripple effect, the weight-saving measures extended beyond the heat exchangers itself, for example on structures and foundations, resulting into savings equivalent to approximately 1-2 times the initial 16 metric ton reduction.



INNOVATION MANAGEMENT

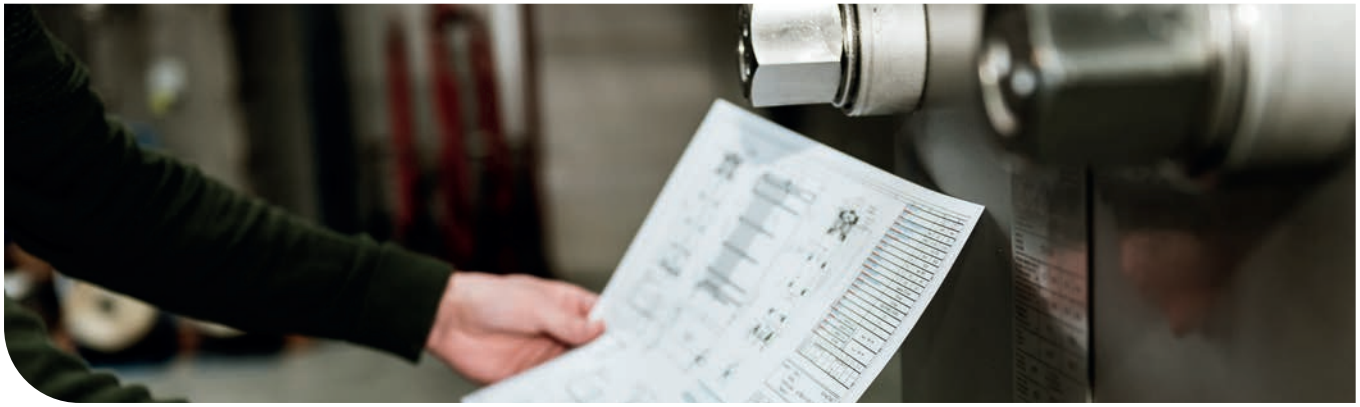
IMPACT AMBITION

At Kapp, innovation is the driving force behind our operations. We pride ourselves on delivering bespoke projects that cater to the unique needs of our clients, constantly pushing the boundaries of design and incorporating the latest industry trends. By embracing innovation, we empower our customers to achieve optimal energy efficiency and sustainable outcomes.

COMMITMENTS & GOALS

While the fundamentals of heat exchanger technology may be well-established, we remain committed to pushing the boundaries of what is possible. We understand that true innovation lies not in the device itself but in its application. One area where we see immense potential is the production of hydrogen, which demands novel approaches in the industry. In 2021 and 2022, we have undertaken an extensive study of the hydrogen process, identifying five critical steps: electrolysis, cooling, compression, drying, and final compression. Each step presents unique challenges, and we have identiefied innovative solutions to address them. These insights have been distilled into concise translations and visually engaging materials, which we will share through our upcoming website (launching in Q1-2023) and dedicated whitepapers.

Moreover, we acknowledge the crucial and transformative role that electric heaters will play in the comprehensive electrification of the industry. This recognition has driven us to establish a strategic partnership with Thermon, a leading manufacturer of electric heaters. We have witnessed a notable increase in the demand for industrial electric heaters, particularly in cases where the use of fossil fuels is undesirable or restricted, as well as in situations where companies have surplus sustainable electricity available.



In 2022 we have made the following commitments:

- We remain committed to delivering tailored heat exchangers that precisely meet the unique needs of our clients. Our strength lies in our independent position as an engineering company, working closely with a diverse range of manufacturing partners. This collaborative approach ensures that we can always provide the best-fit solution.
- Collaborating with our partners to foster innovation across the supply chain, supporting the transition to cleaner and more efficient energy solutions while reducing material consumption.
- Electrify where needed. Electric heaters offer a sustainable and efficient way to generate heat without the need for fossil fuels.

ACTIONS TO MANAGE IMPACT

To effectively manage our impact and drive innovation, we have implemented the following actions:

- We have established a strategic partnership with Thermon, a leading supplier of electric heaters. This collaboration is driven by the growing recognition that fossil fuels are being phased out or deemed undesirable in many applications. In such cases, electric heaters offer a viable alternative.
- Offering project-specific innovation support to our manufacturing partners, fostering a culture of continuous improvement.
- Embracing a collaborative approach with start-ups and companies in the new energies sector, sharing knowledge and learning from each other.

TRACKING EFFECTIVENESS

To gauge the effectiveness of our collaboration with Thermon, we have analysed the number of inquiries. Since 2022 we are offering their heaters to our customers. Within the first year alone, we received 26 inquiries and requests for these heaters. This strong market interest confirms our commitment to advancing in this direction, demonstrating the growing demand for sustainable industrial heating solutions.

"While the fundamentals of heat exchanger technology may be well-established, we remain committed to pushing the boundaries of what is possible.

CASE STORY 4

TRANSFORMING MANURE INTO AN ECO-FRIENDLY FUEL

BASgas, a pioneer in organic agricultural systems, is driving change in the biogas sector. Their innovative system upgrades and compresses biogas, offering substantial benefits for the environment. Kapp played a vital role in turning this vision into reality, by engineering and delivering a crucial high-pressure heat exchanger: Operating at 200 bar, this tube-in-tube heat exchanger efficiently cools the gas with water/glycol on the opposing side.

Agriculture faces the challenge of reducing emissions, notably ammonia and methane. By sealing manure and urine storage, gases are captured, leading to increased methane production by anaerobic digestion. BASgas provides an avenue to monetize biogas by offering an innovative biogas cleaning and distribution system based on high pressure compression. Subsequently, it becomes suitable for storage in cylinders, rendering it suitable for a variety of applications. An excellent illustration is its utilization as a sustainable alternative for power generation at festivals, thereby substituting diesel generators.

BASgas and Kapp's collaboration epitomizes innovation's role in addressing environmental concerns. BASgas' pioneering biogas upgrade and compression system offers a sustainable energy solution, while Kapp's heat exchanger expertise ensures reliability. Together, they are steering agriculture towards a more sustainable, eco-conscious future, reducing emissions and promoting green practices.

GOOD EMPLOYERSHIP

IMPACT

As we reflect on another year of growth and progress at Kapp, we acknowledge the ever-evolving landscape of talent acquisition and the challenges we faced in attracting new personnel in the current employee-market. In this sequel to our 2021 CSR report, we delve deeper into the importance of employee loyalty and detail the measures we implemented to overcome associated challenges. Additionally, we assess the hurdles we encounter in recruiting new talent and address our strategies to navigate them successfully.

At Kapp, we consider ourselves fortunate to have cultivated a workforce characterized by unwavering loyalty. By fostering a culture of trust, empowerment, and meaningful work, we have been able to create an environment where employees feel valued and motivated to contribute their best. We understand that true loyalty is not built overnight but is a result of consistent support, open communication, and opportunities for growth. By offering continuous learning and development opportunities, recognizing achievements, and providing a clear career path, we aim to reinforce the loyalty of our employees and make Kapp a place they can call their "professional home for a lifetime".

The year 2022 presented Kapp with a unique set of challenges in our pursuit of finding and recruiting exceptional talent. The tightening labor market for engineers intensified the competition among organizations seeking skilled professionals. This trend created a scarcity of qualified candidates and amplified the need for us to be proactive and agile in our talent acquisition efforts.

COMMITMENTS & GOALS

- Leveraging employee loyalty: Amidst the challenges of talent acquisition, we remain grateful for the loyalty and commitment demonstrated by our existing employees. The mean tenure of our workforce continues to be a source of pride for us, and we recognize that our employees' dedication is a testament to the positive work environment and opportunities we provide. We appreciate that their loyalty has become even more crucial in the current employee-market, as it has allowed us to maintain stability and expertise within our organization.
- Acquire talent: As part of our philosophy to foster continuous growth, we're committed to find exceptional candidates who not only possess specialized expertise or a strong passion for becoming heat transfer specialists but also embody a mindset of mutual learning. We believe in creating a dynamic environment where talented engineers can both learn from us and contribute their unique knowledge, ensuring that we constantly evolve and expand our collective understanding in pursuit of excellence.

ACTIONS TO MANAGE IMPACT

- Enhancing employee experience: We invested in initiatives to enhance the overall employee experience, ensuring that our workforce feels valued, motivated, and connected to the organization's purpose.
- Retaining top talent: Recognizing the importance of retaining our most talented individuals, we introduced tailored retention programs that acknowledged their contributions and provided avenues for advancement. These initiatives served to reinforce the sense of loyalty among our employees, creating an environment where they feel encouraged to stay and grow with Kapp.

- Competitive rewards and benefits: We continued to offer competitive primary and secondary benefits, ensuring that our employees' hard work and dedication were acknowledged and rewarded. By benchmarking our compensation packages against industry standards, we aimed to attract and retain the best talent, mitigating the challenges posed by the employee-market.
- Acquiring talented employees: Through our "Working at Kapp page", we continuously demonstrate our commitment to sustainability and emphasize opportunities for talented individuals who share our values. We firmly hold the belief that our organization can accommodate talented employees, regardless of the presence of open vacancies. As we continue to grow, we reaffirm our promise to create space for individuals to thrive, driving positive change and propelling us towards a more sustainable future.

TRACKING EFFECTIVENESS

While the employee-market presented its share of challenges in talent acquisition, Kapp's commitment to nurturing employee loyalty has been instrumental in overcoming these obstacles. We remain grateful for the loyalty demonstrated by our workforce and recognize that their dedication plays a pivotal role in our continued success.

TRACKING EFFECTIVENESS

TOPIC	2022
Number of employees	14
Mean tenure of employees	12 years
Employees < 26 years	1
Employees 26 - 35 years	3
Employees 36 - 45 years	3
Employees 46 - 55 years	5
New hires	1
Employees left	0

CASE STORY 5

KEVIN – WORKING FOR KAPP SINCE Q2-2021

Alongside my master's studies in chemical engineering, I embarked on a role as project engineer at Kapp, seeking to gain industrial experience in real-world cases and contribute to the energy transition. The combination of academia and industry proved to be a captivating endeavour, accelerating my learning cure, and ensuring that each day was filled with engaging challenges. After a year of accumulating experience, I was entrusted with large, intricate projects, further deepening my fascination. I found myself among the minority of graduate student who were actively driving progress in the energy transition, particularly through interesting hydrogen projects.

Kapp provided me a remarkable degree of flexibility, allowing me to navigate my academic journey successfully. While conducting my master's research, I was granted access to company resources for running my computational fluid dynamic simulations on the thermal and velocity fields in a liquid-cooled nuclear reactor. Thanks to Kapp's flexibility, I completed my graduation project with a commendable score of 9 out of 10.

Additionally, I underwent a psychological assessment at a distinguished institute to explore career paths aligning with my capacities, personality, and interests. Kapp generously offered to full financial support for this undertaking.

In recent months, I rounded off my studies with an internship at another company, affording me invaluable international exposure. This necessitated a temporary leave of absence from Kapp. Now that I have graduated, I am eager to continue my journey at Kapp. I am profoundly grateful for the opportunities and support Kapp has extended, and I look forward to advancing my career alongside the company.

ACCOUNTABILITY

At Kapp, we take our commitment to transparency and accountability seriously when it comes to our sustainability reporting. Our report reflects a comprehensive assessment of our environmental impact, including the quantification of scope 1, 2, and 3 emissions.

- Scope 1 emissions: These are the direct greenhouse gas emissions produced by an organization from sources that it owns or controls. Examples include emissions from on-site fuel combustion and industrial processes.
- Scope 2 emissions: These are the indirect greenhouse gas emissions resulting from the generation of purchased electricity, heating, or cooling consumed by the organization. They occur outside the organization's operational boundaries but are associated with its activities.
- Scope 3 emissions: These encompass all other indirect greenhouse gas emissions arising from activities along the organization's value chain. Scope 3 emissions include sources not owned or controlled by the organization, such as emissions from purchased goods and services, employee commuting, business travel, and waste disposal.

To ensure the utmost accuracy and consistency, we have employed the same rigorous quantification methodologies as outlined in our 2021 report, in which we were thoroughly advised by Impact House by Grant Thornton Netherlands. Our sustainability report content has been meticulously gathered, compiled, and verified. Throughout this process, we have adhered to the "6-eyes principle," emphasizing the importance of multiple reviews and cross-checking to minimize errors and enhance the reliability of our data.

We understand the significance of the data and calculations presented in this report, and we stand behind the integrity of our reporting process. Our commitment to sustainability and transparency underscores our dedication to making informed and responsible decisions that contribute to a more sustainable future for all.

LOOKING FORWARD WITH JEROEN VAN RUITENBEEK

"With a focus on the right technology, timely action, and collaborative efforts, we believe we can make a significant impact in driving energy transition and efficiency.

JEROEN VAN RUITENBEEK - KAPP NEW ENERGIES

Having summarised last year's performances, Kapp is excited to continue the journey towards a more sustainable future for the industry. Building upon our achievements in 2022, we are committed to pushing the boundaries further and seizing the opportunities that lie ahead. With a focus on the right technology, timely action, and collaborative efforts, we believe we can make a significant impact in driving energy transition and efficiency.

While our added value predominantly lies within scope 3, we are not complacent. Recognizing the urgency of the global climate challenge, we are determined to phase out the use of fossil fuels in our daily operations and continue reducing waste streams. By prioritizing renewable energy sources and implementing innovative waste management strategies, we aim to minimize our environmental footprint and lead by example. In 2023, Kapp stands ready to contribute our expertise and resources to promising projects that promote energy optimization and efficiency. Whether it be the optimization of existing sites with a focus on better heat recovery and integration within brownfield constraints or the support of emerging technologies in biochemistry, hydrogen, electrification, and new energies, we are committed to playing an active role in shaping the industry's sustainable future.

As we celebrate 25 years of contributing to solving customer issues and increasing energy efficiency, we recognize that the road ahead is long, but our determination is stronger than ever. We firmly believe that by working together with all of our stakeholders, we can overcome the challenges ahead and create a more sustainable and resilient industry.

Together, let us embrace the opportunities that await us in 2023 and work towards a world where energy efficiency, environmental stewardship, and economic prosperity go hand in hand.

COLOPHON

This sustainability report is a publication of Kapp Nederland.

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