

3 ASSESSMENTS OF THE ENERGIEWENDE



3.1 GENERAL POINTS

Positive aspects of the Energiewende

Environmental and climate benefits, technological impact, global knock-on effect

- As expected, **environmental and climate benefits** were the most positive aspects identified in all three of the surveyed countries. The main talking point was the potential for reducing emissions that are harmful to the climate through the planned expansion of renewables. Many of the experts also included Germany's nuclear phase-out in their positive assessment, regarding this as a move away from a type of energy generation that is perceived as risky and unsafe. Other positive aspects cited included efforts to reduce energy consumption and improvements in energy efficiency.
- In all three countries, Germany's Energiewende was expected to have a positive **technological impact**. The German economy was predicted to benefit from the Energiewende by gaining better conditions for the development, use and marketing of new technologies, and, as a result, competitive advantages on international markets. In some cases, the experts expected that a change in energy generation would also have repercussions for Germany's other economic and societal sectors. An overall embracing of a "greener" economy was predicted, as was a shift towards more economical and sustainable energy consumption.

"It is beneficial for environmental protection. Germany is doing pretty good in protecting environment among all the countries."

*NGO representative,
China*

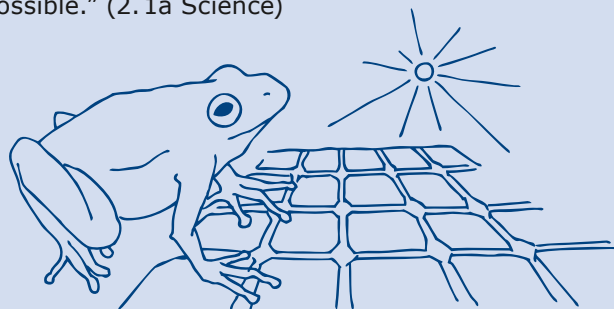
- Lastly, there are hopes that Germany's Energiewende will have a **global knock-on effect**. Other countries are expected to follow Germany's example in terms of practical implementation, and to make use of the technologies developed and readied for commercial production as part of the Energiewende. It is expected that supplying the global market, as well as the higher turnover associated with this, will result in positive cost effects that could also lead to more affordable imports of new green technologies by emerging countries. There is also hope that technology will be transferred to developing countries. In economies that have competitive suppliers of such technologies, domestic industries stand to benefit from export trade as a result of Germany's Energiewende, as is already the case for China's photovoltaics sector.

Environmental and climate benefits



Brazil

- "I see many positive aspects. I think mainly the energy from coal, oil, which are not renewable, is a significant contribution to the greenhouse effect. Then the distribution of this energy has a positive effect when it comes to reducing greenhouse gases and the decrease on the use of renewable sources, which are sources of carbon fixation." (2.1a Industry)
- "It's a template that will do Earth great good. We are living in the Earth's climate changes due to global warming, so the search for models that reduce heating energy is critical." (2.1a Parliament)
- "The most positive aspect is lowering environmental impact, I think that is the main point." (2.1a Public administration)
- "I think what trumps everything is the environmental issue and the reduction of emission of greenhouse gases, and mainly showing that this is possible." (2.1a Science)



- "For those who are environmentalist like me, I think the proposal has basically positive aspects. The first one is to actually minimize the risk of major accidents, to decrease and eliminate nuclear power. And the second is to reduce energy consumption. This I think is fundamental: eliminate waste and reduce the need for energy. The third is to seek energy sources that emit less greenhouse gas, thus contributing to the mitigation of global warming." (2.1a NGOs)

- "It has many positive aspects, but environment protection is the greatest topic. The energy transition in Germany advocates using electrical energy, including wind energy, luminous energy and geothermal energy, etc. The energy it uses comes from nature itself, it can reduce the emission of carbon." (2. 1a Industry)
- "I think to phase out nuclear energy completely until 2022 is good. Also to generate electricity by renewable and recyclable energy sources (e.g. with offshore wind) also finds favor with me." (2. 1a Public administration)
- "It is beneficial for environmental protection. Germany is doing pretty good in protecting environment among all the countries." (2. 1a NGOs)
- "The positive aspects are that Germany can save energy, reduce consumption, and develop renewable energy sources." (2. 1a NGOs)



China

- "The positive aspects for me are obviously more renewable energy, and also very particularly the reduction in energy intensity in industrial processes, because that it a big thing for us." (2. 1a Industry)
- "Well obviously the reduction in carbon dioxide emissions. It will be very good for the climate and also reduction in consumption and making everything more energy efficient, is going to then reduce strain on the whole infrastructure of energy provision. So just getting smarter about not wasting energy, I think is what it is all about." (2. 1a Science)



South Africa

Technological impact

- "First, because Europe has more resources, especially in relation to the countries of the southern hemisphere, it has the opportunity to experience these new technologies and invest in alternative energy generation." (2. 1a Public administration)
- "I think that the main positive aspect is that Germany will be a pioneer in a scientific effort to innovate and make these renewable sources become more economically and financially viable." (2. 1a Public administration)



Brazil



China

- "I believe the entire question on sustainability, sustainable cities and all that concerns it, of high relevancy. Cutting back on the greenhouse effect gases will only depend on their emission, basically. Cutting back on electricity or a more rational use of it would be perfect, as long as there was a change of habit by the consumers. For the increase of productivity, new technological advances must be achieved. New construction techniques in order to reduce consumption of electricity is something important that is already on the agenda..." (2. 1a Science)
- "...Secondly, there will be a much greater development in the areas of engineering and technology in order to generate energy. So people may be looking towards a new era in terms of energy development." (2. 1a Science)
- "Well, I have already said that it is a question of technology in itself, I mean, the investment and creation of dissemination; gain in scale, after a stronger investment in this technology." (2. 1a NGOs)



South Africa

- "Transforming from the thermal or nuclear power generation into new energy power generation can stimulate the economic development, upgrade energy technologies and equipments, and enlarge exports." (2. 1a Industry)
- "The on-going German energy transition allows Germany to have a leading position around the world in the energy aspect." (2. 1a Industry)
- "First, German government will increase investment for energy transition, including investment for technology, human resources, and raw materials. With strong support by government, Germany will get improvement in technology." (2. 1a Public administration)
- "The German energy transition is highly beneficial to the sustainability of economy and industry of Germany. The benefits will mainly impact the economy, energy policy, and the burden to people's life." (2. 1a Public administration)
- "The positive aspect is to improve the technology development in Germany." (2. 1a Science)

- "I think Germany will be recognized as leading the world in this particular way." (2. 1a Industry)
- "I think it will stimulate a lot more entrepreneurship and jobs in a new greener energy sector, so Germany is obviously aiming to be at the cutting edge of that technology, which it will be able to sell worldwide." (2. 1b Science)

Global knock-on effect

- "...Obviously Germany as a country which exports technology to the rest of the world can be a source of technology that services the world." (2. 1a Parliament)
- "This technology brings good things to many countries including Brazil." (2. 1a Industry)
- "..., I think it is interesting when a country like Germany that has the possibility to invest in those new forms of technology, makes it cheaper to other countries in order for them to do about the same, to learn and follow that model, according to their possibilities. Something that would be very interesting, if they are not thinking about it, would be the possibility of transferring that knowledge to other countries, mainly the countries in development, and most especially to the BRIC countries." (2. 1b Public administration)
- "I believe that investment in research in pursuit of innovation in the use of technology, will make it possible for the results they got to make significant gains and be a model for other countries as well." (2. 1a Public administration)
- "I see as a absolutely beneficial position in the context of international agendas for the balance in energy use and emissions. ... And we hope it will be a model to be adopted by other countries." (2. 1a Public administration)
- "I know that there is a German company, Siemens, which has been a world leader in solar panels for converting solar energy into electricity. I think that if it were possible to make the price cheaper globally, it would be something that would be very welcome." (2. 1a Science)



Brazil

- "... the German energy transition will have a certain impact on the economic structure of the whole world." (2. 1a Public administration)
- "German performs very well in the use of new energy sources and there are a lot that are worth being learnt by other countries." (2. 1a Science)
- "If the German energy transition takes progress quickly or works very well, it can serve as a model for the whole EU and for the rest of the world as well." (2. 1a NGOs)
- "Germany reduces the usage of traditional energy and increase that of new energy, which might boost China's photovoltaic market." (2. 1a NGOs)



China



South Africa

- "It is great for other people in the world, because we can use them as an idea and a benchmark of what they did and see how ... it will help them to help us." (2.1c Industry)
- "I think it is progressive and it is something that should be watched and learned from." (1.2 NGOs)
- "It could be a possible change in the world that would assist humanity,..." (2.1a NGOs)

Negative aspects of the Energiewende

Costs, extent, unresolved technological issues

- In all three countries, the majority of the experts surveyed had a positive overall view of Germany's Energiewende and of the course it is taking. Negative aspects were not so much voiced as fundamental objections to the project per se, but rather as conjecture regarding **implementation risks and obstacles**. However, some of the experts surveyed had difficulties naming any negative aspects.
- In all three countries, the **cost issue** was viewed as the most critical aspect. The start-up costs involved in the Energiewende were generally perceived to be very high due to the high generating costs for renewables, as well as the necessary investments in plant and grid capacities. With regard to the cost factor, the experts also anticipated negative economic repercussions, at least in the short term, for the industrial sector, employment figures and international competitiveness. Cost was also viewed as a core issue in domestic energy consumers' acceptance of the Energiewende; in many cases, it was also seen as being of socio-political significance. In the event of the Energiewende being delegitimised due to costs, some concerns were expressed that political backing for the switch may not continue in its present form. In addition, the implementation of Germany's Energiewende was seen as being vulnerable to external factors such as the country facing increased financial strain as a result of the euro crisis and the global financial and economic crisis.
- However, some of the reservations expressed addressed the **extent** of the changes associated with the Energiewende, as well as its proposed **timetable** until 2020. There were also concerns about having **no nuclear power** at all in Germany's future energy mix, accompanied by a huge expansion of renewables. Several experts could not (yet) imagine the full-scale replacement of nuclear energy by renewables in light of the current situation; some even see this replacement as being inconsistent with environmental policy goals such as the reduction of emissions that damage the climate. This last response was frequently backed up with the expectation that any nuclear phase-out would entail a short- or

"The cost of solar energy is more expensive than nuclear energy, for example. So they had to give up a Fund of several million or billion euros to finance this initiative."

*Business representative,
Brazil*

medium-term increase in fossil-fuel use. More fundamentally, a number of experts – particularly from China and South Africa – regarded nuclear power as a clean energy source. Lastly, several experts suggested that the **time frame** for the implementation of the Energiewende was overly ambitious given the magnitude of the proposed changes.

Cost issues

- “Energy is getting very expensive and we try to protect it. But it is expensive for the home consumer, and this compromises the income that will be lacking for other investments and other expenses.” (2.1b Industry)
- “The cost of solar energy is more expensive than nuclear energy, for example. So they had to give up a Fund of several million or billion euros to finance this initiative.” (2.1b Science)
- “I think there is a great challenge that is the final cost of energy. So that is a challenge. I wouldn’t say that is a negative aspect. It is a challenge. ” (2.1b NGOs)



Brazil

- “The cost of new energy and clean energy is much higher than that of the regular ones, so German government pays a kind of allowance when implementing energy transition. Although this kind of allowance helps the corporations to a great extent, it increases the burden on end consumers.” (2.1b Industry)
- “I think if the implementation is too fast, it would cause industrial crisis. The electricity price will increase.” (2.1b Industry)
- “The negative aspects are, first, the price of energy might increase and the energy expenses for ordinary people might go up; second, too quick transition might stir up social unrest.” (2.1b Public administration)
- “The negative aspects include, first, current energy enterprises might encounter problem on profit, and have conflict with government. Second, the economic costs for the energy transition is relatively high, so Germany needs to consider issues of economic benefits.” (2.1b Science)
- “In the short term, the negative aspect is mainly the higher costs of renewable energy resources vs. traditional energy resources such as fossil ones. But I think Germany is ready for the energy transition, because they ought to be well prepared before making the move.” (2.1b NGOs)



China



South Africa

- “The negative aspects is that the electricity prices are going to solar, they are going to increase phenomenally. So in other words the cost of doing business in Germany will increase and the cost of consuming electricity will increase, which means then the input costs in general will increase. Well I think that is the big one and it may limit Germany’s competitiveness globally.” (2. 1b Industry)
- “Um, well obviously there does mean that there are a lot of costs that have to go into the whole transition.” (2. 1b Public administration)
- “Well I think it will be very expensive.” (2. 1b Science)

The radical nature of the Energiewende (extent, total nuclear phase-out, pace of implementation)



Brazil

- “Focusing again on solar energy: when there is Sun, there is energy; when there’s no Sun, there has to be a backup. So sometimes the backup pollutes more than the system we had before.” (2. 1b Industry)
- “I think we have to evaluate the issue of nuclear power, apart from the impact there was with the accident in Japan. But if nuclear energy is conducted within the strict standards of safety, I believe it is something that should not be thrown out. I found the position of the German Government very inflexible in that field. Flexibility to seek stricter safety standards.” (2. 1b Parliament)
- “I think that nuclear energy is not a bad energy and Germany cannot forgo nuclear energy now. If it gives up nuclear power right now, it’ll have to consume more coal until the new renewable energies are available. Then, this, at first, this decision to forgo nuclear energy could lead to an increase in emissions.” (2. 1b Public administration)
- “Nuclear or hydropower energy is stable, plants operate day and night, so there can never be a country where you can have 100% of its energy from photoelectric cells or through wind, they have to be complemented, there is no doubt. So you cannot totally abandon nuclear energy with this program.” (2. 1b Science)

- "I think the energy transition in Germany is somewhat radical. Despite the relatively good base, to completely change the energy resources, which provide energy to its economic pillar, heavy and light industry – is a bit risky. I think it would be more secured for Germany to extend the time frame needed for the transition." (2.1b Industry)
- "I think the German energy transition is definitely not able to be achieved within a short period, with the development and economic strength of Germany both being restrictions for the investment to this reform." (2.1b Public administration)
- "Towards the critical thing of this energy transition at my point of view, because no nuclear power, it may increase the amount of the use of coal; while the amount of coal increases, so as the carbon dioxide, followed by increasing greenhouse gases, and this would be a very serious problem." (2.1b Science)
- "The negative aspect is that Germany may focus on the energy transition too much, so its development speed is too fast. Of which I assume dangerous is that if Germany can not find the new energy to replace nuclear energy in time,..." (2.1b NGOs)



China

- "They have to fill the hole they left by turning off their nuclear power plants in the short term." (2.1b Industry)
- "If I'm correct, they're going to supplement the alternative sources with coal fired power stations, we have the greenhouse gas emissions on that side." (2.1 Public administration)
- "There is a challenge to do it quickly..." (2.1b Science)
- "Well I think it is good to move to renewable energy, but I think it is a mistake to move away from nuclear energy." (2.1b NGOs)



South Africa

Technological and geophysical challenges



Brazil

- "Focusing again on solar energy: when there is Sun, there is energy; When there's no Sun, there has to be a backup. So sometimes the backup pollutes more than the system we had before. So in the case of Germany, we speak of nuclear and solar energy. And so we go and put on batteries. There we have the first problem: battery is also a residue that will cause problems in the future. "Ah, but we're not going to use the battery. We will use the backup". I do not know what this backup energy is. If it is a thermal energy or gas, the project is not 100 % sustainable." (2. 1b Industry)
- "I don't know if it would be negative, which is different than being critical. But today the renewable sources of energy that they are betting a lot on, which is the solar and wind power, are intermittent sources. So there is a security risk in the system and I think that is a critical point." (2. 1b Parliament)
- "I was a little amazed regarding solar energy, because they have very little sun." (2. 1b Parliament)
- "Let's say you have a big city and that energy is being generated there for a place that focuses more on solar energy, so if there is not enough solar energy, you will have to transport energy from other places. The system is very interlinked. The fewer plants you have, the fewer the problems of instability. This new technique of having a number of small plants is not very well managed yet, one of the reason relates to the differences between them, so that the quality of energy, that is, so that consumers continue to receive energy without fluctuations or interruptions. So we have to say that there are some problems." (2. 1b Science)



China

- "For the negative aspects, I think their technology on applying new energies may not catch up. The currently using energies, including solar energy, wind energy and petroleum energy, need new and more advanced technology to improve its utilization efficiency, including transform solar energy and wind energy to electricity." (2. 1b Industry)
- "...Furthermore, technology in the new energy sector is not mature and stable enough." (2. 1b Public administration)
- "The objectives of energy transition are not achievable with the current technology." (2. 1b Science)
- "The technology of renewable energy in Germany is not mature enough. If it quits using traditional energy in a short time, there might be shortage of energy supply." (2. 1b NGOs)

- Another category of reservations about the Energiewende primarily concerned **technological** and **geophysical issues**. These were predominantly voiced by experts from Brazil and China. Perceived technological issues included the yield variability associated with renewables, energy-storage difficulties, and the resulting load and stability issues for the grid. This last aspect included doubts about the extent to which renewable energies could be sufficiently supplied in a densely populated industrial nation in the northern hemisphere.
- **Germany's unilateral approach** was one last negative aspect identified by a small number of experts. On the one hand, this reflected a basic disappointment with the fact that other countries have not taken on similar measures to Germany's or are not yet following Germany's example. On the other hand, there is a critical view of the fact that Germany's Energiewende is not addressing Europe's cross-border electricity market. It was pointed out that even if Germany shuts down all of its nuclear power plants, it may still continue to consume nuclear-generated electricity purchased from neighbouring countries.

"In my opinion Germany should have more support."

*Business representative,
Brazil*

Germany's unilateral approach

- "In my opinion Germany should have more support." (2.1b Industry)
- "They're (Germans) already importing from France, mainly nuclear, and the Czech Republic. Austria has been building some nuclear plants and they are trying to sell to Germany. This in some way deters the politics related to renewable energy in Germany, for it imports it from other countries." (2.1b NGOs)



Brazil

Overall view of the Energiewende

Pioneering decision to some, to others an expectable global trend

- In none of the three countries was there a consistent opinion on whether or not Germany's Energiewende is an unusual decision. Some of the experts regarded Germany as having a **pioneering, vanguard role** in energy policies. This unprecedented role-model character was also perceived within the framework of Western industrialised countries. The experts were aware that there are no benchmarks or blueprints for the process of switching to renewables. In this context, Germany's decision to pursue the switch was regarded as remarkable. Some of the experts also perceived this decision to be extraordinary due to the **extent and pace of change**, and the **extent of costs** that it entails.

The Energiewende as an extraordinary decision



Brazil

- "I would say that is something extraordinary and different from what I have seen in other countries. It is extraordinary because they are fairly damning targets in Germany, and we don't see that in other countries." (2.1c Public administration)
- "I see it as something extraordinary, whereas we have no reference from other countries that have had this courage. So is an exceptional effort." (2.1c NGOs)
- "I see it as an extraordinary and very innovative and courageous measure. And I think Germany has the structure, it has ways to keep taking such innovative, courageous measures." (2.1c NGOs)



China

- "I think it is relatively a kind of extraordinary development. Because Germany is the first country who claims to totally abandon nuclear energy. I really appreciate the attitude to innovation." (2.1c Industry)
- "I consider the concept of the German energy transition is extraordinary, and it needs a rather long time for implementation." (2.1c Public administration)
- "In this field, Germany does better than other countries. In the future, Germany will be the leading role in all aspects of energy development, which will be an advantage for its development." (2.1c NGOs)



South Africa

- "I think it is extra ordinary. It is obviously a first world movement." (2.1c Industry)
- "No it's progressive. It's not the ordinary because the other countries are still struggling with the technology around renewable energy,..." (2.1c Public administration)
- "If they actually do what they say it is extraordinary and quite a leading trend for the rest of the world." (2.1c Public administration)
- "Well I think it is something extra ordinary. I wish it was normal, but I don't see the same happening in any other countries." (2.1c Science)
- "I think it shows great leadership and I think it is a very good initiative." (2.1c NGOs)

- While not necessarily questioning Germany’s pioneering role in energy policies, a number of experts nevertheless did not regard the Energiewende as an extraordinary decision because they saw Germany as predestined for it. The reasons given for this were not only a resource-driven urgency to adopt new energy policies, but also Germany’s favourable economic and socio-political conditions.
- From the perspective of the three emerging countries surveyed here, Germany’s **first-world-country developmental standard** is advantageous for the Energiewende. As a rich, highly developed industrial nation, Germany is perceived to have the necessary research and technology resources, as well as the capacity to invest in such resources as required. In tandem with this, Germany’s economic and industrial structure, as well as its demographic projections mean that its energy needs are stagnating. This also makes it easier to undertake changes in energy policy.
- Some experts were of the view that Germany’s decision to Energiewende simply resulted from its **own particular energy-resource situation**. As the country lacked domestic fossil fuels and relies on electricity imports, a medium-term reshuffling of the energy mix to include more renewables did not seem to be a surprising development, they said.
- Many experts were of the view that the German public’s **high awareness of environmental issues** made it easier for political decision-makers to establish a new energy mix, simplified downstream opinion-shaping processes and discouraged NIMBY* phenomena. In the same context, experts also pointed to Germany’s past environmental policy decisions. Part of Germany’s Energiewende was thus regarded as a result of a continuous development that is following a **historical path**.
- However, a sizeable number of experts declined to recognise Germany’s pioneering role per se on grounds of Germany’s Energiewende being a symptom of **European** and indeed **worldwide endeavours to introduce more climate-friendly policies**. This view is most prevalent in Brazil and China, quite possibly because the topic has already been on these countries’ own energy policy agendas for a long time.

“Not extraordinary. Well it’s a first world country. ... And technologically is very advanced.”

*Science representative,
South Africa*

* *Not In My Back Yard*

An Energiewende to be expected from a highly industrialised nation



Brazil

- "From my perspective the German model is consolidated on the basis of a highly developed society, a society of high, but stabilized, energy consumption." (2. 1c Industry)
- "I think it is a normal outcome from the development of the country, I think society leads to that." (1. 2c Industry)
- "The first thing I see is that Germany wants to and can do this. As far as I can see it has a settled consumption curve, and I believe that I even consider myself a descendent nowadays. The population has been stable for a long time even with a slight tendency to decline. A first world country with cutting-edge consumption is a rich country so it can afford to try a different matrix..." (1. 2c Industry)
- "I think this is a natural process in developed countries, particularly a very developed country, where the governing class and those in government have a lot of awareness and respect for future generations and towards a future that is environmentally sustainable, so I think it is a policy that is worthy of praise, but I do not see it as a natural stage of development." (2. 1c Public administration)



China

- "In terms of Germany's development, the energy transition is compatible with its economic power and technological development. So I think it's natural and normal." (2. 1c Public administration)
- "The energy transition can be regarded as a kind of normal development for Germany, because this issue will be taken into consideration by every country if they have reached a certain stage of development." (2. 1c Science)
- "This is basically a kind of normal development. Due to the developed economy and limited fossil energy resources, Germany needs to make the transition to renewable energy resources for maintaining the sustainable economic development." (2. 1c NGOs)



South Africa

- "No (not extraordinary) I think for them, because they are European economies, so it is almost a normal transition." (2. 1c Industry)
- "I see it as a normal development, because as I said earlier on, it's largely driven by the EU directive, because remember all the EU countries,..." (2. 1c Industry)
- "Not extraordinary. Well it's a first world country... And technologically is very advanced." (2. 1c Science)

The Energiewende to be expected due to Germany's lack of local resources

- "No. I think it's a normal process. Because Germany does not have many sources of energy. It is a relatively small country with a very large population. So it is natural that Germany had to put the brain to work and look for new ways to get energy."
(2.1c Public administration)



Brazil

- "At least, it's normal development for Germany. Germany needs oil for its industrial development, but there is no such deposit there. And they cannot rely on the resources that don't exist in the country."
(2.1c Industry)
- "The German energy transition is a kind of normal development. Germany is not self-sufficient with its energy sources, imports a lot, and is greatly dependent upon the import."
(2.1c Science)
- "German doesn't implement the energy transition voluntarily, but is forced by current situation, without other alternatives. Coal and oil will both be exhausted in the new future. So in order to produce sufficient electricity to meet daily needs, Germany has to find other ways."
(2.1c Science)



China

Germany's Energiewende to be expected due to Germans' high environmental awareness

- "I don't think Germany needs to put forth an extraordinary effort because they've been dealing with this for a long time and they've been improving and have learned a lot, especially from the solar issue... The big change was made in the past."
(2.1c Industry)
- "Society is so well developed that they have the luxury of stabilized consumption. This is a widespread concept in Germany, the social masses already think this way."
(2.3b Industry)
- "I think they've been following a path and there isn't anything so special about that..."
(2.1c Parliament)



Brazil

- "I think this is a normal development and is in line with the national conditions of Germany."
(2.1c Public administration)



China

- "In Germany I think it will be a relatively easy, the transition. In order to get political buy in, it would be relatively easily done in Germany, I don't think it would be so easy in South Africa."
(2.2 NGOs)



South Africa

The Energiewende is also part of a global trend



Brazil

- "Today there is a global awareness of this sustainability issue, new sources of clean energy generation, so I think it's a matter of always having a sense of involvement in this effort, following the worldwide trend." (2. 1c Industry)
- "I think Germany is going towards this direction because the whole world, society is seeking sustainability and working with fossil material, with nuclear power which isn't the most appropriate." (1. 2c Industry)
- "This is taking place not only in Germany, but even here in Brazil." (2. 1c Science)
- "Look, in fact, the goal that the whole world has is trying to become self-reliant on the issue of energy and currently seeking renewable energy sources as well." (1. 2c NGOs)
- "Look, I think that is the result of development within the context that the world presents." (2. 1c NGOs)



China

- "I think it is a kind of normal development. Because the whole world realizes that we can not totally rely on the existing energies any more, like nuclear energy and coal, and we should adopt sustainable and environmentally-friendly energies like water power and wind power, which are mechanical energies and are renewable." (2. 1c Industry)
- "The direction is normal. Many countries, including China, will follow this direction in the future." (2. 1c Industry)
- "The German energy transition is just a direction, towards which Germany can make efforts to. They are promoting usage of new energy resources. China is doing the same." (2. 1c Science)
- "The energy transition is a major global trend due to the shortage of oil resources as well as environmental pollution." (2. 1c Science)
- "As a person engaging in environment research, I think the German energy transition a normal development from the global perspective, and is only one step forward than other countries." (2. 1c NGOs)

Limited knowledge about the political implementation of the Energiewende

- Among the surveyed experts from all three countries, there was virtually no in-depth or practical **knowledge** about the **political implementation of the Energiewende** in Germany. When asked to assess the German government's actions in this field, the majority of respondents displayed a very **superficial understanding** and struggled with their answers. The main reason given for this difficulty in responding was a lack of insight into domestic German politics. Many respondents also chose not to evaluate the political implementation of the Energiewende, but again assessed the decision itself in terms of its degree of innovation, feasibility, scope of change, investment costs, etc.
- The few answers that did address the **implementation process** of the Energiewende were very diverse. Respondents assessed the rate of progress¹, the programme-planning efficiency², and a number of factors that could aid³ or obstruct⁴ further implementation of Germany's Energiewende. Again, responses were largely of a general nature and did not directly address the actions of the coalition currently in government.

¹ China: "Despite the difficulties and problems in the beginning stage, German energy transition process is in a stable stage now." (2.2 Public administration)

² Brazil: "In Germany, where planning is inherent to their culture, I think it is very well planned." (2.2 NGOs)

³ South Africa: "I think there will be wide support for it, because I think it is on the wish list of a very large percentage of the citizens." (2.2 Industry)

⁴ Brazil: "I think Germany will find a resistance of economic lobbies, possibly from oil and coal industry, which is the source for Germany." (2.2 Industry)