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The Limits of Renewable Energy Policies in the European Union: The Case of Germany

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Audience: European Commission, Research and Energy Committee (ITRE) and energy policy makers in Germany.

KEY POINTS

1. There is a gap between the EU's renewable energy targets and the results achieved in practice.

2. In Germany, electricity grid and energy storage issues make the efficient use of renewable energy difficult.

3. Cooperation between EU countries should be strengthened and investments in energy infrastructure should be increased.

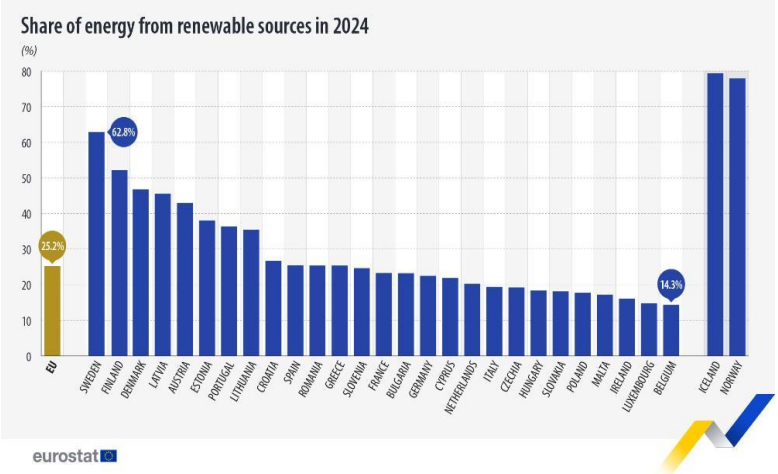
EUROPEAN UNION

Summary

In the European Union, there are common goals and Decrees between countries to increase the use of renewable energy and reduce the rate at which people use fossil fuels. In my work as an environmental policy analyst, I am examining how the EU's renewable energy policies are implemented in Germany and in which areas shortcomings continue. The hypothesis of the policy brief; Although there are common goals and rules in the European Union, factors such as lack of policy implementation, capacity problems in electricity grids and energy storage deficiencies restrict energy conversion. According to my research, Eurostat's 2024 reports, renewable energy accounts for 25.2% of the EU's total energy consumption, while Germany's is 22.5%. According to the European Commission's 2026 Germany Country Report reports, although renewable energy capacity has increased, we observe that problems such as grid capacity, flexibility and digitalization still persist (Eurostat, 2025; European Commission, 2026). These findings of mine actually show that increasing renewable energy production alone is not sufficient. Therefore, our recommendations in this study are as follows; the European Commission should follow current policies more carefully, regulate electricity grids and support energy storage investments. Additionally, the EU should strengthen energy planning among member states. Therefore, the main argument of my study is that the EU urgently needs to reduce the gap between its policy objectives and implementation and infrastructure capacity in the renewable energy transformation. If he does not reduce it, he will continue to face negative consequences.

1. The EU's Renewable Energy Targets and the Implementation Gap in the Field

The European Union has common goals and legal regulations to increase the use of renewable energy and reduce the rate at which people use fossil fuels. In this context, the Renewable Energy Directive, updated in 2023, aims to increase the share of renewable energy in the gross final energy consumption of the EU to at least 42.5% by 2030. However, setting a goal does not, of course, mean that the goal will be achieved. It is among the conditions for member states to make the necessary investments, implement renewable energy projects and make their energy systems suitable for this transformation. According to the data published by Eurostat in 2025, renewable energy accounted for 25.2% of the EU's gross final energy consumption in 2024. This rate is 17.3 percentage points lower than the targeted plan for 2030. This situation shows us that the EU is making progress in the use of renewable energy, but the pace of increase is not enough. In other words, the main problem is not only to set goals, but to investigate whether progress is rapid to achieve these goals. Germany is an important example that definitely needs to be looked at in this regard.



According to Eurostat data, in 2024, renewable energy accounted for 22.5% of Germany's gross final energy consumption. This rate remained below the EU average of 25.2% for the same year (Eurostat, 2025). However, it would not be correct to look at these figures and conclude that all of Germany's efforts in the field of renewable energy have failed. Because gross final energy consumption includes not only electricity production but also energy use in heating, transportation, industry, and other sectors. The share of renewable energy sources in electricity generation is higher in Germany. According to the data of the German Federal Grid Agency, renewable energy sources account for 58.8% of the country's total electricity production in 2025 (Bundesnetzagentur, 2026). This difference shows us that the developments in electricity production alone are not enough to create a change in the total energy consumption of the country to the same extent.

The report states that there has been progress in renewable electricity production and investments in electricity grids. However, the flexibility of the energy system, the digitalization of grids, and the widespread adoption of smart meters still remain issues. Moreover, it is possible to say that fossil fuels still maintain their presence in Germany and hold a significant share. The Buddha reveals the necessity of not only increasing renewable energy, but also transporting the generated electricity to the regions that need it, storing it and using it in different sectors. These problems reveal an important deficiency in the implementation of the common policies of the European Union. The energy systems of the member states, their economic situation, investment power and renewable energy sources are different from each other.

For example, in places where there is a lot of wind and solar energy, the electricity grids should be able to carry this energy. When production is high and consumption is low, excess energy should be stored or sent to other regions. Network investments are progressing slowly, storage capacity is limited, and energy connections between countries have not been sufficiently strengthened. This situation makes it difficult to use renewable energy efficiently. Therefore, when examining the EU's renewable energy policy, simply looking at targets and installed capacity is not sufficient. To achieve the goals, the extent of infrastructure development, what member countries are doing, and how shortcomings are being addressed should also be taken into account. According to the data I have reviewed, the EU has progressed in the transition to renewable energy, but it shows that it needs faster and more harmonious implementation to achieve the goals. The main argument of this study is that besides setting new targets, the EU should strengthen existing policies, improve electricity grids and increase energy storage investments.





2- Expansion of Electrical Networks and Energy Storage

Increasing renewable energy production requires robust electrical grids. Additionally, since wind and solar energy production varies according to weather conditions and time of day, energy storage and flexible electricity infrastructure are also important.

Germany is an important example for us in this regard. According to the European Commission's assessment of Germany, the lack of capacity in the grids and the low flexibility of the energy system are among the factors that make it difficult for renewable electricity to be included in the system. Although network investments are progressing, the expansion of infrastructure and digitalization of electricity networks are very important.

This shows us that there is a gap between increasing renewable energy and the current system reaching a level that can use this energy Decently. If networks and storage systems are not built quickly enough, renewable electricity generated from time to time cannot be fully sent to the system. During periods when energy production is low, other energy sources may still be needed, especially fossils.

The European Union can support cross-border electricity connections, infrastructure investments, and cooperation between countries. While EU support is important, national grid planning and implementation processes also remain decisive. Aligning renewable energy targets with infrastructure investments will contribute to reducing these problems.



(Renewable energy production and battery storage systems)

3- Cooperation in Energy Policies between the EU and Member States

The renewable energy transition requires cooperation between the European Commission and member states. The EU determines common goals and legal regulations. Member countries, on the other hand, implement energy and climate plans, invest in energy infrastructure, and manage their countries' energy systems.



(Cooperation between the member states of the European Union on energy Decision)

Therefore, it is important that the goals set by the EU and the practices of member states are compatible with each other. The example of Germany shows us environmental analysts that even if renewable energy production increases, the rate at which countries use fossil fuels has not completely disappeared. According to the European Commission's 2026 Germany Country Report, renewable energy accounted for 61.1% of Germany's electricity generation in 2025. However, resources such as oil, natural gas and coal have continued to maintain their importance in countries (European Commission, 2026). The main reason for this is that electricity production and total energy consumption are different things. Total energy consumption; in addition to electricity, it also covers the energy used in transportation, home heating and industry. The development of energy infrastructure and storage systems is not an issue that can be resolved solely through decisions made by individual countries.

Because electricity generated from renewable energy sources is not always produced in the same quantity; the primary reason for this is weather conditions. For example, during periods of strong wind or on sunny days when solar panels produce excess electricity, an energy deficit occurs. Storing the released energy or sending it to other countries can enable more efficient use of the generated electricity. However, for this to be possible, electrical connections between countries must be sufficient and the energy infrastructure must be robust. The progress made by member countries towards achieving the goals must also be monitored regularly. Additionally, the implementation of countries' national energy and climate plans should be monitored, and joint investments such as electricity interconnections and energy storage should be supported. This way, instead of focusing solely on their own energy needs, countries will collaborate with each other to use renewable energy more effectively.

4- My Recommendations:

- Strengthen the implementation of existing policies : The European Commission should regularly assess the progress of member states towards their renewable energy targets.
- Accelerating the infrastructure construction of electrical networks : The EU should support investments in electricity transmission and distribution infrastructure in regions with high renewable energy production.

- Developing energy storage and flexibility solutions: The EU and member states should encourage investments in battery systems and other suitable energy storage technologies.
- To increase cooperation among member countries: The European Commission should monitor more closely the alignment of national energy and climate plans with EU objectives. Cooperation between the member states on cross-border electricity connections, common infrastructure investments and energy storage solutions should be strengthened Dec.
- Evaluating the renewable energy transformation across sectors: The success of renewable energy policies should not be measured solely on electricity generation. At the same time, the reduction of interest in fossil fuels in the transportation, buildings, heating and industrial sectors should also be included in the assessment.

FOOTNOTES:

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