

**WORLD
ENERGY
COUNCIL**

**WELTENERGIERAT
DEUTSCHLAND**



German Energy Transition – a Blueprint for the World?

10th Anniversary of the International Survey

October 2021

Blueprint Survey— 10th Anniversary

Over the past decade, we have had the privilege of asking the international energy community for their thoughts on an important question: Can the German “Energiewende” serve as a blueprint for the rest of the world?

The Energiewende is Germany’s ambitious energy transformation plan which aims to turn the European Union’s largest economy and most populous country into one that is nuclear-free and carbon-neutral by 2045.

This survey – released every two years – is launching at an especially active time in the clean energy debate. Severe and deadly floods recently struck Germany, thrusting climate change into national political debates. This summer, the European Union unveiled one of the most ambitious climate change proposals in the world, laying out a roadmap to reducing emissions 55% by 2030. Germany has increased its own ambition by ten percentage points to reducing emissions by 65% by 2030 and achieving climate neutrality by 2045, five years earlier than its previous target.

Younger Professional More Likely to See This as a Blueprint

We are pleased that over 80 energy professionals from over 50 countries and spanning six continents agreed to share their views with us. Eighty-two percent of them answered ‘yes’ (28%) or ‘partly’ (54%) when asked if the Energiewende could serve as a blueprint for the world.

For the first time this year we asked for respondents’ ages and found that the youngest (under 35 years old), were about twice as likely to say the Energiewende could serve as a blueprint than their older peers.

What have we learned by asking the same questions for the past ten years? First, we have learned a lot about the international perception of the Energiewende. In some ways we are perceived as leaders. In other instances, our international peers have pointed to what they see as missteps, or elements of the German approach that are not appropriate for their countries. Each country’s unique circumstance and perspective will determine their energy path and their motivations. At the same time, it’s been interesting to see what resonates internationally, and what belongs in the international context. It has been encouraging to witness the increased perception that parts of the German energy approach could translate into other countries’ energy path.

Covid-19 Pandemic Affects Energy Transitions

This debate is happening against the backdrop of the Covid-19 pandemic which has highlighted the starkly unequal access across the globe and within communities to tools needed to combat this deadly virus. About a quarter of respondents said the pandemic has accelerated the energy transition while a third said it has slowed the transition, hinting at a growing clean energy disparity.

As the clean energy debate becomes more nuanced, more globalized and more advanced, it is our sincere hope that this survey will continue to provide the insights we need to ensure Germany plays its role in developing a successful and just clean energy transition.



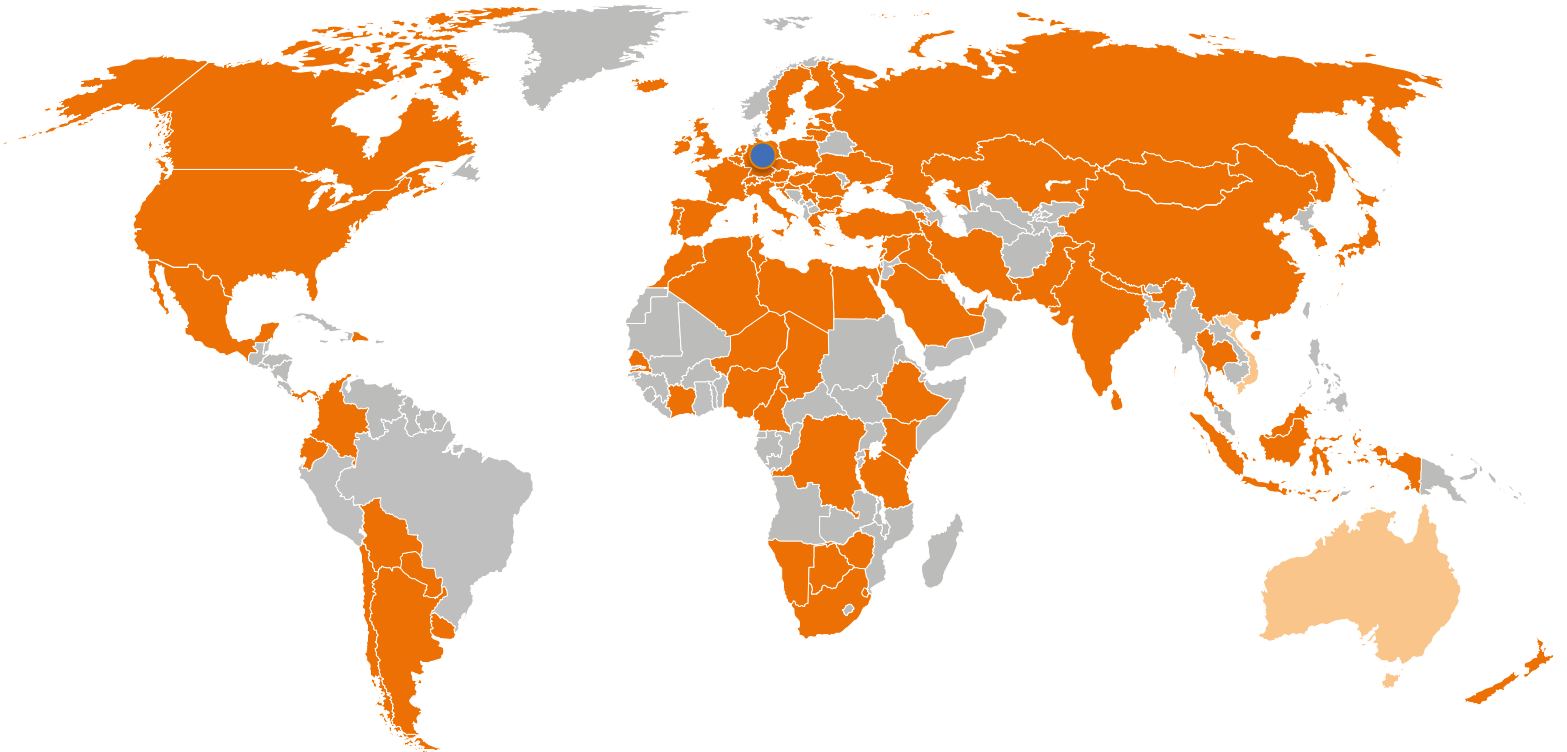
Sincerely,

*Carsten Rolle
Managing Director
World Energy Council
-Germany*

World Energy Council – Germany



- ▶ German Committee of the World Energy Council, a global network of members representing the whole energy system
- ▶ Office in Berlin
- ▶ More than 60 companies, associations and agencies of the energy sector are members
- ▶ Own publications, events, press talks...

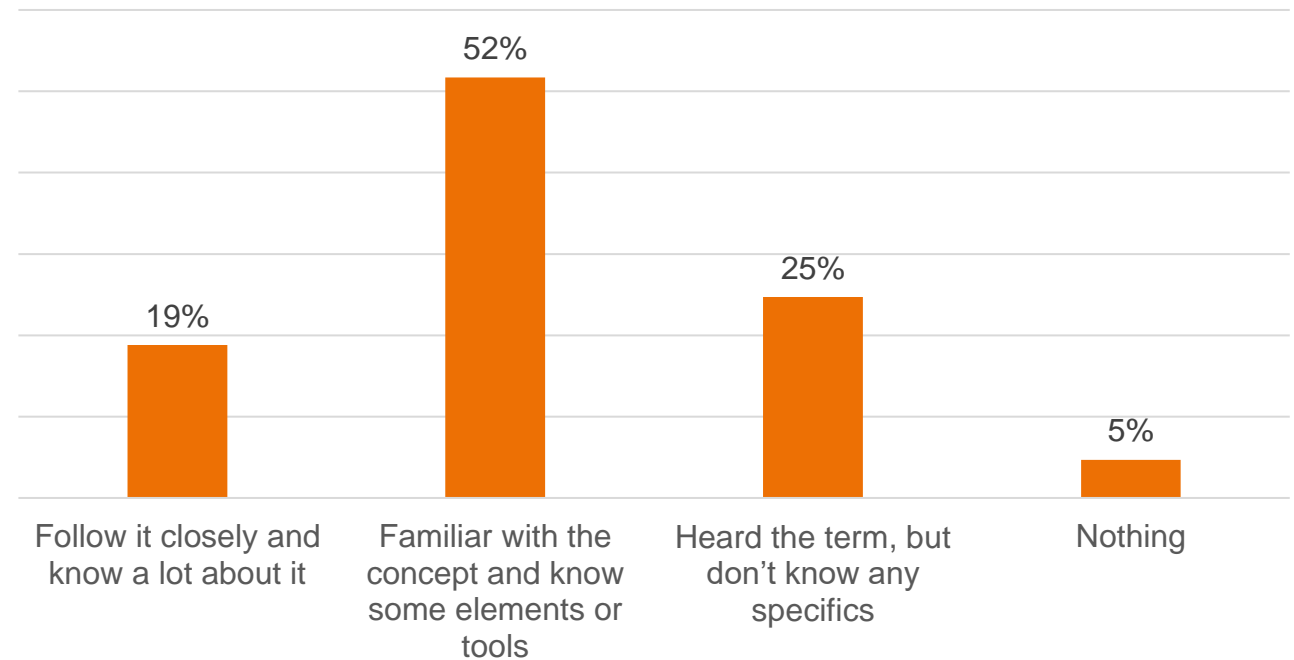


Our aim is to bring the **independent global perspective** into the national debate and to shape the energy system of the future. As part of the World Energy Council, we represent **the German energy system** in the largest global energy network. For almost 100 years, the Council has been committed to a **sustainable energy supply** for the benefit of all people.

The German Energiewende is Widely Recognized...

- **Over 70%** of all respondents said they either follow the Energiewende closely, or are familiar with its concepts.
- Amongst respondents **from the EU**, **100%** said they are familiar with the concept and they follow it closely.

1. How much do you know about the German energy transition, or the “Energiewende”, and its instruments?
(All Countries)



... And is Closely Observed, Particularly in the EU

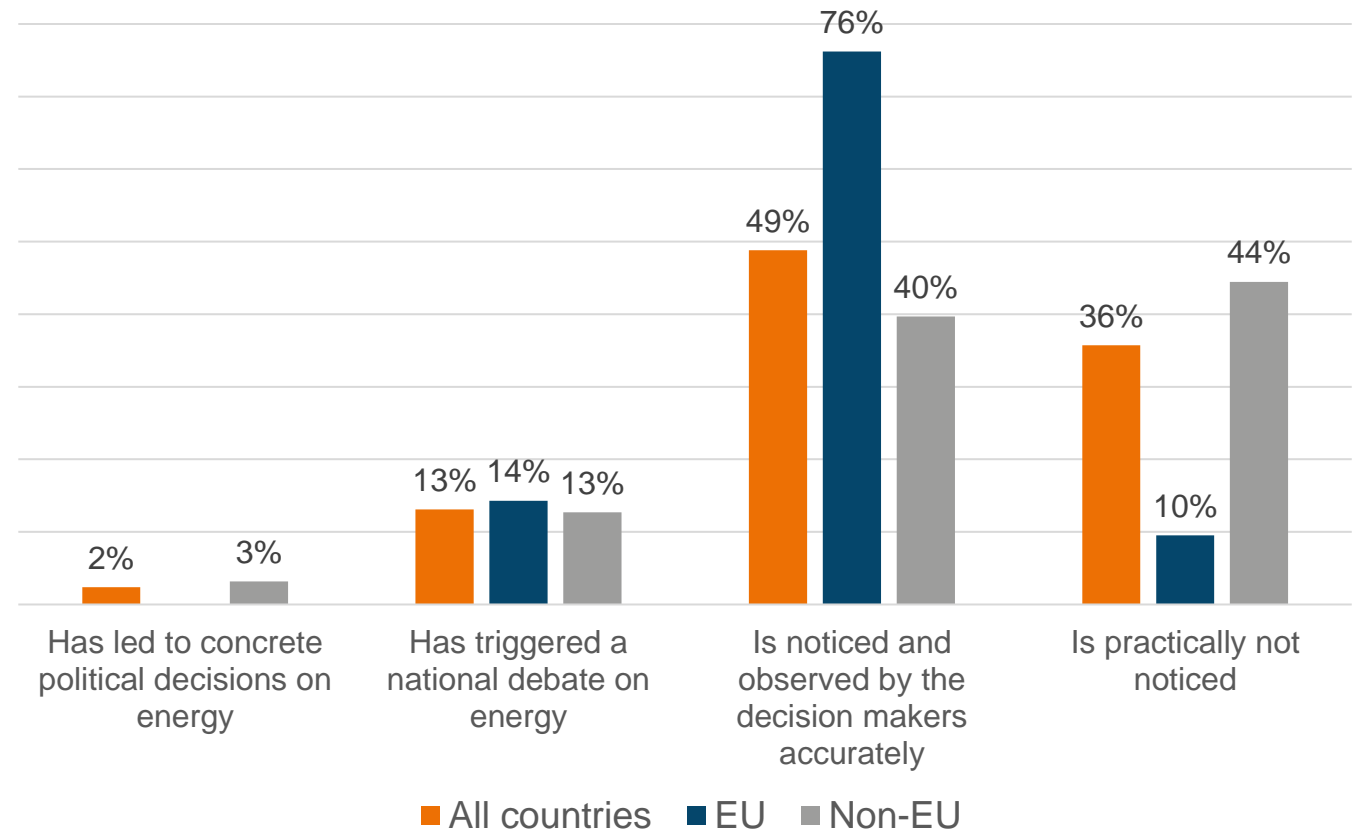
- **Nearly half** said decision makers in their countries are observing Germany's energy transition.
- **Within the EU**, this jumps to **76%**.
- For a small percentage across regions, it has triggered a national debate on energy.



“Comparisons were made with our national energy policy.” – Nigeria

“Outside some researchers and policymakers, Energiewende is not noticed too much in Ecuador...”

2. How is the current German energy policy perceived in your country?

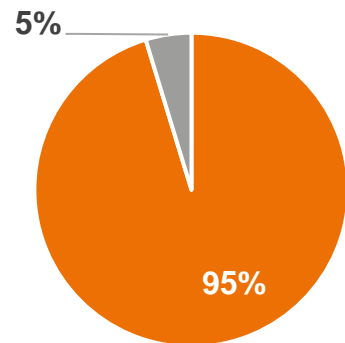


Nearly All Say Germany Will Meet 2030 Renewables Goal, Climate Neutrality More Doubtful

- There is near unanimous agreement that Germany will reach a 30% share of renewable energy in gross final energy consumption by 2030.
- Just over a third feel Germany can reach its 2030 greenhouse gas emissions reduction goal or hit climate neutrality by 2045.

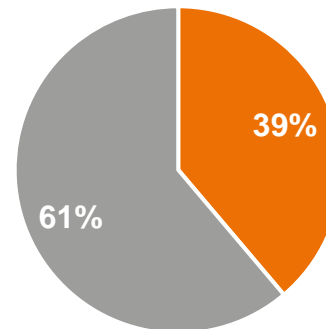
3. How do you assess the feasibility of the German energy goals? (All Countries)

**30% share of renewables
by 2030**



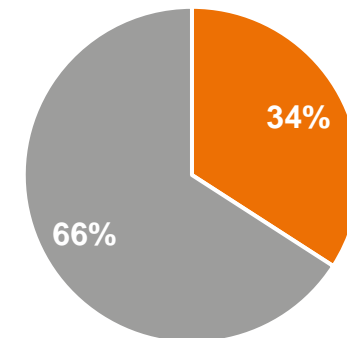
- Likely to implemented
- Will probably not be implemented

**65% greenhouse gas emissions
reduction by 2030**



- Likely to implemented
- Will probably not be implemented

Climate neutrality in 2045



- Likely to implemented
- Will probably not be implemented

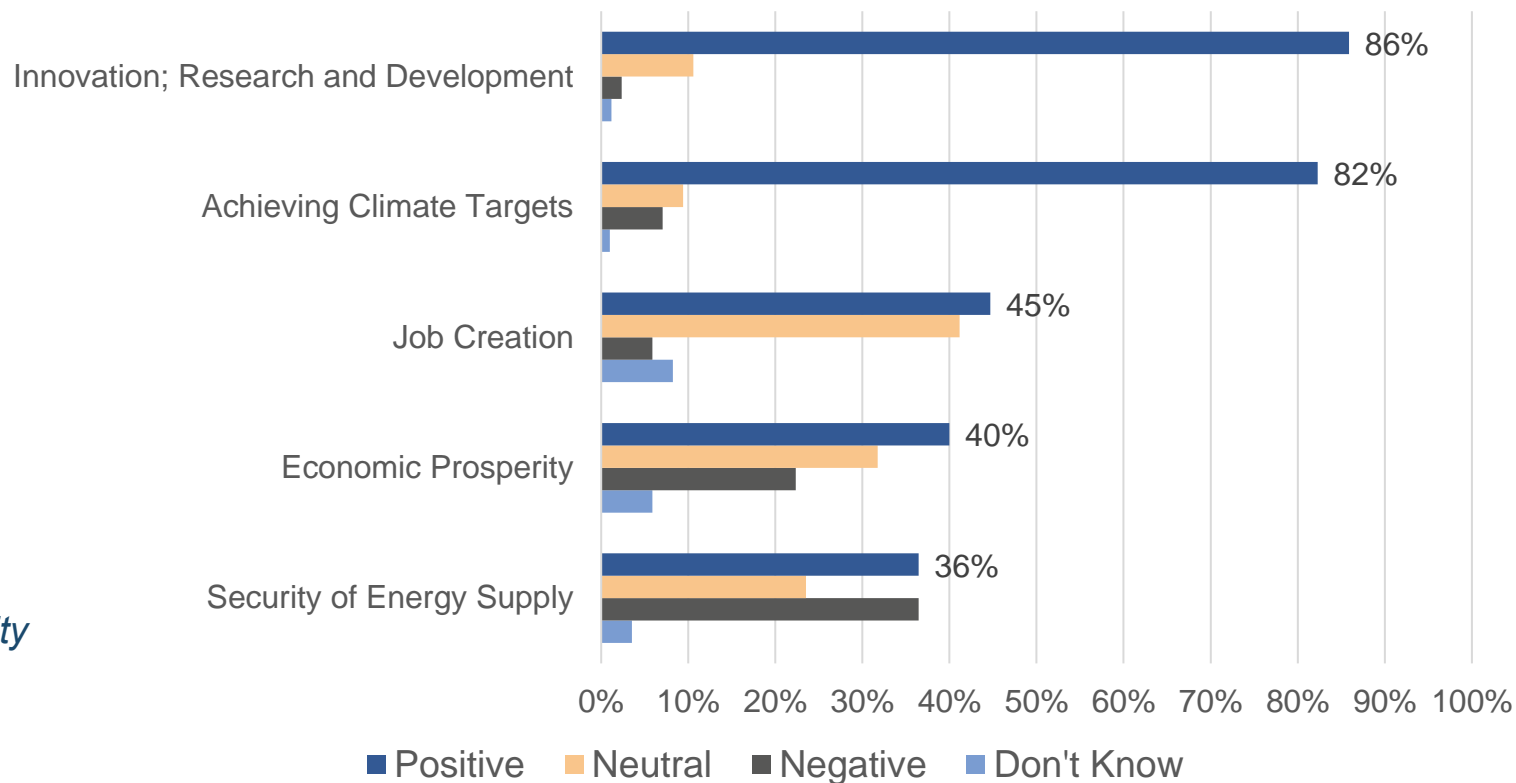
Innovation, R&D and Climate Targets Seen to Most Strongly Benefit From Energiewende

- **Over 80%** say the energy transition will have a positive impact on innovation, research and development and the ability to achieve climate targets.
- Respondents were divided on the impact to job creation, and most negative on the impact to security of energy supply.



“I would expect a transient negative impact on the security of energy supply, but this will in turn provide an incentive for R&D and job creation - it will likely accelerate the transition.” – New Zealand

4. In your opinion, what impact does the German Energiewende have on the following aspects:
(All Countries)



Behavioural Change, Public Acceptance Biggest Risks to Carbon Neutrality

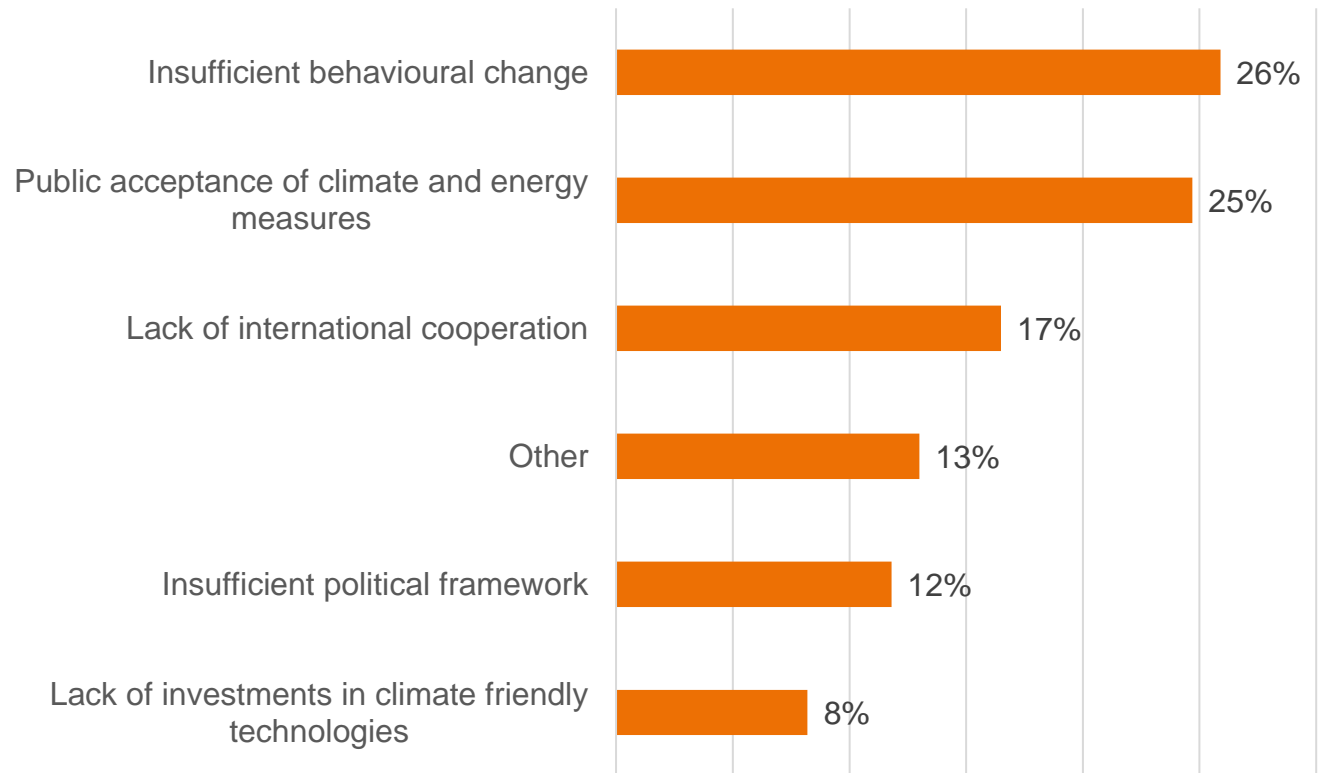
- **Over half** of respondents said a **lack of behavioural change** (26%) and **public acceptance** of energy measures (25%) pose the biggest risks to the ability of Germany to reach its carbon neutrality goal.



“Old habits are hard to change.” – New Zealand

“Energy transition could be threatened by lack of advances in clean technologies helping to reduce final prices to customers.” – Ecuador

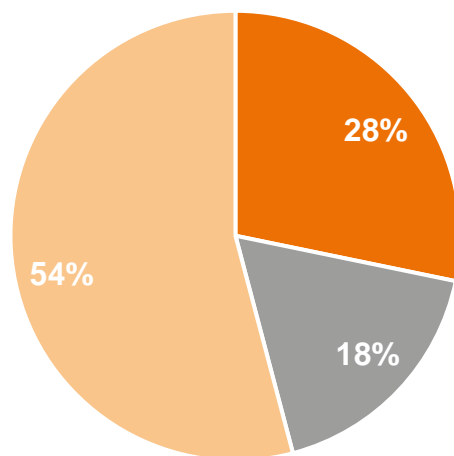
5. What is the biggest risk Germany faces in its efforts to reach its carbon neutrality target by 2045? (All Countries)



Younger Respondents More Likely to See Energiewende as a Blueprint for the World

- Over 80% say all or parts could serve as Blueprint.

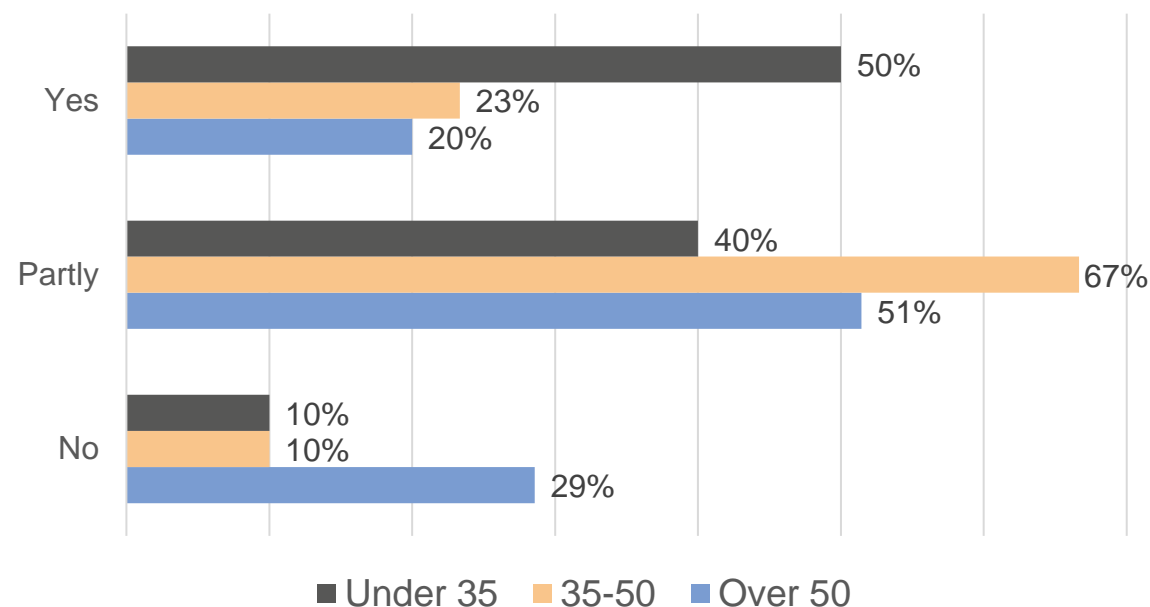
6. Could the current German energy policy serve as a blueprint for the world?
(All Countries)



■ Yes ■ No ■ Partly

- Those **under 35** are more than twice as likely to see the Energiewende as a Blueprint than their older peers.

6. Could the current German energy policy serve as a blueprint for the world?
(By Age)



Why do Respondents Not Fully See Energiewende as a 'Blueprint'?



Cost: *“German policy is very expensive” – France*



Unique needs: *“African countries have very different issues that may not fit the German energy policy” – South Africa*



Need for nuclear: *“Nuclear Energy is likely to be necessary in some countries in addition to renewable sources” – New Zealand*

Most Say at Least Some Elements of Energiewende Can be Adopted

- **Over 70%** said some elements Germany's energy policy could also work in their country.
- **Less than 10%** believe the whole approach could be adopted in their home country.

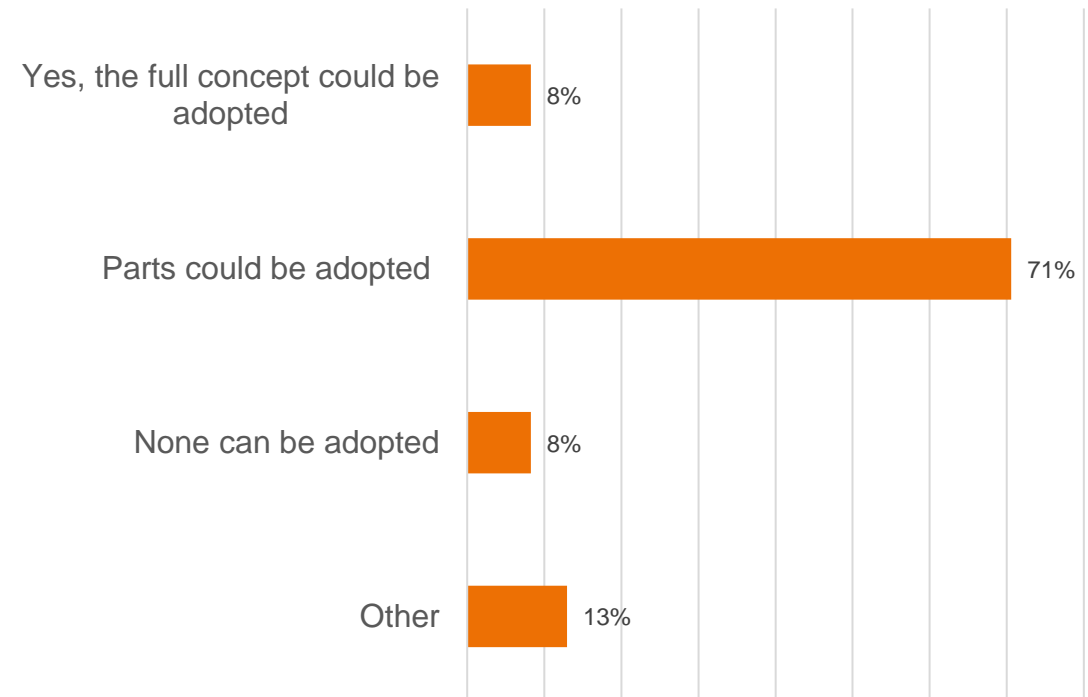


Those who answered 'other' said:

"Some elements are the same but not at the same level and with the same goals. One doesn't suit all." – France

"It is necessary to study all the accumulated experience available in the world before acting." – Kazakhstan

7. Do you expect your country to adopt parts of Germany's energy policy? (All Countries)



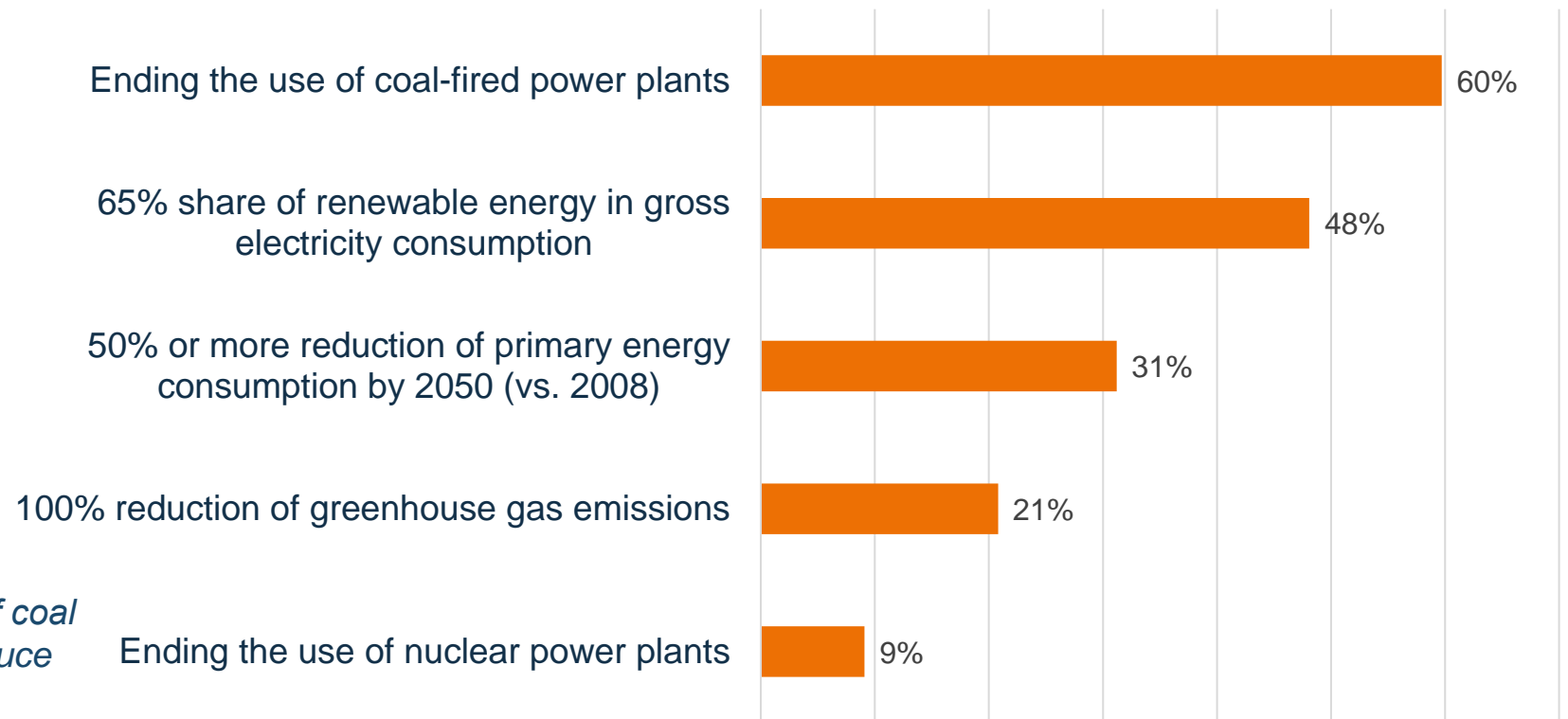
Ending Coal, Increasing Renewables in Electricity Seen as Most Likely to be Used Elsewhere

- **60%** see ending the use of coal fired plants at the element most likely to be adopted in their country.
- Ending the use of nuclear power plants is the least likely to be adopted elsewhere.



“Support for renewables and the end of coal are feasible, but I doubt the goal to reduce primary energy consumption or to end nuclear power [are feasible].” – Slovakia

7a. Which parts of Germany's energy policy do you believe your country could adopt? (All Countries)



More than one answer allowed. Totals equal more than 100%.

Most Say Conditions Not Available in Their Country to Follow German Path

- EU-respondents say they are more likely to have the tools to follow Germany's energy path than those from non-EU countries.

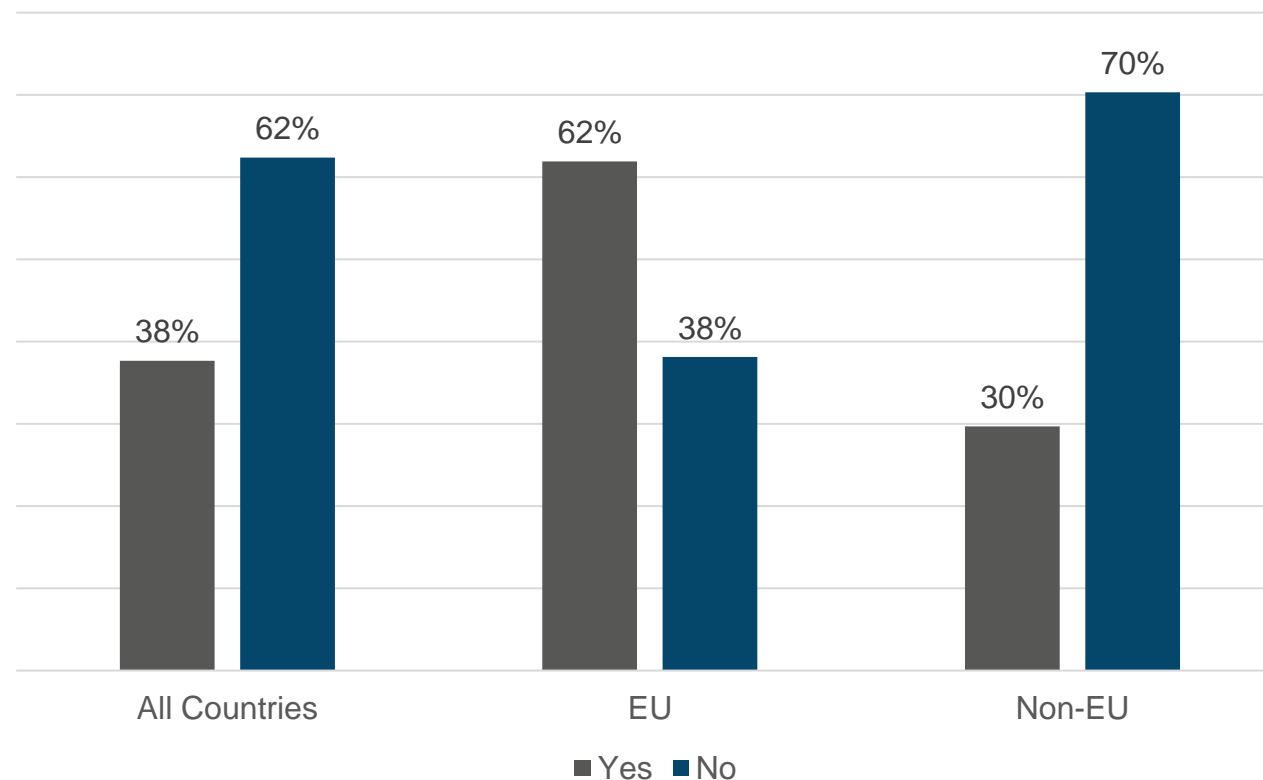


“Finland's gas infrastructure is very different from Germany's”

“The technical conditions are available. However, the economic crisis will delay the transition.” – Lebanon

“The German path is expensive, and the Polish consumers are not able to bear such costs.”

8. In your country, are the technical and economic conditions available to follow the German energy policy path?



Uncertainty About Impact on Trade Relations With Germany...

- **57%** of respondents from the EU say Germany's energy transition will **positively** affect trade relations.
- But **over 40%** say they are **not sure** what the impact will be.

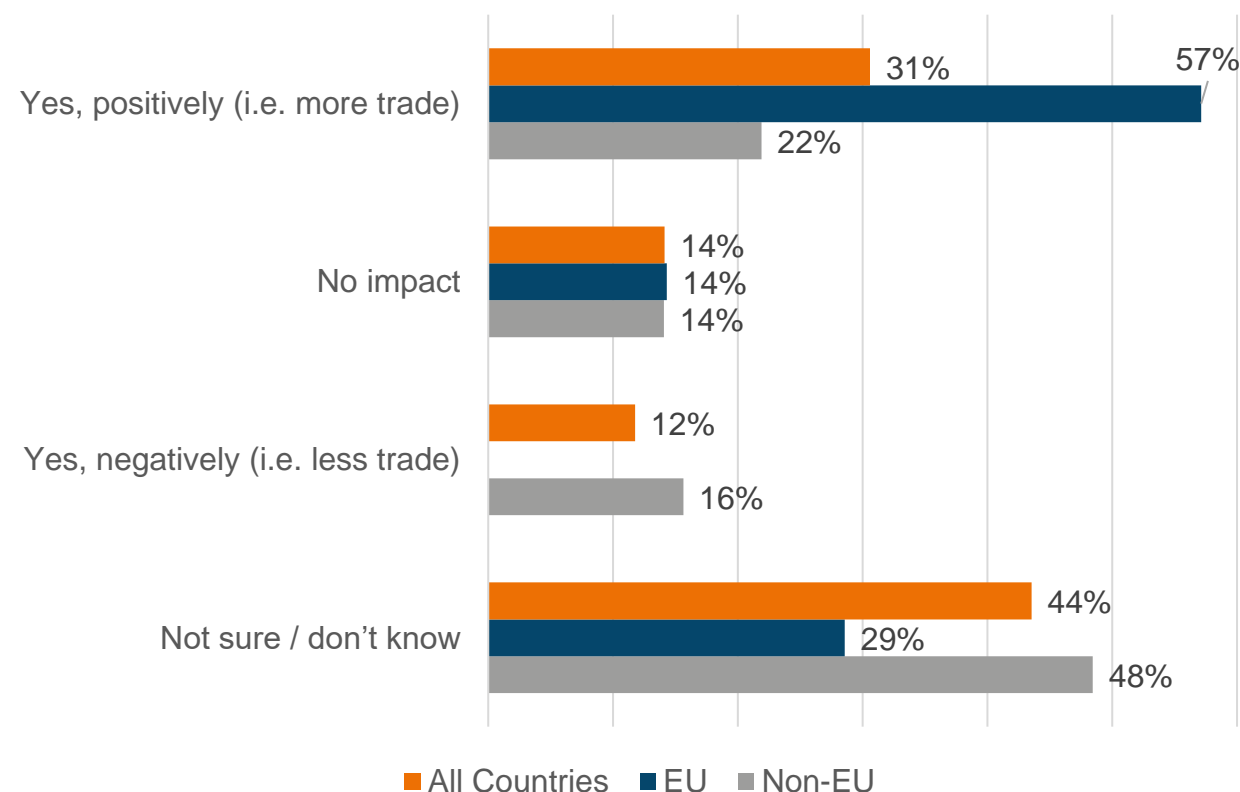


"It could lead to H2 exportation to Germany – or LNG." – Argentina

"There could be a negative effect if EU led Germany imposes punitive climate import duties on countries like India."

"If border taxes are imposed there could be a big impact on trade from South Africa." – South Africa

9. Does Germany's energy transition have an impact on your country's **trade relationship** with Germany?



...But Hold a More Positive View on the Impact to Know-how Transfer

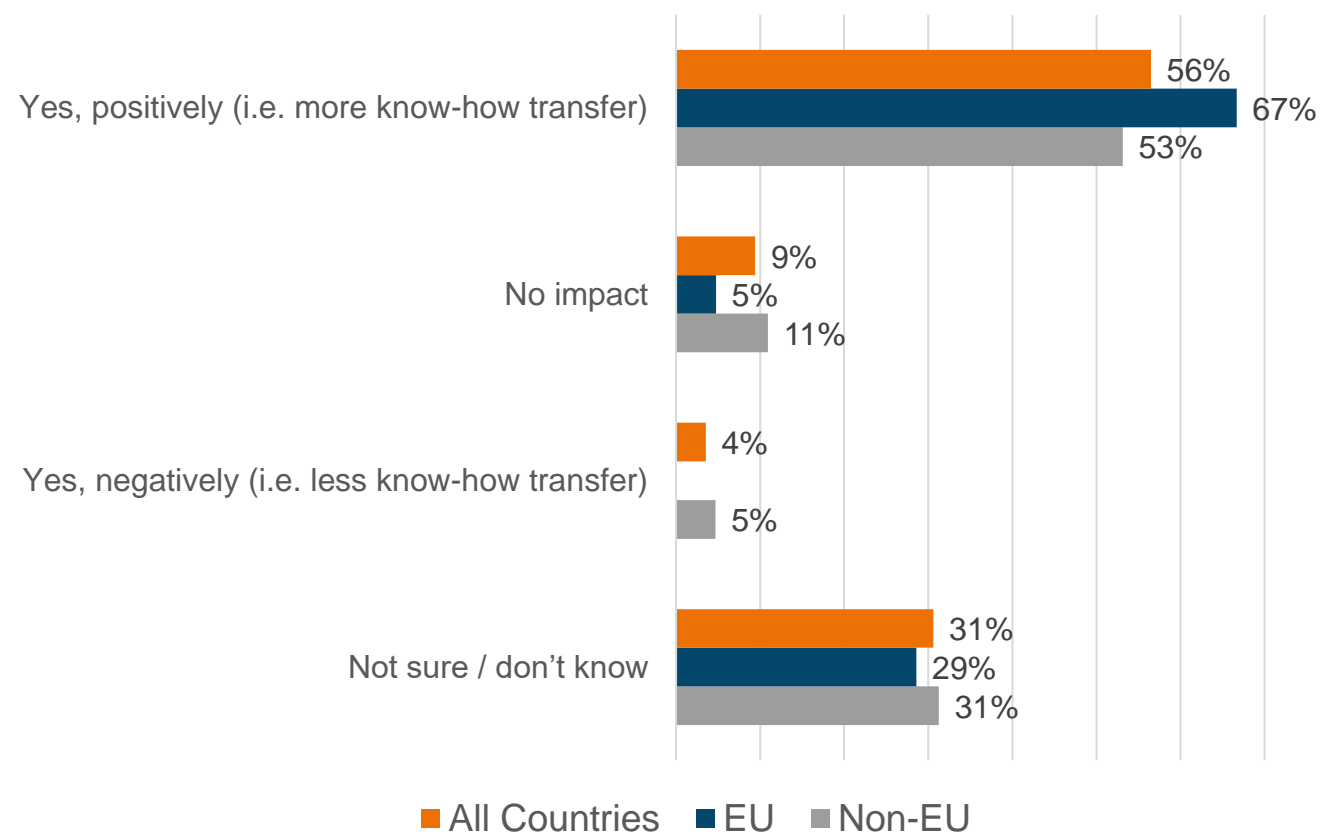
- **56%** of all respondents say Germany's energy transition will **positively affect know-how transfer**
- Still about a third are **not sure** what the impact will be.

"Argentina could benefit from the German experience in wind power."

"The question is difficult because of the strong link between the two countries. Yes, in both directions, like for all economic sectors". – France

"Developers of RES technologies use the expertise from Germany." – Slovakia

10. Does Germany's energy transition have an impact on your country's **know-how transfer** with Germany?



Strong Potential for Cooperation on Hydrogen

- There is near unanimous belief that Germany can cooperate with other countries in promoting the use of green hydrogen.

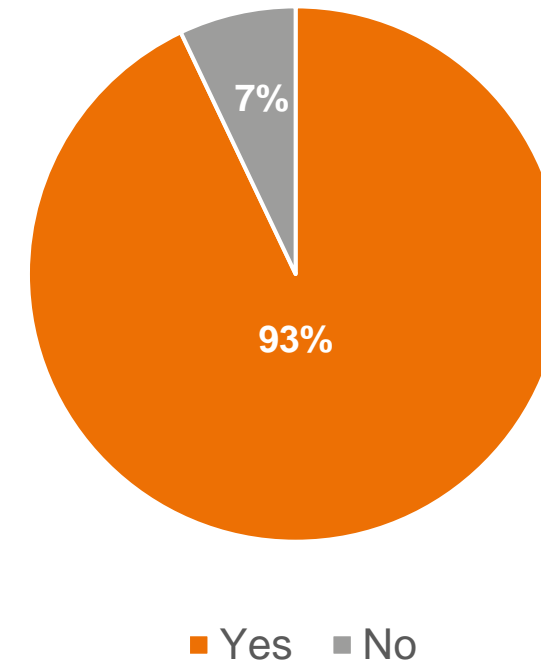


“Using the Rotterdam harbour and the Dutch /German pipeline network to ship and trade hydrogen.” – Netherlands

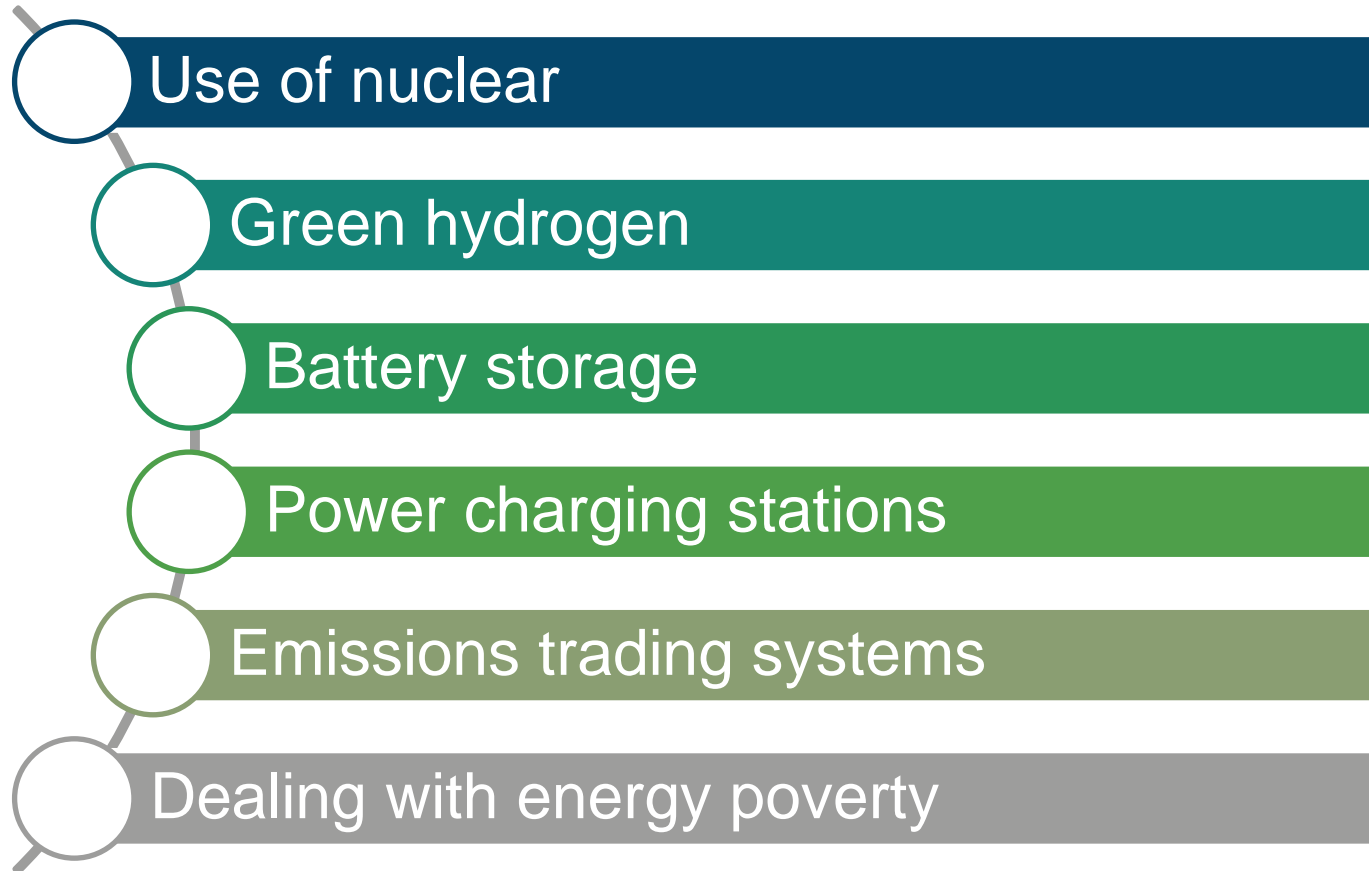
“Yes, but currently hydrogen pathways differ between countries and this will make cooperation difficult.” – United Kingdom

“We need to address our electricity shortages before we can consider Hydrogen production. Renewables have a capacity factor of 25% to 30% here, so hydrogen will be expensive.” – South Africa

11. An important element of the German energy transition is the use of green hydrogen. Do you see potential for cooperation between your country and Germany in promoting the use of green hydrogen?



Respondents Point to Perceived Gaps in Germany's Energy Transition



12. Are there any policies, technologies or innovations applied in your country that you believe are important yet absent from Germany's continued energy transition?

Climate Protection Drives Energy Transition in EU and Non-EU Countries

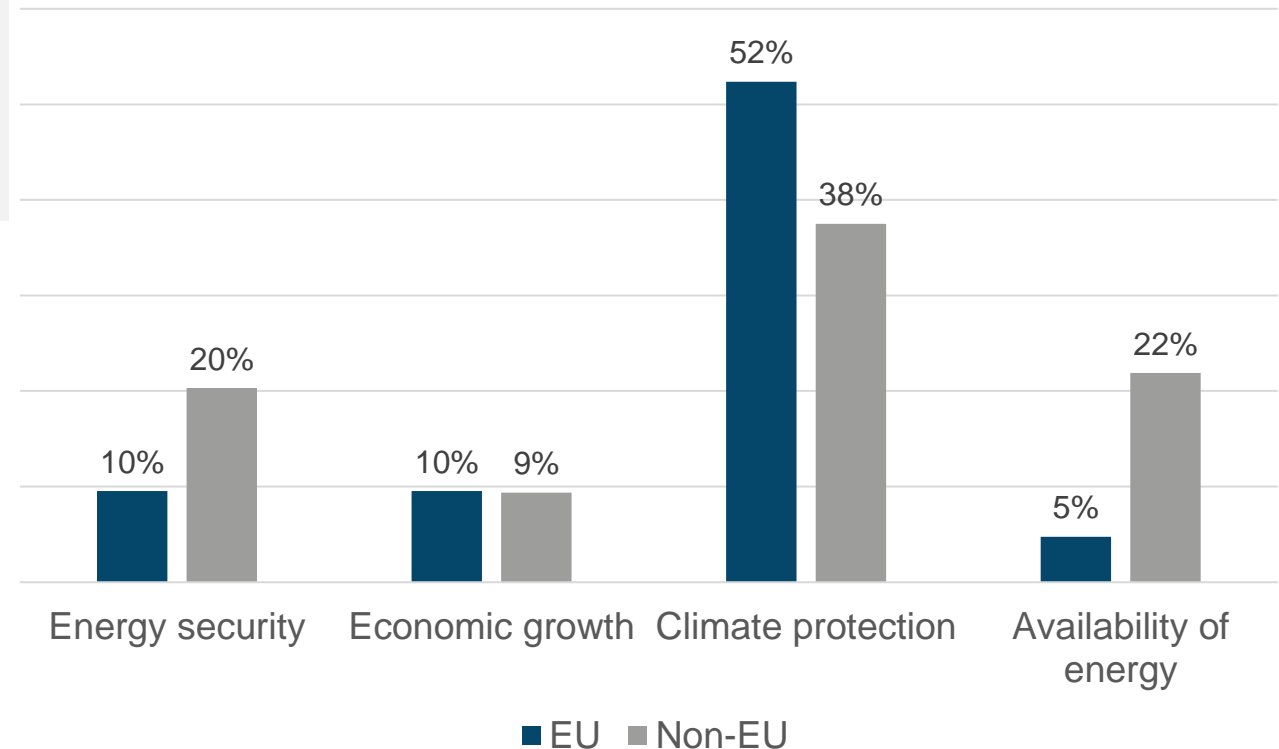
- The desire to protect the climate emerged as the main driver of the energy transition for EU and non-EU respondents.
- This is a change from 2019, when climate protection was not listed among the top three drivers in non-EU countries



“Energy security drives economic growth and improves quality of life.” – South Africa

“A huge gap between demand and (conventional) supply increased the need for renewables.” – Lebanon

13. In your country, what is the main driver of the energy transition?
(Eu vs. Non-EU)



Price of Energy Considered Most Relevant Topic in Relation to Clean Energy Debate

14. Below are topics that have generated interest in Germany in relation to the clean energy transition. How relevant are these topics within the current political debate in your country?

Most relevant or relevant	
Price of energy	94%
Regulatory framework of the energy transition	89%
Expansion of the electricity grid	80%
Hydrogen	80%
E-Mobility	79%
International cooperation	75%
Just transition	74%
Phase out of fossil fuels	72%
CO2 pricing	64%

Renewables, Electrification, Energy Efficiency Seen as Most Effective in Tackling Climate Change

15. How effective do you consider the following measures in tackling climate change?

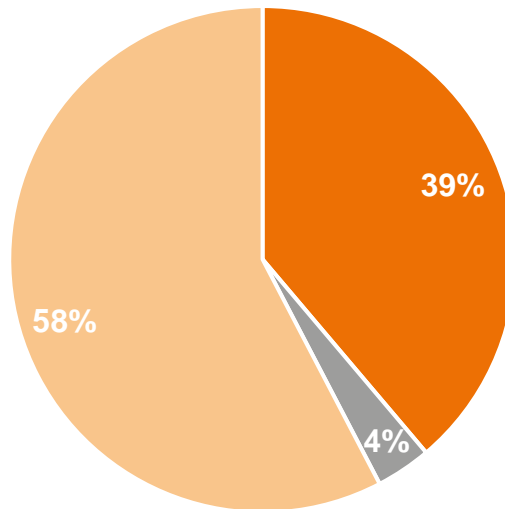
Very effective or effective	
Expansion of renewables	93%
Electrification (heating, mobility)	92%
Energy efficiency measures	92%
Cutting of subsidies for fossil fuels	89%
Phase-out of coal	87%
Financial support for carbon neutral technologies	86%
Carbon pricing	84%
Support for hydrogen	72%
Phase-out of all fossil fuels	67%
Use of gas instead of other fossil fuels	66%
Quotas for clean fuels and electricity	66%
Financial support for CCS/CCU	56%

Most Say Industry and Population Unwilling to Pay for Climate Protection

- Nearly 60% say industry and population are *not* willing to pay higher prices for climate protection.
- But over a third say both are willing to pay “a little more”.

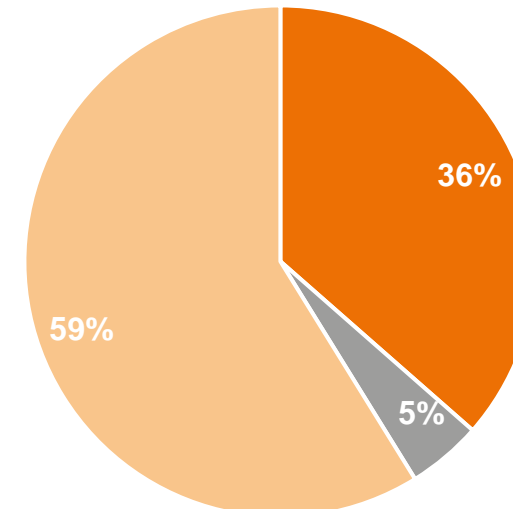
In your country, is there a willingness to pay a higher energy price for climate protection measures?

By Industry - All Countries



- A little more (up to 20% more)
- A lot more (more than 20%)
- No

By Population - All countries



CBAM Seen as Useful for Curbing GHG Emissions – Especially in EU – But a Quarter Remain Uncertain

CBAM Primer:

In order to meet its climate targets, the European Union has proposed a Carbon Border Adjustment Mechanism (CBAM), which essentially imposes a carbon tariff on imports from countries that have not taken similarly ambitious measures to cut emissions. The CBAM strives to create a level playing field between EU producers and those outside the EU. The EU hopes this will encourage other countries to strengthen their environmental practices to avoid costly levies.

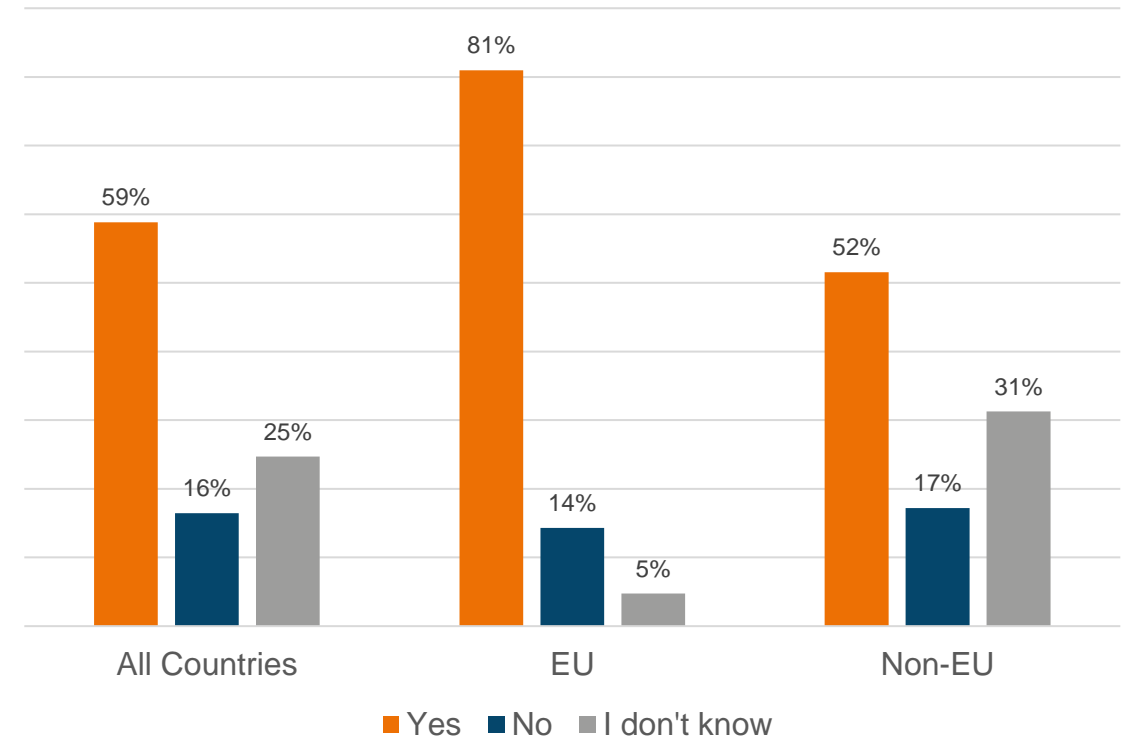


“It is a fundamentally unfair/punitive approach for developing countries [that] do not have the funding or existing infrastructure to move as quickly as the EU countries.” – South Africa

“CBAM is a needed mechanism to keep the competitiveness of EU producers.” – Estonia

“Trade barriers are self-defeating.” – New Zealand

17. Do you believe a CBAM is an effective tool to promote the reduction of greenhouse gas emissions?



Serious Scepticism About the Ability of Many Countries to Reach Climate Neutrality

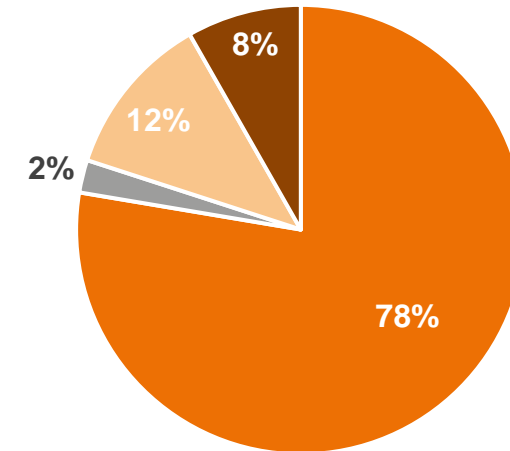
- Over three quarters believe only a few countries will hit climate neutrality by 2050.
- 100% of respondents from G7 countries agreed that only a few countries will reach that milestone by 2050.



“I think it will be quite a few countries, but not necessarily the G7.” – Australia

“I personally hope this can happen, but many undeveloped or developing countries can't achieve that target by 2050.” – Egypt

18. Do you believe the world will achieve climate neutrality at a global scale by 2050? (All Countries)



- Only a few countries will be climate neutral or negative by 2050
- Yes, across all countries
- Only among the G7
- Other

Pandemic Accelerates Some Energy Transitions but Slows Others

- **Over a quarter** say the pandemic has **accelerated the energy transition** in their country, while a third say their transition has slowed.
- **One-third** say the pandemic has had **no impact** on their country's energy transition.



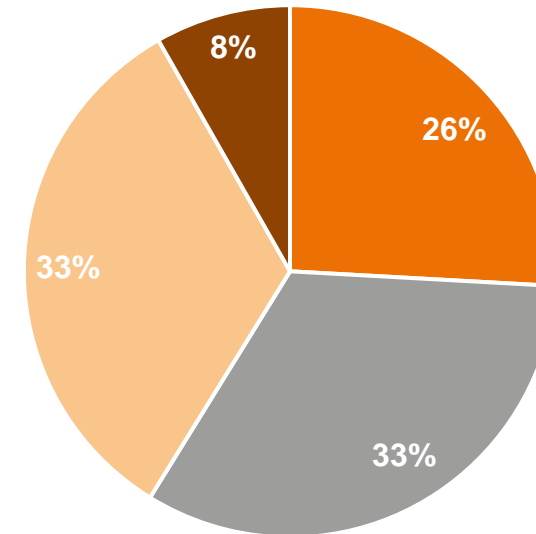
“Absorbed funds into anti-covid measures.” – New Zealand

*“All investments to enhance renewable have been halted.”
– Indonesia*

“Some aspects are positive, but without green solutions and with subsidised fossil fuels, we are going back to pre-Covid levels of emissions.” – Ireland

“It accelerated plans and strategies (as Romania is part of the EU's collective efforts), but no concrete actions so far.” – Romania

19. How has the COVID-19 pandemic affected the trajectory of your country's energy transition?
(All Countries)



- Accelerated the energy transition
- Slowed the energy transition
- No impact on the energy transition
- I don't know

EU Respondents Feel ‘Just Transition’ is a Priority



“The just transition in India overlaps with several long-standing socio-economical challenges. So while many of the dimensions of JT might have been covered even without the transition, the overall JT debate is now increasingly getting traction in various circles.”

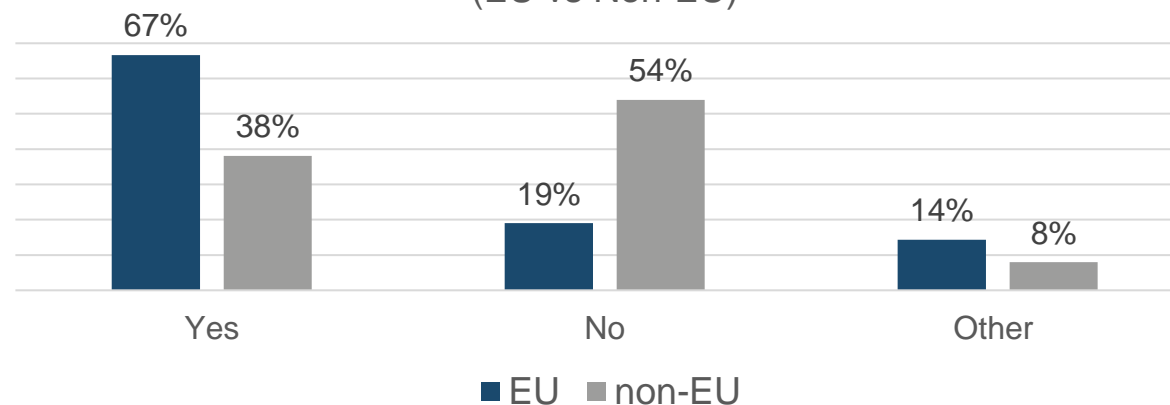
“Yes. Environmental justice has become a huge element of seemingly all aspects of energy.” – United States

“Yes. In Spain, there is a Strategy on Just Transition, and the Institute of Just Transition [was] recently created.”

“For the short- and medium-terms, I don’t believe that Morocco is adopting the Just Transition in all sectors. But the national energy strategy is fostering the energy transition for many sectors...I believe the vision of Just Transition will be adopted in Morocco in the long-term (Horizon 2050).”

- Those from the EU are more likely to say their country is prioritizing a just energy transition than those outside the EU.

20. The World Resources Institute describes a Just Transition as “equitably distributing the costs and benefits of climate action.” Do you believe that your country is prioritizing a just climate transition? *
(EU vs Non-EU)



* This was an open-ended question. WEC-Germany reviewed the responses and categorized them into three broad categories – yes, no, or other.

List of Countries Represented

Argentina
Australia
Austria
Austria
Belgium
Bosnia and Herzegovina
Brazil
Canada
Chile
China
Colombia
Croatia
Dominican Republic
Ecuador
Egypt
Estonia
Finland
France
Greece

Iceland
India
Indonesia
Ireland
Italy
Japan
Jordan
Kazakhstan
Latvia
Lebanon
Luxembourg
Malta
Mexico
Mongolia
Morocco
Netherlands
New Zealand
Nigeria
Pakistan

Paraguay
Poland
Portugal
Romania
Russia
Sarajevo
Slovakia
South Africa
South Korea
Spain
Sweden
Switzerland
Turkey
United Kingdom
United States of America
Uruguay



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Thank You

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