# EU Agenda for competitiveness and transition

IKEM

Chemistry is an inseparable part of modern society. It is all around us – in the foods we eat, the medicines that cure us, the batteries of our mobile phones, the fuels of our vehicles and the materials that form the basis of our homes and workplaces.

In short, chemistry is at the very heart of our modern existence.

In order for IKEM's member companies to be successful in their green transition and be able to help society to become more sustainable, they need to be globally competitive.

To achieve this, a number of prerequisites need to be put in place:

- ➔ We need to promote the recycling of waste, the recycling of carbon dioxide, and the use of bio-based raw materials.
- ➔ We need to develop new safe and sustainable chemicals more efficiently and quickly.
- ➔ We need to increase the supply of skills and strengthen the free movement of labour.
- ➔ We need to ensure that Europe is and remains an attractive place to invest.

# The Innovation and Chemical industries are crucial for Swedish competitiveness and the green transition

The Swedish innovation and chemical industries play a crucial role in Sweden's economy and competitiveness. IKEM – Innovation and Chemical Industries in Sweden – represents around 1,250 companies with some 70,000 employees. With a combined export value of SEK 475 billion, they accounted for 24 percent of Sweden's total goods exports in 2022. Together, its member companies in the areas of pharmaceuticals, rubber and plastics, chemicals, and refineries, contribute to a fifth of Swedish industry's total value-added.

The innovation and chemical industries currently account for about a third of the industrial emissions of carbon dioxide in Sweden. The sector is thus extremely important for the green transition and for Sweden's ability to achieve its climate goals. First, by making efforts to decrease its own emissions, and second, by recognizing the sector's crucial position in the early stages of the value chain, producing inputs essential to other industries. Innovative chemistry is a prerequisite for new solar cells on roofs, recyclable car batteries, and other new technologies that lay the foundation for the green transition. All industrial industries are dependent on chemistry in order to reduce their emissions and achieve circular flows. Without chemistry, there can be no green transition.

The EU is crucial for the innovation and chemical industries. The single market creates a level playing field for EU Member States, facilitates the recruitment of skilled labour from across Europe, and increases exports. Chemicals legislation is harmonised in its entirety with the same rules throughout the EU, and the majority of environmental and climate legislation is decided at the EU level. However, the rapid pace of the EU's legislative work on the green transition poses a challenge for industry, which is struggling with an increasing regulatory burden and initiatives in many different areas that do not always interplay.

The innovation and chemical industries intend to lead the green transition. To succeed in this, we as an industry must be given the right conditions to maintain our competitiveness and continue to attract global investment.

Stockholm, February 2024

Jonas Hagelqvist
CEO, IKEM

# Ongoing transition

Almost a fifth of the research conducted in the business sector can be traced to the innovation and chemical industries. In recent years alone, IKEM's members have made several significant innovation-driven investments around Sweden aimed at replacing fossil raw materials with raw materials that are bio-based or recycled from waste or carbon dioxide. In addition to benefiting the company in question, these investment also create opportunities for other companies to become more sustainable.

In Örnsköldsvik, major investments are being made in biotechnology to produce chemicals from forest residues.

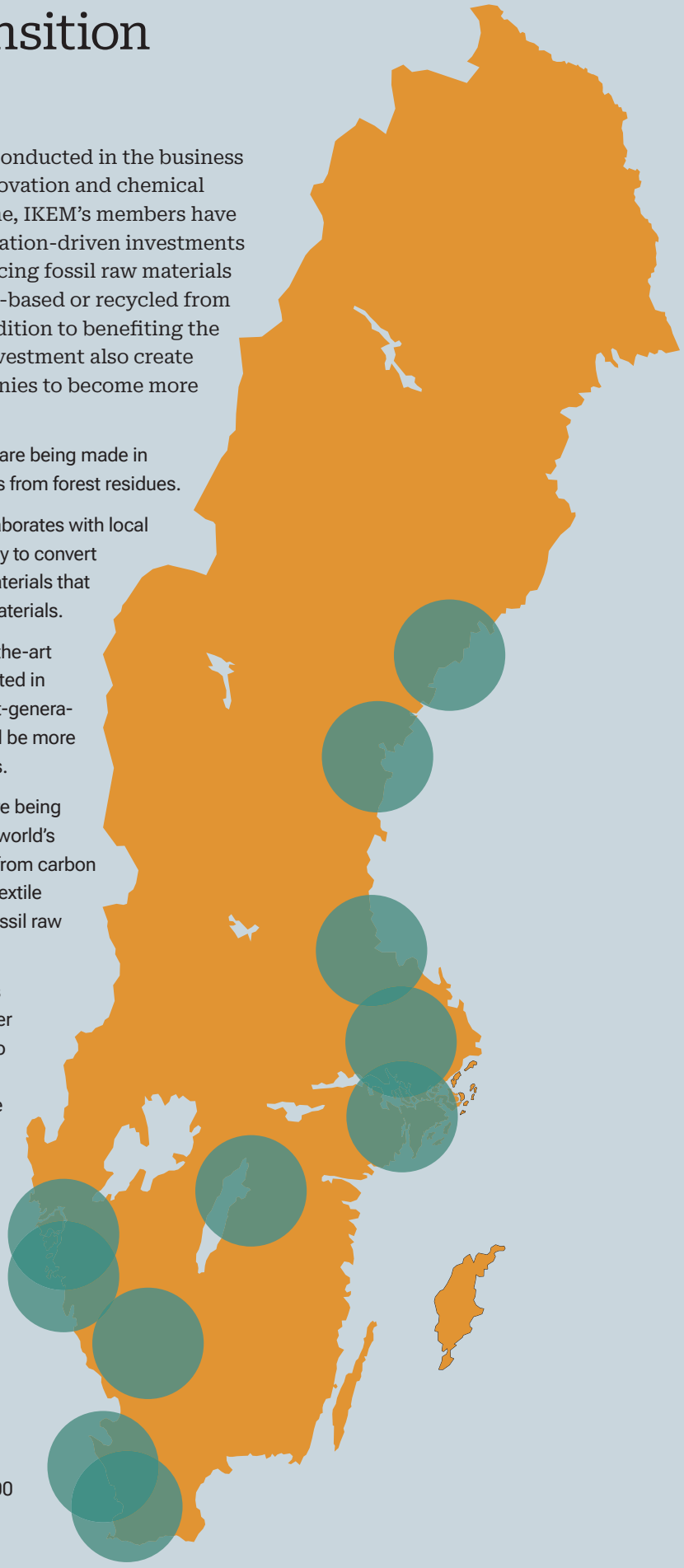
In Gävle, the chemical industry collaborates with local sawmills, employing new technology to convert residues from the forest into raw materials that serve as alternatives to fossil raw materials.

At the end of 2021, a new, state-of-the-art manufacturing facility was inaugurated in Södertälje for the production of next-generation biological medicines, which will be more effective and have fewer side effects.

In southern Sweden, investments are being made in what is expected to be the world's largest facility for making products from carbon dioxide and converting plastic and textile waste into resources that replace fossil raw materials.

In western Sweden, several projects are underway in which IKEM member companies participate, which aim to create circular flows and close the loop for plastics. These focus on the development of the mechanical and chemical recycling of plastic waste, such as pyrolysis, gasification and depolymerization. With chemical recycling, plastic waste can be upgraded to the same quality as the original fossil raw material in the plastic waste, while drastically reducing the carbon footprint.

A production facility for sustainable methanol will also be built in Stenungsund, which can reduce carbon dioxide emissions by 400,000 tonnes annually.



# We need to promote the recycling of waste, the recycling of carbon dioxide, and the use of bio-based raw materials

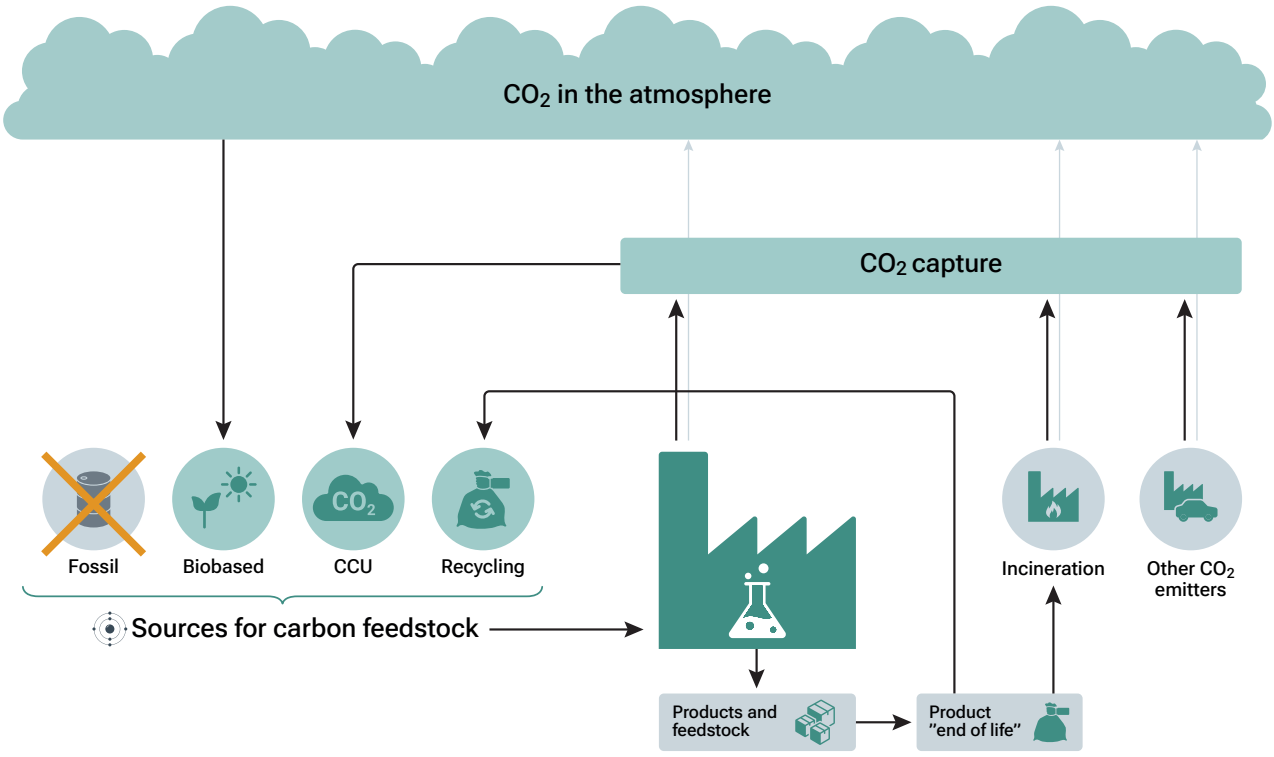
EU climate policies call for the rapid transition of energy and raw materials to mitigate climate impacts. This poses a dual challenge for the innovation and chemical industries, which use fossil raw materials both for energy purposes and as inputs in production.

In some processes, fossil energy raw materials can be replaced by electrification and climate-neutral industrial gases. Fossil inputs can be replaced with recycled waste, recycled carbon dioxide, and bio-based raw materials. To successfully succeed in this transition, we need access to a stable and sufficient supply of electricity and raw materials at a competitive cost. This needs to be done in collaboration between the chemical industry and wider society.

## We need all possible alternatives to virgin fossil raw materials

While carbon – in the form of carbon dioxide generated from the burning of fossil fuels – contributes to the greenhouse effect, carbon atoms are an essential input for the innovation and chemical industries. Carbon atoms are found in almost all chemical production, from plastics and textiles to chemical products needed for other industrial production.

The demand for carbon atoms is projected to double over the next 25 years. To



meet this demand, the carbon cycle needs to be closed so that the carbon atoms can be reused. This can be done by recycling materials such as plastics, textiles and paper, but also by capturing carbon dioxide and using the carbon as a raw material (CCU, Carbon Capture and Usage). Carbon Capture and Storage (CCS) prevents emissions into the atmosphere and thus present an alternative for when emissions cannot otherwise be avoided. Carbon atoms that stay in the cycle can be used as raw materials in industry, which creates an opportunity to reduce the uptake of new fossil raw materials.

Carbon capture technology is tried and tested in both oil and gas extraction and in the electricity and district heating sectors, and is also considered to have great potential within the process industry. It is important that the incentives introduced at the EU level reward both CCS and CCU. Today, there are incentives for storage, but obstacles regarding using captured carbon atoms in new products.

To a greater extent than today, fossil carbon sources need to be replaced with biogenic ones to meet future needs for carbon atoms. Sweden, with its large reserves of forest-based and agricultural-based raw materials, has ample opportunity to increase the use of bio-based raw materials, even with continued high demands on nature conservation. The EU needs a policy that balances nature conservation and the need to use forests as a carbon sink, with the need for bio-based raw materials to replace fossil fuels. It is perfectly possible to bind biogenic carbon atoms in products, not just in trees. If the carbon atoms in these products can be further recycled and circulated, it becomes a carbon sink that persists over time.

## We need more carbon in products and less in the atmosphere

In order to increase the supply of carbon atoms and strengthen the circular economy, the conditions for recycling carbon atoms from waste need to be improved. Carbon-rich materials, such as plastics, textiles and paper, are excessively burned for energy purposes, such as district heating production. We need to progress from looking at waste in a linear way, make the shift from energy recovery to material recycling, and recycle the carbon atoms to replace virgin raw materials – both fossil and bio-based. However, current European waste legislation and policies do not provide the clarity and predictability needed to primarily regard waste as a raw material for new materials and products. This risks preventing or delaying the industry's green transition.

# IKEM's proposals

### ➔ Develop EU legislation and policies that promote the recycling of waste

In order for a green transition of industry to take place, recycling needs to be increased and the use of waste promoted. Three possible ways to do this are to ensure that there is harmonised EU legislation, the development of so-called "end-of-waste" criteria at the EU level under the EU Waste Directive, and quota obligations. To achieve a higher degree of circularity in the industry and take advantage of the industry's raw material, waste incineration needs to be reduced to enable the raw material to be recycled instead. It is thus important that the EU also promotes measures such as chemical recycling.

### ➔ Increase incentives to produce clean and upgraded biogas

Gas is crucial as an input for certain chemical processes and, since biogas consists of the same chemical molecule as natural gas, natural gas can be replaced with biogas. In order to secure the industry's supply of clean and upgraded biogas at competitive prices, the total production of biogas in the EU needs to increase. In REPowerEU, the Commission has set a target for the annual production of 35 billion cubic metres of biomethane within the EU by 2030. The possibility of raising this target should be reviewed.

### ➔ Promote all types of carbon dioxide equally

The European Commission's proposal for a framework for certification of carbon removal only promotes the capture and storage of biogenic carbon dioxide and carbon dioxide that has already been released into the air. The EU should ensure that all carbon dioxide is managed and promoted equally, regardless of its origin. Recycling the carbon in carbon dioxide into a raw material that can be used as a feedstock should also be promoted, while pursuing continuous circularity in carbon cycles. The premise should be to keep carbon within the material loop.

### ➔ Secure industry's access to bio-based raw materials at competitive prices

Using bio-based raw materials in products where the carbon atoms are kept out of the atmosphere over time – in long-lived products, through recycling or through carbon capture and circularity – helps to create lasting carbon sinks. This whole spectrum of solutions, not just long-lived products, should be incentivised in the EU's policy to increase carbon sinks. This could have a positive effect on the competitiveness of bio-based raw materials. Certain bio-based raw materials that are important for industry, such as ethanol, are currently subject to tariffs in the EU, which makes the price higher within the EU than outside it – which hinders its competitiveness.

### ➔ Ensure harmonised calculation methods for the circulation of carbon-rich raw materials

Industry needs to be able to use all types of carbon-based streams. Today, bio-based streams and recycled waste streams are handled in different areas of legislation, which entails different ways of calculating carbon benefits and recycling rates. This poses the risk of the industry having to employ multiple parallel methods of calculation and verification. To avoid unnecessary bureaucracy, it is essential to establish general ways of counting and measuring.

# We need to develop new safe and sustainable chemicals more efficiently and quickly

The chemical industry is facing a dual challenge – we need to change not only the way we produce, but also further develop what we produce. All this must be done in less than 30 years, in order to reach the EU goal of climate neutrality by 2050. The EU Chemicals Strategy for Sustainability, presented in 2020, aims to ensure that chemicals can be produced and used for the benefit of society, without causing harm to health and the environment. IKEM is 100-percent behind this ambition.

Chemistry forms part of all value chains and is a prerequisite for everything from solar cells and lithium-ion batteries to pharmaceuticals and energy-efficient buildings. In order for our industry to be able to deliver what all other industries and society need, the Chemicals Strategy must be implemented in a balanced way, safeguarding the competitiveness of the EU chemical industry and putting the global perspective at the centre. This includes phasing out problematic chemicals and replacing them with new, safe and sustainable alternatives. In order to succeed in this challenge, the industry must be given fair conditions.

Too often, the phase-out of chemicals is proposed with short time frames, without sufficient consideration of the time it takes to develop new alternatives and to have them accepted by users, which can lead to unforeseen consequences across the value chain. Regulations are necessary, as many substances can have major impacts on the environment or on human health, but legislation should to a greater extent enable the development of new chemicals rather than the banning of old ones. It is essential that the production and handling of chemicals is carried out in a safe manner and that the regulation of chemicals is primarily based on risks and scientific facts, not on the properties of substances.

Europe has one of the world's most comprehensive chemicals regulations – REACH. It is good that the chemicals legislation is harmonised at the European level. EU companies operate in a common market and need to abide by the same rules. However, value chains are global, which means that EU chemicals legislation also needs to take into account how chemicals are regulated in, for example, the United States and Asia, which are both competitors and trading partners. If the discrepancy between the EU and the rest of the world is too great, there is a risk that the chemical industry is pushed out of the EU.

# IKEM's proposals

### ➔ Provide industry with the right conditions for research and innovation

In order to phase out the most harmful substances, new alternatives must be phased in. The EU needs to have a long-term and strategic research and innovation agenda that actively meets societal challenges and regulatory developments and leads to the development of safe and sustainable chemistry. In order for Sweden to take the lead in the development of the safe and sustainable chemistry of the future, we need a strategy that is one step ahead of regulations and restrictions. A strategy that shows how the industry's skills needs are to be met, and how targeted research and regulatory efforts that can lead to, for example, better and more effective risk assessment models are to be put in place.

### ➔ Introduce regulations as development and innovation progress and in consultation with industry

Predictable and clear regulations are essential for a competitive industry. In order to protect both health and the environment and at the same time safeguard the competitiveness of industry, chemicals legislation must be risk-based, based on a scientific basis and be as accurate and goal-oriented as possible. Regulations and restrictions must be introduced in step with the development of new alternatives, so as to benefit companies at the forefront. To achieve this, legislation should be developed in close consultation with industry. Additionally, legislation must not become an obstacle to the use of the new methods and technologies needed to accelerate innovation in safe and sustainable chemistry.

### ➔ Adapt regulations to global challenges

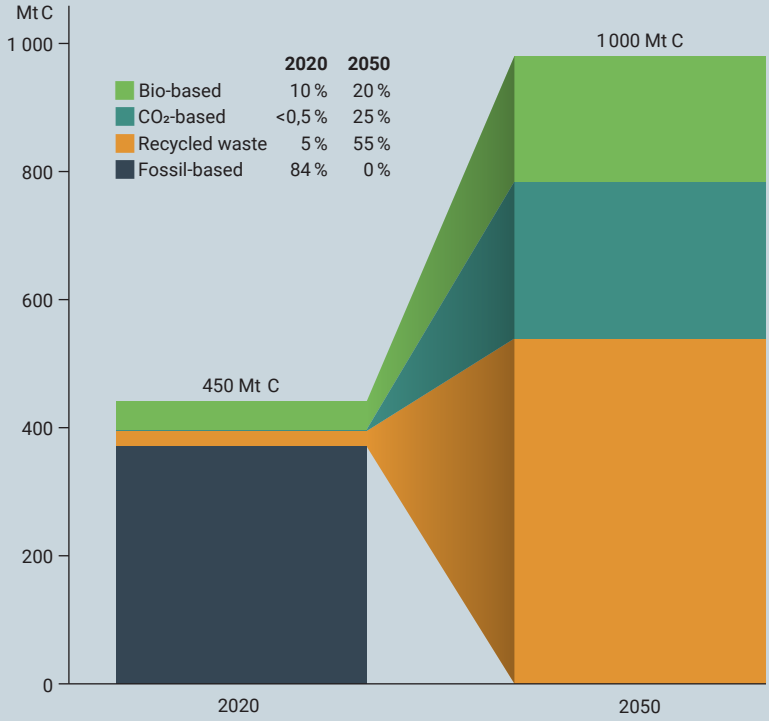
The EU is the world's second largest producer of chemicals, accounting for 15 percent of global production. Currently, China accounts for 43 percent of global production, but, by 2030, this share is expected to be more than 50 percent. Regulatory frameworks in the EU must go hand-in-hand with regulations in competing regions, and the EU should therefore act by both adapting our legislation from a global perspective and by promoting the adoption and implementation of ambitious international conventions.

### ➔ A stronger focus on monitoring and enforcement

However, adapting EU legislation to global challenges requires the EU to take a stronger grip on enforcement at the EU's external borders, in order to curb both the illegal trade and undesired imports of substances that are regulated within the EU. A large proportion of the illegal chemicals found in products in the EU today originate in third countries, and have come here through private imports, importer negligence, or via illegal imports. Effective enforcement is essential in order to not distort competition. Issues of monitoring and enforcement should also be given greater emphasis when designing the regulatory framework.

**Global demand for chemicals and chemical materials**

2020 and scenario for 2050, in millon ton imbedded carbon.

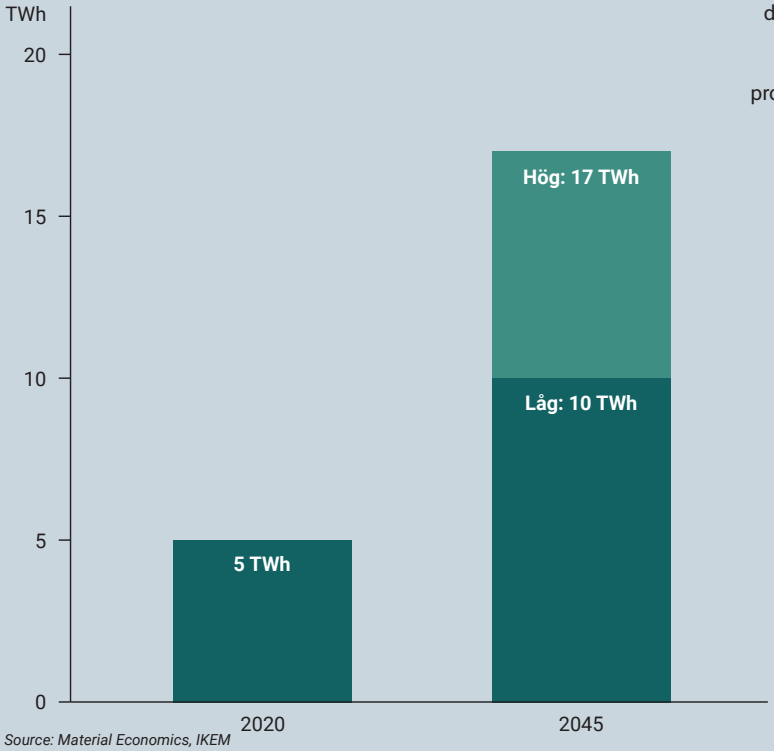



The illustration shows the world's need for carbon atoms in chemicals and chemical materials and a forecast of where the carbon atoms will come from when fossil raw materials are no longer used.

*Source: Nova Institute*

**The electricity needs of the largest IKEM companies today and estimate for 2045**

TWh, indicative.

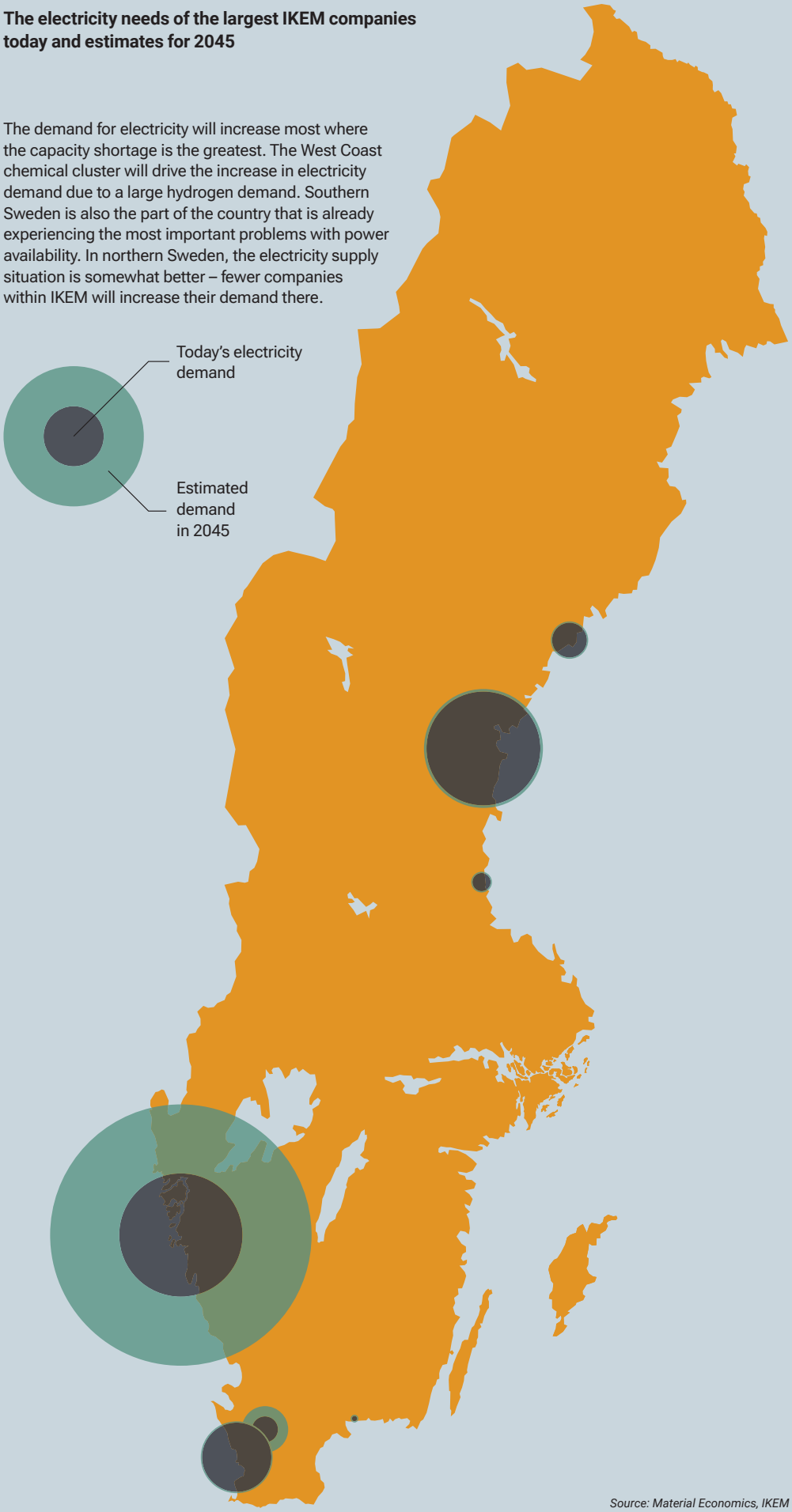



*Source: Material Economics, IKEM*

The transition will likely require at least a doubling of electricity use. The need for hydrogen in the chemical industry drives an increased need for electricity, as both chemical recycling and production with bio-based raw materials require an increased amount of hydrogen compared to today's production.

**The electricity needs of the largest IKEM companies today and estimates for 2045**

The demand for electricity will increase most where the capacity shortage is the greatest. The West Coast chemical cluster will drive the increase in electricity demand due to a large hydrogen demand. Southern Sweden is also the part of the country that is already experiencing the most important problems with power availability. In northern Sweden, the electricity supply situation is somewhat better – fewer companies within IKEM will increase their demand there.




*Source: Material Economics, IKEM*

# We need to increase the supply of skills and strengthen the free movement of labour

Many of the companies in the innovation and chemical industries are high-tech and have a great need for skilled labour. At the same time, there is a significant skills shortage throughout the industrial sector, something that does not only apply to Sweden, but is a common problem throughout the EU. In the coming years, a large number of people are retiring, and by 2030 the EU's chemical sector is expected to have a labour shortage equal to eleven percent. IKEM's member companies expect to have to recruit 11,000 people within the next five years.

The skills shortage poses a serious threat to the growth and competitiveness of companies and influences decisions on the location of new facilities. The skills shortage was identified by European Commission President Ursula von der Leyen as one of the most significant bottlenecks for European competitiveness in her State of the European Union address in autumn 2023, but few concrete measures to address this were presented.

Rectifying the skills shortage requires action in a number of areas. The number of STEM (Science, Technology, Engineering and Mathematics) graduates in the EU need to increase. Knowledge in these areas is crucial for the green transition and for meeting companies' skills needs.

The free movement of labour in the EU needs to be strengthened. Many of IKEM's member companies are dependent on foreign recruitment to meet their skills needs. This applies not only to highly skilled workers such as engineers and scientists, but also to professions such as process or machine operators and laboratory technicians. The free movement of persons in the EU is essential for the competitiveness of companies and for meeting their skills needs.

It also needs to be easier to recruit employees from third countries. The labour market for highly educated people with cutting-edge expertise is global and the majority of the world's top universities are located outside the EU.

Labour market policy remains a largely national competence. In recent years, however, the EU is increasingly engaging in social policy and we are seeing a trend in which the EU is seeking more competence in labour market policy. One example of this is the Minimum Wage Directive, which is to be implemented by the Member States by 2024 and risks having a negative impact on wage-setting and the Swedish labour market model. Other initiatives with an impact on the labour market include the proposal to update the European Works Council Directive, the Pay Transparency Directive and the revision of the Quality Framework for Traineeships. Although the intentions in many cases are good, there is a risk that the EU's growing agenda in the area of the labour market will in time challenge the Swedish labour market model in which the social partners, not politicians, regulate working conditions and wage-setting.

# IKEM's proposals

### ➔ Facilitate for the free movement of labour in the EU single market

More needs to be done to ensure the de-facto free movement of labour. An important aspect of this is the mutual recognition of professional qualifications, where the EU should strive for as much harmonisation as possible. In total, there are over 5700 regulated professions in the EU, of which around 140 are regulated in one member state alone. Regulations that only exist in a few Member States should, as far as possible, be removed, so as not to create unnecessary obstacles for employees to operate throughout the Union. The remaining regulations should, to the greatest possible extent, be common to the whole of the Union. It is possible that revisions can be made to the Professional Qualifications Directive. Available instruments such as the European Qualifications Framework should be used to their full potential.

### ➔ Simplify the administration for cross-border, short-term postings

Due to staff shortages in certain skilled professions, such as welders, many companies are forced to set up mobile teams that are constantly moved between production sites in different Member States. The EU's regulatory framework for cross-border short-term postings imposes a heavy administrative burden on companies and can be simplified, for example by integrating the EU-wide A1 form into an e-declaration.

### ➔ Measures to increase the number of STEM graduates in the EU

Education remains a national competence, but the European Commission can provide funding, support and advice to increase student completion rate and the number of applicants for STEM tertiary education in the EU. Measures that could be taken include the promotion of regular STEM labour market analyses to form the basis for national training and education plans, facilitating collaboration between academia and industry, and providing funding for re-skilling and upskilling activities within the sector.

### ➔ Facilitate the recruitment of third country nationals

In order to secure companies' supply of highly skilled labour, the recruitment of third-country nationals need to increase. To facilitate recruitment, the rules need to be simplified and the recasts of the Single Permit Directive and the Long-Term Residents Directive should be finalised.

### ➔ Safeguard the Swedish labour market model

The Swedish labour market model leads to larger real wage growth and fewer labour conflicts than in most other EU Member States. Sweden should work to safeguard the Swedish model and oppose regulations at the EU -level for wage-setting and other domains of the social partners.

# We need to ensure that Europe is and remains an attractive place to invest

Most of the initiatives in the Green Deal are now fully negotiated and the innovation and chemical industries have begun their transition. Major investments will be required for companies to be able to live up to the demands placed on them and for the EU to manage its transition. However, a number of aggravating circumstances stand in the way of these investments. High energy costs, incoherent and in many cases over-detailed legislative proposals, large investment subsidies for the green transition in the United States and Asia, as well as a ever-changing and highly complex regulatory framework contribute to creating uncertainty and reducing companies' willingness to invest in the EU.

In order for the EU to ensure its competitiveness and for industry to contribute to the green transition, reforms are needed to make the EU a more attractive place to invest.

Massive growth in research and innovation is needed for the EU to benefit from the latest innovations and technologies in the longer term. Over the past 20 years, the EU has lagged behind, in particular, the United States and Asia, and today fewer and fewer of the world's top universities are located within the Union. As a result, it is more difficult for the EU to attract top students and to keep them in the Union after their studies are completed. The quality of tertiary education and research needs to be improved, and the EU's joint research and innovation resources need to be used more effectively to reverse this trend.

It is of the utmost importance for the EU to remain open to the world. As Europe's share of the world economy shrinks, the EU will become increasingly dependent on imports of technology, innovation and raw materials. The industries IKEM represents are generally very export-oriented and are also dependent on imports of raw materials and inputs from third countries. Free trade has served us well, and competition leads to development. However, China and the United States' subsidy programmes for the green transition mean that the conditions for industrial activities may be more favourable there. A degree of vigilance against certain risk countries, technologies or raw materials may therefore be justified. However, the current trend of isolationism needs to be reversed and the next European Commission needs to give greater priority to trade issues.

In order for the EU to manage the green transition and the ambitious climate targets, measures are needed in several areas, and in recent years a large number of laws have been adopted at the EU level. There are increasing demands on industry to invest in the green transition, to report and to take responsibility for environmental and social impact in the supply chain. Most regulations are well-intended, but put together they also impose a large and rapidly increasing regulatory burden on companies. When increasing complexity in regulations more resources are required to be spent on administration, this in turn means that fewer resources can be spent on innovation and production. IKEM fully supports the EU's ambition to be a leader in the green transition, but the EU's eagerness to regulate more rigorously and faster than other countries does not always improve our ability to compete with the rest of the world and leads to a decrease in the willingness to invest in the EU. The regulatory framework therefore needs to be simplified and tested for competitiveness.

# IKEM's proposals

## ➔ Improve the EU's framework for research and innovation

High-quality research and technological innovation are essential for the EU to compete on the global stage. To achieve this, the EU's innovation agenda should promote technological neutrality and avoid overly complex regulation. A larger share of the EU budget should go towards research and innovation, and the criteria in the EU's framework programme for research and innovation, Horizon Europe, should be adjusted to achieve greater returns. Notably, more resources should go towards investments in research infrastructure. Further, it should be considered whether it is possible to make it easier for smaller companies to apply for support.

## ➔ Strive for free trade

As a small, export-dependent country, Sweden relies on free trade – the foundation for Swedish industry and Swedish welfare. Open access to a global market is important both for exports and for companies' supply of raw materials and inputs. However, it should not be ignored that countries such as China and the United States have large subsidy programmes for the green transition, which risks distorting competition. The EU needs to take this into account when designing its own support schemes and make the regulatory framework simpler, clearer, and easier for companies to understand. The EU should also strive to ensure that support schemes are designed at a European level and not at a national level, to counteract a distorted intra-EU competition. It is our view that Sweden and Europe has more to lose from a trade war than the United States and Asia does, which is why it should be Europe's ambition to work towards as much free trade as possible globally and counteract protectionism.

## ➔ Strengthen the EU single market

The single market, with its freedom of movement, is the cornerstone of the EU economy and is at the heart of a vibrant European industry. Despite this, we see an increased fragmentation of the single market, often as a result of national implementation of EU legislation. This trend must be reversed and the next Commission should prioritize measures to strengthen the internal market.

## ➔ Lessen the regulatory burden

In order to strengthen the competitiveness of companies and increase the willingness to invest in the EU, the regulatory framework needs to be simplified. The President of the European Commission has pledged to reduce the reporting burden at the European level by 25 percent. This is a good approach that we fully support. It is now up to the next Commission to hold to this pledge. The premise should be to regulate less, regulate better, and to clarify what companies need to do to comply with the rules.

## ➔ Take greater account of industrial competitiveness when developing new legislation

IKEM supports the ambitious goals of the EU's climate policy. We also recognize the special role and responsibility of our industry in implementing the green transition. However, what is lacking, in our view, is the consideration of industry competitiveness when developing new legislation, especially as the EU sets new climate targets for 2040. Impact assessments need to be more thorough to ensure that the requirements introduced by the legislation are also possible for the industry to achieve while maintaining competitiveness. For example, it could involve ensuring a sufficient supply of fossil-free electricity to facilitate the transition of production processes. The European Commission's proposal to introduce a competitiveness check in all new legislation is a positive step, but it is equally important to ensure that industry is involved at an early stage in the preparation of future legislation.

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**IKEM – Innovation and Chemical Industries in Sweden** represents 1,250 Swedish and foreign-owned companies with more than 70,000 employees. We are an industrial and employers' organisation for companies working in a broad cross-section of the chemical industry, both as producers, distributors and users. The member companies are active in the chemical and plastics industries, pharmaceutical manufacturers or bio-chemistry and bio-tech companies. IKEM also represents members from, for example, the stone, laundry, metal and recycling industries.

IKEM works all over Sweden and we are represented in Stockholm, Gothenburg, Malmö, Norrköping and Växjö.
We also have an office in Brussels.

IKEM