



# KLINGER NEWS

Group Magazine



# EDITORIAL



The UN Climate Conference took place in Paris last November: 196 countries effectively agreed to limit total net emissions for the rest of time. This has been seen as historic and ground-breaking result. Countries will now be legally bound to submit national targets for carbon reduction and to review them regularly.

On an international level, there is finally a deal which sends a clear signal to the community: Reduce global temperature increases and achieve net zero carbon emissions in the second half of the century. Nations are now legally bound to pursue the set goals.

So what does this mean for companies? Generating profit is one of the major priorities. Nevertheless, entrepreneurs also have a social responsibility and the best part about it: A positive business case exists for sustainability. Green is the new "gold".

Companies can achieve better growth and cost savings with simple energy efficiency measures. Positive effects on their brand and reputation help to build a strong brand and to strengthen stakeholder relations. Another topic is to identify and invest into projects which

anticipate major shifts. A risky initiative, but if you are one of these leading companies, it can be a powerful source of competitive advantage in the future.

In this KLINGER News, we would like to present how we deliver our "green value". We focus on developing products that provide even better performance in terms of functionality, reliability, durability and cost efficiency. A substantial benefit for our customers as well as for the environment, as extended product lifecycles reduce damaging ecological footprints. So find out more about our "road to sustainability", which I hope you will enjoy reading about!

Dr. Christoph Klinger-Lohr

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# SUSTAIN TO SURVIVE

## The results of the Paris 2015 UN Climate Conference



**Massive oil spills, the depletion of the ozone layer, global warming, the melting of the polar caps and the subsequent rising of ocean sea levels—these are but a few of the results of our over-reliance on fossil fuels to satisfy our ever-increasing energy demands. And some of the effects will not make themselves known for decades and centuries to come: Even if we stop emitting carbon today, its effects on the climate will remain unchanged for at least a century until a state of equilibrium has been achieved between the atmosphere and the oceans. Has mankind finally passed the point of redemption?**

The answer is not as clear-cut as one would hope. We can definitely quantify how much carbon dioxide we are adding to the Earth's atmosphere. What we do not know, on the other hand, is how much "our" emitted carbon is actually contributing to global warming. Even in our age of high-tech and information technology, there are still too many unknowns. One answer we can supply right now, however, is that it is time to act. And a buzzword which has been used and misused by politicians, economists and celebrities alike in this regard, is the principle of sustainable development.

### Sustainability

The term, coined in the course of the so-called "Brundtland Report", refers to a "development that meets the needs and aspirations of the present without compromising the ability of future generations to meet their own needs." In essence, sustainable development represents a more or less clean break

from technologies that have led and are still leading to worrying social and ecological damage on a global and local scale. And in order for our children to inherit a world worth living in, a radical change is precisely what we need: At present, more than 80% of the primary energy consumption is based on fossil fuels and this share is likely to remain high in the future. Even if renewables are being continuously added to the mix, read: the energy transition, our energy demand is still likely to rise as a result of the ever-increasing global population. Furthermore, due to the fact that modern-day economies are inter-dependent and that pollution does not stop at a country's borders, environmental problems must be addressed on a worldwide level. Luckily, global initiatives continue to attempt to tackle this challenge.

### Bonjour Paris

The most recent was the UN Climate Conference that took place last November in Paris. Compared with the last major attempt at COP15 in 2009 in Copenhagen, Paris featured a different approach: First, COP21 employed a 'bottom up' offer system as opposed to the standard 'top down' proposal: Individual countries were able to suggest what they perceived as fair and achievable emissions trajectories for their respective circumstances. Second, since 2009, the advances in clean energy technology have rapidly improved. In 2014, the newly installed capacity of renewable energy systems surpassed that of fossil fuel-based systems on a global scale for the first time ever. The last point – probably the most crucial – developing countries have been more engaged and better informed than has previously been the case. Two very prominent examples in this regard are India and China. Today, India pledges serious attempts to reduce the carbon intensity of its GDP and China has also offered to peak emissions by 2030 with declines thereafter.

Looking back, the outcome of COP21

has been hailed as "historic, durable and ambitious". In the course of a not always easy conference, the 195 participating nations tirelessly worked on finding a common ground. Their goal: To combat climate change and unleash actions and investments for a low-carbon, resilient and sustainable future.

### The outcome

For the first time in history, 195 parties to the UNFCCC have pledged to curb emissions, strengthen resilience and joined together to take common climate action. The actions cover:

- » Mitigation: Fast enough reduction of emissions to achieve the temperature goal
- » A transparency system and global stock-taking: Accounting for climate action
- » Adaptation: Strengthening of the ability of countries to deal with climate impacts
- » Loss and damage: Strengthening of the ability to recover from climate impacts
- » Support: Includes financing for nations to build clean, resilient futures

The UN Conference in Paris represents the first-ever universal, legally binding global climate deal. All countries have agreed to hold global temperature increases to well below 2 degrees Celsius (3.6 °F) and to pursue efforts to limit it to 1.5 °C. In addition, a review mechanism has been established which will, as of 2018, review progress in five-year intervals. The creation of a climate fund amounting to USD \$ 100 billion a year for developing countries, effective from 2020 onwards, and featuring a commitment for further financing in the future, was another milestone of the COP21 conference. Summed up, the Paris outcome represents a turning point and is a tangible bridge between today's policies and climate-neutrality before the end of the century. And it could well provide future generations with the chance to live in a world actually worth living in.

## COP21

From 30 November to 11 December 2015, Paris hosted the 21<sup>st</sup> Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21).

Since 1995, the COP has been held each year in a different country and attended by the 196 parties (195 states + the European Union).

## Climate Change

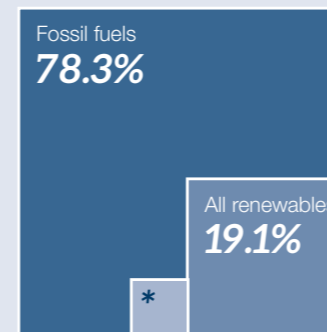
Climate change refers to the increase in the average temperature of the oceans and the Earth's atmosphere.

### Global Temperature

Nine of the 10 warmest years on record have occurred since 2000



Source: NASA Global Climate Change



Source: RENEWABLES 2015 GLOBAL STATUS REPORT

## Global Final Energy Consumption

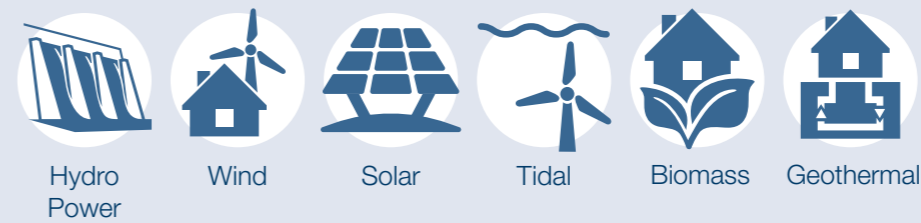
Global final energy consumption has increased by about 1.5% annually in recent years, driven primarily by rising demand in developing countries.

## UNFCCC

The United Nations Framework Convention on Climate (UNFCCC) Change was adopted at the Earth Summit in Rio de Janeiro in 1992. The objective is to "stabilize atmospheric concentrations of greenhouse gases at a level that will prevent dangerous interference with the climate system".

## Renewables

... come from sources that are naturally replenished. Six main types:



## Investment in Renewable Power and Fuels

Annual investment / Net capacity additions

Top Countries	1	2	3	4	5
Annual investment*	China	United States	Japan	United Kingdom	Germany
Per unit GDP	Burundi	Kenya	Honduras	Jordan	Uruguay

\*not including hydro > 50 MW

## Wind

generated more than

# 20%

of electricity in several countries, including:

**Denmark, Nicaragua, Portugal and Spain**



# CONSERVING ENERGY

How you can contribute

While processes and procedures in the industry are already quite energy efficient and therefore more environmentally friendly, we are still lagging behind when it comes to individual "energy-awareness". On this page, we would like to provide you with some hints and tips that we can all use to reduce our power consumption. Furthermore, please share them with your colleagues, friends and family. Together we can make a difference.



## At the office

### Devices & power strips

"Phantom energy" is the electricity drawn from outlets when equipment is off, but still plugged in. Unplug chargers, adapters and small appliances when fully charged – this will also help to improve the lifetime of rechargeable batteries. Consider using power strips: With the flick of just one switch, you can turn everything off at the same time.

### Heating & air conditioning

Heating and air conditioning often represent the largest spending chunk. Keep outer doors closed when your A/C is in use. Lower the thermostat when you leave. A drop of just 5 degrees for 8 hours or more can save up to 10% in heating costs.

### Lighting

Switch off the light whenever you leave the room. Occupancy sensors and timers to control lighting are another good option. Replace standard light bulbs with energy-saving products.



## At home

### Household appliances

If possible, operate your household appliances on low power settings. Washing laundry at 40 °C, for example, requires 25% less electricity than at 60 °C. Clothes dryers, by the way, are real energy gluttons: Not using them will reduce your annual electricity consumption by a staggering 15%.

### Be tree-free

Replace your napkins with cloth napkins. Read books and magazines from the library or online. Purchase bleach-free toilet paper. The last tip here applies to both the office and at home: Think before you print and, if possible, reuse paper.

### Reuse & donate

Clear your shelf of disposable products and use reusable ones instead: Razors, food storage boxes, batteries, coffee filters, cups, shopping bags etc. Donate or sell your old products.

### Coffee

Capsules or pads have become very popular over the last few years. Their production is very energy intensive and they also create a lot of waste. How about opting for a normal coffee machine instead?



## In daily life

### Water

Wherever possible, switch back to environmentally-friendly tap water instead of bottled water. Get a water bottle you can refill. Shower instead of bathing.

### Go reusable

Pick up a reusable bag and make the next bag you throw out your last one.

### Take a walk

Maybe you can take a walk, use public transportation or a carpool instead. And honestly, do you really need a SUV in the city?

### Buy in bulk

For example, a one-kilogram bag of rice rather than four 250-gram bags. This reduces packaging and can also save you money.

### Eat seasonal

In winter, it can take the equivalent of five liters of diesel to get a kilogram of strawberries to your home!

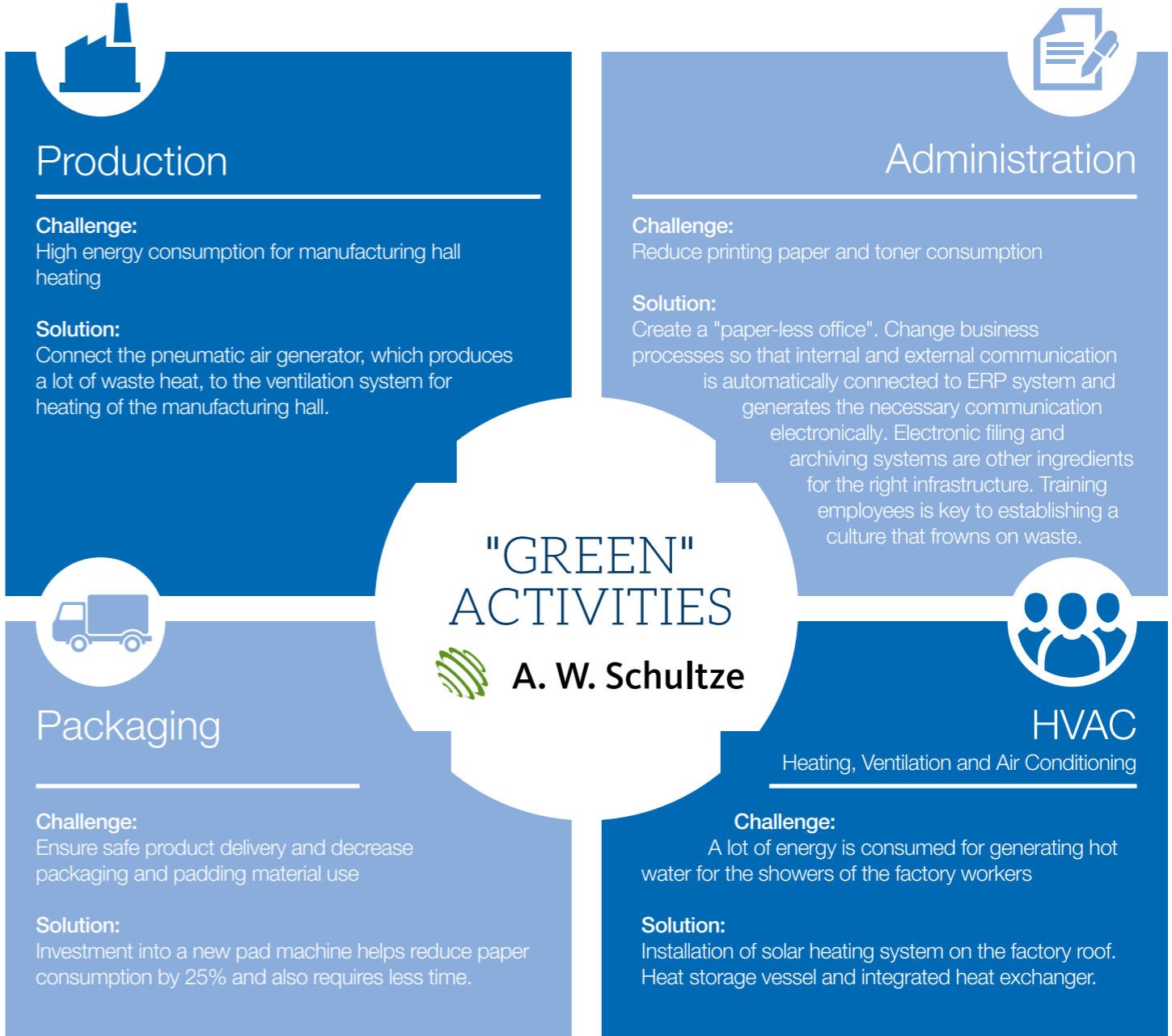
### Less meat on your plate

Meat production is one of the most environmentally destructive industries, responsible for massive amounts of water use, pollution, emissions and habitat destruction.

A "green strategy" for the corporate level is primarily aimed at the ecological environment that surrounds us. However, it also takes

into account every dimension of how a business operates in the social, cultural and economic context. Our German gasket specialist,

A.W. Schultze, has recently implemented a range of "green activities".





# TAKING A STANCE

## Kempchen acts on environmental declaration



Actually addressing the problems we face in our world today is most definitely a first step towards finding sustainable solutions for environmental issues. As such, the United Nations Climate Conference in Paris must be seen as a ray of hope for future generations who will inherit the Earth from us. But it must also be stated that an overall goal, such as for example a full decarbonization of the economy, scheduled for the year 2100 and onwards, is still far off. The time to act, however, is not in 84 years, but now. And this is precisely what Kempchen is doing – in both word and deed, with its environmental declaration.

Legislation takes time. This is a well-known fact of modern bureaucracies and democracies alike. And just because leaders decide that something should be made a law, there is no real guarantee that it will actually be passed as legislation or, if it is, if not in some "watered down" form. Volunteers are therefore needed – entities willing and able to set the stage and get the ball rolling. In the case of Kempchen, we have already long passed this point. True to its mission statement, Kempchen "puts puts itself under obligation to protect the environment by means of

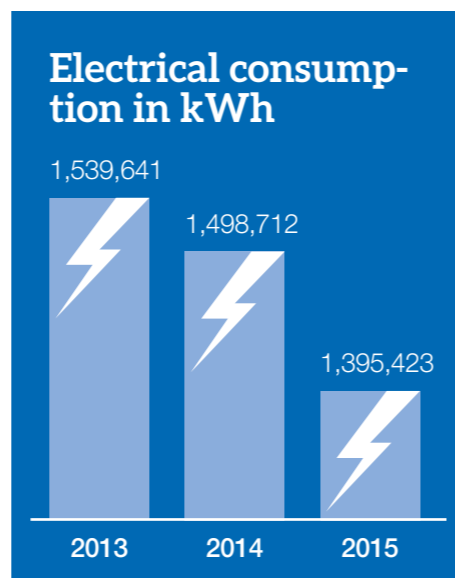
development and manufacturing of products for the reduction of emissions, produced with the aid of environmentally friendly production methods."

Paper, however, does not blush – what can Kempchen point to in terms of actual measures and results? First of all, and admittedly this is a kind of "home field advantage" for the company, it can refer to its high-quality sealing elements, which reliably prevent leakages in chemical and petrochemical plants on a daily basis. This is probably the single most valuable contribution towards environmental safety. And due to power of innovation and a deep desire to stay ahead of the competition, this is not only true today, but will also remain true for whatever challenges the industry faces it in the future.

### Green activities

Environmental protection at Kempchen, however, is far older than the 2015 Paris conference. Going back in time, one arrives in 2010, the year in which the company was certified as the result of an eco-audit. This involved the segments "product", "operation" and "waste management", areas that were subsequently analyzed and optimized. The second milestone on the road to

a company that understands that both the environment and climate matter, was achieved last year. This time, the auditing process, which has obviously also matured over the past five years, focused on energy consumption: The power consumed by the production and lighting systems was analyzed in detail, as was heating and ventilation. The collected data was compiled on a target-actual-sheet in order to measure progress. And what has Kempchen achieved since then? First, the figures: In 2013, the total energy consumption amounted to almost 1.54 million kWh of



electricity. In 2015, thanks to intelligent measures executed by the company as a result of this rather alarming figure, the electricity bill was significantly lower: At the end of the year, 1.39 million kWh had been consumed, meaning almost 145,000 kWh less than two years before. In terms of CO<sub>2</sub>, this is the equivalent of 64,000 tons emitted less per anno. So how can you follow their example?

### Challenges, not problems

"When we first saw the target-actual spreadsheet, we knew that this wasn't going to be easy", remembers Klaus Schonebeck, Managing Director at Kempchen, and adds: "We carried out a strengths-weaknesses analysis and identified areas which showed room for improvement." One of these was the lighting system, which has since been centralized. This allows for the fully automated control of the lights within the various departments on the basis of time programs. Furthermore, the public areas were fitted with motion sensors, meaning that the lights are only activated when somebody enters the lobby. Having made use of state of the art technology in the systems, the actual light sources were the next item on the list: Standard light bulbs were replaced by LED lights. But while you can do a lot by making your lighting



Modern CNC systems enable energy-efficient operations

arrangements intelligent, you cannot necessarily do 145,000 kWh less in electricity with illumination alone. The logical next efficiency stop on the road to energy reduction? The machine park.

"We have modernized our machine park with modern CNC systems, which are all characterized by a high degree of energy efficiency in their operation," explains Uwe Thomanek, Head of Production, "furthermore, our compressor station has been fitted with a waste heat recovery unit, meaning that the energy generated by the compressors reenters

the heating cycle and thus helps us to save gas". Needless to say, the company also recycles its scrap, again going beyond what is required by legislation: Not only recyclable fractions enter the waste cycle, but also PTFE waste materials and paper. Last but not least, these measures not only apply to the shop-floor, but also to the offices, making this a holistic, company-wide approach.

### Continuously better

Not resting on its laurels, the environmental goals of Kempchen are redefined and subsequently communicated on an annual basis. "We firmly believe in the decisions made at the world climate conference and this is also something our employees feel strongly about," confirms Klaus Schonebeck, "with our environmental declaration, we are doing what we can as a company, as a team, to ensure that future generations, our sons and daughters, will also have a world worth living in."



New LED lights consume up to 90% less power than standard bulbs



# HELPING HANDS

KLINGER companies doing their part for the environment



**Environmental protection is not the exclusive domain of a single person or a corporate entity. It concerns us all, especially if we wish to ensure that future generations will inherit a world worth living in. When it comes to saving the environment, every effort, no matter how small or how large, counts. And in the sense of "do good deeds, and tell others about them", we would like to share the contributions of three KLINGER companies with you.**

The Gumpoldskirchen-based KLINGER Dichtungstechnik presented its environmental statement in 2015 as one of the pre-requirements of its continuous application of the EMAS system. The program, which stands for "Eco-Management and Audit Scheme", was established in 1993 by the European

Commission as an instrument for the systematic protection of the environment. Participation in EMAS, which KLINGER Dichtungstechnik has been doing for more than 15 years now, is entirely voluntary. So why take part? "As a company whose social responsibility also includes the environmental aspect, we believe that EMAS is a good way to give something back for the resources we use in our production," explains Walter Kubista, Quality and Environmental Manager at KLINGER Dichtungstechnik, and adds: "Furthermore, it helps us to resolve ecological and economic weak points and, from a business point of view, to conserve both resources and energy as well as avoid consequence costs."

Within the company, seven action fields have been addressed to promote

sustainability: Raw materials, solvent recycling, health and safety, emission reductions, gasket calculation, life-cycles and waste management. "With regard to our choice of synthetic raw materials, for example, we make full use of all our accumulated expertise and comply with the most rigorous regulations," says Kubista, by way of explanation, "this is done to ensure that no harm can come from the materials we use – neither to human life, nor to the environment." Another interesting area in which KLINGER Dichtungstechnik is once again acting as an industry pioneer is the calculation of lifecycles – for gaskets.

Bearing in mind that no gasket will last indefinitely, it is essential to be able to provide concise information on the duration after which a gasket should be replaced in order to avoid possibly hazardous emissions. And with regard to waste management, KLINGER has also proven its willingness to go the extra mile. "In order to ensure correct waste processing, we encourage our customers to return their punching residues free of charge," states Kubista, "following processing, the regrind, which is free from impurities, can then be reintroduced into the production process."

## Committed

Having an environmental management system in place, however, is just the

beginning. Its results and effects also need to be checked against official and internal targets, a task which is carried out by external environmental inspectors on an annual basis. For the future, KLINGER Dichtungstechnik remains fully committed: "The driving force behind our EMAS is our commitment to quality as well as improvement of all aspects pertaining to quality within the company, including our employees, products, processes and the environment," says Kubista.

Both KLINGER Schöneberg and KLINGER Convey, on the other hand, have complied with their requirement to have an energy audit carried out in accordance with the EU energy efficiency guideline and its impact on the German Law on Energy Service Provision (EDL-G).

Based on the EDL-G, the energy audit was carried out by an energy service provider that consults companies in matters pertaining to energy in a flexible and vendor-independent manner. Tasks usually undertaken by such entities include accounting validation, energy purchases, contract and energy management as well as energy-related assessments of the actual situation. Most importantly, and based on their findings in the course of the audit, they also compile a list of potential areas for saving energy, ranked in accordance with their feasibility. Amongst others, the auditor also examines the power consumption with regard to electricity, natural and liquefied gas, fuel oil, district heating and solid fuels. Furthermore, water and wastewater as well as diesel and petroleum consumptions are also analyzed.

A typical energy audit consists of multiple phases and always begins with an initial meeting. This is where the desired goal, e.g. a reduction of the electricity consumption, is set. Next up is the data collection stage, in which the auditor also carries out surveys among the employees. The energy consumptions are then compiled on the basis



Proven energy and environmental certificates for KLINGER Convey, Schöneberg and KLINGER Dichtungstechnik

of the energy sources utilized and their consumers. After the data has been correctly grouped, the energy flows are analyzed and the energy balance is calculated. The final steps of an energy audit deal with the definition of the key figures, the formulation of measures to improve the energy efficiency levels, the creation of feasibility studies for said measures and last, the final report and presentation of the results.

## Learning and doing

"What really fascinated me is the thoroughness and the level of detail of the audit," states Andreas Thureau, Operations Manager at KLINGER Convey: "Literally every device which draws a form of power is taken into account. Our report included electric kettles, company cars as well as the turning lathe". But does such a holistic view serve a deeper purpose as well? According to Manfred Gossmann, Managing Director of KLINGER Schöneberg, it certainly does: "When you think about energy conservation, the first question you usually ask is whether you need newer equipment, which requires less power. In many cases, such as for example with white goods, this is certainly true. What these reports show you, however, is how much you can do on your own by just changing little

things: Such as for example pulling the plug of devices you don't need to have in standby mode all the time or turning off the lights when the last person leaves the office."

Generally speaking, the report provides actions in three categories: Actions which can be executed by changing your individual working behavior, measures which concern the entire organization and last but not least, actions that require investments on the side of the company in order to be implemented. And how did the KLINGER companies fare in terms of their results?

"The results have shown that we do in fact take our resource consumption seriously," confirms Andreas Thureau, and adds: "Of course there is always room for improvement, and thanks to what we know now, we can further raise the already high awareness among our employees and become even 'greener' in the future. And I think that this is important: We are under obligation to carry out either an energy audit or to have ourselves certified in accordance with an environmental standard every four years. So let us make the best of it, profit from our new knowledge, and at the same time support environmental protection."



Returned residues are reprocessed and introduced into the production of seals



# WASTE WATCHERS

KLINGER Group introduces lean management



It is like a coffee break: Learn and lead daily, based on lean management principles

In our increasingly efficient world, lean management principles represent another approach to help create a sustainable future and to cut down unnecessary waste. While other methods may focus on the utilization of new technologies to achieve this, i.e. the digital factory, lean management relies heavily on fostering the right mindset among all participants, from the workers on the shop-floor right up to the top-management. Interestingly, it does not start with complex mind maps, CAD-created process flow charts or simulations: Instead, it is based on a very human trait – the will to learn and to improve.

When we get in touch with lean management expert Robert Weninghofer, he is once again on the road to his next event. Having joined KLINGER a mere four weeks ago, he has already made quite an impact on the hearts and minds of the people who make the family-owned enterprise trusted.worldwide. This is mostly due to his unique coaching style – Robert asks questions as opposed to simply providing answers,

thus allowing everybody to contribute to the lean management experience. The first obvious question, possibly one you are asking yourself right now, is "what is lean management?" According to Robert, in order to understand the principles involved, you have to start with the company and the values it creates for customers, the reasons they buy from you. Having identified said values, your goal is to eliminate waste from their creation – on a daily basis, and there is no shame in this, in small steps. "What is waste in your definition?" I hear myself ask. Robert Weninghofer's answer is simple, but to the point: "Waste can be summed up as everything which has no value for the customer." And its continuous reduction is what lean management is all about.

## Driving change

Robert is keen to point out that introducing lean management principles is not a method for short-term benefits. As with every learning process, its effects improve gradually when continuously applied. And, more importantly, you really have to live the wish to

become "lean". In practice this means that the top-management has to wholly embrace the decision and foster its implementation, from the management right down to the shop-floor. "Lean management needs drive, and drive needs leadership," confirms Robert, and explains: "Successful lean management is all about empowerment. Nobody uses 'bad processes' on purpose. In most cases, we either simply do not know better, it has always been done this way or nobody has so far come up with an alternative or reason to change the status quo. And understanding and changing these fundamental facts requires both vision and courage, because once you sign up for lean management, you need to continuously go forward."

## Seven sins

Room for improvement at a manufacturing facility can be broken down into seven different areas of the production process: Transport, inventory, motion, waiting, over-processing, overproduction and defects. Again, Robert leads us to the answer by asking the right questions: "Look for example, at the



Gradual and continuous improvement starts at the top management level and goes to the shop-floor

'motion' item: If you have to move a product around in a facility for it to undergo its various production stages, then this costs time and resources. In the sense of our original definition, this has no benefit for the customer, i.e. we are creating waste – this is something we have to comprehend in order to become 'lean'. Obviously we need to find out if moving the product is really necessary and if not, then why this is currently the case and how this can be remedied." And this is where shop-floor meetings play an important role: Held on-site to directly address the prevailing conditions, the various module heads discuss the daily business and status with their workers. Problems are openly brought up without fear of repercussion, solutions suggested, and then implemented together.

This could include, amongst others, retooling optimizations to cut down waits, a rearrangement of the various production steps within the factory hall, or providing a worker with all the tools he needs for his manufacturing step at his specific location. Next to the "how", the "why" is also of major importance.

Understanding the company's goals and your contribution, no matter what position you hold, is the motto. At first glance, for example, reaching a certain EBIT margin may seem like the responsibility of the management and the sales force. Because a worker produces the product, while the others sell it, right? Wrong. Every wasteful step, be it in development, administration or production, puts a dent in the overall EBIT goal. And by making everybody aware and responsible for these goals, within their field of activity, you empower them to take an active stance regarding waste avoidance. "I like to compare this process to how we operate a GPS system," grins Robert, and adds: "After you've set your destination, the system suggests a route. If you deviate from your route, the GPS points this out and possibly comes up with an alternative way to get there. This target/actual comparison on a daily basis helps us to stay on track or identify where we took a wrong turn."

## Like brushing teeth

So when do you actually realize that

you have turned into a lean company? Robert answers: "Remember when you were a child and your parents told you to brush your teeth? Today you know it is to keep your dentals healthy. Back then, you did it because your mother told you so." According to Weninghofer, lean management is a bit like that. The management facilitates a lean management approach, and over time the principles become ingrained in our subconscious. "You are at the end of the journey when you no longer think about lean management, because it has become firmly rooted in your mind," he confirms. And lean management not only makes sense in economic terms. Avoiding waste, be it unnecessary energy expenditures or raw materials utilization, also helps protect the environment. In other words, being lean is a win-win situation for all entities involved: The company, the customer, and the world we live in.



# STEAMBUSTERS

KLINGER BV helps stop unnecessary energy losses



Visible steam losses and the question is: "Where are the leaks"?

**While steam definitely played a prominent role during the first industrial revolution, its significance today should not be underestimated, either. Take, for example, the process industries, which use it as a carrier medium for large amounts of energy. But how safe, energy efficient and reliable is your average steam system really? Are your steam traps working according to specification? Our Dutch colleagues have a team in place to answer all your steam and energy-related questions.**

Keeping your steam system in optimal working order is imperative to avoid increased energy consumption, additional CO<sub>2</sub> emissions and higher production costs. Steam traps play an important role in this regard: Steam contains a lot of energy. When this energy is lost, i.e. due to transport and processes respectively, it forms condensate. This condensate must be discharged from the steam cycle and ideally returned to the boiler. This

is what the aforementioned steam traps are for. So far, so good. But what happens when a steam trap is no longer functioning properly? And just as important, how can you even identify whether your condensate discharge system is still up to the task?

## Clues and consequences

The problem with faulty steam traps is that they cause both visible and invisible "symptoms" within the system. This may include, amongst others, steam leaks or no longer being able to discharge condensate matter. As a consequence, your plant processes may become inefficient, safety issues may arise, or steam losses occur. Downtimes, energy drains, greater energy costs, additional CO<sub>2</sub> emissions and a reduced lifetime of your plant equipment are also highly probable. Taking all these aspects into consideration, it becomes clear that while steam may no longer play a major role in today's high-tech world, steam-related

plant problems are no laughing matter, either. Fortunately, help is already on the way.

## KLINGER BV's troubleshooters

"Who you gonna call?" is a well-remembered song line from the 80s movie "Ghostbusters" in which a team of young scientists is called in to take care of paranormal disturbances. KLINGER BV's steam and energy-related services team may not be in the business of putting ghosts to rest, but they are just as capable when it comes to dealing with the invisible and visible effects of steam and energy losses. Working together with the customer, they provide a wide range of services which include on-site troubleshooting, steam trap surveys, the compilation of studies with a focus on saving energy and improving processes as well as support in the selection of the correct size and make of steam traps for your specific needs. The result: A reliable, safe and sustainable steam system.



Steam trap survey in progress by a KLINGER engineer

One of the services for which KLINGER BV's "steam team" is called in many times a year is the aforementioned steam trap survey. During this task, the entire steam trap equipment is cataloged and the steam and condensate installation scanned. The results are then uploaded into the "steamstar" database, which contains more than 6,000 steam traps, and therefore lists almost every manufacturer and model employed around the world. While this may seem impressive in itself, its benefits are far more significant: Working with the database, customers can cross-reference the performance of their own steam traps with the online entries. This allows operators to quantify their losses in terms of energy, CO<sub>2</sub> and money. But is a steam trap survey really worth it?

## Small problem, major loss

Assume you have an 1/2" leaking steamtrap. At a gauge pressure of 10 barg it leaks off approximately 10 to 15 kg/h. On an annual basis this results

in a financial loss of around 3,000 euros and emissions of roughly 13 tons of CO<sub>2</sub>. Plugged steam traps, i.e. the exact opposite, but nevertheless just as negative a scenario, are harder to quantify: It is, however, safe to assume that they lead to higher costs due to downtime or reduced equipment lifetime as a side-effect of condensate build-up within the steam system.

And that there is a real demand for steam trap surveys in the age of energy-efficiency can easily be proven by KLINGER BV's track record. In 2015, the "steambusters" were called in dozens of times for steam trap surveys ranging from between 20 and 2,000 steam traps per customer. Their surveys detected leakages responsible for more than 23,000 tons of lost steam, around 3.6 million kilograms of CO<sub>2</sub> emissions and financial losses resulting thereof amounting to more than 700,000 euros.

So: Who, you gonna call?

ISO  
14001  
Certified

## KLINGER BV

Officially ISO 14001 certified company

The Dutch member of the KLINGER family obtained its ISO 14001 certification in September 2015. As an ISO-certified company, it commits itself to reliable products and systems that lead to less emission and less possibility of the release of dangerous liquids or gases.

As an environmentally aware company pursuant to the principles laid down in the certificate, it complies with laws and regulations and the management of environmental risks and strives for continuous improvement in environmental performance within its organization.



# GREEN RELAXATION

KLINGER Sogefiltres upgrades hotel's energy efficiency



The Domein Westhoek Hotel in Belgium benefits from "green certificates"

**Today's travelers are all familiar with the initiatives in hotels to reduce energy consumption and pollution. An example, which immediately comes to everybody's mind, is the option to re-use towels as opposed to having them washed, dried and pressed on a daily basis. This is how a guest can actively contribute to environmental protection. But what can hotels themselves do in order to reduce their energy consumption and show that they are ecologically aware? KLINGER Sogefiltres has the answers.**

Located in the Belgian Province of West Flanders, the Domein Westhoek hotel is the perfect place to get away from the burdens and stress of daily life. Situated in the dunes along the North Sea



Cogeneration unit with Baelz hydro ejectors

coast, a mere 700 meters away from the beach, it offers both holiday-goers and seminar attendees nature as well as culture in its purest form. When the hotel decided to upgrade its pool and wellness center facilities, it turned to KLINGER Sogefiltres for advice.

"Our task was to design and implement an environmentally-friendly energy sys-

tem for the hotel," explains Georges d'Haeyere, Energy Engineer at KLINGER Sogefiltres, and adds: "We had to approach this challenge from two different sides: On the one hand, as a solution provider, and, on the other hand, as a service provider." This dual approach stemmed from the fact that the customer had a very specific idea of what he wished to achieve with the

## The Domein Westhoek Project

### Goal:

- » Design and implementation of an environmentally-friendly and energy efficient energy system for a hotel

### Suppliers:

- » Prime contractor: KLINGER Sogefiltres
- » Contractors: KLINGER Fluid Control (Ballostar), Baelz (hydro-injectors, regulation processors), Viessmann (cogeneration units)

### Project highlights:

- » Entire system designed and installed within a period of six months
- » Upgrading of three existing condensate boilers; one main pump for multiple heating loops; two gas-fired cogeneration units
- » "Smart" energy regulation allows for flexible utilization of power sources and takes advantage of alternating gas and electricity price tariffs (night pricing)
- » Monitoring and maintenance of entire installation through networked solution remotely operated from KLINGER Sogefiltres head office
- » Delivered solution enables hotel to participate in green subsidy program. "Green certificates" can be sold to utilities or directly on "green certificate" marketplace.



Efficient energy delivered by the Belgian engineer team

completed solution. The first item on his agenda – design and completion of the entire system within a period of six months – only represented the first of several challenges. According to the customer's wishes, the solution should also be capable of taking advantage of alternating gas and electricity tariffs, i.e. night pricing. Furthermore, the hotel wished to participate in a green subsidy program, enabling it to sell "green certificates" to either utilities or directly on the "green certificate" marketplace. And lastly, the Belgian member of the KLINGER family should not simply hand over the solution following completion, but would instead continue to monitor it and provide maintenance whenever required.

### To-do list

Having carefully reviewed the existing installations and completed their design phase, KLINGER Sogefiltres proposed and implemented the following installations – all of which focus on energy efficiency, and thus environmental friendliness as well as cost reductions for the hotel operator.

In a first step, the three existing power distribution manifolds were fitted with 21 hydro injectors from Baelz. From an engineering point of view, this is a very effective solution: The hydro injectors improve the flow management and allow return temperatures to rapidly reach the

boiler condensation zone, thus leading to maximum performance of the three boiler units.

In a second step, a total of 21 electrical pumps on heating loops were decommissioned and replaced by two main pumps. Again, the principle of sound energy efficiency was applied: Using only two pumps significantly reduces electricity, installation and potential maintenance expenses. In order to have a power source that provides both heat and electricity, two Viessmann gas-fired cogeneration units were also set up on the premises.

### In control

As any resort manager will readily confirm, the energy consumption of hotels is characterized by an intense, but nevertheless irregular utilization. This is due to the fact that different areas are accessed almost at random at different times. While one guest may have just switched on the air conditioner in his room, another may be using the pool area, a third the open-air Jacuzzi in the wellness center and so forth. To be able to handle the fluctuating demand, KLINGER Sogefiltres had to ensure that their system was not only capable, but also able to respond to different scenarios. The company therefore opted for a "smart" energy regulation, allowing for a flexible drawing of power from different sources, such as the boilers

or the cogeneration units, based on the prevailing load. Another future-proof feature of the installed energy regulation system is the fact that it is a network-based solution. This means it can be monitored over the Internet and, should the need arise, remotely accessed from the KLINGER Sogefiltres head office.

### Early Christmas present

Having completed their task in the allocated timeslot – no mean feat as the work had to be carried out in tandem with the other construction work going on in the pool and wellness area, the Domein Westhoek hotel proudly reopened its recreational facilities on December 20 of last year. "Looking back at the past six months, I believe our team has done an excellent job," states Christian De Stoop, Managing Director of KLINGER Sogefiltres, "starting from the definition of suitable technical choices via studies and dimensioning, and right up to dimensioning and planning, we have provided the customer with a full solution which will have a very positive effect. Both economically and ecologically."

And thanks to the ongoing maintenance and management contract, which is now in place following completion of the project, the Domein Westhoek will remain an island of energy efficiency among the dunes of West Flanders in the future as well.



# SEASONS IN THE SUN

SAIDI harnesses solar power for a green future



Method 1: Heliostat solar-thermal power plant

Limited fossil fuel resources, soaring energy prices, increasing CO<sub>2</sub> emissions and the challenges of the upcoming energy transition have made industry and private customers turn more and more towards alternative power sources. One of these has captured mankind's attention since the dawn of time: The sun.

The ancient Egyptians firmly believed that a titanic struggle was fought amongst the heavens every night. As

a result of the efforts of the Sun God Ra and the Pharaoh, the evil serpent Apophis would be thwarted for another day and the sun-barque, carrying the star, would once again sail across the sky. Today we know that the sun, a vast source of near limitless energy, is here to stay and, barring any inconceivable disaster, will continue to unaidedly shine for quite a few more billion years to come. Seen from an environmental and an economic point of view, our main contributor to life on Earth spells out four significant words: Free and renewable

energy. And what is more, especially in light of the 2015 Paris Conference, it comes with no further CO<sub>2</sub>-emissions attached. But what can you actually do with the power of the sun?

### Sunny side up

Solar power applications come in an abundance of shapes and sizes, from simple solar panels on roofs to charge batteries or to provide warm water, right up to industrial-scale applications such as solar thermal power plants. Contrary

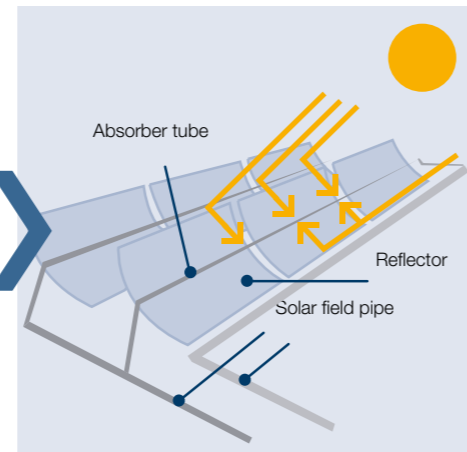
to photovoltaic applications, which directly convert sunlight into electricity, the latter use solar power to heat water and create electricity via steam-driven turbines. The challenge in this regard is that high temperatures – between 300 and 1,000 °C – are needed in order to achieve an acceptable output. Two methods are in use today to focus the power of the sun and achieve the temperatures required: Parabolic trough systems focus the power of the sun onto

a receiver by means of a linear parabolic reflector. Heliostat solar-thermal power plants, on the other hand, feature a wide field of heliostats that focus the sun's power onto a single collector to heat the fluid or molten salt medium for steam generation purposes. ISCCs, integrated solar combined cycle power plants represent a hybrid solution: In this combined cycle technology, the solar source is used to partially replace fossil fuels by delivering steam. As with every other conventional power plant, products and solutions able to withstand even the most challenging conditions are required for all these plants. And this is where SAIDI shines.

### Renewable energy – powered by SAIDI

The KLINGER Group's company in Spain can already look back on a rich tradition as a solutions provider for renewables. Since 2008, it has been contracted to provide its products and expertise for all of the 50 solar-thermal power plants built to date in its home country.

Furthermore, it has also gained an international reputation as an expert in the field by working on solar-thermal projects in South Africa, Morocco, the USA, Mexico and the United Arab Emirates. True to its core business, SAIDI's focus is on valves, instrumentation, fittings and sealing technologies, specifically designed for different areas of utilization within a solar-thermal power plant, essentially products for the heat transfer fluid, the water and steam cycle as well as for molten salts. While leakages in conventional plants may prove hazardous to man and the environment, in solar power plants the focus is entirely on maximum solar steam generation in order to drive the turbine. And valves and gauges from SAIDI will continue to ensure precisely that, at least for the next few billion years or more.



Method 2: Parabolic trough systems

## SAIDI's Solar-thermal power plant offering



### Products for the HTF (heat-transfer fluid)

- » Manual and operated bellows sealed valves
- » Metal-seated trunnion-mounted ball valves
- » Metal-seated butterfly valves
- » Nozzle-check and double-plate check valves
- » Loop control valves
- » Safety valves

HTF

### Products for the water and steam cycles

- » Bypass turbine valves
- » Gate, globe and check valves (for non-critical applications)
- » Gate, globe and check valves (high-pressure and high-temperature, made from special materials for severe conditions)
- » Double-offset butterfly valves
- » Soft-seated and metal-to-metal ball valves
- » Metal-seated control valves
- » Safety valves
- » Magnetic level gauges
- » Instrumentation: Pressure gauges, separators and indication accessories
- » Control valves

WATER & STEAM

### Products for molten salt applications

- » Globe valves
- » Butterfly valves

MOLTEN SALTS

Find specific case studies on SAIDI's website: [www.saidi.es](http://www.saidi.es)



# RESOURCEFUL

How KLINGER Finland is doing its part for the environment



Micaela Roswall-Grägg, Quality Director of KLINGER Finland

As a network of companies spanning the globe, the KLINGER Group is committed to the highest level of quality in its products, solutions and services. Internally, the focus is on efficiency in all processes, which has two major benefits: On the one hand, energy consumption is kept as low as possible. On the other hand, this also helps the environment. We caught up with Micaela Roswall-Grägg, the newly appointed Quality Director of KLINGER Finland, to see how environmental issues and sustainable development are addressed within the Finnish member of the KLINGER family.

It is mid-winter when we meet up with Micaela in Masala. In Finland, January has been marked by temperatures as low as -26° Celsius. One might assume that a lot of energy goes into heating, as the office we are sitting in is comfortably warm. "We are continuously looking into reducing our energy consumption," explains Micaela, and adds: "Utilizing the principle of warm air recovery has already brought down the cost, but we are nevertheless investigating renewable energy sources and also looking into alternative options, such as geothermal heating."

With offices, a warehouse, a workshop as well as a cutting shop and service facilities located in Masala, utilizing renewables would most definitely have a further positive impact on the company's ecological footprint. The Finnish colleagues, however, have been active in other fields as well: "In addition to reducing energy consumption, we practice recycling throughout our business location. Essentially this concerns items such as for example packaging materials at the warehouse, printer cartridges in the office or food waste in the staff kitchen," states a visibly proud Micaela, "Our higher goal, however, is to be fully committed to sustainable development in its entirety. And while environmental issues are important, they represent just one aspect."

## Sustainability

The term sustainable development is based on four pillars: Ecological sustainability deals with environmental issues such as energy and emissions. Social sustainability, on the other hand, is about working conditions, equality and justice at the workplace. Economic sustainability includes the careful and

effective use of raw materials and energy efficiency in operations. And last but not least, there is human sustainability, which looks at occupational health and safety aspects. "These are all written out in our management system," confirms Micaela, and adds: "We also expect our external stakeholders, including our suppliers, to follow the principles of sustainable development as well as other internationally recognized principles such as the UN Global Compact, the ILO Fundamental Principles and the Rights at Work as well as the OECD guidelines." At the end of the day, especially in economic terms, results are what count. And so we ask Micaela if she can prove that KLINGER Finland is, in fact, moving towards a sustainable future.

## Hard facts

By way of answering, Micaela points to the numerous certifications the colleagues from Finland have worked hard to acquire: "We recently underwent an audit and were awarded the certificates ISO 9001:2015, ISO 14001:2015 and OHSAS 18001:2007. We have been ISO 9001-certified since 2012, but the other two are brand-new," she

## Sustainable Development Pillars

**Ecological sustainability:**  
Effective use of natural resources and energy, avoidance of environmental pollution, e.g. emissions, noise pollution etc.

**Social sustainability:**  
Manufacturing conditions, equality, justice

**Economic sustainability:**  
Balanced use of natural resources, effective use of raw materials, energy-efficient manufacturing processes and product recycling

**Human sustainability:**  
Occupational health and safety aspects

says. Furthermore, the company has already completed the preparations required for when OHSAS 18001 turns into ISO 45001 later this year. One certification, however, is especially dear to KLINGER Finland's Quality Manager: The company has been granted Green Office labeling rights by the WWF Finland (World Wide Fund For Nature). Green Office is an environmental management program specially tailored to address office environments and, needless to say, a great addition to the existing ISO 14001 Environmental Management certificate. Furthermore, working together with the WWF has been a great incentive to get all the employees to actively contribute: As part of the Green Office collaboration, the company holds an annual outdoor event for its staff. In 2015 it was a frisbee golf tournament at the beautiful Oittaa recreational area in Espoo and, needless to say, a hit amongst the employees.

Finally, why is sustainable development so important to KLINGER Finland? "The bottom line is that we want to ensure that future generations have healthy and safe conditions to live in – just like we do," explains Micaela, "this is why we want to be a sustainable and responsible company. We believe it goes hand in hand with being a good corporate citizen."

## Sustainability Goals

By the end of 2017, KLINGER Finland commits to the following goals:

- » Reduce energy consumption (electricity, water, heat, fuel) by 3% per employee
- » Decrease landfill waste by 80% through improvement of recycling
- » 10% less printing paper per employee
- » Consider environmental aspects in procurement and investment (e.g. vehicles, emission constraints)
- » Integration of products compliant with sustainable development into product portfolio
- » Favor public transportation on business trips and commutation
- » Centralize and select transport companies committed to environmental aspects
- » Increase environmental awareness among personnel and partners

## Engagement:

- » Encouragement of staff to make suggestions on how to improve procedures and processes
- » Commitment to the goals and targets set
- » Monitoring progress and continuous improvement
- » Environmental event once a year: Staff frisbee golf tournament



Frisbee golf tournament as a "green company event" initiative



# TAR ALLIANCE

Partnership for efficient shutdown and turnaround management



**Stopped machines generate costs, in some cases these can be massive even in the medium term. As a consequence, operators wanting to keep their systems running as economically and productively as possible, need to reduce downtimes to an absolute minimum. Each system has specific requirements and so far it has only been possible to develop individual solutions. Until now.**

Associations formed to reduce downtime in the various product and process chains have been with us for quite some time. While their intent is definitely laudable, in practice these associations are often hindered in making significant progress by the fact that they consist of potential competitors, meaning that companies are reluctant to share insights and information that could result in a potential loss of a competitive edge. Understanding this fact, the TAR Alliance has taken a different approach in order to provide tangible results from which all members

can benefit: Formed in 2013, it consists of six companies active along different parts of the process chain and operating in different markets (see info-box). This ensures that the TAR Alliance can openly exchange information, insights and potential solutions.

## TAR – Together Achieving Results

The idea behind TAR is to provide the various industries with efficient solutions for shutdown and turnaround management. This is achieved by adhering to a set of defined principles, which govern how the alliance works together. First and foremost, this means cooperation – instead of competition – between the complementary companies, aimed at making use of synergies and finding solutions as a team. Second, state of the art professional expertise, which the companies have at their disposal in their respective field, is brought to bear in a unified manner. As a third item, the TAR alliance

firmly believes that a problem needs to be addressed from different angles, i.e. from the viewpoint of the different players along the process and product chain, in order to provide innovative solutions for existing problems. Last but not least, regular meetings and the provision of specialist teams with an expert on-site contact person ensure that results are technologically sound, actionable, and most importantly, shared among the members.

## Networking and expert talks

That the TAR Alliance is about "more than words" was again proven on November 12, 2015. With 70 decision-makers and project managers from major industrial facilities in attendance, the six companies held their second info-day at the Glückauf Club of the Veltins-Arena in Gelsenkirchen. The sports stadium, which combines sportive excellence with the rich industry tradition of the German Ruhrgebiet,



Kempchen presentation at the last info-day meeting of the TAR Alliance



proved to be the perfect venue for specialist talks dealing with all aspects of shutdown management from a holistic point of view. Furthermore, detailed case studies offered the participants the opportunity to gain insights, network and share knowledge. The event was rounded off by a guided tour through the arena, which is home to the legendary German soccer club FC Schalke 04. And just like the club, the TAR Alliance once again proved it is more than capable of being on the ball when it comes to keeping machines operating and avoiding downtime.

## TAR Alliance Members

### AS Bauer:

Active in the fields of occupational safety, e-learning, environmental and health protection



### Kempchen Dichtungstechnik:

A KLINGER Company which provides static sealing technology products and solutions



### Metlog:

Manufacturing of and logistics for all industrial connecting elements, including metallic turned, milled and special components



### Rockwool Technical Insulation:

Products and systems for the thermal, acoustic, fire-safe and sustainable insulation of technical installations



### TechDo:

Technical system documentation, downtime management, process optimization



# PART OF THE FAMILY

New companies join the KLINGER Group

**KLINGER**  
trusted. worldwide.

**KLINGER**  
Baltic  
Product marking and sealing power for the Baltic market

**KLINGER**  
IGI, Inc.  
High-tech products for the US market

**DRAKO**  
Steam and compressed air applications for the Brazilian market

**DRAKO**

## Profile

In January 2016, KLINGER Brazil acquired an 80% stake in Sao Paulo-based Drako. The company currently has eight employees and has been ISO-certified since 2015. It will continue to operate as an independent company under the leadership of Juliano Magnolio, who holds the remaining 20% corporate share.

## Products and solutions

Drako is a manufacturer of steam traps, air suppressors, strainers (Y-filters) and moisture separators utilized in steam and compressed air applications. At present, it mostly sells its products to distributors and resellers in Brazil. Half of the corporate sales are in the state of Sao Paulo. In future, products from Drako will convince customers throughout Brazil by means of their high quality and competitive pricing.

## Strategic benefit for KLINGER and its customers

The acquisition enables the KLINGER Group to increase its product and service solutions. In the case of Drako, this especially applies to the target markets food & beverage, chemicals, the pharmaceutical / cosmetics industry as well as the sugar and ethanol markets. Furthermore, Drako will allow the Group to follow a more competitive bid strategy in the course of tenders and will also create opportunities for institutional markets, i.e. hotels, hospitals and universities, especially with regard to compressed air solutions.

[www.rklinger.com.br](http://www.rklinger.com.br)

**KLINGER**  
IGI, Inc.

## Profile

On December 1, 2015, Thermoseal acquired IGI, which has production sites in both Oregon and Colorado. KLINGER IGI, as the company has been rebranded, will be managed by a corporate management team under the leadership of Scott Peters as the CEO of the company. It currently has a staff of 35 and is rapidly growing.

## Products and Solutions

Founded in 1962, IGI built up an excellent reputation in the Pacific Northwest of the United States as a fabricator of cut parts. The company's founder grew the business from its base operations near Portland, Oregon, to cover several states in the region serving many industries in typical MRO (maintenance, repair and overhaul) services including pulp and paper, refineries, power generation and chemical plants as well as OE manufacturers (original equipment) throughout the region. It was during the 1990s that IGI and Thermoseal began working together in multiple MRO industries and this similarity in the customer base

established their long-term customer and supplier relationship.

As the Pacific Northwest region developed into a center for high-tech-products ranging from computer chips and high-end electronics to aerospace, IGI also adapted and evolved to serve those markets primarily as a solutions provider of cut parts in those OE applications.

## Strategic benefit for KLINGER and its customers

With its expertise and proven track record, KLINGER IGI is the perfect choice for expanding both the customer base and the on-site production capacity of the KLINGER Group in the USA. As the Pacific Northwest has shifted into a technology sector, 70% of KLINGER IGI's current sales are from cut parts for high-tech OE manufacturers and sub-suppliers or the electronics and other technology industries making products such as video walls or aircraft interiors.

[www.klingerigi.com](http://www.klingerigi.com)

**KLINGER**  
Baltic

## Profile

In 2015, KLINGER Finland acquired the companies Marking Art Oü and Simracon Oü in Estonia. Following a merger, the companies have subsequently been rebranded into KLINGER Baltic, which is now headquartered in Tallinn under the management of Talis Perosti. The recently formed company has a staff of three employees.

## Products and Solutions

KLINGER Baltic brings expertise in the fields of coding and marking as well as sealing and gasket products and solutions to the group.

being even closer to the customer than before, they have recently also signed a partnership contract with Honeywell Process Solutions. KLINGER's new channel partner is a company focusing on a wide range of process-related fields, including advanced software, control monitoring and safety systems. Amongst others, Honeywell, is the inventor of the autopilot control system and also responsible for the first commercial radar system. For KLINGER Finland, Honeywell will now provide high-quality industrial field instruments, including Honeywell's SmartLine range of pressure, level and temperature transmitters. These modular, highly reliable transmitters deliver total value across the entire plant lifecycle by using guided wave radar (GWR) technology to monitor respective ranges.

## Strategic benefit for KLINGER and its customers

With the new company, the KLINGER Group can further expand its presence in the so-called Baltic region. Our Finnish colleagues are also proud to report another success story: Next to

[www.klinger.fi](http://www.klinger.fi)



# THINK GLOBAL

KLINGER Denmark teams up with Indian Nihon Koso to support Danish utility



 With its network of partners and suppliers around the globe, the KLINGER Group is renowned for being able to provide the best tailored solution for any specific challenge a customer might have. One of the major advantages of this approach is that, whatever the requirement, a solution is literally just one phone call away. In the case of the Danish utility company HOFOR, our journey leads us to India. With excellent results.

valves: A safety shut-off valve, a steam conversion control valve and a water inlet control valve. It then got in touch with its suppliers and soon found the right partner able to supply the required valves – Nihon Koso in India.

### Solving a "hot" case

"Needless to say, we were excited to be called upon by KLINGER Denmark to assist with their customer's problem,"

confirms Ales Volek, the sales manager at Nihon Koso in charge of handling the project, and adds: "HOFOR was absolutely right to call in KLINGER, as the current IP bypass solution was proving to be unreliable and leading to high maintenance costs as well as unavailability." A Nihon Koso team under the leadership of Sanjay V. Sherikar immediately got to work. What followed was a root cause analysis and several telephone conferences, which came to



The combined safety shut-off and steam conversion control valve welded in and ready for insulation

the conclusion that the installed solution was wholly inappropriate for continuous operation of the bypass required to feed the heat exchanger. "The bypass which had been installed at the plant was barely suitable for standard operation, i.e. shutdowns, startups, turbine trips," remembers Sherikar, "it was definitely not designed to run several months in a row, as for example all through winter." In addition to coming up with a system capable of safe and reliable continuous operation, the experts also had to take into consideration the space available for placement of the solution.

### What partners are for

Following the design phase, the valves were installed in August of last year. Aware that space was at a premium at the plant, the colleagues from India combined the safety shut-off valve with the steam conversion valve in order to make optimal use of the available room. As stated in the specifications, a water inlet valve was installed as well. The high noise and vibration levels

**”** HOFOR had a positive experience working with KLINGER Denmark and Nihon KOSO on the recently finalized project. We ordered a large and sophisticated bypass system with not much time available for design and production. Yet everything was delivered and installed on time. The system has been in operation for approx. half a year and has worked without problems from the start.

Peter Gensmann,  
HOFOR



The project team: Peter Gensmann (HOFOR), Martin Hammer Sillassen (KLINGER Denmark), Ales Volek (KOSO)

were also addressed: Nihon Koso's VeCTor multi-stage trims were used to significantly reduce the pressure, thus bringing down both the vibration and noise levels which had been as high as 105-107 dBA. Last but not least, electro-hydraulic actuators were utilized in order to retain use of the existing hydraulic power and safety control unit. As a consequence, the same control logic could be used to obtain the necessary safety certifications.

Commenting on the cooperation between the various players involved in the project, Peter Gensmann, in charge of maintenance at the Amagerværket plant, had the following to say: "Working with KLINGER Denmark and Nihon Koso has been a very positive experience for us. Due to the problems we had, we needed a large and complex bypass system, and we needed it now – meaning there was not much time for initial design and production."

Looking at what has been achieved since then, he summarizes: "The parts were all delivered and installed on time and the plant has been running smoothly ever since. Our vibration and noise levels are again well within the specified parameters. Furthermore,

## The customer

### HOFOR:

Danish utility provides several municipalities in the Copenhagen area with potable water, wastewater management and drainage services.

### Amagerværket:

Combined heat and power plant with three units. Owned by HOFOR. The solution provided was for the unit 1 of Amagerværket.

we've also had the opportunity to visit the Nihon Koso plant in India and let me tell you, I fully understand why KLINGER proposed them as their partner for our project: They really are state of the art in everything they do."

To be continued in the next KLINGER News: We will take a closer look at the performance and the results of the installation at Amagerværket.



# MAKING WATER SAFE

KLINGER Argentina to help provide 26 villages with drinking water

2013 marked the official International Water Co-operation Year of the United Nations. And it provided us with some alarming figures: According to reports, 783 million inhabitants of the Earth do not have access to a source of clean water. Included in these statistics are 26 villages and towns in the Argentinian province of Chaco. Thanks, amongst others, to the efforts of the Water & Sewage Division of KLINGER Argentina, around half a million citizens will soon benefit from a ready supply of potable water.

The province of Chaco is located in the north-eastern part of Argentina. Spanning an area of 99,633 square kilometers, it is among the poorest regions of the country. It is estimated that almost 50% of its population lives below the poverty line and that 17.5% of the children aged between two and five are in a state of malnutrition. As these figures clearly show, this is a region in dire need of aid. Luckily, help is on the way.

Initiated by former provincial governor Jorge Capitanich in 2011, the "Segundo Acueducto del Chaco" pipeline is the largest water project currently underway in the poverty-stricken area. Majority-financed by the Brazilian development bank BNDES, with additional funds provided by the central government together with the provincial water utility Sameep and the national water and



KLINGER Argentina team members in front of a SINGER control valve (DN 600 mm)

sanitation board Enohsa, it comprises different measures to supply the province with potable water: These include an intake on the Parana river, the already mentioned pipeline with a total length of 20 kilometers, the erection of a potable water plant in the port city of Barranqueras and a corresponding 512 kilometer-long distribution network. The initial capacity is set to be at around 7,000 cubic meters for the treatment of drinking water and 9,200 m<sup>3</sup> by the year 2030. And this is an area of expertise where KLINGER Argentina, contributing via its Water & Sewage Division, has been part of the project since the advisory and specifications phase, which began as early as 2009.

## Modeling and making

One of the major challenges of the project focused on the system measurements and dimensioning of the valves in order to avoid surge-related fluid

hammer effects, which could potentially result in noise, vibrations and, in the worst case, a collapse of the pipe. Making use of a specialist software tool, hydraulic transients were successfully mapped. Based on the analysis, the sales colleagues from the Water & Sewage Division, Emanuel Brizuela and Lucas Fernandez, proposed the installation of four SINGER pump control valves featuring a dual chamber build and a diameter of 600 mm as well as corresponding control panels.

## Perfect fit

Taking into consideration both the project and the prevailing conditions, this model is ideally suited to protect the pumping system and the line. Startup, for example, is achieved at a specific speed that avoids the sudden build-up of pressure on the line. During shutdown, on the other hand, the valve is closed slowly while the pumps continue running. This method reduces and prevents depressions or water hammers in the pipeline. Last but not least, the hazard of power cuts, a frequent occurrence in the region during summer, has also been taken into consideration: A mechanical spring, installed in the lower chamber of the dual valve, closes the valve as soon as the flow is interrupted, thus ensuring the avoidance of a kick-back of the water column and possible damage to the pump. "A lot of our work focuses on helping our industry customers to become more efficient in their processes as well as protected against the hazards caused by leakages. We also take our social responsibility seriously and with our contribution to the 'Segundo Acueducto del Chaco' project, we can ensure that the inhabitants of the Chaco province no longer need suffer from the effects of having to drink contaminated water", explain Emanuel Brizuela, Lucas Fernandez and Cristian Gonzalez from the sales team of KLINGER Argentina.

# INNOVATIVE EXPERTISE

KLINGER expert 6.0 now available



**Environmental protection comes in many shapes and sizes. Next to a reduction of emissions in manufacturing and process industries, avoiding pollution as well as harm to man and machine should be the top priority of every responsible operator. Faced with a wide range of gaskets available on the market, all featuring different properties, this, however, is easier said than done. But competent help is on the way – in the form of a powerful software: The KLINGER expert 6.0.**

KLINGER expert, the continuously improved gasket selection program by KLINGER Dichtungstechnik, is now available for download in the version 6.0. Immediately ready for use after unzipping and double-clicking on the .exe file, it assists operators in the selection of gasket materials for their specific areas of utilization.

## Versatile

As a powerful calculation tool capable of taking into consideration a wide range of parameters, KLINGER expert 6.0 calculates the surface pressure as well as the corresponding tightness of any given gasket material. This becomes a valuable asset when operators require a gasket that must be as tight as possible for a specific application. Version 6.0 also offers an entirely new feature: The selection of the bolting-up method, which subsequently highlights

the scatter compared to the calculated surface pressure. And needless to say, this is a very valuable piece of information, as uncontrolled tightening of bolts can easily result in leakages within the system.

## Gasket wizard

In order to carry out its calculations, KLINGER expert 6.0 requires the input of information readily available to the operator. This includes, for example, the temperature, pressure or the medium the gasket is intended for.

Furthermore, a wide range of standardized flanges and bolt qualities can be selected. Understanding that one size does not fit all, the application also allows for the entering of non-standard gasket dimensions. After all the necessary information has been provided, the app automatically displays the torque and the corresponding surface pressure. The latter, by the way, is also graphically highlighted in terms of the minimum and maximum surface pressure necessary for both the installation and operating conditions. Furthermore, users can also select a tightening class, which then illustrates the actual tightness on the basis of the calculated surface pressure, the material selected and the temperature. Last but not least, KLINGER expert 6.0 also answers any questions you may have regarding the gasket stress and tightness at any given torque. This also covers a change in the bolt properties,

for example with regard to the quality or yield. As a consequence, technicians are able to determine the gasket material featuring the highest levels of safety for both employees and the environment.

## More features, greater usability

Next to now being an executable (.exe) file requiring no further installation steps, KLINGER expert 6.0 also shines through a redesign of the user interface. Instead of utilizing six windows as has previously been the case, the app now features two main windows which depict all relevant data in a clear and concise overview, including the already discussed powerful bolting-up method selection and its influence on the calculated surface pressure. What is more, the program can also be set to work with materials that comply with required approvals, in which case a score is provided with regard to their suitability. This also includes regulations such as the German air pollution regulation "TA Luft", ensuring that responsible operators can actively contribute to a safe and healthy environment.

The KLINGER expert 6.0 app is available free of charge from KLINGER Dichtungstechnik.

Visit [www.klinger.co.at](http://www.klinger.co.at) and immediately benefit from this powerful tool.



New design and features facilitate the right gasket selection

Facts & Figures:  
Province of Chaco

Located in the north-east  
of Argentina

Capital and largest city  
Resistencia



# HISTORY MEETS PROGRESS

## Westad completes latest factory expansion



A rendering of Westad's new production facility

**Westad, a fairly recent addition to the KLINGER family, can look back on 120 years of production excellence. From its business location in Geithus, Norway, it has continuously strived to improve both its products and the quality of service provided for its many customers. Time, of course, has also resulted in changes in the production methods and the corresponding requirements. Following a very positive outlook in 2014, the company undertook a significant expansion of its facilities to retain its well-deserved status as a state of the art manufacturer.**

Walking through the manufacturing halls of Norwegian-based Westad is akin to a trip down memory lane. You can almost feel the walls humming with the vibrant history accumulated there. "Westad has remained on the same spot for its 120 years of existence," confirms its Managing Director, Jørn-Inge Thronsen, and adds: "And like any form of evolution, certain innovations do not stand the test

of time." What Jørn-Inge is referring to, for example, is the set-up of production facilities on three different floors. Such an approach is no longer feasible as it creates inefficiencies and logistic bottlenecks. Furthermore, certain parts of the building mass clearly show their age. "Our factory expansion was definitely not a simple face-lift to look younger," says Thronsen, obviously trying to make light of the fact that it also pains him to see parts of the corporate heritage laid to rest, "at the end of the day, however, if we want to continue to be proud of our work as an environmentally responsible company, walls without sufficient thermic insulation and high heating demands are simply not an option."

### From theory to practice

An internal team was formed in 2015 to plan and oversee the enlargement and modernization project. Right from the start, the focus was on the principle of "form follows function", meaning a very low-key, but highly work-efficient

building. "Westad does not believe in building corporate monuments to itself to show what it has achieved," explains Jørn-Inge, and adds: "When speaking of success, we ask that you instead look to our satisfied customers." Designed by the architecture office "Arkitektgruppen" and erected by master builder Strøm Gundersen, the focus of Westad's latest expansion was on adding another 2,500 square meters to the newest part of the production facility. The result: A total area of 5,000 m<sup>2</sup>, which houses – on one floor – all the main manufacturing centers, including logistics, machining, assembly, testing as well as packing. A side building, featuring another 200 m<sup>2</sup>, is reserved for cryogenic testing. A modular approach was implemented across the entire construction, featuring walls based on sandwich elements with inner and outer sections plus insulation. With regard to energy efficiency, a major factor for an environmentally friendly company, as it helps to significantly reduce power consumption, the building can rightfully call itself state of the art: In compliance with all energy standards, it features a roof with almost 50 centimeters of insulation, an increase by a factor of 10. Heating is achieved by air-to-air technology with heat pumps. And with regard to the source of energy itself, Westad exclusively draws its power from environmentally friendly hydro power stations.

### Voluntarily lean

Understanding that efficiency is not only a

matter of technology but also of attitude, the company has furthermore opted to enhance its energy and resource efficiency activities with lean principles: "In workshops together with KLINGER's Operational Excellence Manager, Robert Weninghofer, we are coming up with new ways to avoid waste, increase efficiency levels and in general become 'leaner'," explains Jørn-Inge.

Summarizing what has been achieved since Westad's first intention to enlarge and modernize its factory space, Jørn-Inge Thronsen states the following: "In 2014, after a year with the highest revenue in the company's history, thanks, amongst others, to the frame agreement with Statoil and the high activity in the LNG business, we decided it was high time to raise our operation levels to the next level of efficiency. Since



Members of the KLINGER family attended the Ski Jumping World Cup in Vikersund

then, we have worked around the clock to complete our latest factory expansion. The grand opening, which was held on February 11, 2016, was attended by high-profile politicians, suppliers and colleagues from the KLINGER family including Heinz Scharl, Christopher De Stoop and Raffaele Pittaluga as well as our partners Bertrand Ory and David Ruml. We also took the opportunity to include visiting the World Cup Ski

Jumping event in Vikersund into our ceremony and rounded off our celebration weekend with a tour of Oslo." With the new facility at its disposal, Westad can now again look forward to another 120 years of success. And in doing so, it can be certain that it is not only providing best products and service to its customers, but also doing the environment a service by applying the most energy-conserving principles available.

# WELL DONE, FRANZ!

## KLINGER Group honors 30 years of FRANZ GYSI AG



The KLINGER Supervisory Board congratulating Franz Gysi

**In February, Franz Gysi celebrated his 30-year anniversary as CEO of FRANZ GYSI AG in Switzerland.**

Wishing to show their appreciation for his excellent work and long-time and outstanding efforts, the Supervisory Board of the KLINGER Group presented Franz Gysi with his very own "Well done, Franz!"-cake. Dr. Christoph Klinger-Lohr speaks up for the board: "Excellent leadership, being able to motivate yourself and others, and providing the best service for customers and partners are all hallmarks of your success. We would like to sincerely congratulate you on the occasion of your corporate anniversary and thank you for the joint collaboration we have enjoyed over the years. We hope you will be just as strong and successful in the future!"



Opening ceremony in the new factory hall



Heinz Scharl, CEO KLINGER Group, with Ole Martin Kristiansen, the Vice Mayor of the Municipality of Modum



# THE HUNTSMAN'S CALL

KLINGER and HUNTSMAN announce Pan-European cooperation



The HUNTSMAN facility in Rotterdam (NL)



**Proximity and the ability to understand a customer's strategy, requirements and processes are the hallmarks of any successful enterprise. For the KLINGER Group, comprising 40 companies and more than 60 manufacturing, distribution and service hubs around the globe, this is a well-understood fact. And with the signing of a Pan-European agreement with the US multinational chemicals company HUNTSMAN – a contract three years in the making – this approach has now gained an entirely new perspective.**

Founded in 1970 by Jon Huntsman Sr., the company has been publicly listed as the HUNTSMAN Corporation on the New York Stock Exchange since 2005. Today, HUNTSMAN is a multinational manufacturer and marketer of a wide range of chemical products for

consumers and industrial customers. These include polyurethanes, performance products and pigments for "names" such as BMW, General Electric, Chevron, Procter and Gamble as well as Unilever, to name but a few. Headquartered in The Woodlands, Texas, as well as with executive offices in Salt Lake City, Utah, and with manufacturing and R&D facilities in over 30 countries, HUNTSMAN is a major player in the chemicals industry.

And while there may be truth to the saying "opposites attract", the same can be said for similarities: Both KLINGER and HUNTSMAN have the "family" gene – in the case of HUNTSMAN in the person of Jon M. Huntsman as the Executive Chairman and Peter R. Huntsman as its President and CEO. Furthermore, both companies are active and present around the globe. And last but not least, equipment for the titanium



Enriching lives through innovation

dioxide industry is one of the fields of expertise provided by KLINGER. It should therefore not come as a surprise that the company has been a customer of the Austrian family-owned valve and gasket solutions provider for many years. What is now poised to change, however, is the scope of the collaboration between Huntsman and KLINGER.

#### Where it all began

Roughly two years ago, Jimmy Wilkins, the MRO Purchasing Manager of the HUNTSMAN branch in Belgium, carried out an assessment of the company's supplier portfolio in order to streamline the structures and processes involved. "As a result of our organization's size

## Total Cost of Ownership (TCO)

Total Cost of Ownership is a purchasing tool which aims to understand the true costs of buying a particular good or service. With TCO analysis, all process and people-related expenses are identified and quantified. The main goal is to make better purchasing decisions by considering cost issues beyond the simple purchasing price.

#### Overview of TCO Factors

- » Purchase price across the entire product lifecycle
- » Maintenance and service contracts
- » Ongoing operating costs, as affected by reliability, availability, serviceability
- » Fixed operating costs
- » Risk-mitigation costs

TCO brings a long-term perspective into the purchasing process. It offers opportunities to improve productivity, create sustainability benefits and generate cost savings throughout the entire product lifecycle.

and complexity, I found, amongst others, that we were using different suppliers for the same products," recalls Wilkins, "furthermore, we were not ordering frequently required parts in bulk – our orders were low-value – and we did not really have any notable price leverage, either." Setting out to rectify the situation, Wilkins and his team got in touch with suppliers in different fields that matched certain excellence criteria he determined to be a must-have, among these a constant level of quality, technical competence and excellent service provision. Among the companies contacted: KLINGER in the Netherlands. Erik van der Plaet, who acted as Jimmy Wilkins' KLINGER counterpart, remembers: "After having heard from HUNTSMAN, and having asked a few questions of our own, we quickly understood that their intent to centralize procurement would be a major opportunity for us to both intensify and strengthen our good relations with this already long-term customer."

Working together with HUNTSMAN, Erik and Ton van Erkelens, KLINGER BV's Managing Director, went the extra

mile and came up with a tailored e-procurement solution. Not only would this innovative tool simplify the purchasing process itself, it would also provide a purchasing history that would greatly aid the multinational chemicals producer in its product rationalization efforts: For example with regard to transaction costs incurred by part orders. This proved to be an area with an enormous saving potential: By ordering in bulk, i.e. large amounts as opposed to placing multiple small orders, HUNTSMAN was able to significantly reduce its overall purchasing costs.

#### Strategic partnership

Impressed by the efforts, power of innovation and expertise displayed by the KLINGER team, HUNTSMAN, effective as of January 2016, named the Austrian manufacturer and service provider their preferred supplier for gaskets. "KLINGER is the number 1 producer of soft sealing in Europe and a top-3 producer of metal gaskets," confirms Wilkins and adds: "The company has a very efficient distribution

process and is also willing and able to assist us with any technical challenge or improvement project related to the products they offer." Now that the contract has been signed, where will the journey lead to from here?

In a first step, the contents of the preferred supplier agreement will be rolled out and implemented in the various European countries it concerns. The fact that HUNTSMAN, represented by its procurement manager Jimmy Wilkins, has opted to personally attend the kick-off meetings in Italy, France and Germany clearly shows that both sides see themselves as equal partners, working towards a mutual and profitable goal. On the basis of the trend-setting e-procurement solution created by KLINGER BV, HUNTSMAN will order its gaskets via OCI websites and Ariba contract management, available for each participating country. Next to significantly simplifying processes, this will result in multiple benefits for the HUNTSMAN Corporation: Summed up, they are now able to rely on tried and proven gaskets at a constant high-quality level from one source, whenever and wherever required. Furthermore, the agreement will allow for a detailed analysis of the total cost of ownership with full transparency regarding additional (transaction) costs, allowing HUNTSMAN to streamline their procurement activities in an economically efficient manner. And for a company the size of Huntsman, this is essential: Not only can it rest assured that it is getting the best value for money, but it can continue to fully focus on its core competences without having to worry about the quality of the products and services procured.



