Reduction Transformation Production

The tesa energy strategy for a climate-neutral future

Reduction, transformation, production: The tesa energy strategy for a climate-neutral future

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Executive Summary

tesa is committed to actively shaping a more sustainable future – as an international company, a manufacturer of innovative adhesive solutions, a business partner and an employer. By making sustainability a top priority, we have set ambitious targets, with one of our key goals being to achieve climate-neutral production (Scope 1 & 2) by 2030, focusing on the **reduction and avoidance** of emissions.

Our energy strategy is at the core of this effort. It outlines a clear, actionable plan that combines energy efficiency measures, the transition away from fossil fuels, and increasing our use of renewable energy sources like wind and solar, both through procurement and our own production.

Achieving climate neutrality in our own production, ensuring security of supply and maintaining cost stability are key to the success of our energy strategy. To improve our competitiveness while contributing to a more sustainable future, we have established clear goals and developed action plans in these areas.

With the 2030 deadline fast approaching, the rapid pace of our energy transformation makes this strategy both ambitious and challenging.

The tesa energy strategy: Reduction – Transformation – Production

Our energy strategy is built on three pillars: **reducing** energy consumption, driving technological **transformation**, and increasing the share of electricity **generated at our sites**. All modernization, flexibility and change initiatives are aligned with these core areas.

Strategic objectives

1. Reducing energy consumption

Goal: Reduce energy consumption by 28% by 2030 compared to the base year 2022	**Measures:** Increase energy efficiency, use of new production technologies	**Challenges:** High level of investment and costs when switching to energy-saving technologies/processes, complexity of changing operating procedures

2. Transformation

Goal: Reduce reliance on fossil fuels as much as possible by electrifying processes while balancing costs and ensuring security of supply	**Measures:** Diversify the energy portfolio, increase flexibility in procurement contracts and energy infrastructure, e.g., make the use of CHP plants more dynamic, invest in electrification and digitalize energy management, with a view to using green hydrogen as an energy source in the future	**Challenges:** Balancing climate targets with cost stability and security of supply given the limited availability of renewable energy

3. Generating our own energy

Goal: Increase the share of renewable energies through our own production of electricity from renewable sources	**Measures:** Install our own photovoltaic systems, explore energy storage solutions, examine options such as participating in external photovoltaic or wind energy projects	**Challenges:** Supply bottlenecks from manufacturers, inadequate energy storage options and bureaucratic obstacles

Outlook

Companies are key players in the energy transformation but they cannot accomplish it on their own. Economic viability depends significantly on political support, including subsidies, tax incentives and regulations. Moreover, infrastructure is vital for enabling the expansion of hydrogen technology at competitive costs and increasing installed capacity at production sites.

If the energy transformation succeeds, fossil fuels could be largely replaced by green electricity or green hydrogen in the long-term, dramatically reducing or even eliminating CO_2 emissions in production.

To meet our ambitious goal of achieving climate neutrality in our own production (Scope 1 & 2) by 2030, we are proactively implementing a range of measures aimed at reducing our environmental impact while also enhancing and safeguarding the economic sustainability of our company in the short, medium and long term.

Introduction

In short

- **Sustainability priority: tesa is committed to sustainability as a core part of its corporate strategy, especially important in the chemical industry.**
- **Climate neutrality by 2030: The company aims for climate neutrality in production by 2030, focusing on reducing Scope 1 & 2 emissions.**
- **Energy strategy: tesa's plan includes energy efficiency, transitioning from fossil fuels, and increasing renewable energy use.**
- **Alignment with EU goals: tesa follows Science Based Targets initiative guidelines, aiming for a 95% reduction in Scope 1 & 2 emissions by 2045.**

tesa is committed to actively shaping a more sustainable future – as an international company, a manufacturer of innovative adhesive solutions, a business partner and an employer. Sustainability is one of our top priorities, with ambitious goals in place to make our company more sustainable. This commitment is especially important for a company like tesa, which operates in the chemical industry with production facilities around the world.

Climate-neutral production by 2030

Our sustainability strategy is a central part of tesa's corporate strategy, with ambitious goals and measures across five strategic action areas. These initiatives aim to reduce our environmental footprint while enhancing and safeguarding the economic sustainability of the company over the short, medium and long term.

Our five strategic action areas with high impact

Each action area addresses strategically relevant topics that significantly impact the sustainability transformation of our company. These include raw materials, procurement, production technology, logistics, product development and energy.

In the "reduce emissions" action area, we have set the overarching goal of achieving climate neutrality in our own production by 2030, focusing on **reducing and avoiding** emissions within Scope 1 & 2 (direct and indirect emissions under tesa's control).

Our energy strategy is at the core of this effort. It outlines a clear, actionable plan that combines energy efficiency measures, the transition away from fossil fuels, and increasing our use of renewable energy sources like wind and solar, both through procurement and our own production.

With the 2030 deadline fast approaching, the rapid pace of our energy transformation makes this plan both ambitious and challenging.

By 2030,

we want to achieve climate-neutral production (Scope 1 & 2)

"The transformation to a climate-neutral company is not only a significant challenge but also a strategic advantage. It ensures our competitiveness, fosters innovation and new technologies, and allows us to become independent of fossil fuels so that we can shape a sustainable and successful future." **– Dr. Ingrid Sebald, Board Member, Technology**

What is climate neutrality?

Climate neutrality means that the activities of a company such as tesa have no negative impact on the climate. Specifically, this entails either emitting no greenhouse gases or offsetting any emissions by removing an equivalent amount from the atmosphere, achieving what is known as "net zero."

The European Union, with its "net zero target," aims to become climate-neutral by 2050 by reducing emissions as much as possible and offsetting any remaining emissions through measures such as reforestation, carbon capture and storage. The plan is part of the European Green Deal, which aims to make the EU the first climate-neutral continent and limit global warming to well below two degrees Celsius, which is in line with the Paris Agreement.

We follow the Science Based Targets initiative (SBTi) guidelines, which call for an absolute reduction of 95% in Scope 1 & 2 emissions.

The tesa energy strategy: Implementation

In short

- **Energy management: A future-oriented energy management system is essential for tesa's sustainable transformation.**
- **Three-pillar strategy: Focus on reducing energy consumption, driving technological transformation, and increasing self-generated electricity.**
- **Consumption reduction: Efficient energy use minimizes environmental pollution and reduces dependence on fossil fuels.**
- **Technological transformation: Transitioning to renewable energies ensures long-term flexibility and supports sustainable infrastructures.**
- **Self-production: Generating its own energy enhances supply security and mitigates economic risks associated with fossil fuels.**

As a manufacturing company with high energy demands, a future-oriented energy management system is essential for the sustainable transformation of our business. That is why we developed a comprehensive energy strategy in 2023.

"We believe that energy efficiency and sustainability, coupled with cost optimization, are the foundation of a responsible and successful company. Our global energy strategy aims to reduce energy consumption, lower emissions, ensure security of supply and save costs at the same time."
– Holger Rauth, Head of Sustainable Production

Our energy strategy: Reduce consumption – Transform technology – Increase our own production

Our energy strategy is built on three pillars: reducing energy consumption, driving technological transformation and increasing the share of electricity generated at our sites. All modernization, flexibility and change initiatives are aligned with these core areas:

Reduction

- Reducing energy consumption reduces environmental pollution and is a key driver of climate protection.
- By using energy more efficiently, we decrease resource dependency and minimize fossil fuel use.
- Switching to energy-efficient technologies and processes is far from a simple process.

Transformation

- The transition to renewable energies prevents the depletion of natural resources and reduces greenhouse gas emissions.
- Technological transformation ensures long-term flexibility in security of supply and contributes significantly to building sustainable infrastructures for the future.

Production

- Generating our own energy enhances supply security in volatile markets. It reduces dependence on fossil fuels, which are subject to economic risks such as price fluctuations and supply instability due to geopolitical factors.
- Investing in our own production of resource-efficient energy supports long-term economic stability and growth.

We are committed to reducing our energy consumption. We want to convert what we cannot reduce further into renewable energy sources. One building block for this is the production of our own energy.

Strategic goals in the area of »Energy reduction«

In short

- **Energy consumption reduction: The chemical industry must significantly minimize energy consumption, particularly natural gas, to meet climate targets.**
- **Impact on business: Reducing energy use supports sustainability objectives, lowers costs, mitigates risks from market volatility, and lays the groundwork for long-term success.**
- **2030 target: tesa aims to reduce energy consumption by 28% by 2030, focusing on increasing efficiency and transitioning to new production technologies.**
- **Solvent-free production: The shift to solvent-free production methods significantly lowers energy consumption and emissions, with several sites already implementing these technologies.**
- **Challenges ahead: Transitioning to energy-efficient processes requires substantial investment, technological innovation, and infrastructure development.**

Reducing energy consumption: A major step towards climate neutrality in production

The chemical industry is highly energy intensive, with many processes requiring elevated temperatures and pressure. If we are to achieve our ambitious climate target, we will need to significantly reduce our energy consumption. Specifically, we will have to minimize the use of natural gas, which is primarily employed in the direct firing of coating systems, steam generation, and the operation of our combined heat and power (CHP) plants, along with the associated emissions.

Reducing energy consumption impacts every key aspect of our business activities:

Climate targets: All reduction measures support our sustainability objectives and regulatory compliance by reducing greenhouse gas emissions while contributing to climate protection and our broader goal of achieving climate neutrality.

Costs: Energy is a major cost factor in the chemical industry. By reducing consumption, we can lower expenses and boost competitiveness, especially as energy prices continue to rise.

Risks: Lower energy consumption also reduces exposure to the risks posed by increasingly volatile markets. By consuming less energy, we become less vulnerable to fluctuations in availability and pricing, which increases our economic stability.

Long-term: Investing in innovative processes and digitalization to reduce energy consumption lays the foundation for long-term success.

"The energy we don't need is the cheapest – and the most sustainable."
– Tillmann Köpke, Manager Sustainability Production Strategy

We have set a clear target to reduce our energy consumption by 28% by 2030, using 2022 as the baseline. The initiatives we are pursuing to this end consist of increasing energy efficiency, using new production technologies and, most importantly, gradually shutting down CHP plants. However, transitioning to energy-efficient technologies and processes that minimize the use of fossil fuels can be very complex. Meeting our goals will require substantial technological innovation, process adaptation and significant investment.

It is also important to acknowledge that many chemical processes still rely heavily on fossil fuels. While alternatives like green hydrogen are being developed rapidly, they are not yet available at the necessary scale in the short to medium term or economically viable without subsidies. Further steps, especially with regard to infrastructure, are necessary in order to be able to use these alternative raw materials.

These challenges and further steps will be discussed in the next section: “Strategic goals in the area of Energy Transformation”.

28%

We have set a clear target to reduce our energy consumption by 28% by 2030, compared to 2022.

Solvent-free production: Energy-reduced and low-emission technology

The solvent-free production of adhesive tapes using an electrified extrusion process significantly lowers energy consumption and emissions compared to solvent-based coating methods. tesa is therefore investing in these solvent-free technologies across various locations. Alongside continuous energy-saving measures, transitioning to solvent-free processes is one of the primary drivers in reducing emissions and achieving climate neutrality in production. The tesa sites in Concagno (Italy) and Sparta (USA) have already fully transitioned to solvent-free production, while the Haiphong plant has operated at 50% solvent-free capacity since its opening in 2023.

The Hamburg site is also set to gradually adopt solvent-free and energy-saving production processes by 2030.

Alongside continuous energy-saving measures, transitioning to solvent-free processes is one of the primary drivers in reducing emissions and achieving climate neutrality.

Sparta: A case study in the technological adaptation of infrastructure

At tesa's Sparta site in the US, we developed a holistic concept to support energy and resource efficiency. In 2023, the entire plant was converted to solvent-free production, with the supporting infrastructure fully optimized for energy and resource savings. The previous production line, which used solvents and an incineration system, was replaced by a new solvent-free production line. The tesa® SFX extrusion technology, which we developed in-house as a solvent-free approach, eliminated the need for energy-intensive drying and solvent recovery processes. Compared to solvent-based methods, tesa® SFX reduces primary energy use by around 40%.

In addition to the new production line, the construction of a large-scale solar system was part of this comprehensive approach. This initiative will cut carbon emissions at Sparta by 38%, saving approximately 1,100 tons of CO_2 annually. The plant aims to be climate-neutral by 2030.

1,100 tons of CO_2

will be saved annually through the adaptation of tesa's Sparta site.

Energy efficiency: The efficient use of available resources

Reducing energy consumption goes hand in hand with the efficient use of available resources. To that end, we are implementing various measures in both our production and office buildings worldwide to enhance energy efficiency. These initiatives include optimizing production processes, replacing old pumps with higher energy efficiency ones, insulating pipes to prevent heat loss, installing energy-saving LEDs at our sites and much more.

Technological advancements, such as the introduction of solvent-free processes, also contribute to improving the energy efficiency of our manufacturing operations.

Achieving tesa's climate neutrality goal depends to a large extent on significantly reducing our energy consumption.

Challenges

- Transitioning to energy-efficient technologies and processes that use less fossil fuel requires substantial investment and time.
- Modifying operating processes to reduce emissions can be very technologically complex.
- Some of the technologies are not yet fully developed or the required infrastructure is lacking.

Strategic goals in the area of »Energy transformation«

In short

- **Energy consumption goals: tesa aims to minimize energy consumption and reduce reliance on fossil fuels, anticipating a significant increase in electricity demand due to electrification.**
- **Balancing energy needs: The company must manage energy costs, availability, and supply security while pursuing climate neutrality in production and enhancing competitiveness.**
- **Action plan: tesa's strategy focuses on a diversified energy mix, flexible supply contracts, and adaptable infrastructure to optimize energy procurement and usage.**
- **Electrification investments: Significant investments in electrification, including heat pumps and electric steam boilers, will enhance flexibility and reduce dependency on single energy sources.**
- **Hydrogen Technology Outlook: tesa is exploring hydrogen as an alternative to fossil fuels, with plans for its use in steam generation at the Hamburg plant by 2027, aiming for substantial CO_2 reductions.**

Our objective is to minimize energy consumption while avoiding the use of fossil fuels as much as possible. However, massively reducing reliance on fossil fuels, such as natural gas, will likely cause a three- to fourfold increase in electricity demand in the short to medium term because electrification is at the heart of this transformation. This not only applies to tesa, but to the entire economy of industrialized countries, which is why factors like supply costs, energy availability and security of supply are such critical considerations.

Balancing act between energy costs, availability and security of supply

As a global company focused on economic success, we must ensure the stability of our energy supply and manage costs as we work towards climate neutrality in production. Our defined targets and action plans in these areas will enhance our competitiveness while also contributing to a more sustainable future.

The energy transition is fundamentally driven by **electrification**, which significantly increases electricity demand – not just for us, but for many other companies as well. Success in this transition requires keeping electricity **supply costs** economically viable, ensuring the **availability** of sufficient energy from suitable sources and maintaining the **security of supply**.

- Moving away from fossil fuels
- Increasing demand for electricity
- Covering electricity demand from renewables and reducing consumption by switching to more energy-efficient technologies

Our action plan is built on three pillars – the energy mix, flexible supply contracts and making infrastructure more adaptable. At all our locations, we are implementing extensive electrification measures, such as heat pumps and electric steam boilers.

> "Energy transformation essentially means the electrification of our production facilities."
> **– Thomas Erfurth,**
> **Manager Energy Transformation at tesa**

Energy mix, infrastructure, supply contracts: Flexibility is key

Our main goal is to make energy use in our plants more flexible, efficient and sustainable. We aim to do this by using a variety of tools to improve transparency and adaptability, thereby optimizing the procurement, usage and distribution of energy in our production facilities.

We are prioritizing a diversified energy portfolio – an energy mix that enables us to respond flexibly to market volatility, price fluctuations, changes in supply infrastructure and regulations, and technological requirements.

In order to achieve this, we are broadening our energy procurement options, investing in new technologies, making procurement contracts more flexible and shifting our supply focus towards renewable energies. However, we maintain the flexibility to use conventional energy sources only to a limited extent where no viable alternatives exist, particularly for cost and generation reasons.

Our combined heat and power (CHP) plants, which generate electricity and heat simultaneously, offer higher efficiency than separate systems. However, these plants depend on fossil fuels, particularly natural gas. This reliance not only impacts their economic efficiency, given the volatility of fuel prices, but also has negative environmental impacts due to the emissions they produce.

More dynamic use of CHP plants

For example, one of our next steps is to gradually shut down the operation of our CHP plants with the aim of removing them completely from the grid in the long term. In the medium term, CHP plants will continue to serve as a backup to ensure energy security and cost-effective procurement. The success of the sustainable transformation depends on ensuring both security of supply and economic efficiency.

As energy consumption shifts due to electrification and the demand for electricity rises significantly, renewable energy sources must be expanded and made consistently available. In Germany, however, the availability of renewable electricity is currently limited, and costs are notably higher compared to other countries, primarily due to grid fees. This means that expanding renewable electricity capacities and ensuring its long-term availability at competitive prices is crucial.

Flexible infrastructures are essential for transitioning from today's fossil-based energy landscape to climate neutrality. While conventional energy sources will remain part of the energy portfolio as a backup, their use will be gradually reduced.

Given the current situation, companies will need to invest in their own renewable energy plants, which will also help reduce costs, and adopt dynamic energy consumption methods, such as making use of storage solutions. This also needs to be reflected in flexible and modern supply contracts.

Transition to flexible portfolio supply contracts

To manage energy availability and costs effectively, we have completely transitioned our procurement processes from structured tranche contracts to flexible portfolio supply contracts. In Germany, we already source energy continuously through these portfolio contracts. This approach is crucial because it gives us access to spot market prices, making the ongoing energy transition more cost-efficient. Where feasible, we aim to expand this small-scale model to all locations worldwide. This will allow us to tailor our energy procurement to the specific conditions in each country in terms of sustainability, cost efficiency and security of supply.

Flexibility and the ability to respond quickly to changes in energy markets provide tesa with a competitive advantage, ensuring our future viability and a sustainable, adaptable energy portfolio.

Flexible portfolio

supply contracts help us to manage energy availability and costs effectively.

Electrification of production processes

tesa is also planning significant investments in the electrification of production processes (e.g., heat pumps and electric steam boilers). This approach offers maximum flexibility in choosing energy sources, thereby reducing dependency on any single type of energy. We are also planning investments in local power generation and energy storage solutions. Ultimately, the cost-efficient supply of electricity and gas through flexible supply contracts will also facilitate the integration of hydrogen options into tesa's energy mix.

tesa is planning

significant investments in the electrification of production processes.

Data-driven decisions: Digitalization of energy management and smart manufacturing

A key aspect of tesa's energy strategy is increasing the flexibility of our energy infrastructure and supply, with digitalization playing an important role: Digital solutions for energy management increase transparency for tesa-wide analyses, reports and forecasts. We are investing in energy monitoring systems to track emissions, monitor and control energy consumption in real time, and create a comprehensive database across all tesa plants.

Data-driven decisions help us to efficiently manage and optimize energy supply, energy costs and emissions reductions. Quantifying demand and savings allows us to predict daily energy consumption in real time. In addition, energy procurement can be tailored, with the flexibility to purchase energy at spot market prices. In Europe, particularly Germany, this will be managed through flexible contracts, while at other locations, tariffs will be adjusted based on time-of-day usage. We are preparing for dynamic purchasing behavior to save costs and shift the energy mix from gas to electricity, while progressively transitioning to adaptable, cost-efficient, and sustainability-optimized schedules for the energy supply infrastructure across all tesa plants.

Digital control tools will help us determine the optimal operating conditions for each site. The goal here is to achieve global data transparency to support the entire energy management process. This data will include not only plant-specific information but also external factors such as stock market and weather data. Demand forecasts informed by this data will enable us to adjust our flexible energy infrastructure as needed. For example, we can dynamically generate heat, steam or cooling using different energy sources depending on the available data.

Data-driven decisions help us to efficiently manage and optimize energy supply, energy costs and emissions reductions.

A crucial success factor in our transformation is a flexible energy infrastructure paired with flexible energy supply contracts, which are essential due to volatile markets, all powered by internal digitalization and automation of energy management.

Outlook: Hydrogen technology

The use of hydrogen could save around 6,000 tons of CO_2 annually at tesa plant Hamburg, which is an important step towards climate neutrality.

Hydrogen technology offers a promising alternative to fossil fuels like natural gas, with hydrogen being used as a fuel. While the technologies for producing hydrogen are well established, large-scale industrial hydrogen production and a nationwide supply infrastructure are still in the development stage in Germany. Currently, green hydrogen is significantly more expensive than natural gas, but in a welcome development, support from the German government and the European Union is expected to drive the growth of hydrogen technology. Through initiatives like Germany's "National Hydrogen Strategy" and the EU's Hydrogen Strategy, the necessary momentum is being created to establish a competitive green hydrogen economy. An extensive catalog of measures is being developed, together with feasibility studies on technologies, production, storage, infrastructure and logistics; economically suitable locations for a future green hydrogen economy are also being identified worldwide. On this basis, the German government will support hydrogen expansion with funding. The European Union also aims to establish an internationally competitive hydrogen economy by 2030 through its hydrogen strategy.

Studies predict that in the long term natural gas prices will rise due to increased CO_2 emissions costs, while the costs of green hydrogen will decrease significantly due to economies of scale. At tesa's Hamburg plant, which requires large amounts of process heat at high temperatures, green hydrogen will be used alongside green electricity for climate-neutral steam generation. The plant is preparing to replace gas-fired

Supported by:

Federal Ministry
for Economic Affairs
and Energy

on the basis of a decision
by the German Bundestag

Funded by
the European Union
NextGenerationEU

steam boilers with new H_2-ready technology. In collaboration with Hamburger Energienetze GmbH, tesa aims to connect the Hamburg plant to the supply network as part of the HH-WIN (Hamburg Hydrogen Industrial Network) project. Hydrogen will supplement electricity and gas and play a key role in reducing CO_2 emissions at tesa's most energy-intensive production site. The use of hydrogen could save around 6,000 tons of CO_2 annually, which is an important step towards climate neutrality in production.

The tesa plant in Hamburg is set to produce the first adhesive tapes using green hydrogen by 2027. Multi-million euro investments are planned for the new equipment and infrastructure needed to integrate hydrogen into steam generation.

Not all hydrogen is the same

Gray hydrogen:

Produced using natural gas. The CO_2 generated in the process is released unused into the atmosphere.

Blue hydrogen:

Like gray hydrogen, but the CO_2 is captured and stored instead of being released into the atmosphere, making it carbon-neutral.

Green hydrogen:

Produced using only renewable electricity through electrolysis and is completely CO_2-free.

Challenges in the area of energy transformation

- The increased use of renewable energies is driving a sharp increase in electricity demand, requiring digital solutions to align energy consumption with availability.
- Ensuring a sufficient supply of electricity for all plants from renewable sources in the short term is essential.
- This is why we are focusing on our own production of energy from renewable sources.
- Cost efficiency: Currently, fossil fuels like natural gas are still the most affordable energy source, and the technological shift to alternatives must always consider cost-effectiveness.
- Renewable energy for heat generation is only available to a limited extent at present, making it difficult to fully eliminate fossil energy sources. Although hydrogen technology is promising, its availability and cost remain hurdles that need to be addressed in the future.

Strategic goals in the area of »Our own production of energy«

In short

- **Since 2020, all global electricity purchases have come from renewable sources, contributing to climate neutrality by 2030.**
- **tesa is investing globally in local renewable energy generation, particularly photovoltaics, with the goal of covering 20-25% of its energy needs through self-generated electricity.**
- **In addition to self-generation, tesa evaluates to participate in external photovoltaic and wind energy projects and is exploring energy storage solutions.**
- **Challenges include regulatory requirements, local conditions, supply bottlenecks, and the need for reliable industrial-scale energy storage solutions.**

Using energy from renewable sources contributes significantly to our sustainability goal of becoming climate-neutral by 2030 (Scope 1 & 2). Since 2020, all of our electricity purchases worldwide have come from renewable sources. At the same time, we are accelerating our efforts to produce renewable energy, particularly solar power, as part of our energy strategy. This is essential not only from an economic perspective, as it will help meet rising electricity demand from the transformation of our processes, but also because generating our own renewable energy is critical given the energy transition and potential shortages, particularly in industrialized nations.

We are investing in local renewable energy generation globally, with a particular focus on photovoltaics. tesa aims to cover 20 to 25% of its energy needs at all locations by generating its own electricity from renewable energy sources.

The overarching goal is to secure a stable, renewable energy supply to support the electrification of our production facilities at competitive and predictable costs.

In addition, we plan to participate in external photovoltaic and wind energy projects to diversify our energy supply, ensure its security and minimize risk. Storing excess self-produced energy for later use is another crucial element, for which there is currently no comprehensive, satisfactory solution. We are currently exploring energy storage options, including batteries, hot/cold water reservoirs and ice storage to optimize our positioning in this area.

To ensure the successful and sustainable generation of our own electricity, careful planning is essential. Implementing this at our global sites requires customized solutions that take into account various challenges, requirements and opportunities, including financing and subsidies, site-specific factors like available space and climate conditions, country-specific regulations, and the availability of hardware and suppliers.

tesa aims to cover

20–25%

of its energy needs at all locations by generating its own electricity from renewable energy sources.

Currently, a solar park is being constructed at the tesa plant in Offenburg, which will be operational by early 2025 and cover around 25% of the site's electricity needs (based on electricity consumption in 2022). Additional solar parks in China, Italy, Germany and the US are already in place, under construction or in preparation. Over the coming years, tesa will invest a high double-digit million euro amount in its energy transformation, including initiatives for the generation of our own energy.

Challenges in the area of our own energy production

- Requirements of government agencies and associations: Obtaining approvals for installing photovoltaic and wind systems can be a slow and complicated process.
- Local conditions: Developing areas for renewable energy systems can be costly.
- Supply bottlenecks: Long lead times for equipment from manufacturers can significantly delay the quick implementation of measures to produce our own energy.
- Ensuring a continuous energy supply and compensating for fluctuations in generation requires the availability of reliable industrial-scale energy storage solutions.

A task for all of society: Challenges & Outlook

We are convinced that companies are key players in the energy transformation, but they cannot achieve it alone. The economic viability of any business activity depends significantly on political support, including subsidies, tax incentives and regulations. To a great extent, this also applies to the transformation of the economy towards increasingly sustainable solutions. In addition, infrastructure developments, such as those seen with hydrogen technology, are necessary to facilitate the transition.

Currently, the biggest external challenge for this transformation is the limited availability of renewable energy and green hydrogen at competitive prices, as well as the need to expand the necessary infrastructure. If we succeed in creating these conditions, fossil fuels could be largely replaced by green electricity or green hydrogen in the long term, dramatically reducing or even eliminating CO_2 emissions in production.

Aside from sustainability, the cost of fossil fuels in Europe has risen sharply due to the halt in Russian gas and oil supplies and increased CO_2 pricing. Overall, the volatility of energy prices and supply is rising due to global competition for limited resources.

At the same time, as we continue to phase out natural gas, electricity demand will increase three to four times compared to current levels. Meeting this rising demand in the short and medium term primarily with renewable energy sources is critical for achieving emissions reduction targets despite rising demand. However, renewable energy is scarce, meaning that initiatives for generating our own energy are indispensable, as is the political will to promote these measures.

Limited access to renewable energy, particularly in Asia, complicates the global transformation process. At the same time, customer demand for production with 100% electricity from renewable sources or carbon-neutral production is increasing, including for adhesive tapes. The growing social awareness around the need to reduce carbon emissions affects all stakeholders. Companies that fail to respond adequately risk both reputational and business losses, which could be substantial. In addition, global regulations on the use of fossil fuels, driven by the Paris Climate Agreement, are tightening. In Europe in particular, regulatory requirements (e.g., for emissions trading) are increasing. Therefore, we are taking a wide range of proactive and forward-looking measures to ensure our future sustainability. The lack of skilled workers, especially in the energy sector, presents another challenge in Europe. This shortage is incompatible with the growing demand for energy services and suppliers and threatens to slow the pace of implementation of the energy transition, at least in part.

The energy transition is a task for all of society. In addition to our internal goals and efforts, we need both established and new partnerships to adapt technologies, markets and national infrastructures to meet the challenges ahead.

We are convinced that companies are key players in the energy transformation, but they cannot achieve it alone.

For more information on our actiona area Reduce emissions, please visit our sustainability website:

Contact:
responsibility@tesa.de