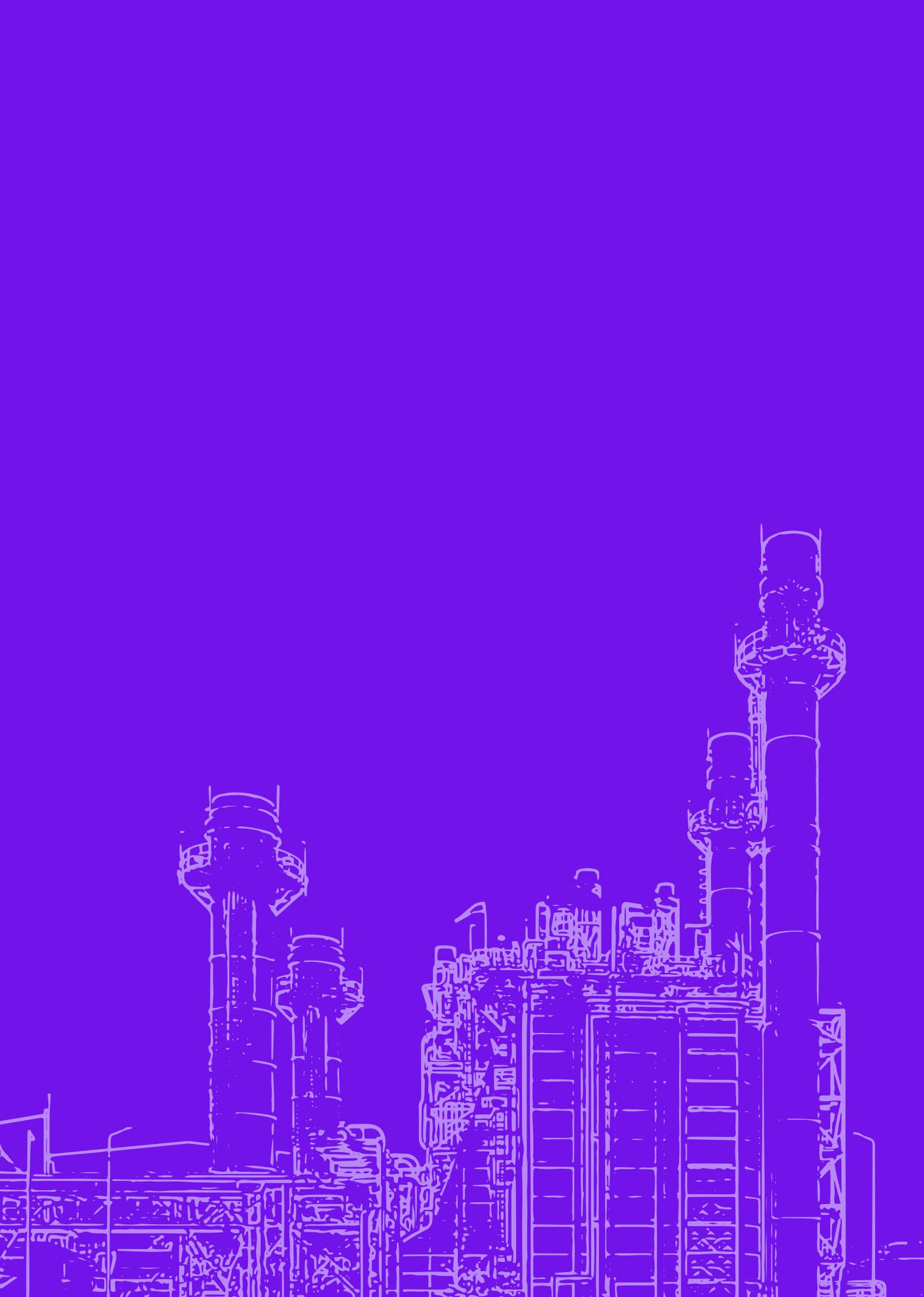




Survey on the impact of high energy prices on industrial investments and employment in Belgium

October 2023





In today's rapidly evolving world, the impact of high energy prices on investments and employment in industry has become an issue of paramount importance. As the global economy moves towards a cleaner, more sustainable future, nations worldwide are grappling with the challenges posed by the energy transition and rapidly rising energy costs. This report aims to shed light on this specifically in Belgium, where we had the opportunity to interview 22 leading industrial players on behalf of Febeliec.

Through these insightful interviews, we endeavor to explore the multiple impacts of high electricity and gas prices on investment decisions and employment opportunities in Belgium. By delving into the experiences and perspectives of these industry leaders, we aim to provide a comprehensive understanding of the complex relationship between energy costs and industrial growth in the Belgian context.

The industrialists we interviewed represent a wide range of sectors, including chemicals and petrochemicals, life sciences, industrial manufacturing and food processing. Their expertise and first-hand experience provide invaluable insights into how high electricity prices have shaped their decision-making processes, operational strategies, and workforce dynamics. Together they represent approximately 10TWh of electricity consumption (or approximately 1/8 of total electricity consumption) and 40.000 jobs¹. Besides this, in order to reflect the importance of the sectors represented in this report, it can be noted that Belgium hosts the second largest petrochemical cluster in the world, Belgium ranks 2nd worldwide for (bio)pharma exports and the food industry is the largest industrial employer of the country.

By examining the challenges faced by these leaders and the innovative solutions they have implemented, this report aims to provide a comprehensive analysis of the current landscape. We hope that our findings will contribute to a wider understanding of the impact of high electricity prices on investment and

employment, and ultimately encourage informed discussions and drive positive change.

We would like to thank the interviewees who gave their time and expertise to make this project a reality. KPMG in Belgium is committed to playing a constructive role in the green transition towards 2030. As a global firm, we recognize that we have a role to play in shaping a more sustainable future and are actively contributing to the United Nations Sustainable Development Goals (SDGs). That's why, in 2021, we launched Our Impact Plan, our internal sustainability strategy, which focuses on four pillars: People, Prosperity, Planet and Philanthropy. We are also investing in capabilities to help our clients navigate the energy transition.

It is our sincere belief that this report will serve as a valuable resource for policymakers, business leaders, and other stakeholders alike, fostering a dialogue that contributes to a sustainable and vibrant economy in our country.



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¹ Source figures: Febeliec

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Background

To gain a deeper understanding on how high energy prices are affecting investment and employment in the Belgian industrial sector, Febeliec requested us to conduct a comprehensive study. This study involved in-depth interviews with 22 industrial companies located throughout the country. Out of the 22 industrial companies interviewed, 16 agreed to make their interview public in this report. The other 6 decided to remain anonymous. The key messages from all interviews are included in the first part of this report and the interviews of the companies who agreed to make their interview public, are included in the second part.

Interviews were held during the period June 2023 - September 2023.

Our research aimed to investigate the multifaceted impact of high energy prices on the industrial landscape in Belgium. We employed a structured interview process to gather valuable insights from a diverse sample of companies representing various sectors, and we focused on the large energy consumers.

Our research team conducted interviews with key stakeholders, including CEOs, Country Heads, heads of production plants, and energy procurement specialists from each of the selected companies. These interviews were held using a standard questionnaire that covered various aspects of their operations, focusing primarily on energy costs, investment decisions, and employment trends.

Figure: Number of interviewees by job title



We examined the importance of the energy costs in the overall cost structure of each company and assessed the fluctuations of the energy costs on the overall cost of production. Furthermore, our study explored how high energy prices influenced investment decisions within these industrial firms. We investigated whether companies were allocating resources to energy-efficient technologies, renewable energy sources, or other strategies to mitigate rising energy expenses. Additionally, we discussed the employment dynamics seeking to understand whether high energy prices are affecting employment rates.

We observed a strong convergence in the key messages provided by the interviewees, with differences mostly related to the specific situation of the companies. In the following pages, we summarize the results of our study and detail our key findings, the consequences of high energy prices on investment and employment in Belgium and the key requirements for the future.

Key findings



Key finding 1

The industry considers the total electricity cost per MWh in Belgium as one of the highest in the world.



Energy cost competitiveness & long-term visibility is key



Increased volatility in electricity prices adds uncertainty



Several countries have taken measures to keep energy costs low for the industry



“Spiral effect” is weighing on competitiveness



Key finding 2

Security of electricity supply is a pressing concern for the industry.



Uncertainty regarding the nuclear phase out



The network infrastructure needs substantial investment due to aging components



Intermittency of renewables raises new challenges as most industries need a stable baseload profile



Belgium risks an increasing reliance on imports



Key finding 3

There is a crucial need for a stable, coherent energy strategy in Belgium and Europe.



A stable energy strategy can improve Belgium’s energy resilience



The horizon of the Belgian energy strategy should be long-term



Focus on creating a robust and coherent energy production base



The industry believes that Member States would benefit from a stronger Europe



Key finding 4

Decarbonization of the industry will require substantial investments.



Achieving European decarbonization targets will require important investments yielding low returns



Limited job creation expected from investments in decarbonisation



The industry will need additional support mechanisms



Clear roadmap with roles & responsibilities needed



Key finding 1

The industry considers the total electricity cost per MWh in Belgium as one of the highest in the world.



Energy cost competitiveness & long-term visibility is key



Several countries have taken measures to keep energy costs low for the industry



Increased volatility in electricity prices adds uncertainty



“Spiral effect” is weighing on competitiveness

According to the industrial companies we interviewed, Belgium’s total electricity cost per MWh is considered as higher than those in neighboring countries and those in many other European regions. In addition, European electricity costs surpass those in other parts of the world.

In the context of international comparisons, the industry tends to focus on energy prices in North America and Asia. In Asia, significant subsidies contribute to the potential for lower energy costs, while the presence of abundant natural resources in the US, such as coal, gas and hydropower, contributes to a lower production cost.

Energy cost competitiveness in an international context is seen as key by the industry. Industrial companies operate on a global scale and therefore production costs should be competitive on a global scale as well. This is an important point to consider, when defining an energy strategy. Visibility on long term electricity prices is another one, as the industry makes long term investment decisions, typically covering 15-20 years, not the least in view of reducing its greenhouse gas emissions and obtaining climate neutrality as soon as possible.

Several European countries realized this and have implemented support mechanisms. In France, for example, there is the ARENH. Germany will implement a potential cap on energy prices, which also favors German businesses. Spain and Portugal have an Iberian model that sets a ceiling on the price of gas used for electricity generation. Differences in energy prices, however, are not limited to these European countries; variations are also evident in northern Europe, with Scandinavian countries benefitting from large scale hydropower installations.

In addition to the high electricity prices, industry is concerned about the increased volatility of electricity prices due to the growing share of renewable energy sources, such as wind and solar. While the uptake of renewable energy is a positive development in the drive to

reduce Europe’s carbon emissions, increased energy price volatility leads to less visibility on the long-term electricity price, which is a key element for many industrial companies when making investment decisions. Additionally, Belgium’s dependence on energy imports and the interconnectivity in Europe make it vulnerable to price fluctuations in other countries.

Delayed effect

Industrial consumers have often observed a delayed impact of rising energy prices to the extent that they had secured favorable energy prices by sourcing significant volumes for 2022 at pre-crisis price levels in 2019 and 2020. This strategy allowed companies to lock in electricity or gas prices up to three years or more ahead of the consumption period. In 2022, when energy prices peaked, those companies were shielded from the high energy prices as they were still paying relatively low prices, based partly on 2020 price levels or even earlier price periods. However, in 2023, the companies had to lock in part of the price for 2023, and in some cases for 2024 and later, at higher prices. As a result, they are experiencing the delayed effects of the high energy prices as of 2023. In addition, the volumes currently hedged are low, given the lower production forecasts. If the economy picks up again and production volumes increase, many industrial companies will again be exposed to the current market conditions.

Rising energy prices lead to higher inflation, which in turn triggers automatic wage indexation and increases in raw material costs. These effects exacerbate the impact of the energy prices and are considered a disadvantage when investing and operating in Belgium compared to other countries. Inflation also has a significant impact on the demand for final products. Not only is this demand decreasing, but the high prices of final products provide opportunities for foreign competitors to penetrate the European market.



Key finding 2

Security of electricity supply is a pressing concern for the industry.



Uncertainty regarding the nuclear phase out



Intermittency of renewables raises new challenges as most industries need a stable baseload profile



The network infrastructure needs substantial investment due to aging components



Belgium risks an increasing reliance on imports

It is clear from the interviews that, in addition to rising energy prices, the security of electricity supply is a pressing concern for virtually all industrial companies. This concern relates both to the production capacity adequacy and to the required expansion and stability of the electricity grid, a.o. in view of planned electrification of industrial processes.

Belgium has decided to phase out its nuclear power plants by 2025, with the exception of Doel 4 and Tihange 3, for which the lifetime will be extended by 10 years. This transition introduces challenges in terms of replacing the baseload production capacity and maintaining grid stability, especially if alternatives are not rapidly deployed.

In addition, the country, like many other European nations, is moving towards a more sustainable energy mix, including increased reliance on renewable sources such as wind and solar, which introduce intermittency and variability into the electricity supply.

Like many countries in Europe, Belgium's energy infrastructure has some components that are ageing and in need of maintenance or replacement. The adequacy of investment in maintaining and upgrading the electricity infrastructure is essential.

Besides this, the nuclear phase-out risks to make Belgium more reliant on imports for a significant portion of its electricity, primarily from neighboring countries. Any disruptions in the electricity supply from these sources, can affect Belgium's overall supply security. Several industrial players highlighted the importance of having sufficient production capacity within the country to mitigate supply risks even though the country is benefiting from regional cooperation and cross-border electricity trading agreements that can help balance supply and demand.

Security of energy supply is a fundamental consideration for industrial companies when making investment decisions. It has a direct impact on their ability to operate efficiently, remain competitive and adapt to technological advances. As discussed later in this report, most industrial companies indicate that they cannot easily make investment decisions without visibility on security of electricity supply and long-term electricity price levels.

Industrial processes are heavily reliant on an uninterrupted supply of electricity. Any disruption, even for a short period, can lead to production downtime, resulting in financial losses and competitive disadvantage. This is especially important for businesses that operate 24/7 or rely on just-in-time manufacturing processes.

Several industrial companies indicated that baseload production is key to them as industrial processes often require a steady, continuous, and cost-efficient supply of electricity to maintain production efficiency and product quality. Production facilities often need to operate at or near full capacity so that the fixed costs are spread over the largest volume of output, resulting in a lower cost per unit produced.

As countries become increasingly dependent on electricity to power their industries and society in general, it becomes imperative to address any potential vulnerabilities that could disrupt the flow of energy.

Achieving security of electricity supply is an ongoing process that requires collaboration between government agencies, utilities, industry stakeholders and the public, and a stable and long-term energy strategy to ensure that electricity remains a reliable resource for the industry and society.



Key finding 3

There is a crucial need for a stable, coherent energy strategy in Belgium and Europe.



A stable energy strategy can improve Belgium's energy resilience



Focus on creating a robust and coherent energy production base



The horizon of the Belgian energy strategy should be long-term



The industry believes that Member States would benefit from a stronger Europe

The interviewees believe that the security of supply risk should be addressed by adopting a balanced, stable and coherent Belgian energy strategy and roadmap. They believe that this strategy can improve our domestic energy resilience while keeping our reliance on foreign energy imports within reasonable limits. The recent energy crisis has shown that some traditionally exporting neighboring countries are struggling to meet their domestic energy needs. For example, last year's unexpected maintenance of the nuclear reactors in France, combined with a long drought period and resulting low hydropower output, put the European electricity market under significant pressure.

The industrial sectors expressed that the availability of an adequate and long-term domestic electricity production base would improve the investment climate. Both renewable energy and other carbon-free energy sources would be welcomed, taken into account the limited available land and resources in Belgium. In this context, several interviewees referred to a continued focus on nuclear and a commitment to invest in Small and Modular Reactors (SMRs). Some industrial players also highlighted nuclear energy as an area in which Belgium has been at the forefront in the past and in which we can still play a crucial role. The assessment of these options should at least take place in the articulation of the Belgian energy strategy.

Moreover, most industrial players believe that lessons should be drawn from the current Belgian energy policy landscape. This landscape has been labeled as inconsistent over time and not integrated across different EU members states, Belgian regions or between the Federal and regional level. The recent change of heart regarding nuclear is one example, according to the interviewees. Another refers to Combined Heat and Power (CHP) installations. Governments have supported the uptake of these CHPs in the past, although they rely on natural gas. However, as part of new regulations,

industrial companies are forced to undertake yet another investment in alternatives to meet European and Belgian decarbonization targets. The industry has indicated that the current situation poses challenges when investments decisions are to be taken.

The horizon of the new energy strategy should be long-term. The industrial sector expects policymakers to prepare Belgium for the future – that clear choices between technologies are made to direct investments and resources to those areas that support the strategy.

The interviewees also believe that a stronger Europe should guide the individual countries in this journey. Firstly, directives do not seem to be transposed into national law in a coherent way. As a result, European member states are taking inconsistent actions in their energy transition, which in turn leads to undesirable competition in the European single market. Secondly, the industry feels that Europe itself is struggling to develop coherent policies that take into account the full impact of new legislation. The recent EU Deforestation-Free Regulation (EUDR), for example, neglects the impact on biomass imports, which are essential for some green energy generation processes. And although the Carbon Border Adjustment Mechanism (CBAM) intends to foster a level playing field, there exist important loopholes. The manufacturing industry indicated that CBAM only penalizes products for the European market, leaving foreign producers with the possibility to only greenify those products intended for European import. As a result, the overall cost base of foreign producers remains significantly lower than in Europe, and decarbonization standards are only applied to a small part of the production base.



Key finding 4

Decarbonization of the industry will require substantial investments.



Achieving European decarbonization targets will require important investments yielding low returns



The industry will need additional support mechanisms



Limited job creation expected from investments in decarbonisation



Clear roadmap with roles & responsibilities needed

The industrial sector believes that Europe has rightly embraced carbon-neutrality goals. However, they are concerned that European policy is too stringent compared to other continents. Achieving our European targets will require massive investments that are expected to yield low returns and for which there are limited support mechanisms. This applies not only to the greening of electricity supply but also refers to the targets in reducing process emissions, which in many chemical companies accounts for a significant portion of total emissions. Hard-to-abate industries will therefore be forced to invest in expensive technologies such as Carbon Capture and Utilization (CCU).

The interviewees also highlighted that individual companies have very different characteristics, whereas the European Union applies generic rules. The industrial sector compares our system with the Inflation Reduction Act in the US, where there is more diversification and no 'one size fits all' approach.

Energy decarbonization also comes in different flavors. While the transition to green energy is key, increasing energy efficiency remains a cornerstone of many decarbonization strategies. However, flexibility is less prominently embedded in current decarbonization strategies, with most industrial companies reporting that they have limited flexibility in their current assets. Moreover, flexibility is often negatively correlated with efficiency of production processes: production lines need to run at full capacity to remain profitable. Safety is another concern when applying large scale demand-response. It should be noted that four of the interviewed companies are investing in flexibility based on the specific context and business of their company. Network providers will need to consider carefully how to stimulate flexible solutions as they rely on the uptake of this practice to support their balancing activities. For many companies, increasing flexibility will ultimately mean installing new assets, such as storage solutions. The interviewees point out that these capital-intensive investments require adequate funding mechanisms to support European companies against global competition.

Consequences

01

Future investments are delayed or other countries are favored

02

Current investments mainly focus on license-to-operate investments, cost efficiencies & energy savings

03

No significant investments in expanding production capacity were mentioned

04

The first signs of long-term relocation are likely to be subtle and risk going unnoticed. However, there appears to be a high risk of relocation as the current assets reach the end of their useful life.

05

There is a risk of a domino-effect due to the fragility of some sectors

Belgium's competitive position is under pressure

Investments are usually initiated to meet a wide range of objectives. In this study, we distinguish between energy efficiency investments and all other types of investments. Energy efficiency investments are considered separately as they could be a way to mitigate the impact of rising energy prices.

Due to the security of supply uncertainty and the relatively high energy prices, investments in the Belgian industrial sector are currently focused on improving the energy efficiency of existing processes and buildings. In this case, reduced energy consumption is not only a way of reducing carbon emissions, but also a means of mitigating the impact of the rising energy prices.

Other significant investments in Belgian industrial activities were not mentioned at all by the interviewees, although the pharmaceutical sector may be considered an exception. This sector is obliged to produce in the country where the production license has been granted. Relocating production of a medicine would require applying for a new production license, which can be a cumbersome process. The sector is also highly dependent on the availability of the skilled labor in Belgium.

In the short term, the industry indicated that existing production facilities in other countries are scaled up, while production levels in Belgium would remain stable or even decrease due to lower demand for the companies' products. Within Europe, the North of France was mentioned by many interviewees as an interesting location due to the favorable total energy costs per MWh and the proximity to the Belgian market. Other neighboring countries with similar characteristics and existing production facilities are also on the radar of many industrial companies. New locations with low energy prices and convenient transport infrastructure are usually explored to keep all options open for the future and are not seen as immediate alternatives to the current Belgian-based production. Most companies operate in asset intensive

industries where existing assets cannot be easily relocated. New locations are therefore compared with existing facilities in the case of product mix expansions.

In the longer term, the industry warned of a possible domino effect. The existing assets in the production processes generally have a long lifecycle but will have to be replaced when they reach their „end of life“. At that point, companies will need to decide whether to replace the asset in Belgium or scale the production up in another country where there is already a production site. Given the current Belgian market conditions, it appears that the replacement will take place abroad if the opportunity arises, jeopardizing industrial activity and jobs in Belgium. Countries such as France with lower energy prices and network costs, Turkey with good connections to Europe, or the USA with lower energy prices are just a few examples. Some companies might start this process in the next years. Initially, it might go unnoticed since factories will remain open and employment levels will not be impacted when investment in one asset is relocated. However, once the process is complete, it will have a significant impact on employment in Belgium.

The industry also pointed out that potential relocation could have a negative impact on global decarbonization levels in the long term, as Europe imposes high decarbonization standards. European factories tend to be more energy efficient than factories in other parts of the world, where less stringent targets are imposed. Relocating the European production could therefore mean moving to less energy efficient facilities.

It should be noted that there is no consensus within the industry on the issue of relocation. Other factors, such as the presence of a highly skilled workforce in Belgium, dependence on the availability of raw materials or historical roots in Belgium may also play a role in the decision-making process.

Key requirements for the future



Pillar 01

Establish a long-term stable energy policy with a clear roadmap

- Raise Belgian electricity production capacity
- Take a clear position on the chosen technologies, including nuclear LTO & new build
- Ensure sufficient availability, including availability of renewables
- Foster collaborations



Pillar 02

Articulate a clear path towards a carbon-neutral economy

- Leave sufficient room for the industry to innovate and implement technologies
- Avoid “over-regulation”



Pillar 03

Ensure appropriate measures are taken to create a level playing field

- Create level playing field within Europe
- Harmonise regulation across the different Regions in Belgium
- Avoid loopholes in regulation



Critical enablers

- Consider the full impact of the decisions
- Ensure the government takes the lead in developing a clear framework & ensuring legal certainty
- Embed a clear definition of roles & responsibilities
- Safeguard competitiveness of the industry

Establish a long-term stable energy policy with clear roadmap

As mentioned earlier in this report, it is crucial for the industry that a coherent, clear and stable long-term energy strategy and roadmap are established for the country. This can ensure security of supply and enhance the competitiveness of Belgian industry by providing competitive energy prices, which in turn can reduce production costs and improve the country's attractiveness for businesses and investors. Such a roadmap can help Belgium meet the challenges of the energy transition and position itself for a sustainable and prosperous future. The roadmap should balance the three interconnected and often conflicting objectives of the energy trilemma: energy security, competitive prices, and sustainability.

Establishing such a roadmap is a complex and multifaceted process that requires government leadership in close cooperation with the utilities, industry, and society to successfully achieve its goals. Close cooperation also limits the potential negative impact of regulation on other stakeholders. In addition, transparency, accountability and the right balance between stability and flexibility are essential principles to guide the evolution of the strategy over time.

As part of this roadmap, the industry is asking for transparency in terms of the available Belgian production capacity and the technologies chosen. Companies know their current energy consumption and have carried out studies to quantify their future consumption paths. They already have a rough idea of how much capacity will be needed on their path towards electrification and climate neutrality and by when this capacity will need to be deployed. They would like to see these findings taken into account in the formulation of the Belgian energy strategy and roadmap.

The industry also advises to carefully balance the amount of energy that is sourced abroad. They believe that a strong Belgian production base will benefit the country and its energy resilience, as neighboring countries all have their own challenges. As local markets naturally take precedence over energy exports, industrial companies believe that a high dependence on imports could affect Belgium's energy resilience.

The appropriate mix of energy sources and technologies should be explored and clarified. Due consideration should be given to the availability of hydrogen and other

molecules, which many companies see as an opportunity. The costs and societal impacts of extending the use of existing assets and network infrastructure should be carefully weighed against the impact of introducing new technologies and building new capacity.

Energy efficiency should also be stimulated by encouraging energy exchanges between companies. There is a trend for companies to increasingly form partnerships to address energy sourcing challenges together. These clusters are observed not only between partners in the value chain, but also between companies in the same geographical area. The partnerships can take different legal forms and should cover a wide range of activities. While some companies are working together to optimize underutilized land for energy production, others are exchanging heat or exploring innovative new technologies. The industry believes that the government should encourage collaboration as part of its energy strategy. Governments and key energy players should provide a legal basis for such collaborations and could even actively participate where appropriate.

Finally, the role and importance of flexibility in balancing supply and demand of electricity will need to be clarified. The strategy should take into account the industry's current flexibility options required to achieve the necessary targets. The industry believes that the strategy and roadmap should include appropriate support in case they are required to authorize significant investments in this area.

To ensure that the strategy can be translated into actionable and realistic plans, the Belgian energy strategy will need to be tested against potential supply chain disruptions and the availability of skilled workforce. The articulation of clear roles and responsibilities during the implementation of the roadmap will be another important cornerstone. Finally, the Belgian permitting landscape may need to be reviewed to ensure that shortened permits can be obtained in an efficient manner and to limit the throughput times as much as possible. The development of wind turbines and high-voltage lines requires a strategic and inclusive approach that addresses concerns and objections of local communities while emphasizing the benefits of clean and sustainable energy generation.



Articulating a clear path to a climate-neutral economy

The industry believes that the energy strategy should be part of an overall decarbonization path for Belgium. There is a need for a broad perspective that allows for diversification and does not propose a „one size fits all“ solution. It is important for the industry that regulations leave the necessary room for innovation and the implementation of appropriate technologies, rather than proposing pre-defined pathways.

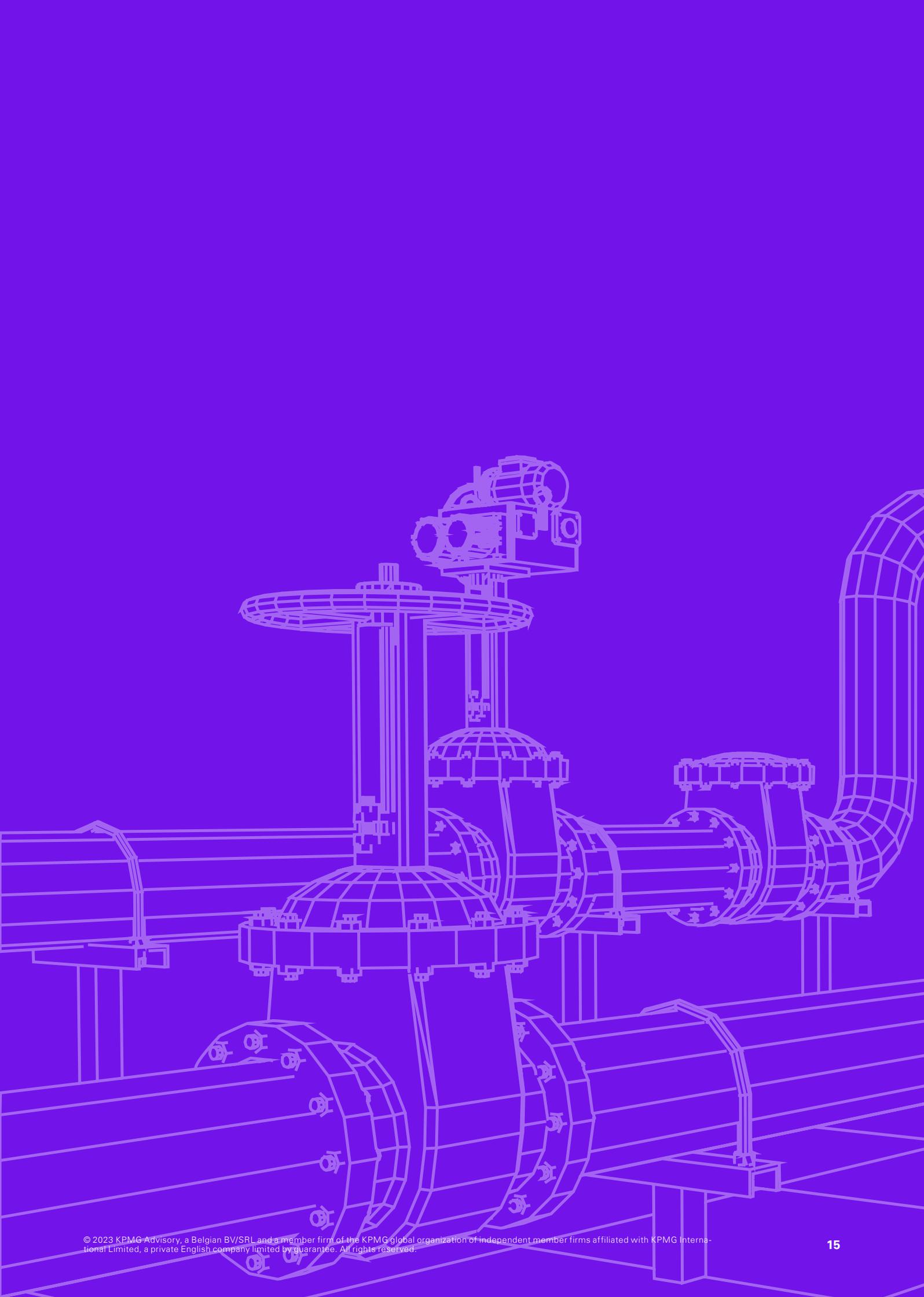
In addition, the industry believes that financial support is needed to stimulate capital-intensive investments in new technologies. The Dutch cCFD scheme or the IRA in the US are seen as good examples.

According to the industry, it can play an important role in the route to a climate-neutral economy. Some companies are considering expanding their product range to include “green” products. These extensions often require important investments for which sufficient resources are needed. These resources can only be obtained if the company can demonstrate healthy revenue streams, which is difficult in the current economic climate and in the context of high energy prices. The industry therefore believes that the government should take these elements into account when designing support schemes, as companies need to survive in order to bring innovative green products to the market.

Ensure that measures are taken to create a level playing field

Attention should be taken to ensure that a level playing field is fostered within Europe and across the different Belgian regions. Within Belgium, the industry has highlighted divergences between Flanders and Wallonia in terms of the legal basis for innovative business models, the support mechanisms available and the applicable grid tariffs and levies. Despite the differences, the industry believes that synergies can be achieved and that the overall energy strategy should become a federal responsibility, in close cooperation with the individual regions. It should be noted that the industry does not necessarily favor one support mechanism over the other. The key message is that the implemented measure should be efficient and that the overall impact should be taken into account. This also means that loopholes should be avoided. Furthermore, a level playing field at the European level is of paramount importance to avoid wide variations in all-in energy prices and competition in the European internal market.

Belgium, and by extension Europe, has many strengths: its strategic location at the heart of Europe, its highly skilled and educated workforce, its diversified economy and its strong research centers, to name a few examples. The industry believes that these strengths should be used to tackle the current challenges and create a better and prosperous future for the next generation.





Air Liquide

Xavier Pontone

General Manager Air Liquide Benelux Large Industries

A world leader in gases, technologies and services for Industry and Health, Air Liquide is present in 73 countries with approximately 67,100 employees and serves more than 3.9 million customers and patients. Oxygen, nitrogen and hydrogen are essential small molecules for life, matter and energy. They embody Air Liquide's scientific territory and have been at the core of the company's activities since its creation in 1902. Air Liquide has been present in Belgium for more than 100 years (1906) and supplies industrial gases to more than 100,000 customers and patients in the region, for a wide range of applications such as industry, mobility, healthcare and electronics.

The constraining regulatory framework associated with rising energy prices and complex energy strategy are a concern, as it complicates for us and our customers to take long-term investment decisions that can make a significant difference in paving the way for a more sustainable European industry. The access to sufficient low-carbon energy sources and to the necessary grid infrastructure is also a key element for the faster development of large-scale decarbonization projects.

Higher prices, lower volume

Since the increase in energy prices which is alarmingly driving down production levels in Europe, and with a view to 2024, we have engaged in consultations with our customers to jointly determine their individual purchasing strategy for electricity and gas. Two strategies have emerged from these conversations: on one hand there are customers who prefer to avoid risks and opt to hedge their entire purchase, providing them price certainty and the possibility to make clear forecasts. On the other hand, we have customers who hedge only a portion of their purchase and buy the remaining on the market at spot prices in the coming year, depending on their needs.

The volumes involved annually are significant, amounting up to several terawatt-hours (TWh) of both electricity and gas. Our own consumption is heavily dependent on our customers' production decisions. As these are global players, with a worldwide presence and strong investment capabilities, we need to pay close attention to the risk of shifting (part of) their production to other, more attractive regions, where investment incentives, regulatory frameworks and energy prices are more attractive. Of course, these measures would have a direct impact on our activities, as their consumption of industrial gas is directly dependent on their production volumes. So far, for 2023, our forecasts indicate that these volumes tend to be maintained compared to 2022, remaining at a significantly lower level than in 2021. Even if large industrial players (our customers) do have a certain capacity to absorb economic uncertainties, their prolonged exposure to these uncertainties prevents them from projecting ahead and making important decarbonization investment decisions. This reduced room for manoeuvre increases the pressure on their shoulders and the long-term risk of relocating production to other, more attractive regions in terms of energy prices (such as the USA and, to a lesser extent, Asia).

Lack of clarity on regulation

Providing a clear, simple and stable regulation is of the utmost importance. Today's uncertainty makes it difficult to make long-term decisions. Although a

progress is being made at European level, with the recently adopted RED III², the legislation still needs to be fully transposed across all the Member States. This creates uncertainty among customers as they face difficulties in making large investment decisions without a clear vision on what is defined as sustainable (or not). As mentioned above there is progress, however we still lack stability and simplicity in order to eliminate the uncertainties surrounding investments and create better market conditions for first movers.

Furthermore, we have been working for more than 60 years on mastering the hydrogen value chain as we are certain of its potential significant impact on decarbonization, in particular the hard-to-abate sectors such as the industry and heavy-duty transport e.g. road haulage, maritime, aviation, train, etc.. However, we recognize that this molecule is not a “silver bullet” that will solve all the challenges, and this is why technological neutrality is absolutely critical while tackling decarbonization. The energy transition policies are not a “one size fits all” solution and as such should support different initiatives. We need to holistically support all the low-carbon measures and the different technologies involved with.

Europe has a strong position with regard to its well-organized and strategically located petrochemical hub, as well as its highly educated talents who can work on developing these new low-carbon technologies. The energy transition projects depend on the availability of (and our capacity to retain) these individuals who will make a change in building innovative solutions for our planet.

At the Belgian level, there is also a need for more consensus for de-risking large private investments. This would be guaranteed by establishing a clear and stable (inter-federal) regulatory framework to not hamper private innovation capabilities, reduce go-to-market time (e.g. permits) and globally favor long-term investments in new markets such as energy transition. All that combined together should create the right setting and allow us to act on a much larger scale than is currently the case, with only a handful of pioneering projects.

A sustainable industry needs more low-carbon power capacity and well-developed networks

The access to enough low-carbon power capacity for the industry (as well as a clear and harmonized framework allowing its fair development) is paramount to achieve the ambitious European decarbonization objectives, besides providing a baseload production at

stable and competitive electricity prices. In addition to that, the large-scale decarbonization projects will be multiplied in the future, leading to a significantly increased demand in low-carbon power (in addition to the electrification of current uses). Public authorities need to anticipate it by creating the right incentives (regulation, permitting, etc.) to favor these projects in the country.

The global electrification objectives, including the presence of more and more low-carbon electricity in our energy mix, will inevitably create additional capacity requirements, as well as more flexibility for renewable power (intermittent by nature). Air Liquide has already developed various solutions to this flexibility demand, but nevertheless these rapid developments need to be urgently absorbed in our European energy infrastructure. The volumes are expected to increase significantly, leading to new high-voltage lines, which need to be built as quickly as possible to prevent grid congestion and uncertain price effects. In this regard, the public authorities have a key role to play by prioritizing public investments in the electrical grid (as well as CO₂ infrastructure to decarbonize). This will guarantee a stable low-carbon energy supply in Europe, not only for our economic environment but for society as a whole.

2 Renewable Energy Directive III



Aluminium Duffel

Geert Vannuffelen
General Manager

Aluminium Duffel is a European leader in the manufacture and sale of aluminium rolled products for diverse industries worldwide. It features state-of-the-art technology, including the widest Automotive cold rolling mill in Europe and a CALP-line (Continuous Annealing Line with Pre-Treatment). With the current production capacity of 200,000 tonnes of aluminium per year, they supply products for applications ranging from highly designed cladding for building facades to automotive body sheet. Sustainability is important to Aluminium Duffel. That is why they are certified against the ASI Performance Standard and the ASI Chain of Custody Standard, which means they support responsible sourcing of aluminium, responsible mining practices, reduce GHG emissions from aluminium processing and enhance recycling and material stewardship of aluminium.

Currently active in the automotive industry and several niche segments in construction, Aluminium Duffel is mainly present in Europe and the US. With an investment push in the US for the automotive sector, competitors in Germany and France likely only having to pay half the energy costs compared to Belgium. The goal is to consistently improve energy efficiency in the coming years and a disguised Europe where countries do not compete on equal terms. Aluminium Duffel constantly faces the challenge of staying competitive in a dynamic market.

Paying half of the energy costs

Currently, the competition within Europe is primarily based in Germany, France, and Switzerland. As energy prices increase, a study is being conducted concerning the electricity costs paid by competitors in those countries, considering factors such as taxes, subsidies, and other relevant parameters. In Germany and France, energy expenses for industries are significantly lower compared to the costs incurred here in Belgium. These figures specifically apply to the automotive industry, highlighting the significant energy cost advantage enjoyed by the competition. Looking ahead, with anticipated energy price increases, energy efficiency initiatives are given internal priority.

Greater immediate impact

The rising energy prices indirectly have a greater immediate impact on the operations. Although they have renegotiated existing customer contracts, it proves challenging for standard automotive contracts with a lengthy duration. Not only do the energy costs

increase, but there is also the indirect consequence of inflation leading to wage indexation and further increasing labor costs in Belgium, which are already 5% higher than neighboring countries.

It is essential to continuously consider how to remain competitive in all areas. Whenever an employee leaves the company due to retirement or farewell, considerations arise regarding whether the same position needs to be filled or improvements can be made to avoid rising costs. Additionally, there is a need for ongoing efforts to improve energy efficiency each year. A comprehensive program with numerous sub-activities has been established, engaging a significant part of the organization. This includes addressing standby energy consumption, as even in standby mode, substantial energy usage occurs to keep the metal molten overnight. Furthermore, within production, a study is ongoing regarding the automation of certain tasks and, if possible, without increasing headcount.

Aluminium Duffel is an important player in the market, delivering niche products that many others cannot, which makes us unique. However, in the past years, there has been significant pressure on prices, impacting profitability and investments. This trend is expected to continue in the coming years. As a result, cost management has become even more increasingly vital.

Energy-efficiency and CBAM

The energy crisis has led to a change in mindset towards the environment. As mentioned earlier,

Aluminium Duffel's goal is to continually enhance its energy efficiency each year.

In the context of this changing mindset towards the environment and the Green Deal with the associated European measures, the Carbon Border Adjustment Mechanism (CBAM) is more of a threat than an advantage now. The underlying idea of CBAM is certainly good, but the planning is extremely poor. The prices at which aluminium can be purchased will most likely increase due to CBAM. Moreover, CBAM is not entirely accurate. CBAM is applied to semi-finished products imported above the benchmark. However, if the same origin delivers a complete vehicle, they do not have to pay CBAM fees. In its current implementation, CBAM will have an impact on the European competitive position. European countries should be able to operate under the same conditions as the US and China.

Divided Europe

Furthermore, even within Europe, there are disparities and a disguised Europe where one country provides state aid while another does not. Wealthier countries like Germany, with greater resources, ensure the protection of their industries. Although Belgium demonstrates willingness to support the industry, resources are limited. In this regard, Belgium and the Netherlands face similar challenges as they trail behind countries providing substantial support. Having a level playing field in Europe is crucial and the most important aspect. While government can only have limited impact on energy usage, it should be held responsible to ensure fair competition.



Aperam Stainless

Geert Verbeeck
CEO Europe

Aperam is a global player in the stainless, electrical, and specialty steel markets and a global leader in environmental sustainability. In the factories in Belgium, the melting of scrap, to liquid steel and the hot rolling of slabs to coils, take place. The finishing of the products, namely the production of cold rolled coils and plates in various qualities, takes place mainly in Belgium and France. Service centers are spread over the whole of Europe (and even outside)

Within Aperam Europe, the largest energy consumption is currently in Belgium, making us highly dependent on competitive energy prices to position ourselves as a global stainless steel producer. However, due to an unequal playing field in electricity, Belgium is currently less competitive compared to countries inside and outside Europe.

An unequal electricity playing field

For natural gas at one hand, the situation is different, as our competitive position is neutral despite the significant increase in gas prices in 2022. This increase did not result in a structural disadvantage compared to our neighboring countries. Today, the playing field for natural gas is more or less at the same level for us in Europe and comparable to Asia. Therefore, we do not see a significant competitive disadvantage in that regard.

On the other hand, the playing field for electricity, as mentioned earlier, is unequal. Electricity prices in Belgium are significantly higher than those in Asia, which already constitutes a considerable disadvantage compared to competitors outside Europe. Within Europe, the situation is even more complex due to the fragmented energy policies among European member states. On one hand, there are the Scandinavian countries (location of our main competitor within Europe), who benefit from affordable electricity from nuclear, renewables and hydro power plants reaping the benefits of their early investments in these areas. This enables them to benefit from electricity prices that are less than half the cost of those in Belgium. Also other countries, such as Italy and Spain, have taken specific measures to keep electricity costs low

for their industrial companies. It is clear that the playing field in Europe for electricity is characterized by individual measures taken by countries. Due to having not only competitors outside, but also within Europe, we were compelled to take measures to gradually reduce the cost disadvantage caused by energy prices.

Short- and long-term consequences

These measures include, among other things, putting future investment plans on hold awaiting better economic fundamentals. Additionally, when looking at products that we can develop for which we need new applications, there is a choice between investing in or outside Belgium. Given the uncertain energy climate and high prices in Belgium compared to a more favorable investment climate elsewhere, new investments in Belgium are at risk.

However, the greatest risk concerning investment measures lies in replacement investments. This is not a risk for the first years but should be considered in the mid and long term. The crucial moment will come when replacement investments have a high CAPEX, and the Belgian investment climate has not been adapted. At that point, the necessary replacement investments will no longer take place in Belgium.

Not only are there consequences in terms of investments, but also in terms of employment. Employment in Belgium will be in question when Aperam's future in Belgium is in doubt because we cannot defend our competitive position as energy prices are triggering inflation, and hence increasing labor cost pressure. In this situation 2.000 direct jobs and 4.000 indirectly would be at stake.

Renewables and security of supply

In addition to the investment climate, there is also the energy transition with renewable energy. The question here is which larger renewable projects will be developed to ensure that sufficient volumes of

renewables are produced and made available. In this context, energy-reducing measures are also considered as is governmental support, such as subsidies for mechanisms like heat recovery. Our industry has large quantities of waste heat that can contribute to additional green energy generation. The availability of sufficient energy is a crucial factor in the energy transition and decarbonization.

Moreover, the expected development of renewable electricity generation, which is mostly intermittent in nature (wind, solar), whereas at the same time dispatchable on-demand generation capacities will be reduced (in the case of Belgium, due to the announced closing of nuclear plants) can only lead to increased price volatility and more frequent episodes of extreme prices, which would force us to stop our operations at unpredictable times and thus strongly deteriorate our productivity. Proper mechanisms such as long-term contracts (contracts for difference) allowing electro-intensive customers to be protected against such volatility are thus extremely important.

Creation of a more favorable investment climate

A more favorable investment climate in Belgium can be achieved by, on one hand, establishing a clear energy vision and a definite direction for the country. There has been no clear energy strategy for years, leading to a lot of uncertainty. Under these circumstances, companies cannot easily make investment decisions.

On the other hand, there is also the aspect of energy pricing. Belgium should be a front runner (but it is not at the moment) to create a competitive energy price for the industry and to guarantee a level playing field for companies operating in the different countries. It must be ensured that competitively efficient companies are not placed in a non-competitive position. Sustainable industrial development in Belgium is at risk. Other European countries are showing a higher dynamic to protect their industry.



Etex

Bernard Delvaux
Group CEO

Etex is an international manufacturer of lightweight and sustainable building materials. It operates four plants in Belgium in addition to its global headquarters. Energy plays a crucial role in its day-to-day operations. As Etex's production is set to increase in the coming years, the company strives to adapt accordingly. Energy sourcing and carbon emission reduction are long-term challenges that extend beyond mere procurement.

As a gas-intensive company, Etex is actively prioritizing the energy transition, as part of its operations. At the same time, Etex is also bracing itself for the lingering impact of the ongoing energy crisis.

Belgium being a key node in-between major markets, with direct access to alternative supply sources, may help protect local industry from extreme risks and price disruptions. The nuclear and the off-shore wind generation might be routed to offer economically viable and long-term low-carbon supply to industry.

Investments in the energy transition

With sustainability as a key strategic driver, one of Etex's current priorities lies in reducing energy consumption and maximizing energy recovery. We are further exploring greener solutions, which include for example electrification or the use of biomethane, biomass, solid residual fuels and possibly hydrogen.

Our supply contracts include a growing share of renewable electricity and ultimately, we aim to secure mid- to long-term agreements with renewable energy providers. 100% of our electricity consumed in Europe and Latin America, and 74% worldwide, is certified green electricity, partly produced by photovoltaic installations at our manufacturing sites. In the past, energy price differences between locations had minimal impact on our investment decisions. Going forward, the all-in cost of supply of (alternative) energy will be a primary determining factor for future investments and their location.

Crisis mitigation

We proactively acted with dedicated teams across the globe to mitigate the impacts of the current energy crisis on Etex:

- We pursued our hedge strategy and increased protection in a riskier period;
- Etex takes advantage of the current strong market volatility to optimize energy supply costs;
- We respond to short-term market price signal by leveraging production flexibilities over time and across manufacturing locations.

Altogether, this arbitrage management helps to optimize Etex' energy budget.

Long-term strategy

Etex aims to apply a long-term energy strategy which goes beyond the mere purchasing of energy. Manufacturing plants adapt by shifting away from short-term investment returns towards longer timeframes for energy-efficient investments.

Moreover, there are several possibilities for us to transition to alternative energy sources, making Etex less vulnerable to energy market volatility:

- Etex considers as one of its priorities to use any available space at its own premises to contribute to additional renewable electricity generation. Every manufacturing plant is engaged in project evaluation and partnership development to install additional solar panels on its roofs and free ground space, alike former quarries. From an economical perspective, on-site generation projects can fly thanks to network

costs saving. However, self-generation can only cover a few percents of the total usage of an industrial organization like Etex.

- From an energy sourcing perspective, Etex considers power purchase agreements (PPAs) and biomethane purchase agreements as valuable commitments to secure long-term renewable energy supply.
- Ideally, our (future) factories would be located near industrial partners that have fossil energy available, or close to renewable and low-carbon energy generation such as biogas production plants.
- Another option is hydrogen, which merits full attention. According to preliminary cases studied by our manufacturing plants across Europe, it appears that some countries show intention to make substantial efforts to promote hydrogen within industry by offering strong subsidy support. This would result in its potential cost competitiveness compared to other alternatives, when location is nearby green hydrogen production or close to an importing facility. Should Belgium establish a hydrogen terminal and distribution network, compatibility will be assessed for potential integration.

Etex capacity expansions

Etex currently operates four manufacturing sites in Belgium and has more than 1,500 Etex employees in the country. The company also operates factories in neighboring countries such as France, The Netherlands, Germany and UK.

If capacity expansions were to occur in the region, energy prices will be an important driver to decide on the location. Today we see, for instance, significant difference in electricity prices between France and Belgium. Companies in France benefit, among other mechanisms, from regulated price support (ARENH-tariff), making it an attractive location for investments and electrification of its industry. Belgium should consider implementing a similar system to level the playing field; or explore alternatives such as tax exemptions or refund as seen in Germany and Italy.

The large offshore wind generation capacity to be installed could also be an asset for the Belgian industry, would the regulation in place help industry benefit from competitive wind generation cost at margin.

Structural shifts

Governments should adopt a strategic and long-term perspective, looking on structural evolution because of a changing energy mix. As an example, the energy market design is currently based on the marginal supply and demand price (generation merit order), which is the right price signal for short-term balancing and demand

response. But has little to do with the real and average cost of production.

Currently, electricity prices in Belgium are still heavily set by the gas fueled power generation. Looking ahead, and taking example of Germany or Spain, two European countries with a fast-growing share of wind and solar generation, spot prices have started to decouple on the downside from gas prices for a growing number of hours. By contrast, the entire electricity forward price curve does remain fully driven by gas quotes for Future derivatives. Those structural shifts have negative consequences for the industry that could be tackled in a revised market design:

- Since industrials can seldom stay exposed to uncontrolled and extreme price volatility, they require a fair forward price curve, which should be reflective of a changing energy mix and could be used as a long-term price benchmark.
- New capacity cost mechanisms are being experienced to secure an added revenue to power producers, adding a cost layer for final consumers, on top of the energy (commodity) and transmission costs. The challenge for the industry is that all those new mechanisms are being developed without coordination and alignment between member states, adding non-transparency to complexity.

Lagging effect of energy crisis

One of the pressing issues within Belgium is the challenge to address the long-term impact of the energy crisis in 2024, 2025, and 2026. This impact results from hedging which protected industries from huge increases in 2022 and 2023, but lead to higher hedging costs from 2024 onwards.

While the Belgian government's focus has been primarily on supporting small businesses and citizens at the core of crisis, it is crucial to recognize that major energy consumers will require assistance in the coming years as well. Subsidies or tax benefits can be effective measures to alleviate the financial burden on industry, ensuring budget availability for prompt energy efficiency investments and future growth.



Evonik

Ivan Pelgrims
General Manager

Evonik is a chemical company situated in the port of Antwerp, responsible for the production of Smart Materials, Nutrition & Care, Specialty Additives and Technology & Infrastructure. The company is part of Evonik Industries AG.

Once, I was asked by a Belgian politician what hampers sustainability. I replied: 'The low price of natural gas.' At that time, sustainable projects that met all economic factors were not realized due to their low returns. However, with the current high energy prices, the upcoming increase in energy demand and the energy transition, these innovative and more sustainable projects now yield good returns and are being implemented. The key lies in finding the best possible ways to remain competitive and strike a balance between existing and new technologies, digitalization and human resources. The right focus and measures from the government, however, can be of great value in this energy narrative.

Energy supply shortage

In the upcoming years, many countries will experience an increase in energy demand, particularly in electricity. However, this surge in demand poses a challenge as Belgium has become increasingly reliant on other countries for its energy needs. In recent years a substantial part of Belgian energy production has already

fallen into foreign hands, leaving Belgium with limited influence on the energy market. The current decisions in the sector are primarily made by the strongest and most powerful players, especially the French and German players. Belgium is neither the strongest nor the most powerful, and its political efforts in this area have become less effective. Sometimes I dare to say that the damage has already been done. An example is the closure of the Belgian nuclear power plants, even though they produce relatively low amounts of nuclear waste and do not emit CO₂. Enormous investments were made for the maintenance and the shutdown of these nuclear power plants. The closure was by far a wrong decision for the energy supply in Belgium. While it's positive that there are plans to consider small modular reactors, it will take some years before they become a reality. The existing nuclear power plants could have easily continued operating for another 10 to 15 years without any problems. While they may not be a long-term solution for the next century, they serve as a bridge between our current situation and what we'll need in the next decade.

A positive aspect is the LNG terminal in Zeebrugge as during the war in Ukraine, which was a challenging period, not only the Belgian, but also the German and Dutch industry could take advantage of lower natural gas prices and ensure adequate supply of gas during that time.

Additionally, Europe does have significant offshore wind farms, but these alone may not be sufficient to meet the growing demand for green energy in the years to come. While the ultimate goal is to transition to green energy, our current capacity falls short. A possible interim solution is to transition to brown, blue or turquoise energy sources, such as brown hydrogen, as they will already generate fewer CO₂ emissions. Eventually, a complete shift to green energy can be made when it becomes sufficiently available. This is something which is happening in Germany, where our parent company is located. They had to make significant leaps to keep the industry running over the last years. It presented an opportunity as they took larger strides towards efficiency, sustainability, and general resource management. The current solutions in Germany although may not necessarily be entirely sustainable. For instance, they have reverted to using lignite (brown coal) to move

away from the nuclear power plants. It's a phase they must go through, but it represents a transitional period as they have made substantial investments in on- and offshore wind farms for the future.

Striving for balance in energy transition

That transitional period is also visible in the Belgian industry as it is shifting its focus away from capacity expansion and constructing new facilities. Instead, the emphasis is on enhancing process efficiency and embracing the energy transition. Over the past 2-3 years, most of Evonik's major projects have centered around improving energy efficiency, especially after the surge in energy prices in 2022. The impact of these high energy prices on end products was not immediately apparent, but now end consumers are experiencing the consequences with rising prices across various sectors. They start making cuts as this surge has also caused commodity prices to rise, making essential materials more expensive. Additionally, inflation and Belgium's automatic indexation system also play roles in driving up costs. Raw materials, wages, and energy costs have all increased, resulting in higher prices for consumers.

At Evonik, programs have been initiated to streamline operations and control costs to maintain the competitive position. There is a clear correlation between high energy prices and the consequences for the job market, prompting to search for ways to optimize processes and implement the energy transition. Decisions are mainly focused on existing technologies and maintaining current installations, but with a greater emphasis on efficient resource utilization, energy management and workforce optimization. Striking the right balance between digitalization on one hand and recognizing the value and need of human involvement in functions on the other hand is a challenging but crucial endeavor.

The energy transition will also involve striking a balance between existing and new technologies. Let's give an example: heat pumps; while some households already have one installed, industries have been cautious due to their significant wattage requirements and ongoing technological developments. However, there are numerous opportunities to innovate, particularly in terms of energy efficiency for buildings. As an example, Evonik is currently focused on developing catalysts to enhance certain processes. By using a catalyst, one step can be omitted from a process that currently involves 3-4 steps. Moreover, we are exploring the conversion of plastic into high-value chemicals, although large-scale industrial processes using this method have yet to be established. Furthermore, Evonik is ISO 50001 certified, ensuring that its energy management is considered throughout the entire energy transition. Being ISO 50001 certified also entails implementing certain requirements that ensure a continuous

improvement of energy performance, which ultimately benefit the company.

Government's role in energy transition

In the context of this energy transition, the strategy of the Belgian government is not always clear and the most optimal. The emphasis is more on the push rather than focusing on the quality of the push. Take the implementation of electric vehicles, for example. There is a strong focus on electric vehicles for private individuals, but the majority of electric cars are still supplied through company car fleets. This is positive and opportune, but do electric vehicles have a future? The emphasis on electric vehicles is too strong, while the focus on other alternative technologies is too weak. There needs to be a better balance.

Another example are the solar panels. The government encourages companies to install solar panels or use wind turbines because they are familiar options, but why are solar mirrors not being promoted? They can directly provide the heat that the industry requires. Sometimes, there is a simplistic view without sufficient consideration.

On the energy supply side, the government for example can provide subsidies and support for the industry as done in other countries. Looking at Elia's tariff proposal for the coming years, there is talk of doubling the transmission network tariffs to finance their investments. These network investments are crucial for the future of our industry. A comprehensive modernization is necessary as electricity will become the primary energy component. However, in other countries, companies receive much more support for these costs. This is an area where the Belgian government should focus and help facilitate the transition.

Through the Green Deal it is also possible to receive subsidies in a relatively elegant manner for the development of new technologies. I am an advocate for supporting the industry in the development of certain energy-efficient processes. Of course, well-considered choices must be made, and the approval of subsidies should be scientifically justified, and not with political arguments.

Ultimately, any support the government can provide is important, but it must be targeted appropriately and with the necessary flexibility. Not only the Belgian government, but also Europe should encourage the industry and individuals to implement sustainable, and if possible, innovative solutions during this energy transition.



GSK

Emmanuel Amory
Managing Director GSK Belgium

GSK is a global biopharmaceutical company with the ambition and purpose of uniting science, technology, and talent to proactively prevent disease. They specialize in vaccines and specialized medications. In Belgium, there are three key sites, including their own international vaccine headquarters.

Despite consuming 400GWh of energy per year, including 200 GWh of natural gas and 200 GWh of electricity, the impact of high energy prices on GSK's overall cost structure has remained restricted. Energy accounts for a limited percentage of the total costs in our overall cost structure. The limited impact is due in part to the delivery of a high-value-added product. Within the energy context, our highest priorities are a reliable energy supply at any point in time and a focus on energy efficiency.

Key factors

Within our total cost structure, the high wage indexation did have the biggest impact as one of the key factors in the pharmaceutical sector is the level of expertise. In Belgium, we find the right people with the right qualifications as most employees of GSK hold a PhD or a master's degree in pharmaceutical or medical studies. This is important for the R&D activities but also in production. It is important to consider that the quality of the products is heavily regulated. To meet those quality standards imposed by the different countries in the world to which vaccines are exported a whole set of highly specialized internal inspections are being conducted, a process which also requires a highly skilled workforce.

One last crucial element, which does not impact as a cost component but affects day-to-day operations, is the assurance of an adequate energy supply. In this regard, dependence on Russian natural gas last year was a significant factor. There must be a constant

supply of energy to keep vaccines and partially or fully finished products cold or preserved. Moreover, air and water need constant circulation. There is no possibility to halt production and the potential to participate to demand response is fairly limited. The back up capacity needed in case of a blackout is close to the entirety of our electricity demand.

Reducing energy use

The certainty of energy supply can be provided in various ways, and we are exploring those options. However, we believe it is essential, in the first instance, to focus on reducing consumption. Any consumption that is no longer necessary eliminates the need for both green energy provision and decarbonization. Currently, we have already managed to reduce 20% of our consumption. Regarding decarbonization, we have already installed solar panels across the entire site. Decarbonization is, however, an ongoing process for our processes and buildings and those investments lasts for 30 to 40 years. Nevertheless, we recognize that more radical changes are necessary to achieve further substantial reductions. We have set various goals for our entire production by 2040. In the coming years, prioritizing energy efficiency will be the primary focus on our agenda.

Security of green energy supply

Of course, there will always be a portion of energy that we cannot reduce, and for that portion, we are exploring a transition to green energy. As in the context of decarbonization, we need to move away from natural gas and focus more on electrification. However, this green energy must also be sufficiently available, and the distribution and transmission grids must be equipped to handle the possibility of providing sufficient delivery and supporting the transition. Currently this is not the case.

Within the transition to green energy different options are open. The extension of nuclear power plants in our country is one and is seen as an important step in the transition. However, this extension alone will not ensure an adequate supply. Another possibility are the offshore wind farms in the North Sea. However, we believe this is also insufficient. Moreover, looking at the option for photovoltaic zones or wind turbines, as third option, there will generally not be enough land in Belgium. On a global level we also investigated corporate Power Purchase Agreements.

Next to those green energy options, Elia is also working on flexibility, but it needs to be assessed if this is feasible. As mentioned earlier, we depend on a constant energy supply for our processes. Our elasticity is low, and we require the capacity. We are highly sensitive to changes.

A collaboration with various companies on energy communities can also be seen as an option. However, within Belgium, we see significant differences in terms of possibilities on that aspect.

Belgium ...

In the geographical landscape of industrial localization, we observe differences between Wallonia and Flanders. In Flanders, there are zones where a significant amount of industry is concentrated in a small area. This creates an opportunity for an ambitious trajectory and collaboration possibilities in greening and energy supply. In Wallonia, on the other hand, we see that the industry is more dispersed across the entire territory and much less concentrated. For example, if we look at GSK's site in Wavre, our largest site for vaccine production and research and development, we see that it is surrounded by the municipality itself. Therefore, we need to explore alternatives for decarbonization at our site. We emphasize the need for shared facilities with partners since we cannot provide everything on our own site. Our rooftops are already covered with solar panels, but even that is insufficient. Where we are located, who our neighbors are and what we can do together with them, are important considerations.

... and Europe

In that regard we see a common narrative between Belgium and Europe in the greening of energy. There are locations in Europe where there is more space and sun. Europe must collaborate to find common solutions for the future in this environmental theme. Currently, it's every individual and every country for themselves. Wind may be available everywhere, but not sunshine. There need to be European goals and national goals at the European level. It is not always easy to do something at the national level. Take, for example, hydrogen networks. That is something that needs to be developed on a European scale.

The key message we want to convey is that Belgium should be more ambitious in the long term. We need to look much further than 2025 if we want to decarbonize our energy. Belgium should also leverage its presidency in Europe to contribute to that energy vision. It should also keep in mind that GSK's ultimate goal is not to become a professional in energy production; we want to focus on what we do best: vaccines and medication.



KRONOS EUROPE

Philip Volckaert
Plant Manager

KRONOS EUROPE is part of KRONOS Worldwide, Inc. a global player in the production of Titanium Dioxide (TiO₂). TiO₂, a white pigment with very high covering power, is primarily used in coatings and plastics but also in inks, paper, fibers, and cosmetics. The production of its factory in Ghent is primarily intended for the plastics industry.

The profitability of KRONOS EUROPE is currently heavily impacted as the market balance is disrupted due to imports of Titanium Dioxide producers from China, who produce at a considerably lower cost. These costs are not comparable to the European cost base as the industry and energy prices in China are subsidized. Currently, Chinese producers already managed to capture 20 to 25% of the European market for Titanium Dioxide. Along with a temporary decrease in global demand, the situation is very challenging and impacts our baseline. We will however need considerable resources to invest in the energy transition and the decarbonization projects we envision to reduce our process emissions.

Unfavorable competitive position

The biggest obstacle today is the unfair competitive position we have from Chinese producers. During COVID, we faced no hindrance from Chinese imports of Titanium Dioxide, mainly because sea transport costs were exorbitantly high at that time. Today, those transport costs have decreased significantly. Moreover, Chinese producers are confronted with oversupply. This is partly due to the heavy subsidies, for example in terms of energy prices, which also enable Chinese producers to offer their products at lower prices.

Next to the unfair competitive edge of Chinese producers, we also face different energy prices worldwide. The most noticeable contrast arises when we compare the European energy prices with the rest of the world. If European producers are not competitive due to high energy costs, a lot of jobs and our welfare is at stake.

The decarbonization journey

We are not only losing a portion of the market, the last year we are also facing reduced global demand for our product. This is forcing us to run below normal capacity and puts pressure on our profitability, for which we can only achieve acceptable figures if we operate at full capacity. However, profitability is crucial to realize our ambitious decarbonization roadmap.

Our decarbonization roadmap, like many companies, targets 2050. It is challenging to pinpoint today where exactly we'll end up because many elements within the energy and carbon neutrality theme are interconnected. The more we delve into the details, the more questions arise. Currently, 50% of our CO₂ emissions are process emissions. We are in that sense currently exploring the decarbonization of the process itself where we for example envision to replace the fossil-origin cokes with biocokes.

The future for substituting our Combined Heat and Power (CHP) installation also remains unclear. One possibility could be a hydrogen-powered CHP. However, we believe more in the role of hydrogen as a building block for other molecules than as a fuel. Converting hydrogen into fuel incurs significant electricity losses and we believe energy can be more efficiently deployed in another context.

Currently, we are considering a Power Purchase Agreement (PPA) for a wind turbine in 2026 and the installation of solar panels. However, these only provide a small portion of the envisioned electricity consumption after our electrification projects.

Additionally, together with other companies in the North Sea Port business zone, we are exploring ways to increase our energy resilience under the initiative called Smart Delta Resources (SDR). This includes all kind of initiatives to facilitate the energy transformation. As a group of companies, we realize that we can achieve more as a team than only working on our own.

Innovative ideas for decarbonization

We are also exploring innovative technologies for decarbonization through VLAIO subsidies as we emit a considerable amount of process emissions. We are in touch with several companies to establish value chains around CO₂ Capture and Utilization (CCU). The captured CO₂ from the CCU strategy can be used to create new molecules in our production. For example, by combining the captured CO₂ with green hydrogen, we can produce green ethanol for our aviation industry as part of the available Sustainable Aviation Fuels (SAFs). To realize these investments, subsidies will be important. VLAIO is providing good support in exploring the possibilities for subsidies.

It is an innovative technology that also contributes to global decarbonization. However, these projects require more than just adequate profits, as they are capital-intensive and cost more than a few million. Nevertheless, I strongly believe that we can create new products with significant added value. It will also allow us to continue to operate in the long run and generate sufficient profits competitively.

Security of supply

Throughout the decarbonization journey, the availability of electricity is also a crucial element. As an energy-intensive company, we consume 350 GW of natural gas per year under normal market conditions. Part of this natural gas is used to produce 50 GW of electricity with our CHP. However, since electrification will be key in the decarbonization, we need security of supply of electricity.

We must ensure self-sufficiency for electricity in Europe, and this requires greater unity. It cannot be that European countries suddenly act independently and compete with each other. Belgium itself must also ensure sufficient supply and production. Ideally, this should be green electricity, but that may not suffice. The availability of a source with a baseload production profile is essential. In this regard, we strongly believe in transitioning to Small Modular Reactors (SMRs). If we genuinely want to decarbonize and ensure adequate supply, we will need solutions like these.

We believe that there should be a stronger role for the government in this regard. Europe must function more cohesively as a continent. Our Belgian plant of KRONOS EUROPE is one of the factories in the production of Titanium Dioxide that ranks among the world's best in terms of energy efficiency. Many environmental rules are stricter in Europe than elsewhere in the world. While this is highly commendable, other continents do not apply the same rules and similar activities are usually conducted at far less energy efficiency levels. Europe must therefore understand that if the industry leaves Europe due to unfair competition with the rest of the world and uncertainties regarding the security of electricity supply, it will have only negative consequences on a global scale for the environmental footprint. Moreover, it will impact, prosperity and employment in Europe and Belgium. We should not forget this is not a risk for KRONOS EUROPE alone but for the entire Belgian (chemical) industry. Belgium cannot ignore the potential high risk and impact on its GDP and employment rates.



Lhoist

Vincent Deleers
VP & Managing Director

Lhoist S.A. is a Belgian multinational family-owned company that operates in 25 countries worldwide. Lhoist produces and supplies lime (including dolomitic lime), limestone, and mineral solutions for an ever-growing range of applications, since 1889. As an industry leader, their activity is essential for many sectors – like water treatment, agriculture, steel and construction, paper and pulp, roads and civil works, etc. – and play a critical role in improving the world by bringing purity and efficiency to a variety of applications.

Although the order and location of investments to decarbonize have yet to be determined, it is certain that Lhoist is resolutely transitioning to a different future and towards net zero in the medium term. Our future in Belgium is intimately linked to the future of our customers, and we are concerned about their situation as they face significant challenges in terms of competitiveness due to, amongst other, high energy prices, inflation and indexation of wages. There is also the need for a global view on an industrial and energy strategy, which is shared at the different political levels.

High energy & electricity costs in Belgium

Today, energy represents 40 to 60% of our total production costs. We mainly use energy in the form of combustion fuel in our lime kilns, and electricity as driving force to operate our facilities.

The heat required for the conversion of stone constitutes a high share of our total energy consumption. At Lhoist, we started replacing fossil fuels with alternative sources (including biomass) 15 years ago, but fossil fuels still represent an important component in today's industry's energy mix. When comparing natural gas prices between Belgium and other European countries, the difference amounts to a few euros per MWh. Within Europe, the natural gas price is not our biggest driver. However, when comparing natural gas prices between Europe and the United States, the price difference is much larger, and European companies pay a higher price.

Currently, proportion of electricity in our total cost is rising. When comparing electricity prices, we observe that they are much higher in Belgium than in the rest of Europe and, by extension, the world. From our perspective, this is due to various reasons, including subsidies or regulated prices, such as the ARENH tariff in France. The presence of these mechanisms in other countries puts Belgium at a disadvantage, impacts our competitiveness and influences some of our investment decisions.

Investments for decarbonization

The question of decarbonization is not new at Lhoist – but it is now at the top of the agenda. Decarbonization is our biggest challenge, and we will invest heavily to reduce our CO₂ footprint in the coming years. The investment to decarbonize a plant is counted in hundreds of millions of euros. The order and location of the investments have not been determined yet, but one of the decisive factors is the (green) electricity price, as decarbonization could multiply our current requirements by factor 10. This steep increase of consumption will result in electricity prices becoming one of our key cost drivers. We continually analyze the best options, and it is possible that investments will be made in other European countries first (e.g., France or Germany), with Belgium following later, driven by lower electricity prices in those countries. Besides this, some very important questions remain: “will there be enough electricity to meet our needs?” and “can it be delivered to our sites?”

(In)security of energy supply

The availability of energy is a crucial factor when making investment decisions. In this regard, a clear and stable view on the energy strategy is needed in Belgium. The challenge concerning security of supply is well-known, but we do not see solutions yet. The main issue lies in implementing an ambitious and long-term plan for the supply and composition of the capacity mix. As a company, we need certainty of supply and stability of prices because we cannot invest 100 to 200 million euros without the required visibility on this matter.

A priority in our sustainability strategy is buying electricity mostly from renewable sources, e.g., from wind turbines in the North Sea. In addition to that, we can also contribute to the energy supply through self-generation; for instance, we are installing solar panels in some of our plants. It generates an important amount of the green

electricity we need for our operations, but that is unfortunately insufficient to cover our demand. Besides this, we need to ensure security of supply 24/7. We therefore hope to be able to count on the electricity supply we need to support our decarbonization ambitions.

Furthermore, it is not just about security of supply; the grid must also have the capacity to handle the necessary volumes. For example, in the Netherlands, we currently observe difficulties in this regard. In Belgium, these difficulties do not exist today, but the question could arise on the medium term.

Our customers face stiff competition

It is important to note that our customers are also large energy consumers. Most of them are active at a global scale. Can they remain competitive in the long term given the rise in energy prices? Due to the increase in prices in Europe, we have noticed that some of our customers have relocated their production to regions offering lower production costs, like North or Latin America. Additionally, we observe that during crisis, such as the global financial crisis in 2008 or the recent COVID period, we lose significant volumes. Although we do recover some of these losses quickly after the crisis, we never return to the original level. There is a gradual erosion of sales volumes that is noticeable which has consequences for both our own business activities as well as investments and employment in Belgium.

The industry needs political action and engagement

The permitting policy in Belgium should be simplified, and regulation should be harmonized between the regions. We also see a distinction between Wallonia and Flanders with different electricity prices, and even with differences in prices between municipalities because not everywhere is the same distribution operator or tax level.

Overall, there needs to be a political awareness to make the right and necessary decisions. On regional, federal, and municipal levels, these decisions should not be short-term but should look ahead to a period of 10 to 15 years. Establishing a clear energy roadmap that guarantees security of supply at competitive prices would support our investments. Additionally, there should be a more European perspective on energy as this is a common concern across the board.



Nyrstar

Guido Janssen
Co-CEO

Steven Vaelen
General Manager
Balen & Pelt



Nyrstar is an international producer of critical minerals and metals essential for a low carbon future. With a market leading position in zinc and lead, Nyrstar has mining, smelting and other operations located in Europe, the United States and Australia and employs approximately 4.000 people. Its Corporate Office is based in Budel-Dorplein, the Netherlands. Due to its already fully electrified zinc production process, it is one of the largest electricity consumers in Belgium, accounting for more than 1% of the country's total electricity consumption. The energy transition is a top priority for the company. Given its share in the total electricity consumption and the highly flexible nature of its production process, Nyrstar can play an important role as flexible asset to support the overall grid balance.

Competition from zinc producers within and outside Europe is increasing. Keeping operating costs, including the energy costs, under control and within reasonable limits is a prerequisite for remaining competitive and in business. Moreover, Nyrstar has made the transition to carbon neutrality a high priority for its own organization. The necessary investments which are made in that area will benefit the community as Nyrstar will be able to flexibly steer its demand which will in turn help to mitigate network congestion or black-out risks.

Competition within and outside Europe

Within Europe, countries such as Norway, Finland, Spain, and Germany are active in the zinc industry, whilst Nyrstar is operating its own zinc smelters in Belgium, France and The Netherlands. However, significant differences exist among these countries in terms of energy mix. For example, Norway has abundant hydropower resources, while Finland has been able to secure Power Purchase Agreements (PPAs) at low energy prices in the past. Spain has the „Iberian exception“ model, which imposes a price cap on gas prices, and it also relies heavily on solar energy.

As the zinc market is a global one, offtake of our product will decrease if production costs become too high in Belgium. This will also result in increased competition and imports of zinc from other regions. It is for example more challenging to compete with Asia in this regard since they can also benefit from relatively low transportation costs to Europe. Additionally, there is the issue of carbon leakage and the recently introduced (not yet imposed for zinc) Carbon Border Adjustment Mechanism (CBAM). CBAM can be a solution to prevent competition from outside Europe, but only if it is implemented correctly, without loopholes. For instance, there is a risk producers outside of Europe will allocate a relatively small – sustainably produced – portion of their output to be sold in Europe to circumvent CBAM and undermining European producers' competitiveness, whilst continuing to produce high carbon metal (at lower costs) for other global markets outside of Europe. Implementing an effective CBAM is extremely challenging, if not impossible, so compensation of indirect emission costs remains necessary to keep European industry globally competitive.

In France, for example, consumers can purchase nuclear power at production cost for part of their needs and can benefit from a reduction in energy transmission costs. We lack this cost compensation in Belgium, as well as a cap on wholesale prices. We request that transmission costs in Belgium offer more incentives for flexible consumption, considering that energy sources, such as wind and solar, will become more volatile requiring more flexible industrial offtake.

Flexibility, stability and reliability

At this moment, the fully electrified zinc production process already inherently contains flexibility, but as a

company, we aim to move towards an even more flexible energy consumption. This means that when there is abundant solar and wind energy, we increase our electricity consumption and produce more, effectively storing the energy in a sustainable and fully recyclable metal - zinc. When solar and wind energy are scarce, we reduce our consumption. Additionally, during peak demand on the energy market, we aim to support Elia in its balancing activities by reducing our production. This should stabilize the energy market and ease short term price shocks, which will benefit other consumers as well. Currently, there is a lot of focus on 'Battery Energy Storage Systems' (BESS) to be installed to implement this flexible strategy. BESS' are important, but they are limited in their storage capacity and can only provide grid support for a few hours, whilst Nyrstar's 'Virtual Battery' concept can accommodate significant plusses and minuses in the energy-supply and help level the load over several days. It is important to note that this kind of solution will not only benefit Nyrstar but also every energy consumer in Belgium, as peak prices will be lower.

Regarding the security of supply and need for reliability, we welcome the recent agreement between Engie and the federal government which allows 2 nuclear power plants (Doel 3 and Tihange 4) to operate in the winter of 2025-2026. Although 90% of our energy consumption is for electrolysis, we have the flexibility to switch it off temporarily for short periods. Therefore, there is no need for full reliability at all costs. However, alongside reliability, we recognize the equal importance of the other two pillars of the energy trilemma: sustainability and affordability. Moving forward, finding the right balance between these aspects will be crucial.

Affordability

When looking at other investments, the main question is how we can remain competitive and expand our capacity in the future, rather than relying on zinc imports from regions outside of Europe where the cost of operation is lower. The price of electricity is a key consideration that is taken into account for those investments as our single biggest cost element is the energy consumption of our electrolysis. Electricity costs typically account for 30 to 40% of our operational costs, and have gone up significantly during the energy crisis, so the affordability pillar is more important for us than for the average industrial consumer and globally competitive electricity costs are a must for us. There is a greater need for a unified approach from Europe and a fair level playing field within Europe, rather than only providing optional guidelines. Moreover, Belgium must also ensure that we remain competitive within the European market. With this in mind, we support the attached position of Febeliec, Febeg and Essencia stating that energy transition investments need to be cost-effective and grid tariffs need to be competitive in Belgium.

Long-term benefits

A unified approach from Europe can yield long-term benefits by reducing our dependence on other regions, such as Asia. Early July, China announced export restrictions on Germanium and Gallium to Europe and the US. Germanium and Gallium are key, critical minerals used in green technologies and high-tech applications (such as semi-conductors). This move by Chinese authorities caused significant concern. However, Germanium and Gallium are elements found in zinc concentrates, and – with the necessary investments – Nyrstar could recover these two critical minerals as byproducts from our existing zinc production processes. In the US, we have an actual plan in place to invest in a Germanium and Gallium recovering process at our existing Nyrstar Clarksville smelter location and we see a long-term potential for our European factories.

The recently (March 2023) proposed EU Critical Raw Materials Act, which includes a comprehensive set of measures to ensure the EU's access to a secure, diversified, affordable, and sustainable supply of critical raw materials recognizes the need for Europe to de-risk its critical and strategic minerals and metals needs. The EU aims to keep the producers of these essential raw materials in Europe and ensure sufficient supply. While zinc is not categorized as a critical raw material in this act, some of its byproducts are. As part of Nyrstar's considerations to expand European Critical and Strategic raw materials production, the company is looking into the possibility to add additional metals recovery capabilities to its existing EU footprint. These potential new 'Metals Recovery Facilities' would be built at one (or a number) of Nyrstar's existing European operations and would enable a significant increase in the extraction of minor metals (in particular indium - which is already produced at Nyrstar's Auby site - germanium, antimony and tin) from its existing zinc and lead flowsheets. As a zinc producing company, we are part of the value chain for these byproducts. If the zinc plant were to shut down or relocate due to high energy costs, Belgium would lose the input and these byproducts. The Critical Raw Materials Act primarily focuses on securing the end product and pays insufficient attention to securing the value chain.

Europe needs to adopt a unified approach to remain globally competitive and reduce its dependence on Asia. Within this European framework, Belgium must carefully safeguard its position in the energy market and ensure its competitiveness and future viability compared to other European countries.



Oleon

Moussa Naciri
CEO

Oleon is one of the leading producers of oleochemicals made from renewable raw materials. Their specialty lies in converting natural fats and oils into a wide range of oleochemical products, such as fatty acids, glycerin, esters, technical oils, and biodiesel. Their products combine high performance with ready biodegradability.

As an energy-intensive company, energy is of paramount importance to Oleon. Our current focus is on natural gas as it accounts for about 90% of our energy consumption. However, we are also pursuing electrification (e.g., boilers and heating pipes) and the shift towards green molecules (e.g., biomethane and green hydrogen) as part of our ambitious decarbonization roadmap towards 2030.

Competitive disadvantage

Our current energy consumption primarily relies on natural gas. With facilities in Europe (France and Germany), Asia, and America, we can easily compare different natural gas prices worldwide. In Europe, we opted for a natural gas contract for all our European factories. Gas prices are

clicked based on the same index (TTF) for all our factories and wholesale prices for us are therefore equal across France, Germany, and Belgium. Taking a global perspective and looking at Asia, we observe that gas prices are government-regulated and subsidized. This puts Europe at a competitive disadvantage compared to Asia. Since last year, we have also expanded our presence in North America and have seen firsthand that natural gas prices are even lower there.

Over the past years, we have implemented a hedging strategy for natural gas prices. In 2022 we were able to mitigate the impact of rising energy prices as a result. For 2023, which we see as a transition year, we also hedged a portion of our total consumption during the crisis year 2022. We therefore do notice the impact of rising energy prices, but it is somewhat delayed. In the meantime, we have built a cautious buffer for 2024 and we are constantly monitoring the market.

Even though electricity is less significant in our current context, we observe a greater disparity, even within Europe. When comparing on a per-unit basis, we see that electricity in France is substantially cheaper. Germany does have a higher total cost per megawatt (MW) today, but the price is capped through the intervention of the German authorities.

In Belgium, we therefore have a competitive disadvantage. Our revised electricity tax regulation has exacerbated this. While the VAT on electricity has been reduced from 21% to 6%, higher excise duties have been imposed as a compensation measure. This generates additional complexities as our internal policies must be adjusted to deal with this changing landscape. In these times, the government should, in fact, assist businesses instead of making things more complex.

Energy as primary cost driver

Energy is one of our biggest cost drivers. It is evident that companies like us are exploring possibilities in North America, especially when one pays 50 million euros for energy in Europe and only a fraction of that in North America. Of course, relocation is not as simple. Two factors come into play.

Firstly, it is not possible to simply relocate our factory assets. If it were, we would likely have done this already. What matters, is the asset lifetime. When an asset in our Belgian factory, like a reactor, reaches its end life, we will ask ourselves: do we replace that reactor here in Belgium or relocate it to, for example, our factory in Malaysia?

Secondly, there are our other cost components. Besides raw materials, these consist for us primarily of labor costs, which is exposed to automatic indexations in the Belgian landscape. It goes without saying that this cost element is also in the red.

The overarching question is how competitiveness can be sustained in the long run considering the high energy prices, asset lifetime, raw materials availability – and associated prices – and labor costs. Without any fundamental change, we have no idea how Belgium can remain competitive in the long-term.

Security of energy supply

Oleon is looking to electrify important pieces of its production process. A reliable electricity supply is of paramount importance in this process.

Announcements of potential blackouts, like the ones during the winter of two years ago, pose potential big risks going forward. During that time, we immediately investigated generators as on-site back-ups but all were already rented out and unavailable at reasonable rates. For Oleon, shutdowns are undesired and have significant implications for our production process.

Companies like Oleon are more vulnerable than other companies as we have limited flexibility in our processes and current asset base as high temperatures are required to convert natural fats and vegetable oils into chemical products. There is no easy way to lower the temperature of the process. Our research to attempt this, is a cumbersome and expensive work and not yet possible at this time, which make our assets not designed for unexpected shutdowns.

Note that the security of supply conversations is not new. Belgium considers itself as a transit country and therefore focused more on interconnectivity than on self-sufficiency. This can be an attractive position in case the European energy system is in balance. However, in Europe everyone is responsible for energy production and problems may pop up in neighboring countries such as the issues with the availability of the nuclear capacity in France last summer. This situation amplified the need for Belgium to take responsibility as we can't always rely on neighboring countries and Belgium must ensure its own security of supply.

(Green) energy supply

For Oleon, having the security of supply is currently the key concern whilst ensuring that the supplied energy is green for the long-term. Consequently, the availability of sufficient green energy in the long-term is paramount, especially when considering the needs within the next 10 years where everyone is talking about reducing scope 2 and scope 3 emissions. There will be an increasing demand for green energy, but the demand will not necessarily match the supply. We appreciate that there are investment plans available for wind, nuclear and green energy on rooftops, but we do not see them materializing. Everyone has expressed its long-term net-zero targets and therefore

requires green energy, but we expect more support from the government in realizing this.

Moreover, Belgian measures are often not future-proof and do not provide long-term certainty either. A few years ago, we invested in a natural gas-based CHP (Combined Heat and Power) installation in our main factory, which is also our most energy-intensive site, as this was encouraged by the government and could improve our self-sufficiency. However, the government now refocused its policies towards electrification and green energy to achieve the European decarbonization targets. This forces us to make considerable investments once again, which could have been avoided if longer term perspectives would be embedded in incentive programs and government policies.

Decarbonization goals

At Oleon, our decarbonization goals are company-wide, allowing us to take a broader perspective and choose what suits us best. Additionally, we must consider that for non-energy producers, the access to the biomethane market and alternatives like green molecules, is quite limited. We would however encourage the update of a biomethane market as this energy source is readily available. We are also exploring, in a partnership with Fluxys, a connection to the hydrogen network for both our sites in Belgium. Furthermore, we are also considering a cross-border photovoltaic Power Purchase Agreement (PPA) with France that could cover 90% of our electricity needs. In Belgium, it is more challenging to rely on this option due to limited available land.

Connecting the dots

Governments, whether on a Belgian or European level, often articulate and vote new regulations without considering their full impact or their relationship with other already existing regulation. For example, we expect significant imports of biomass into Europe which are necessary for our production processes and even for energy production. At the same time, Europe passed the Deforestation Act in the context of its biodiversity targets, which imposes an obligation for EU-based companies to ensure their import and export is 'deforestation-free'. This well-intentioned regulation risks to disrupt existing import flows and bring about significant concerns on top of the competitiveness challenges which already exist.



Tiense Suikerraffinaderij

Guy Paternoster
CEO

Tiense Suikerraffinaderij is a Belgian company specializing in the refining of sugar beet into sugar. Its sugar factories are located in Tienen and Wanze, while the factories for sugar specialties are in Antwerp, Oostkamp, and Wijchen (NL). 90% of the sugar they produce is for industrial purposes and undergoes further processing. The remaining 10% consists of consumer products as they are known today.

During the sugar beet campaign, which runs from September to January, we are completely self-sufficient: we produce what we consume, and even a bit more than needed, during that period. We generate our own electricity and heat through a gas fired combined heat and power generation (CHP) during this time. The surplus energy is sold to the grid, although these are typically marginal amounts.

While energy is one of the largest variable costs, other costs are determining factors in our story.

Raw materials, inflation and indexation

The determining factors for us are raw material prices, inflation, and indexation. We are facing some real challenges regarding those elements. When looking at indexation in our neighboring countries, the Netherlands and Germany, we see that it occurs much more gradually over the course of several years. In Belgium, we underestimate the consequences of an immediate indexation on top of salaries. Additionally, we also observe that inflation affects household consumption, leading to a decrease in sugar and food purchases. The prices of our raw materials are also affected by the inflation. All of this has an impact on our overall cost structure.

Moreover, as company active in the food sector, we find that there is limited support in Belgium for SMEs. Those SMEs may not consume large energy volumes, but the share of energy in the total costs are significant for them.

Especially when we compare prices with those on the other side of the borders, such as in France and Germany, it becomes clear that there is a disadvantage in Belgium. There are also the higher transmission and distribution costs and significant taxes and excises. The Belgian government lowered the VAT on energy from 21% to 6%, but instead came with higher excise taxes. This is actually a punitive factor for our company.

When taking everything into account we see that overall, our costs have increased by at least 10%, taking into account factors such as indexations, inflation, rising energy prices etc., and in some cost components, even experiencing increases of up to 20%.

Reconsidering a relocation is not easily possible for us because we are tied to our raw material, sugar beet. In Belgium we find the ideal cultivation conditions. The short distance between the field and the factory also contributes to the sustainability of the end product.

Decarbonization

We face heavy investments in the path towards decarbonization. We are questioning how to become carbon-neutral and what energy sources we can use for that. One option on the table is biomass, which would involve using waste from beet processing. However, investments in decarbonization are substantial. Another possibility we are considering is installing an industrial heat pump.

Our primary focus is on reducing our energy consumption. As a company, we have made significant progress in this regard, having already reduced our own energy consumption by 35% to 40%.

Considering the option of demand response is a more complex issue. On one hand, we have a production process that requires stability. On the other hand, as mentioned earlier, our production process is highly seasonal. We require a significant amount of energy, especially during the sugar beet campaign period.

Security of supply

One question that arises in all of this is the availability of electricity in Belgium. A stable long-term strategy would be welcome. A couple of years ago, in 2022, we already had the same concern about the security of supply for natural gas. In this context, Belgium also needs to show courage, such as the courage to retain nuclear energy. There is now for example also a focus on electric vehicles, but how will electric vehicles be charged if there is not sufficient electricity?

The goal of decarbonization in Belgium is clear. However, the timing is not ideal and tight because the technical solutions are not yet fully developed. The investments required to decarbonize are significant and will have to be passed on to the market.



UCB

Philippe Mantelet

Head of Global Engineering & Facilities

UCB is a global biopharmaceutical company focused on the discovery and development of innovative medicines and solutions to transform the lives of people living with severe diseases of the immune system or of the central nervous system. At the campus in Braine (Belgium), both research and development of new drug substances, production, and packaging of medication are carried out.

The rise in energy prices and the certainty of having sufficient green energy in the coming years are important topics for UCB. The company is actively exploring the adoption of renewable energy; in parallel, the focus is also put on an optimization of the usage of all natural resources and the reduction of our environmental impacts.

Low impact from energy prices

With production sites in Switzerland and Belgium, UCB is well placed to compare electricity and natural gas prices in these countries. In this analysis, we can conclude that electricity prices are lower in Switzerland, compared to Belgium, whereas natural gas prices are higher. It is worth noting that energy price regulations in countries such as those in Asia do result in lower operating costs, but this factor doesn't significantly influence our investment decisions in the short term. While energy is a vital resource for us, our investment decisions are primarily based on a local network, availability of capabilities and expertise, and existing footprint. Manufacturing activities are submitted to many authorities for approval.

Shift in energy contracts

In the light of the ongoing energy crisis, we have noticed a trend among energy suppliers to safeguard their interests, resulting in less favorable energy supply contracts. This shift is particularly obvious in Belgium. As a result, we have taken proactive measures by fixing our natural gas purchase price for a three-year period, which runs until the end of 2023.

Presently, we assess our energy requirements on a month-to-month basis, recognizing the high level of significant risk associated with securing energy at the right price, we have established a comprehensive energy profile. Unlike in the past, where energy procurement was based solely on consumption, today we recognize the volatile and speculative nature of the energy market and approach it in a manner akin to purchasing commodities like petrol on specific markets.

Energy security

Access to energy is key, and has the same level of consideration as pricing, even if we are proactively preparing for potential energy shortages, a critical question in the context of energy supply for everyone is whether priority would be given to sectors committed to public health. Additionally, we place significant importance on achieving energy independence, given the uncertainties in the grid's stability. We are currently exploring diversification in our energy sources. Solar energy already contributes to 25% of our energy needs, and we operate without energy storage batteries, using the energy as it becomes available. This approach reduces our reliance on the grid. Geothermal energy is another source taken under consideration.

Belgian energy supply strategy

At the Belgian level, our primary strategy is to ensure a reliable electricity supply. Our primary focus remains on generating heat, improving energy production and consumption efficiency, reducing consumption, reassessing primary energy sources, and promoting reuse. These are all pivotal aspects of our sustainability goals.

We are actively exploring ways to secure our energy supply and minimize potential disruptions to our business operations. We anticipate the introduction of incentives or measures that will facilitate the possibility of having enough energy supply or easily adjust our existing profile. It is worth noting that we are currently benefiting from support schemes, provided by the Walloon Region, for the implementation of geothermal energy solutions. The subsidy program, coupled with an adaptation of the legal framework is highly advantageous as it not only encourages investment but also streamlines the research and adoption of sustainable energy sources.

At the federal level, it would be important to implement measures to secure energy supply, with a particular focus on promoting renewable energy sources. It is crucial to collect and consolidate all relevant proposals, as many of them share common concerns and goals. A decade ago, there was a significant discussion in Belgium regarding the potential formation of a consortium to invest in renewable wind energy; this project has been abandoned.

Permits

In our observations, we have noted similarities between Switzerland and Belgium in certain aspects. In Switzerland, we have found that support at the cantonal level plays a pivotal role in facilitating our operations. Specifically, in a supportive canton, we have seen a strong interest from 2 to 3 companies eager to participate in our endeavors.

Energy regulations and taxes

Additionally, it is important to note that federal taxes on energy exist, and while compensation is a significant consideration, it is not the sole factor in our decision-making process. The energy landscape is further complicated by several factors, including green certificates, the Carbon Border Adjustment Mechanism (CBAM), and carbon dioxide (CO₂) emissions. Building expertise in navigating these complexities remains a priority for us, especially as we aim to achieve carbon neutrality by 2030, which involves planned investments. This commitment also indirectly affects our suppliers, particularly for specific molecules with a substantial role in our operations. Primarily, our emissions fall under scope 2, with no scope 3 emissions.

In Belgium, we face challenges when it comes to executing projects, often necessitating considerable time and coordination among diverse stakeholders. Streamlining our operations through process simplification is imperative. We must also remain vigilant, as the next crisis will likely pertain to water-related aspects, including provision, security, pricing, quality, reduction of usage and reuse. Addressing dependencies in this domain, as well as developing renewable energy usage and production, is equally essential.



Unilin

Bernard Thiers
CEO

As an energy-intensive company, Unilin, relies on both gas and electricity in its production processes. In response to rising competition, climate change and the European push for CO2 neutrality, the company is actively pursuing gas independence and electrification of its operations, which will further amplify its electricity-intensive operations in the coming years.

Two-stage disadvantage

When looking at energy prices, it becomes evident that Belgium faces a two-stage disadvantage: (1) Europe as a continent has higher energy prices than for example the US, Turkey and Asia and (2) within Europe, the electricity price for the industry in Belgium is one of the highest. This context prompts companies to consider reallocating future investments to other countries, both within and outside Europe. This is a new phenomenon which was not yet present prior to the energy crisis.

The situation is exacerbated for companies as Unilin as important raw materials (melamine, urea, PVC) are linked to natural gas and electricity as well. The relatively high European energy prices therefore enter in the total costs of our raw materials and push the prices of these European raw materials up. This direct and indirect energy price effect results in a steep increase of our European cost base, compared to other continents. It ultimately provides foreign competitors with opportunities to enter and penetrate the European market with cheaper products and to compete with local businesses.

The dilemma of investing in Belgium

Although immediate investments or capacity expansion is not top of mind under current market conditions, the question arises what Unilin will do in case innovative ideas emerge and should be implemented: should Unilin in this case invest in

Belgium or explore alternative locations? In the short term, asset intensive companies cannot easily shut down and start up somewhere else. Investing in our factory in Northern France, however instead of in Belgium is a legitimate business question and seems the smarter option as the ARENH-scheme in France guarantees lower energy prices and network fees are inferior as well.

Turkey, as an example, also becomes more and more attractive as the country is well connected to the European continent and has reasonable energy prices. Unilin is not yet active in that region but could explore these opportunities. These countries could initially become an important hub for implementing innovative products. Once a new site is operational, it will however trigger a natural process of growth in that country and shrinkage in Belgium as end-of-life assets will no longer be replaced. This impact will not be apparent immediately but could slowly materialize. This constitutes a significant risk in itself as stakeholders might not see any impact although, once the process is triggered, it will be a matter of time (10 to 15 years) before our industry completely moves outside of Belgium.

Lagging effect of energy crisis

During the energy crisis, when prices were high, governmental support was also provided to the citizens who felt the increasing prices immediately. Energy-intensive companies were however not immediately impacted as they usually hedge their prices a couple of years in advance. Unilin was also in this situation and will experience a delayed effect of the crisis, as we had to hedge a portion of our energy consumption for 2024, 2025 and 2026 when prices were soaring in 2022. Energy-intensive companies

therefore will go through some challenging times in the years to come.

Cost versus security of supply

Next to energy costs, firms like Unilin consider a secure energy supply as paramount. Belgium needs to establish a clear vision to manage its energy demand and instill confidence in its own market, especially as the demand will definitely increase in the coming years. Take the example of embracing circularity by using recycled wood. This process requires additional energy-intensive procedures to render the wood usable.

In addition to Belgian efforts, European initiatives like the Green Deal, EU ETS, Carbon Border Adjustment Mechanism, and the merit order need to be put in place in an appropriate manner. While the merit order system is commendable as it ensures assets are deployed based on their marginal costs, it becomes adherent as gas prices soar. Revising the system by for example imposing a price cap on the price of gas, which is used in power production, could ensure the efficient mechanisms of the merit order remain in place while cost impacts of soaring gas prices are mitigated. This proposal will have similar effects then the existing gas price cap, in Spain and Portugal and could be beneficial for the sector.

Belgium, and by extension Europe, stands at crucial crossroads, necessitating a decisive long-term energy vision that balances the rising electricity demand while taking climate warming into account. This vision must carefully consider whether to retain domestic industry or risk its relocation to neighboring countries or overseas due to the availability of more cost-effective alternatives.



Vandemoortele

Yvon Guérin
CEO

Vandemoortele is a Belgian family-owned business active in bakery products, margarines, culinary oils, and fats.

Vandemoortele holds a strong leading position in Europe in its core categories. The company operates in 70 export countries and has production sites in 12 European countries.

Vandemoortele's operations make them an energy-intensive company, relying highly on gas and electricity prices.

Belgian challenges in the competitive landscape of Europe

Considering energy prices, it becomes evident that the Belgian context is one that does not play in the favors of energy-intensive companies such as Vandemoortele. A central concern lies in the automatic indexation system, which creates a two-stage problem out of one: 1) on the one hand the non-competitive energy prices compared with neighboring countries, and 2) on the other hand resultant high labor expenses linked to inflation. These two costs have been rising hand-in-hand the past two years, overruling the cost-advantage Belgium possesses regarding transport – a pivotal cost center when operating across Europe.

Besides this, the unlevel playing field within Europe is having its effects on the attractiveness of Belgium as well. One example is the ARENH-scheme in France, which directly impacts the industrial consumers. The mechanism operates as a supporting scheme, which ensures price levels in France are relatively low compared to other countries such as Belgium. Similar trends are observed in Germany, Italy and Poland, countries that can give companies assurances on competitiveness for the near future. The absence of such incentive schemes and assurances in Belgium has a huge impact when it comes to making investments decisions. At last, an investment is a decision made for the coming 20 years or more.

Additionally, the Belgian energy sector should be guided more towards an open market model. The

bargaining power of the energy supplier to set the rules in times of crisis, constraining flexibility in hedging of energy contracts, has left companies like Vandemoortele feeling disadvantaged and left behind.

The future is green, no doubt about that

Vandemoortele is committed to a green future. It is clear as day it is the only possible trajectory going forward. This commitment is evident in the Ghent headquarters, an excellent example of sustainability as a nearly Zero Energy Building. The company's board is resolute in extending this vision to its plants as well, aiming to realize the full renewable energy potential.

The push for green is however not always as easy in every country. Although the law in Belgium is reasonably permissive to attain a permit, administrative inconvenience and legal conflicts – spurred by the “Not In My Backyard” principle – makes Belgium a less attractive candidate to implement a renewable strategy. Getting a permit for solar panels or a windmill is more complex in other European countries. However, the rest of the administrative process is more clear once the permit is received and construction proceeds as planned.

In Belgium, the landscape lacks substantive incentives compelling businesses to embrace full-scale sustainability. Neither governmental nor corporate initiatives have substantially bolstered the transition towards renewable practices. On site green energy should be rewarded, and not penalized with additional balancing and grid contributions. No pragmatic solutions are proposed to help making energy-intensive companies this transition to fully renewable.

Despite these challenges, Belgium has the opportunity to be the leader when it comes to sustainable energy. The expertise of offshore wind is one example. The hydrogen hubs and potential delivery of hydrogen through the piping grid are

others. The latter holds particular interest for Vandemoortele, as it sees potential for burners which operate entirely on hydrogen.

Energizing innovation: the response to soaring costs

The rising energy and labor costs have pushed Vandemoortele to explore new innovations. One solution was created in balancing demand and generation of cold in warehouses. Excess renewable energy is stored through freezing the bakery products to a lower freezing temperature, facilitating energy recuperations for periods of reduced energy generation. Another solution consists of the possibility of heat recovery of ovens' excess heat, released during the beginning of the baking process.

Despite the increased costs, Vandemoortele has managed to increase the headcount in central services. The number of employees active in the manufacturing plants however stays the same, made possible by cost-saving through automatization of processes.

Belgium remains an important factor for Vandemoortele's strategic vision. As competition is growing, maintaining Belgian capacity remains pivotal for competitiveness. However, the increased costs have left Vandemoortele to significantly lower further investments in Belgium and look at other countries to increase capacity.

Belgium must carefully reassess its vision on energy. With its strategic location and infrastructure, it has the opportunity to be the frontrunner on renewable resources. By fostering innovation, investing in clean technologies, and protection of its own industries, Belgium can emerge as an inspiring example for nations worldwide and be a true partner for energy-intensive businesses.



VPK

Pierre Macharis
CEO

VPK Group is a leading packaging group that was founded in Belgium in 1935 and has since grown from a local player into the current international supplier of sustainable packaging solutions with three product groups: corrugated cardboard, solid cardboard, and tubes & corner protectors.

In an increasingly expanding playing field of all cost parameters within the packaging industry, cost factors such as similar tax rates, social contributions, labor costs, and raw materials have become less distinguishing factors. The real differentiator for countries like Belgium, the Netherlands, France, Germany, and the United Kingdom is the energy price. There are significant differences in energy prices among these countries, and some countries have developed their energy costs as a competitive tool. For instance, France has the ARENH tariff, and in Germany, there is a cap on the cost of gas and electricity. It should be noted that the additional cost, namely the portion above the cap, in this case, is paid by the community/taxpayers. Furthermore, a tariff like the ARENH tariff can only be applied if there is the production capacity for it, just as the price cap is only possible if there is budgetary room at the level of the government.

Long-Term Vision

Not only energy prices are important, it is often also a matter of policy decisions. Policy decisions are made at the national level to regulate availability and pricing, allowing the industry to support its long-term vision and not just for the next 3 years. Alternatively, policies may also be put in place by local government. If such policies are absent, the industry will inevitably decide to invest elsewhere. The industry needs visibility for 10 to 30 years, and as an entrepreneur, you want to invest where there is a level of certainty.

When looking at the paper production industry we see that our energy cost is approximately 20% of its selling price. For us, energy cost is therefore a significant component of the total cost, and the main differentiator in terms of competitiveness. VPK Group has 5 sizeable paper mills: 3 of them are located in France, 1 in Finland and 1 is located in Belgium. The Belgian factory is a site where we have heavily invested in reducing energy consumption and improving processes, e.g. by combined heat and power generation. This allows us to optimize our operations and remain competitive whilst saving energy costs. Other countries, such as France and Finland, have better visibility and more competitive energy supplies, which significantly impact the profit and loss that we can achieve in comparison to Belgium. As an investor, one would rather further develop in countries as France where it is more attractive in the long term.

Not unimportant to mention is that Belgium still remains an excellent place to do business, due to amongst others our skilled labor force and partly because the group's origins are here. There is also an emotional bond, namely, we take pride in being Belgian and Flemish. VPK Group will always protect and maintain its position as a market leader in this country, but I would prefer to see our customers grow in a prosperous country grow and be able to grow together with them.

VPK Group and her customers

In that respect, we need to be more competitive in Belgium, either through investment or via other means. We clearly see that growth is shifting to other countries, primarily those that can offer price stability. The industrial policies of France, Germany, Scandinavia, and others drive investments there. VPK Group has also invested less in Belgium than in other places. However, this must also be viewed from an „outside-in“ perspective. Other investors who must make decisions on the same criteria will logically go to countries with more price stability. These other investors include our customers, whom we no longer see growing in Belgium. There is a trend of expansion beyond borders among them. This automatically puts

a brake on the growth of our own company in Belgium. The employment that evolution follows this shift of production capacity and investment.

Energy Supply

It is also important to think about crisis moments: what do we do if there is a shortage of gas or electricity, or if it is unavailable?

We have to look at the bigger picture. Belgium is, as a transit country, situated in the middle of a playing field of countries such as France and Germany. Politicians find the transit country role very attractive from a logistics perspective. Fluxys and Elia, who have actively invested interconnection, have secured a share of the pie, but at the same time, another part of that pie is taken away from the Belgian industry. Belgium faces a shortage of both baseload and capacity. The countries that have mechanisms like the ARENH type or price cap, as well as mechanisms seen in Spain and other countries, will ensure that the limited availability, including for our country, risks to be drained away to industries in other countries. We Belgians should be able to enjoy the same protective measures as those countries, given that there is an energy market in Europe with more demand than supply and a general shortage.

We will have to make the right decisions to keep that capacity available, even if it means having a slight overcapacity in the country. Every industry needs slightly more than the demand to avoid downtime or setbacks. I cannot fathom that NV Belgium will produce just slightly less electricity than it consumes and lack the means to financially hedge against spikes.

Sufficient Energy Supply

There are several possibilities to ensure sufficient energy supply for the industry. Firstly, there is the nuclear power. It is nonsense that we have decided to shut down the nuclear power plants in Belgium and to only keep 2 running and extending them by just 10 years. If you are making the effort to extend them, do it for their entire potential lifespan. You need a longer period, at least 20 years. There is now the alternative of Small Modular Reactors (SMRs), but this takes time, and success is not guaranteed. Moreover, the need for this will also be questioned with the next change in government. However, nuclear power is a part of the baseload of an industrialized country.

Additionally, there is a focus on wind energy, which is however intermittent. There are initiatives such as the use of batteries to store and release the electricity from wind energy. However, the kWh that a battery releases, is just a drop in the bucket. Intermittent wind energy will hence also not be sufficient to be used as

baseload. Wind energy currently costs 70 to 90 EUR per kWh, a mid-price of 80 EUR. On top of this you have to add standby costs for the gas turbines that will likely produce relatively little but still need to have their depreciation, financing and maintenance costs to be covered.

Innovation in hydrogen is another aspect we need to focus on. Looking at the pyramid of energy carriers in Belgium, where the most expensive energy carrier is used for the most advanced applications, hydrogen is perfect for transport by waterway, rail, and air. It is compact and can be used for certain purposes. It is likely to be part of the solution, but not a solution for electricity generation or for industrial-scale use due to being too expensive and scarce.

Carbon-Free Energy

Europe aims to transition to carbon-free energy, which is a crucial aspect of the energy transition. The CO₂ intensity of energy must decrease, and the customers of our customers expect products with lower CO₂ intensity. The goal for 2050 is distant, so our customers are already asking for milestones along the way. For instance, by 2030, we at VPK have a milestone to reduce the carbon intensity of our units by 34% over 10 years (2020-2030). This can be solved internally and depends on the environment as well. If your electricity supplier has a higher share of CO₂ emissions because of shutting down nuclear plants, the electricity you purchase will also have higher CO₂ emissions. Scope 2 emissions are particularly important in this regard. Cost, stress moments, bridging mechanisms, and the quality of the product you buy all come into play. Quality includes CO₂ content; for instance, in the food and cosmetics industries, packaging is needed to optimize the supply chain. However, if we produce packaging with electricity that has a high carbon intensity, we will not be accepted anymore by those who demand sustainability.

Business is about competition, and we also see that politicians want to score on economic and green fronts. Our country needs to have an industrial and economic strategy that ensures growth in various parts of society, not just in services but also in industry. Even if industry plays a limited role in society today, there is a need, and there is room in Europe to produce high-quality products, both basic and technologically advanced.

Over-all Belgium needs a clear policy to remain competitive in terms of energy cost and to secure supply to all segments of society. There must be a future and a vision to make long-term investment decisions so that we, the industry, can keep on growing, together with our clients.



Vynova

Christophe André
President and CEO

Vynova is a leading European PVC and chlor-alkali company with activities in Belgium and abroad. They provide solutions for different essential sectors and produce, amongst other hydrogen and chlorine. Their businesses are managed on a global scale. As a player in the chemical industry, Vynova is also an energy-intensive company, with an overall energy consumption of 2GW of electricity and 2GW of gas.

Today, the European chemical sector is seriously challenged due to lower production costs from emerging countries, more stringent regulations and the need for more sustainable manufacturing practices. Rising and more volatile energy prices are one of the top alarming issues for energy-intensive companies nowadays. It remains a continuous challenge to stay competitive within and outside Europe, impacting investments and potentially even jobs. The chemical sector is critical to achieve the ambitions of the Green Deal due to its interconnectedness with various sectors, its potential for technological innovation, and its ability to drive sustainable economic growth. It plays a pivotal role in developing and producing materials for renewable energy technologies, energy storage, electric vehicles. Additionally, sustainable chemicals and materials can help improve energy efficiency, reduce waste, and enable the circular economy.

Furthermore, through research and development, the chemical sector can drive technological advancements that support the transition to a greener and more sustainable economy. This includes developing new materials, improving recycling processes and finding alternatives to harmful substances.

Global energy market

The chemical market operates on a global scale, necessitating consideration of global competitiveness. At the global level, lower energy prices for electricity, gas and oil in the US have a significant impact on their overall costs.

Within Europe, the primary focus of comparisons lies on France, Germany, and the Netherlands. Looking at electricity, France benefits from lower electricity prices due to the ARENH tariff, while Belgium, and other countries lack support for the electricity-intensive industry. Gas prices in all these countries still experience significant fluctuations, and there is no governmental support for them. However, these divergent energy prices create a distortion between Belgium, Germany and the Netherlands on one side and France and the US on the other.

When comparing Belgium, Germany, and the Netherlands, two main aspects come into focus. Firstly, the mix of renewables which is quite different, leading to notable variations in energy buildup throughout the year. Moreover, there are disparities in the expected future state aid policies among these three countries. Vynova is closely studying the actions these nations will take, as they will heavily influence our decision-making process. For instance, looking back at France, the ARENH tariff will be phased out by 2025, and new changes will occur that we need to anticipate.

Currently, prices in Belgium compared to other countries are very high, affecting investments and optimizations. The energy balance in Belgium is not as favorable as in other regions. Considering that our company uses 2GW of electricity and 2GW of gas overall, we see that a significant portion of our energy bill comes from Belgium. At present, I first check the electricity prices and the price of CO2 certificates in the morning. It is currently a major factor for, on one hand, competitiveness and, on the other, the business strategy. Rising energy prices are a fundamental concern, ranking in the top 3 of alarming issues for all energy-intensive companies, not only at present but also in the future.

Turbulent times

Reviewing the timeline of the past few years, it has been quite extraordinary. In 2019-2020, the situation was normal, and we were exploring investments to reduce energy costs and enhance competitiveness. Although

there were some gaps, energy prices remained manageable and predictable. However, since 2021, there has been a notable increase in energy prices. In 2022 and early 2023, despite the rising energy costs, the market was in abnormal state, disrupting the entire global trade. During this period, our company thrived and achieved remarkable results. Nevertheless, in recent months, the market has experienced a collapse, leading to poorer outcomes. This trend emerged modestly in 2022 but became significantly evident in 2023, posing challenges for both investments and employment.

Future-proof profitable investments

Due to the significant gaps in energy prices, medium- and long-term investments have been heavily affected. When planning an investment meant to last for 20 years, relative certainty becomes crucial. Otherwise, our risk/return balance is not favorable to investment. However, the present times are characterized by uncertainty and ambiguity, leaving us unsure if these decisions are wise. Consequently, numerous investments are currently on hold. For instance, let's consider a sustainability agenda aimed at reducing CO2 emissions and enhancing efficiency, requiring costly upgrades of 100+ million euros. This constitutes a massive investment without any direct return to associated to it. The question remains whether our assets will align with the winning side and prove to be both future-proof and profitable.

Job impact concern

Thankfully, the surging energy prices haven't impacted jobs within our company thus far. However, if this trend persists, there will undoubtedly be consequences. In Belgium, 55% of our total workforce is employed, and in the short term, we might encounter a loss of 5 to 10% in jobs. It is noteworthy that our neighboring companies - also chemical companies - face a similar predicament. There appears to be a critical mass point - once one company starts falling, there are negative side effects for everyone.

Another factor that distinguishes Belgium from other countries is the automatic wage indexation. This leads us to exercise caution when considering job creation, even if energy prices were to decrease. Naturally, individuals reaching retirement age or switching jobs will be replaced. However, the issue of employment is now a matter of concern, or will be in the future, for numerous energy-intensive players.

Staying competitive

The main question revolves around maintaining competitiveness in the coming years. Energy is just one aspect; regulations also play a crucial role in this equation.

Stability is essential, but it is currently lacking in the European electricity market, except in Scandinavia and

France, which respectively benefit from hydrogen and subsidies. The volatility is unsustainable as we cannot make investment decisions on this basis. How can a company be confident that its assumptions are correct and accurate? This significant issue is exacerbated by the acceleration of the EU Green Deal, adding pressure to adapt and make investment decisions, leading to a rise in CO2 certificate prices that hinder long-term competitiveness in the long run. The Belgian government should set priorities and provide support to the chemical sector even though there is no such thing as free money in the end and there will be someone who will pay for it.

Regarding energy production, the question arises whether renewables are competitively viable in absolute terms. Hedging or swapping electricity with Germany is possible due to their reliance on renewables. For six months, there can be a basic leverage, but uncertainty remains about wind conditions throughout the four seasons. It is an abstract concept and the total costs of the renewables should be considered (being the backup capacity, the reinforcement of the networks, etc.).

Re-industrialization of Europe

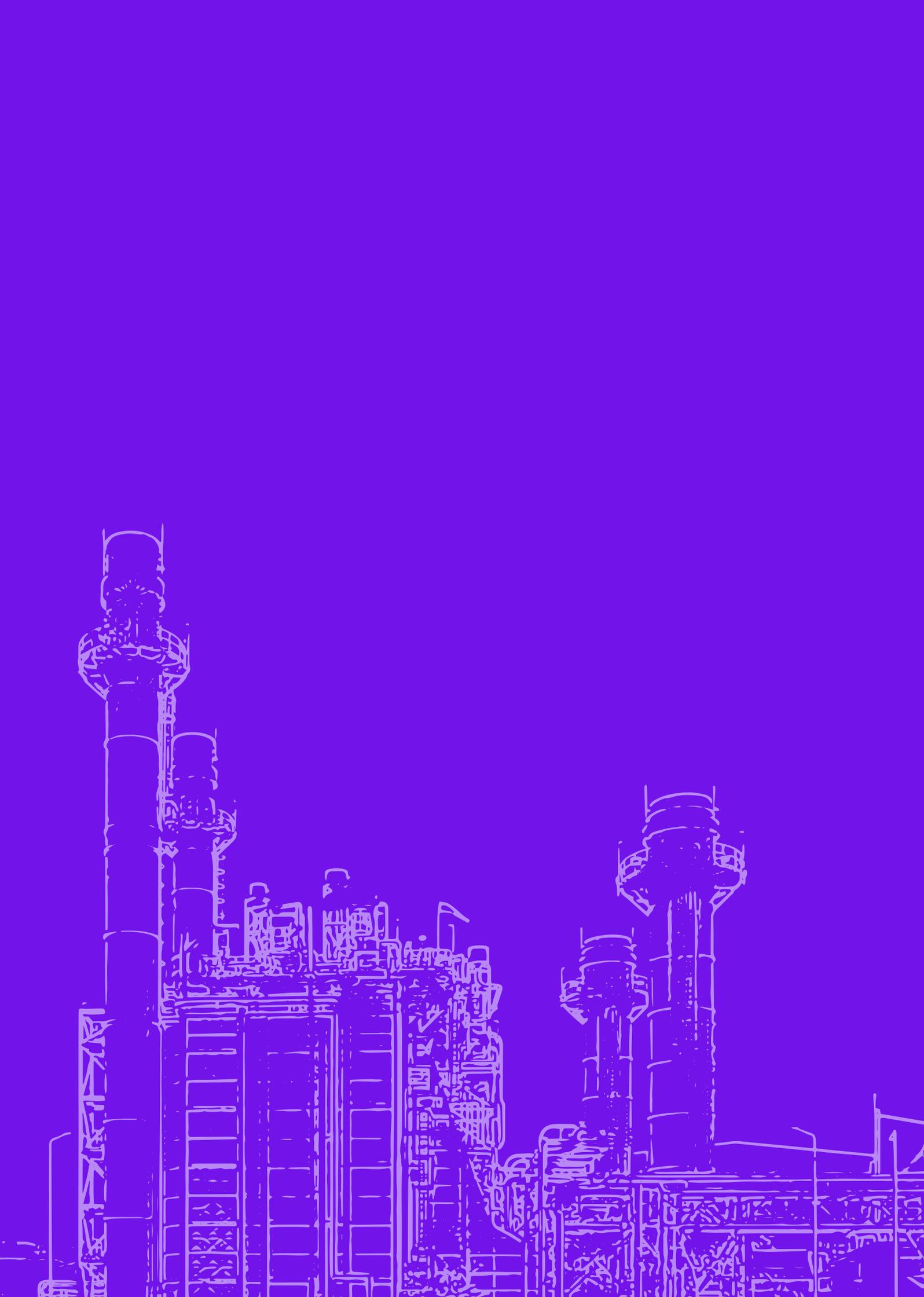
A critical question arises whether Europe's approach to this energy issue is realistic and pragmatic enough to provide an answer for industrial redevelopment within Europe.

I am not convinced that the current actions will genuinely drive or advance the re-industrialization of Europe. The market's volatility and constraints present unique challenges, leading to utter madness. The European Commission may not fully grasp the huge issues our industry is facing: how to become greener while not having the competitiveness needed to make this transition. Vynova, as a producer of hydrogen and chlorine, amongst others, understands the pivotal role these chemicals play. Chlorine is indispensable for water treatment, while hydrogen is a key driver towards achieving the Green Deal's objectives. Chemicals serve as the foundation for all industries, and without a robust chemical sector, you cannot speak of sovereignty. Which will leave us dependent on China for the import of chemical products. Europe must stop being collectively naive to avoid such vulnerable positions in the future. Persisting in this manner will only place us in a precarious strategic position.

This energy issue is highly unique in the history of Europe, especially considering the magnitude of volatility compared to previous times. Time is of the essence to act. Politics must understand that they must not underestimate the size of the wave approaching us as this storm is different from those in previous years and that pragmatic and down-to-earth choices need to be made, even if they are difficult.

Lexicon & abbreviations

BESS	Battery Energy Storage System
CAPEX	Capital Expenditures
CBAM	Carbon Border Adjustment Mechanism
	An EU policy designed to impose carbon-related tariffs on certain imported goods to ensure that foreign producers are subject to similar emissions reduction requirements as EU producers, thereby preventing carbon leakage and promoting global climate goals
vCCU	Carbon Capture and Utilization
cCFD schemew	Carbon Contracts for Difference
	A program to accelerate the phasing-out of fossil fuels in energy-intensive industry by enabling the possibility for German companies to receive grants when reducing CO2 emissions and converting their production to climate-friendly production
CHP	Combined Heat and Power Plant
CO2	Carbon dioxide
Deforestation Act	An EU legislative measure
EU Critical Raw Materials Act	An EU policy to address the security of critical raw materials to ensure their sustainable supply for key industries
Green Deal	The European Union's plan to combat climate change and promote sustainability across its economy and society
GW	Gigawatt
GWh	Gigawatt per hour
Hedging	The use of financial instruments or contracts to mitigate the risk of price fluctuations in electricity markets, helping businesses and utilities secure predictable costs or revenues
IEA	The "International Energy Agency"
IRA	Inflation Reduction Act An US Act to reduce the deficit and lower inflation while investing in domestic energy production and lowering healthcare drug costs.
LTO	Long Term Operation (of nuclear power plants)
Merit Order	A ranking of electricity generation sources based on their marginal cost, with lower-cost sources being dispatched first to meet demand, ensuring efficient and cost-effective electricity production
MW	Megawatt
MWh	Megawatt per hour
PPA	Power Purchase Agreement
R&D	Resource & Development
RED III	Renewable Energy Directive III An EU legal framework for the development of renewable energy across all sectors of the EU economy and supports cooperation between EU countries towards this goal
SAF	Sustainable Aviation Fuels
Scope 1 emissions	The direct greenhouse gas emissions produced by a company or organization from sources that are owned or controlled by them, such as emissions from on-site combustion of fossil fuels or emissions from company-owned vehicles
Scope 2 emissions	The indirect greenhouse gas emissions associated with the production of electricity, heat, or steam that a company consumes, typically from external sources like power plants, which are used to power their operations
Scope 3 emissions	All other indirect greenhouse gas emissions from activities associated with a company's operations, including emissions from its supply chain, business travel, employee commuting, and other sources outside its direct control
SDR	Smart Delta Resources
SME	Small and medium-sized enterprises
SMR	Small Modular Reactor
System ARENH	Système d'Aide au rachat des Energies Renouvelables en France A regulatory mechanism that allows eligible consumers to purchase a portion of their electricity at a fixed price from renewable energy sources, promoting renewable energy development in the country
TTF	Title Transfer Facility
TWh	Terawatt hour
VAT	Value Added Tax
VLAIO	Vlaams Agentschap Innoveren en Ondernemen



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