# European Union

# Advancing European Climate Leadership

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## Summary

The European Union (EU), among other global actors, is probably the most ambitious actor when it comes to fighting climate change. EU climate leadership is based on three legally binding commitments to reduce climate change: the goal of climate neutrality for all members by 2050; the reduction of net Greenhouse Gas Emissions by at least 55 percent by 2030 compared to 2005 levels; and the new target for net reductions by 90% by 2040, relative to 1990 levels, established through the amended European Climate Law passed by the EU Parliament in March 2026. The 2030 and 2050 objectives represent more than just additional green or environmental objectives for Europe. They also attempt to fundamentally transform the energy systems of the Europe Union's 27 member states, their industrial structures, technological capacity, and position in the global political economy.

European Climate leadership faces significant obstacles, both international and domestic. As climate-related physical risks continue to escalate across Europe, so too do competing interests in the areas of geopolitics, energy security, industrial competition from China and the United States, and the costs associated with decarbonizing.

According to the European Environment Agency (EEA, 2024), there are 36 major climate-related risk factors facing European food and energy production, infrastructure, water availability, ecosystems, financial stability, and public health. Moreover, the recent energy crisis rom Russia's invasion of Ukraine and American-Israeli attacks on Iran highlight the dangers of dependency on foreign energy sources. According to the International Energy Agency (IEA, 2025), many European countries are rapidly pursuing strategies to increase the diversity of their energy supply portfolios and develop their clean energy capacities.

For delegates to the European Commission at ODUMUNC 50, the future of EU climate leadership is at stake. Should today's regulatory model of addressing climate change shift to a comprehensive model of climate, industrial, technological, and geopolitical leadership? It that feasible and affordable?

In addition to setting ambitious emissions targets, can the EU reconcile decarbonization with economic competitiveness, enhance energy security, promote technological innovation, and foster social resilience?

## Introduction

Climate change is a major challenge for the 21st century. It is affecting not only the environment but also economic stability, public health, infrastructure, energy security, food systems, and international relations. According to the IPCC (2022), climate change is already having serious impacts on both human and natural systems worldwide. As these impacts continue to develop, they will pose many challenges for highly interdependent regions such as Europe, where climate risks may travel through energy markets, supply chains, financial systems, and cross-border infrastructure. Therefore, European climate policy should not be seen as merely environmental regulation but as an increasingly important component of economic and strategic governance.

The EU has put forward policies aimed at establishing itself at the vanguard of this transition. The European Green Deal provides the political framework to transform the Union into a low-carbon and resource-efficient economy, and the European Climate Law has made achieving a climate-neutral Union by 2050 mandatory (European Commission, 2019; European Commission, 2021). The EU has also agreed to a 2030 target of reducing net greenhouse gas emissions by at least 55 percent below 1990 levels.

The EU has further advanced its commitment to this goal by establishing a legal obligation to achieve an additional 90% reduction in net greenhouse gas emissions from 1990 levels by 2040. This is to be achieved by each EU Member State, with a minimum domestic contribution of 85 percentage points. An additional 5 percentage points may be achieved internationally via carbon credit purchases (European Commission, 2026a).

The importance of the 2040 goal goes far beyond simply lowering greenhouse gas emissions. In fact, the European Commission explicitly frames climate action as a chance to enhance investment, innovation, industrial competitiveness, energy independence, and strategic independence (European Commission, 2025)–all important considerations, especially after Europe experienced its worst-ever energy crisis.

The energy crisis was a direct result of the disruption in Russian energy deliveries, which highlighted the risks of overreliance on foreign energy suppliers from fossil fuels. Thus, Europe's move toward renewable electricity, increased energy efficiency, and greater use of electricity and other non-traditional energy sources now has two goals: an environmentally friendly transformation and a possible way to reduce Europe's exposure to geopolitical risks. The International Energy Agency (IEA) observed that most European states have significantly reduced their reliance on Russian energy and are planning to pursue even more aggressive clean energy strategies (IEA, 2026).

However, while lofty goals can be a good start to successful climate policymaking, they do not necessarily produce effective climate leadership. The EU has a major problem with its implementation. As stated above, achieving a 90 percent reduction in net greenhouse gas emissions will require dramatic changes across virtually every sector of the economy, including electricity production, transportation, residential buildings, commercial-industrial facilities, agricultural practices, and consumption patterns. Additionally, a tremendous amount of capital spending will be required for grid upgrades, energy storage systems, clean manufacturing technology, low-carbon industrial process development, and new infrastructure. A prior study prepared by the European Commission indicated that one of the primary challenges facing the commission would be how to decarbonize heavy industry while expanding domestic manufacturing capabilities in critical areas such as battery manufacture, manufacture of electric automobiles and related components, heat pump manufacture, and solar panel manufacture (European Commission, 2024).

Decarbonizing Europe is critical for achieving climate neutrality by 2050. However, this effort will be in vain if the EU does not take action to

ensure that its efforts are successfully implemented. The effectiveness of the EU's climate ambitions may depend on its ability to implement them effectively; if so, the success or failure of the EU's climate policy will significantly influence the EU's role in climate negotiations. Therefore, the EU's efforts to achieve climate leadership (as an example) would best be pursued through three connected themes: decarbonization, climate resilience, and green strategic autonomy. The diagram below demonstrates the EU timeframe for whittling down its greenhouse carbon emissions from 2015 to 2050.

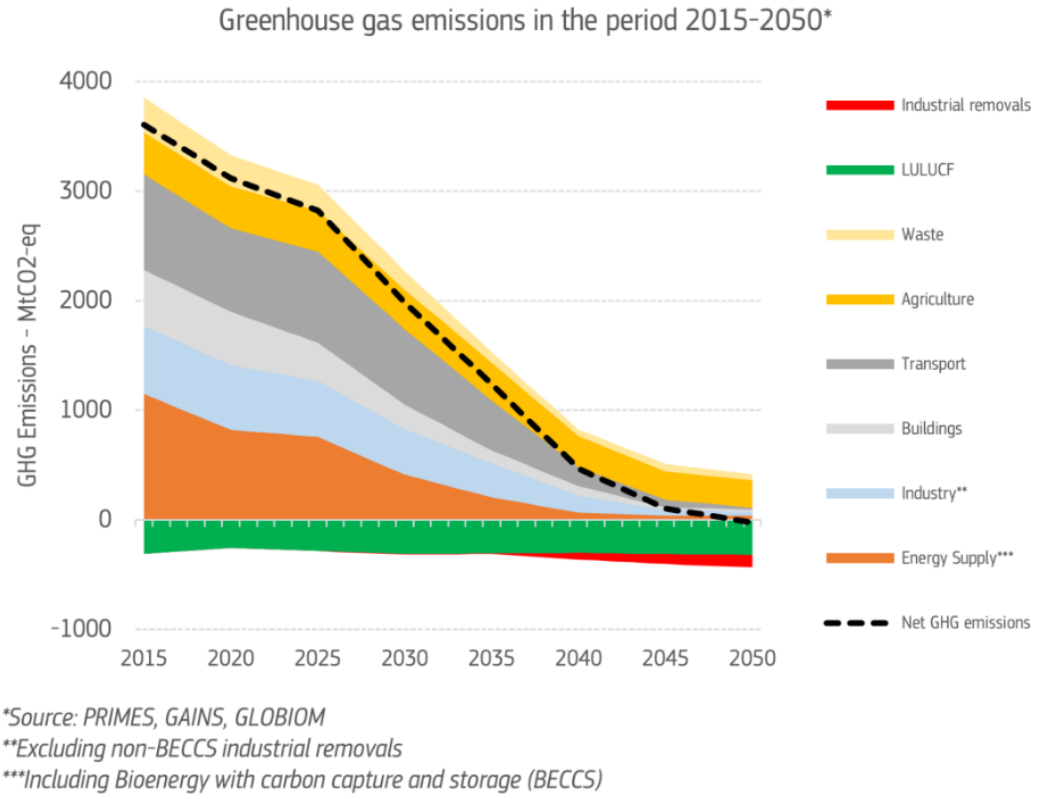



***Figure 1.*** *Greenhouse gas emissions in the EU, 2015–2050, by sector, in MtCO2-equivalent. Source: PRIMES, GAINS, GLOBIOM.*

## Evolution of European Climate Leadership

Climate Leadership within the EU has evolved significantly over time; however, the European Green Deal was a dramatic shift in the way the EU approached climate policy. Instead of viewing climate policy as primarily about environmental regulations, the Green Deal attempts to reformulate Europe's entire economic structure. The European Commission stated that the Green Deal will assist in changing the European economy into a modern economy that is resource-efficient and competitive while creating a carbon-neutral Europe by 2050 (European Commission, 2019).

An advantage of this new climate policy model is that climate change cannot simply be regulated through emissions standards alone. Therefore, industrial policy, energy policy, transportation, agricultural policy, financial regulations, and technological innovations must work together.

The “Fit for 55” package therefore translated the EU’s 2030 climate ambition into law across multiple sectors. According to the European Commission, the Fit for 55 Package places the EU on a path to achieve its 2030 climate ambitions while protecting competitiveness and ensuring a just transition (European Commission, 2025).

This represents a significant transformation in the way scholars view climate governance. For example, Oberthur and Dupont (2021) stated that the EU’s role in shaping international climate governance is no longer limited to domestic climate policy but also includes influencing international climate policy. Similarly, Wurzel et al. (2017) described the EU as a key player in global climate politics, whose influence comes from combining its internal regulatory capabilities with its diplomatic capabilities at the international level. Therefore, EU climate leadership depends on two factors: what the EU does internally and how much influence those actions have on other countries.

This new stage represents the next step in developing climate governance in Europe. In contrast to the 2050 neutrality goal, which remains somewhat removed and intangible with respect to time, the 2040 target offers a mid-term milestone. The European Commission states that this target creates increased predictability for governments, businesses, and investors, as well as providing a strong impetus for both innovation and longer-term investment in low-carbon technologies (European Commission, 2026a).

However, the geopolitical landscape in which European climate leadership occurs today is dramatically different from when the European Green Deal was first presented. China has established itself as a leading global manufacturer of clean technologies, such as solar panels, batteries, and electric vehicles. The U.S. has taken similar actions by implementing large-scale incentive programs to support private sector investment in clean energy and related technologies. Thus, European climate policies are increasing, and it has become a race to see who will develop and produce the technologies necessary for a low-carbon economy.

## The 2040 Climate Target

The 2040 objective for the E.U. will act as the cornerstone of its current climate trajectory. The revised European Climate Law sets a legal obligation to achieve a 90% decrease in net GHG emissions relative to 1990 levels by 2040. A minimum of 85% domestic achievement was required. International carbon credits (high quality) can account for up to 5% of the total decrease. (European Commission 2026a).

The importance of this objective lies in establishing a link between the two objectives set by the EU, specifically the 2030 objective requiring at least a 55 percent reduction and climate neutrality by 2050. Establishing this middle objective will help reduce the likelihood that climate neutrality remains an idealistic target without sufficient policy pressure from intermediate targets. The European Commission has stated that this target provides "pragmatic and flexible" pathways toward achieving a decarbonized European economy. (European Commission 2026a).

This target can also lead to major economic benefits. As previously mentioned, a transition to a lower-carbon world will require massive investments in various forms of renewable energy (e.g. solar power), electric vehicles, energy-efficient construction, low-carbon manufacturing processes, energy storage technologies, hydrogen production technologies, carbon capture and storage technologies, and upgrading electrical grids. Such investments are likely to promote technological innovations and the development of new industries. Stern (2007) estimated that the costs associated with failing to address global warming would far exceed the costs associated with acting in time to mitigate it. Additionally, Porter and Van Der Linde (1995) demonstrated how effective and thoughtful environmental

regulations can foster innovation and increase competitiveness.

Significant advances have been made in the field of renewable energy in the EU. A report from WindEurope stated that during the first six months of 2026, Europe installed over 8.8 GW of wind power, which was nearly 30% greater than the same time frame in 2025. This demonstrates that both technological and industrial development are possible while implementing climate policies. However, all these advancements require grid expansion, additional storage, and system integration. The International Energy Agency (IEA) reports that challenges associated with clean energy supply chains, outdated infrastructure, and the integration of energy systems will continue to exist (IEA, 2026).

Consequently, the 2040 goal should be viewed as both an industrial and climate strategy. For the EU to lead in terms of climate, it cannot become reliant on foreign companies to produce the technology needed to meet its own climate objectives. Therefore, strategic autonomy will require European production capability in areas including but not limited to battery production, renewable energy equipment, power electronics, semiconductors, grid technology, electric vehicles, and others identified as being critically important.

## Climate Leadership and Energy Security

One of the most compelling reasons for accelerating Europe’s clean energy transition is energy security. Prior to Russia's invasion of Ukraine, Europe was highly reliant on imported fossil fuels which made it extremely vulnerable to a number of geopolitical risks. When Russia invaded Ukraine in February 2022, this vulnerability became apparent as the resulting energy crisis illustrated how quickly an external conflict could be felt by European households through increased energy costs and industrial production through decreased supply.

The International Energy Agency (IEA) argues that the energy system in Europe underwent significant changes after Russia invaded Ukraine in February 2022. Specifically, the IEA argued that "countries reduced their reliance on Russian fuels while increasing renewable capacity and improving diversification" (IEA, 2026). In addition to creating a relationship between climate policy and strategic autonomy, reducing fossil fuel usage can provide both countries and households with a reduction in greenhouse gas emissions and exposure to geopolitical coercion.

The energy transition creates new security risks for the same reasons. To achieve a sustainable future, we will need critical minerals and advanced manufacturing technology for green technologies are required; however, these will be produced in complex global supply chains.

Therefore, climate leadership by the EU does not imply an exchange of dependence on hydrocarbon imports from Russia for dependence on an alternative group of foreign producers. For this reason, it is necessary for the EU to have diverse supply chains for its energy resources, as well as recycling, technological substitutes, reserve stocks, and domestic production capacities. Therefore, energy and industrial policies must be much more aligned to meet the ambitions of a low-carbon economy.

Thus, the definition of “energy independence” should be expanded. It will never be possible for the EU to produce all of its own energy or even to do so completely independently; instead, strategic autonomy means having sufficient diversity, domestic capacity, and technological alternatives to preclude any external producer or supplier from exerting too much coercion over the EU.

## Climate Resilience Leadership

Climate leadership should not only focus on mitigating the impacts of global warming. To be prepared for what has been described as the “inevitable” consequence of global warming, the EU will need to develop an ability to adapt to

these climate-related effects. The European Environment Agency (EEA) has identified climate-related risk factors that may significantly impact areas such as food, energy security, physical structure, infrastructure, availability of water, financial stability, ecosystems, and public health (EEA, 2024).

The thirty-six identified climate related risk factors indicate that there is a growing recognition that adapting to climate change is becoming increasingly necessary. For example, heat waves may create serious health problems and reduce the capacity of agriculture to produce crops. Droughts may jeopardize both hydroelectric power production and drinking water supply. Floods may damage homes, businesses, roads, and other infrastructure. Wildfires can lead to loss of community and destruction of entire ecosystems. Finally, rising ocean levels threaten coastal development and structures.

Therefore, climate resilience must be a central element of economic planning at the EU level. In addition to their purely economic returns, infrastructure built with money from EU programs must be evaluated in terms of how well they can withstand future climate conditions. For example, it is about the resilience of energy supply grids, traffic ways, hospitals, communication infrastructures, and urban planning in general against climate risks.

This is also a matter of social justice. Extreme weather events and energy price hikes do not affect all households and areas equally. In addition, householders who are already under economic pressure have fewer opportunities to protect themselves against extreme temperatures, increased energy prices, floods, etc.

Therefore, the “Just Transition” and the “Social Climate Fund” Mechanism of the EU (European Commission, 2019; European Commission, 2025) represent the first steps in ensuring that a carbon-free economy does not hit lower-income populations especially hard.

The success of European climate policy will depend, in part, on whether the reduction of CO2 emissions is accompanied by a socially and politically acceptable transformation. If there are significant distributional effects of the climate strategy, this may lead to political resistance and undermine the successful implementation of a long-term climate strategy.

## Europe as a Global Climate Norm Entrepreneur

Climate Leadership is an additional significant area of international influence for the EU. Historically, the EU has employed both normative and regulatory power to exert its influence internationally. This influence is exhibited by the EU in climate politics through such areas as emissions standards, carbon pricing, environmental regulation, trade policies, foreign aid, and international negotiations.

A very specific example of how the EU exercises this type of influence is through its Carbon Border Adjustment Mechanism (CBAM). By charging a carbon fee to imported products that are considered to contribute to greenhouse gas emissions, the EU seeks to discourage carbon leaking into the global economy while encouraging producers outside Europe to produce lower emissions.

This reflects the “Brussels Effect”, as described by Bradford (2020), which refers to how large markets and high regulatory standards adopted by the EU for environmental policy issues can shape practices outside of the EU’s borders. Therefore, climate regulations can have economic and geopolitical influences.

However, international cooperation is required to exercise European regulatory power. Developing countries often argue that new ambitious climate rules require finance, technological transfer, and capacity development. In this respect, the EU must balance its regulatory ambitions with diplomatic climate action efforts.

The importance of this type of balance is most evident in Africa, Asia, and other developing areas, where the costs associated with adapting to climate change are significant and access to clean energy financing is still uneven. For European leadership to be viewed as credible regarding its climate strategy, it must demonstrate that its climate strategy is intended to provide a basis for supporting global decarbonization rather than simply attempting to export regulatory burdens.

## The Industrial Challenge

One of the biggest obstacles facing European Climate Leadership is industrial competitiveness. There are many investments required for decarbonizing Europe, and these investments need to happen at a time when there is a great deal of competitive pressure on EU-based manufacturers from both the U.S. and China.

The Commission's own research indicates that it believes it will be necessary to increase Europe-based production of various manufactured goods, including battery technology, electric vehicle manufacturing, heat pump technology, and solar panel technologies (European Commission, 2024). Therefore, the goal of the European Union's climate policies should be to develop European industrial capacity to meet this increased demand, instead of simply creating additional demand for clean products manufactured outside the European Union.

A closer relationship needs to be developed between industrial policy and climate policy for the EU to create a solid base of clean technology in Europe through public investments, R&D spending, training of skilled workers, construction of infrastructure, and use of strategic purchasing by the EU. EU policymakers must simultaneously refrain from an overprotective approach toward European industry that would add costs and hamper innovations.

Therefore, a more appropriate goal for the EU is competitive decarbonization, which lowers emission levels while increasing the competitiveness of the European economy and its technological capabilities. Competitive decarbonization is arguably the biggest test of the 2040 targets.

If the EU can demonstrate that ambitious climate policies do not negatively affect competitiveness, the EU's international influence will significantly grow. It is more probable that other states will replicate a model which creates economic advantages rather than those who view their model as primarily creating economic disadvantages.

## Major Policy Challenges

Several challenges confront the future of European climate leadership:

**The challenge of implementation of capacity.** European climate objectives call for cooperation between the EU's governmental institutions, member state governments, regional authorities, companies, and individuals. Due to differences in their respective national energy systems and levels of economic development, it will be challenging for all member countries to implement these goals uniformly.

The second obstacle is the political opposition. Policies addressing the impact on energy prices, transportation, agriculture, and industry generated by the shift from fossil fuels to renewable energy sources may elicit strong political opposition. Therefore, a fair distribution of transition costs is necessary for the EU.

**The challenge of funding.** The amount of money needed to fund this massive transformation into low-carbon economies is significant. Investing in climate change may require taking money from social welfare and persians, from defense against Russia, or other important goals. Private financing may be required in addition to government funding. But diverting private money could require shifting money from the more dynamic parts of the regional economy, endangering industrial competitiveness and growth.

**Technological dependence**. Unless the supply chain for critical minerals and low-carbon technology can be diversified, Europe's climate objectives will increase its dependency on foreign supplies of these materials.

**Global fragmentation**. For Europe to significantly influence the reduction of greenhouse gas emissions through climate ambition, there must be some restraint by other countries from increasing their emissions. Therefore, the EU must improve its climate diplomacy and partnerships with other nations.

**Policy contradictions**. Climate ambition may also be negatively affected if the EU uses different forms of support (subsidies), protectionism (trade measures), incentives (agricultural policies), or infrastructure planning that encourages carbon-intensive activities.

## Policy Recommendations

Unlike most other international bodies like the United Nations, decisions by the European Commission are binding on the 27 Member States. This gives the body enormous power, but also explains why it is slow and careful to act. A wrong move, forcing a Member State in a direction it does not want to go, could fracture the EU.

The EU has an opportunity to place implementation credibility at the center of its strategy to meet its 2040 goals. Instead of continuing to expand headline targets, EU institutions could focus on achieving measurable reductions in greenhouse gas emissions through compliance with existing commitments. Some proposal for action include the following:

**Move forward rapidly with investment in electrical power distribution systems (electricity grids) and energy storage systems**. Renewable energy deployment is limited by the lack of a modern transmission network system, lack of interconnection of regional renewable resources, lack of storage to allow excess generation to be stored until it is needed, and the inability to shift flexible loads when renewable generation exceeds load demands. Coordinating policy among the 27 Member States will be an essential challenge to overcome, as will the problem of how to pay for it.

**The EU could invest aggressively to ensure its access to Critical Minerals**. Such as rare Earths, currently imported almost entirely from Africa and China. Possibilities for action include subsidizing mining and production in Europe, reducing environmental rules that currently make this impossible, reducing imports, promoting recycling, substituting minerals through research and development, establishing strategic partnerships (such as with Algeria, Canada or Egypt). Some aspects of such a plan require sacrificing environmental goals, since rare Earth production is highly polluting.

**Climate Adaptation can be elevated, given the same strategic importance as other EU goals** such as controlling mitigation. supporting Ukraine in its war with Russia or the restoration of European defense capability. As part of this, the results of the EEA's climate risk assessment could be integrated systematically into all relevant areas of planning within the EU, including those relating to foreign aid, defense policy, infrastructure protection, agriculture, health, and finance.

**The EU can increase support for its international climate partnership activities,** ensuring more global support, especially in developing countries. In doing so, European climate diplomacy should simultaneously work to reduce emissions while cooperating in the field of clean technologies, provide funding for adaptation measures in developing countries, provide financing for climate-related projects in developing countries and build up technical capacities in developing countries.

But there is little or n money available. This is a time when EU foreign aid spending is rapidly dropping and finances shift to support for Ukraine in its war with Russia and Europe's own defense

preparations. An emphasis on global efforts will through foreign development aid funding will require cuts in other programs, probably defense or healthcare, welfare and pensions

**Europe's climate policies can be made more socially inclusive.** There is no way that the cost of transitioning to a low-carbon economy will not be borne by lower-income households, workers employed in high carbon-intensive industries, or economically vulnerable areas of Europe. But reducing burdens will require large-scale financing, involving cuts in other programs, probably defense or healthcare, welfare and pensions

**The EU can stress climate leadership as an element of its strategic autonomy.** While the green transition can help reduce dependence on imported oil and natural gas, enhance technological capability, and increase European economic resilience, it will only do so if both industry and supply chain vulnerabilities are reduced simultaneously.

## Advancing European Climate Leadership

The 2040 goal provides an excellent opportunity for this. Achieving a 90% decrease in net greenhouse gas emissions would represent a fundamental transformation of the European economy and provide a clear path toward a carbon-neutral economy by 2050. This goal should not be seen solely as an environmental commitment; it should serve as the foundation for a new economic strategy for Europe, focused on clean energy technology innovation, industrial modernization, and resilience.

Europe can utilize its regulatory and market authority to shape global norms through climate regulations. The EU's climate policies can incentivize multinational corporations to adopt cleaner production processes while promoting climate diplomacy globally, allowing European models to be disseminated worldwide. While utilizing regulatory authority to lead international climate policy development may be sufficient, demonstrating economic and technological success is necessary.

To provide the most effective type of European Climate Leadership, Europe needs to take advantage of all forms of European power (normative, regulatory, technological, and economic). Europe cannot simply tell other nations which climate policies they need to implement for their own good; however, if Europe demonstrates through its' own example that deep decarbonization can result in a prosperous economy with energy security, industrial innovation, and social resilience, this will help increase the likelihood of success in implementing global climate policy and will also create an opportunity to reinforce European Strategic Autonomy.

Renewable Energy helps reduce Europe’s dependence on fossil fuel geopolitics, domestic production of clean technology provides the ability to be independent from foreign technology, Resilient Infrastructure protects against the impact of climate shocks, and Climate Diplomacy expands opportunities for Europe’s International Partnerships. Therefore, European Climate Leadership should be viewed as a form of Strategic Statecraft.

European climate leadership is not about militarizing climate policy. Rather, it is about recognizing that economic resilience, energy independence, technological capacity and environmental sustainability are becoming more important factors of geopolitical power.

## Conclusion

The European Union has become an influential actor, perhaps the most influential leader, in global climate governance. By establishing legally binding objectives it made commitments that match or surpass those of any other major or middle sized country: climate neutrality by 2050, emissions reduction by 2030, and new climate-neutrality objectives by 2040. As such, the EU’s

plan to cut net greenhouse gas emissions by at least 90 percent by 2040 is a significant move toward a climate-neutral future and will serve as a bridge toward the 2050 goal.

The EU and its Member States are proud of their leadership, but maintaining that role will be increasingly painful and costly, requiring difficult trade-off with other national, regional and global goals. Climate-related obligations matter, but so do democratic support, social cohesion, economic affordability, political legitimacy, economic competitiveness and regional security and defense.

The European Climate Risk Assessment has demonstrated the need for adaptation, while the current energy crisis has shown how climate policy and international relations are connected in terms of security.

Therefore, the EU's greatest chance lies in transforming climate leadership into strategic resilience. Measures like decarbonizing economies and reducing reliance on fossil fuels, will help, as will policies to strengthen European capabilities in clean technologies. But if the cost is reliance on imports of electric cars from China and the bankruptcy of the European car industry, for example, there may be second thoughts.

Ultimately, the credibility of Europe's climate leadership will depend on its ability to balance reduction of greenhouse gas emissions with strategic interests. Then the 2040 and 2050 goals can evolve into a template for a new European paradigm of sustainable economic and geopolitical strength.

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