

Technology and the Bali Action Plan: what could Germany do?

National Summary Report for Germany

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Introduction

Limiting global CO₂ emissions to levels consistent with a maximum rise in temperature of 2 degrees Celsius will require a step-change in global technology innovation and diffusion. Indeed, a ‘third industrial revolution’ or ‘technology revolution’ is necessary to make a zero-carbon energy economy feasible within the next years and decades, before 2050.

Many emission reduction trajectories that keep the temperature increase within the range of 2 degrees, e.g. those produced by the IPCC and IEA, are underpinned with aggressive assumptions about the deployment of existing technologies as well as the early commercialization of new innovations. Cross-country international technology cooperation is of prime importance to achieve large-scale application of these technologies in all markets around the world, and to optimize research and development for new technologies beyond what is technically imagined today.

Technology cooperation plays a key role in the political dynamics of the ongoing international climate negotiations. The technology discussion is directly linked to the negotiations on mitigation, in particular to mitigation actions by developing countries. Developing countries argue that they will only be able to contribute to mitigation substantially with sufficient technological and financial support from developed countries. The “Bali Action Plan“, therefore, establishes a reciprocal relationship between the level of developing country mitigation activities and the level of developed country finance and technology support. Reaching an ambitious and comprehensive deal in Copenhagen will be unlikely unless significant advances are made on a technology and finance package.

Still negotiations on the issue are at an initial stage. Substantial movement on the issue is indispensable to clear the impasse between diverging interests of developing and developed countries. However, the notion that all technology will be ‘generated’ in the North and then ‘transferred’ to the South is outdated. Instead the focus should be on creating highly viable domestic production capacities for low-carbon and climate-friendly technologies in developing countries. This requires not only the transfer of ‘physical equipment’ and products, but also capacity building and the transfer of know-how through cooperation on research, joint ventures, public-private- as well as private-private partnerships.

Germany has a great potential to contribute to such a kind of technology development and transfer. In many sectors, German environmental technology companies are world market and technology leaders. For some years now Germany has headed the list for world trade in potential environmental protection goods: In 2006, for instance, its share was 16 percent, corresponding to an export volume of € 56 billion, followed by the USA with 15 percent of world trade and Japan with 9 percent (BMU 2008). Moreover, Germany has a comparatively advanced set of policies and measures in place that

require emission reductions and foster investments in energy efficiency and low-emissions technologies. For instance, Germany participates in the European Emissions Trading System, has a feed-in law for renewable energies, as well as advanced legislation on combined heat and power, an ecological tax reform, programs for housing insulation, and more. If Germany would offer the knowledge and experience it has acquired as a leader in both policy-making and the production of climate-friendly goods and services, technology cooperation would entail win-win-opportunities for all sides: for companies as well as policy-makers in Germany and the developing world.

In 2006, the German Ministry of the Environment has outlined a strategy called 'Ecological Industrial Policy'. It seeks to reposition Germany in the global economy, namely, as "a producer of efficiency, exporter of infinite energy, guarantor of global environmentally sound mobility, a competence centre for public services provision and waste and wastewater disposal – in general as a global provider of environmental technology and services for the 21st century" (BMU 2006, p.9).

The Ecological Industrial Policy may provide the basis for Germany's interest in engaging in a large-scale South-North technology cooperation. However, it has two weaknesses: firstly, it focuses mainly on the side of creating growth and jobs in Germany, and much less so on transferring know-how and production capacity to developing countries. Secondly, it focuses mainly on fostering business cooperation and market development, while it does not include cooperation between policy-makers to help governments abroad set climate-friendly framework conditions and enabling environments. Nevertheless, the Ecological Industrial Policy already focuses Germany's engagement in the world economy on those sectors and activities most relevant for the ongoing climate negotiations on technology cooperation.

The focus on 'new green markets' is backed by the interviews conducted for this study: All interviewees agreed that the energy sector is key for investment in technology transfer. Especially energy efficiency needs to be targeted predominantly, as improvements in this field are possible anywhere. Other promising sectors for investment are the building and transport sectors, and possibilities to better store electrical power.

German companies have strong expertise to offer, and German policy-makers can count on years of experiences to support innovation and commercialization in these sectors. Now, ways and means need to be found how Germany and other countries could better provide and transfer this valuable knowledge to markets and governments in the global South. This paper intends to contribute to this important debate.

Methodology

As part of the Global Climate Network's research project "Technology and the Bali Action Plan – Defining technology needs and addressing the barriers to its development and transfer", the Wuppertal Institute has conducted a number of interviews to explore the situation in Germany. In parallel, other members of the Global Climate Network have conducted similar interviews in Australia, Brazil, China, India, South Africa, and the United States. This crosscutting research will allow to compare different national perspectives on the matter, while it may generate proposals and solutions that are rooted in different backgrounds and are 'tested' by varying cultural understandings. As the German National Report, this paper presents findings from German interviews only.

The methodology of this study applied qualitative research methods based on the use of explorative interviews. Qualitative methods have been chosen because in-depth social research methods are the most appropriate means of uncovering the thinking processes and underlying attitudes expressed. Moreover, explorative interviews suit best to jointly discuss problems and solutions with the interviewees.

Interviews have been conducted with ten selected persons from government, private sector business, science and non-governmental organizations. The interviewees cover representatives from the two ministries most relevant to technology-related policy-making: the Federal Ministry for the Environment (BMU) and the Federal Ministry of Economics and Technology (BMWi). Another interviewee works for the *Deutsche Gesellschaft für Technische Zusammenarbeit* (GTZ). Furthermore, interviewees cover a representative from the Kreditanstalt für Wiederaufbau (KfW). As of interviewees from non-governmental organizations, one representative from an environmental NGO and another from a university have been chosen. From the business community, interviewees include a financial investor, a wind turbine firm, a business union for renewable energies, and a large electricity provider (whose portfolio largely consists of fossil fuel technologies).

All representatives have been approached with the same set of 13 questions, while leaving plenty of space for narrative explorations by the interviewees (see questionnaire in German in the annex). A first group of questions interrogated the status quo of policies promoting the development of climate-friendly technology in Germany, as well as policies for transferring technologies abroad. A second group of questions addressed potential barriers to technology development and transfer both within Germany and in developing countries, including political, economic and technical barriers. A third group of questions asked for unilateral policies and measures by Germany and developing countries that may advance the development and transfer of technologies. A fourth group of questions examined the interviewees' expectations and proposals for policies at the multilateral level, both within and outside the UNFCCC process.

Key Findings from the Interviews

Political regulation versus free market forces

Views varied on whether stronger state regulation or the free play of market forces was needed to best promote technology transfer. Answers ranged from the conviction that TT is mainly a money question, which has to be met purely by market demands, to the opinion that detailed political regulation is needed, and that current policies in Germany do not sufficiently provide for.

However, all interviewees agreed that in a general sense, political regulation is needed to create the appropriate framework condition for the market. In particular, long-term and reliable political environments were deemed important, within which market forces can freely work. Most interviewees further agreed that in the current environment, market forces alone are not enough to effectively address the problem at hand.

One policy-maker commented on the difficulty for German ODA of shaping regulation in developing countries, and to avoid malfunctions there: “we can only offer capacity building or set conditionalities”, he said; the problems of perverse regulation, such as perverse subsidies or over-regulation, needed to be avoided and overcome largely by the developing countries themselves.

The interviewee from the university added that most of the basic technological innovations are already made. Now, investments in secondary innovations are needed, which should mainly aim at raising efficiency and price performance of existing technologies to become applied more widespread. He proposed a “lead-market” concept, characterized by Marian Beise (1999) as “geographic markets which have the characteristic that product or process innovations, which are designed to fit local demand preferences and local [...] conditions, can subsequently be introduced successfully in other geographic markets as well and commercialised world-wide without many modifications.“ As an example, he quoted the development of electrical bicycles in China, which were made to fit especially for the Chinese market, but which also gave China the leading edge in technological advances in this sector.

Existing policies supporting climate friendly technologies in Germany

Compared to most other countries in the world, the level and ambition of policies supporting climate-friendly technologies in Germany were considered very positive. There was consensus among interviewees that, in many ways, Germany can be called a forerunner in this field; one person went so far to say that there was no need of any new political action for supporting climate-friendly technologies anymore.

The successful policies mentioned mainly include initiatives on renewable energies and the electricity sector, followed by measures for industry and for housing. Some interviewees stated that measures beyond the electricity sector are not focused enough so far. Improvements are needed in the field of networking for information, as one

expert pointed out. According to him, the diffusion of information on technology through dedicated knowledge networks is key to the advancement of climate-friendly technologies.

Existing policies for TT in Germany

While policies for technology development and use within Germany were considered to be strong, policies for technology transfer to other countries were less developed, most interviewees agreed.

Longest-standing, and mentioned by almost all interviewees, are the *Export Initiatives for Renewable Energies* and *for Energy Efficiency*, which are explicitly devoted to contribute to TT. They were designed to help German companies enter foreign markets by providing information on foreign markets, and facilitate business relations and private-private-partnerships through 115 foreign boards of trade. They also provide information for multipliers from developing countries, arranging meetings with German companies in Germany.

Furthermore, the KfW (Germany's Reconstruction Loan Corporation) grants *export credit guarantees* ("*Hermesbürgschaften*") to German companies investing abroad. However, these were not particularly conditioned to climate-friendly technologies, nor would they aim at transferring know-how.

Most recently, interviewees mentioned, the *Climate Initiative (Klimaschutzinitiative)* has started to support projects that aim at TT. The Climate Initiative was founded by the Ministry of Environment, with money generated from the auctioning certificates from the European Emissions Trading System; it is run cooperatively by the Ministry of Environment and the Ministry of Economic Cooperation through its agency GTZ.

In addition, interviewees mentioned that the Federal Ministry of Economic Cooperation supports climate friendly technologies in developing countries as part of ODA; however, these were mainly guided by an export interest of German companies, and would lack a specific focus on TT.

Besides, and rather indirectly, Germany would contribute to the advancement of TT through grants to the GEF, which hosts a number of dedicated TT projects.

Best practice policies for TT and the support of green technologies in other countries

Interviewees mentioned a number of best practice examples for the support of TT in other countries. The USA, UK, Denmark and France are successful not only in facilitating meetings and business cooperation between domestic companies and potential foreign buyers. At the same time, they offer credits and financing to those buyers— something Germany has not taken on so far. This helps to overcome one of the main impediments in developing countries: their lack of financial means.

Dubai's newly-built Zero-Energy City lighthouse project was seen as good example of domestic action. Finally, China's policy of annual doubling of investments in renewable energy was considered a promising policy move whose effectiveness should be thoroughly researched in future projects.

Impediments for TT on the side of Germany

Most notably, almost all interviewees mentioned the high risk of investment in many developing countries as the main impediment. On top of that, return on investment in these markets in many cases was deemed too low to make the investments in developing countries attractive. Interviewees suggested that this general impediment was aggravated by the fact that many German companies producing climate-friendly technologies currently see a very high demand within Germany and Europe; in such times, there is little incentive to further expand into developing country markets.

As one policy-maker mentioned, many German companies, particularly SMEs, are not yet aware that their level of energy efficiency is a major advantage in foreign markets. In particular, in times when oil prices and energy prices rise, the status quo of many German products already has a great comparative advantage in markets of the South. Nevertheless, many companies are still not aware that, compared to the status quo in developing countries, they offer very efficient and climate friendly technologies.

According to several of the business representatives, one of the main impediments for a successful TT is the companies' fear of new competitors emerging from the South, spurred by easy access to new technologies. Another mentioned concern was the "rip off and duplicate" problem: TT may lead to an increase in the illegal duplication of patented technologies.

Regarding political impediments, most interviewees agreed that the lack of a comprehensive policy framework for the advancement of TT is a major hindrance.

One interviewee also bemoaned the limited knowledge of Germany's policy-makers about the issue, and the lack of knowledge transfer among the different ministries concerned. Successful TT strategies must be developed taking into account all decision-makers. Decisions must be made transparent and be quickly diffused into public knowledge. As an example, he quoted the quick and wide spread of the latest IPCC report by the media, which made climate change a well-known public issue, and also made subsequent decisions in this matter easier for the government.

Impediments for TT on the side of the developing countries

Compared to the impediments within Germany, existing impediments in developing countries were considered the larger barrier to TT. In general, investment conditions were said to be better in emerging market economies, such as China and Brazil, since these would offer better physical (e.g. electrical grids) and economic (e.g. specialized national programs) infrastructures.

The interviewees pointed out numerous economic, political and technological impediments that exist in many countries of the South. One of the most basic problems, many interviewees suggested, is simply a lack of appropriate cash-flow and liquidity on the side of developing countries. Best available technologies come at a price that often cannot be met by developing countries. As a possible result, the demand for Germany's "high-tech" products would be low.

In addition, one interviewee voiced that in many developing countries, there would be a low sensitivity for high quality. Instead, consumers and companies would prefer cheap but low-quality products.

Developing countries also lack the economic pull to attract foreign investment, interviewees agreed upon. Many countries would offer poor investment conditions, while they often had high market-entry barriers such as tariffs and mandatory certificates for particular markets. This creates uncertainty for investors, and makes market entry unattractive. An example, given by one of the policy-makers: in their remote areas programme, India has offered to cover 85% of the investment by foreign companies. Yet so far not a single foreign company has subscribed, for too many risks are associated with these investments.

Interviewees felt that several political factors further aggravate the poor investment climate: Many developing countries would lack stable and reliable long-term political conditions, making market development risky for foreign investors. In addition, the administrations of many countries would show a very high level of bureaucratization. At the same time, many countries could only offer distressingly small number of well-trained, qualified personnel. Many interviewees also felt that corruption in the countries' administrations is still regrettably strong.

On top of that, interviewees felt that common political priorities in many developing countries still lie elsewhere than in the promotion of climate-friendly technologies and energy efficiency. Often a goal such as the low-cost electrification of rural areas is seen as primary aim, which may be pursued at the cost of low-efficiency fossil-based solutions. In many countries, interviewees said, electricity tariffs are so low (and subsidies for energy so high) that they impede any impulse to invest in energy saving technologies.

On the technological side, the basic impediment undoubtedly is the lack of a supporting infrastructure for technologies. For instance, even though renewable energy sources mostly don't need a centralized grid, they cannot function if there is none at all. One expert pointed out that sometimes it is even unclear where the responsibilities for the build-up and maintenance of the infrastructure lie.

Business representatives, moreover, found the level of technical know-how of indigenous personnel lacking in many places. There would be a distinct deficit in capacity-building which needs to address this.

Germany's options for unilateral support of green technologies and TT

What could Germany do unilaterally to support green technologies and TT? Responses from the interviewees were highly diverse. It was suggested that Germany should focus on a Green Deal to promote a low-carbon economy both at home and in target countries. For this, Germany should engage unilaterally, but activities would still have to be MRV-relevant. For instances, Germany could augment their export supports, from Hermes to export crediting to direct subsidies for certain technologies. As Germany's export initiatives for renewables and energy efficiency are not designed for large-scale TT, another interviewee suggested to better devote money to concrete projects and to improve project finance from BMZ/GTZ.

Germany may also co-finance the demand on the recipient countries, e.g. co-finance a wind park in Morocco. The commentator found it highly important that Germany should engage in consulting policy-makers in developing countries, and provide capacity building for these.

Further, bilateral cooperation on TT can be greatly improved. Compared to multilateral TT cooperation, this often proved effective, e.g. in the case Germany-China. In contrast, multilateral cooperation, such as through the GEF, was often more bureaucratic and time-consuming.

Another expert noted that the worldwide demand for technologies is larger than currently perceived by the industry. Therefore, Germany needs to make German companies aware of these markets, and of their comparative advantages in the world market, and launch a large-scale information campaign for German companies for this purpose.

Also, particularly Germany's SMEs complain that they lack the capacity to develop export strategies. Offering capacity building for these companies might be promising. This should be conducted in cooperation with German trade and business unions.

Interviewees asked for a massive increase of funding for research & development. One person reminded that federal funding for research was much higher in 1973 after the first oil price shock. The German government needs to not only support companies financially in their *material* export business (e.g. via export credits and export credit guarantees), but also in their transfer of *knowledge* and in their *capacity building* efforts in the developing countries. For instance, Germany may enlarge advanced technical colleges and expand "classical" development cooperation on the matter.

In addition, Germany could offer information exchange forums for key decision-makers in developing countries, so as to transfer the best information about policy making and setting enabling environments.

Developing countries' unilateral options to attract TT

In order to attract a higher level of TT, developing countries need to overcome the impediments lined out above. Governments of developing countries need to make reliable decisions to successively phase out fossil fuels and rely on renewable energies, then analyze the respective impediments in their countries (such as counter productive subsidies, infrastructural shortcomings), so as to offer a stable base for businesses and a climate-friendly enabling environment. Generally, stronger governance is needed in developing countries.

As is already the case in some emerging economies, a secure investment climate for foreign direct investments needs to be provided in order to make TT more attractive. By most of the interviewees, foreign direct investments were considered the prime channel to trigger North-South technology transfer.

Interviewees from businesses called for implementation and strong enactment of intellectual property rights to better control the use of and avoid copying of technologies.

Multilateral level support of TT

In the interviews, feelings about deliverance of the multilateral level to support TT were mixed. On the one hand, several interviewees felt it most important for the UNFCCC to send a strong signal that TT is rigidly supported, both through solid policy and financially. Concrete instruments need to be developed, such as low-carbon development plans for developing countries, technology roadmaps and technology action programmes.

One commenter advised to establish a new fund under UNFCCC for massive financing of technology transfer. Such a fund would need to be geared towards the developing countries in the first place, i.e., improve the political and economic framework conditions for TT in the countries themselves as a precondition to supporting companies in the developed world in TT.

Most interviewees agreed that UNEP, GEF and the World Bank as existing institutions should definitely be used. It was not found practical to establish too many parallel structures and new institutions outside the control of industrialized countries. However, one interviewee mentioned that the GEF currently manages 2 billion, and that it might not be capable of managing three digit billion sums. Reform of the GEF was therefore called for, as its TT-programmes need to be made much more pragmatic.

On the other hand, interviewees also expressed some strong skepticism whether the international community would be able to come to terms with a strong multilateral agreement on TT, considering that not even economic agreements are possible (see WTO), and seeing how inefficient the last climate conference in Poznan in 2008 was.

Moreover, several interviewees felt that international politics are too far away from the business among companies, and that multilateral decisions have very little impact on the company level where actual TT takes place.

Against this background, one of the experts specifically called for an institution that is internationally recognized (such as IRENA) and that is solely geared towards TT, but not necessarily part of the UN. Such an organization would not need to give financial support, but could focus on know-how and consulting as regards practical steps to foster TT.

Several interviewees suggested that the EU as a union should also act unilaterally in addition to member states and the UNFCCC in order to implement a successful TT regime with stronger measures than possible within the multilateral framework.

Expectations regarding Copenhagen

All experts agreed that reliable and stable long-term conditions on the multilateral level are key to a successful TT framework. In order to give clear guidance to future investments in climate-friendly technologies, and also for an up-scaled TT, all interviewees felt that a post-Kyoto agreement must first and foremost provide ambitious mid- and long-term mitigation goals.

Furthermore, the advancement of the Kyoto mechanisms CDM and JI towards a clearer TT perspective, and the development of criteria of what is “climate friendly” are of major concern for businesses.

Summary of results and recommendations

Germany has a lot to offer on technology transfer, both regarding political experiences as well as at the industry level. All interviewees agreed that Germany could offer experiences both as a forerunner in climate policy making and a leader in the production of climate-friendly technologies. However, interviewees still expressed the need to better frame a national strategy for technology development, and also technology transfer to other countries.

The market and private business relations were considered the prime vehicle for technology transfer. Therefore, interviewees considered the main role of politics in setting appropriate framework conditions for a private sector-based TT. Focussing on enabling environments for climate-friendly technology development both in Germany

and in developing countries was regarded much more important than up-scaling politics' actual engagement in TT projects, or major North-South funding.

Impediments for TT mostly appear at the national level. Impediments in Germany, in particular as regards SMEs, mainly comprise the lack of information and lack of capacities to engage in TT with the South. Impediments in developing countries comprise an overall weak investment climate, including unattractive conditions for foreign direct investments, and lack of purchasing power. In emerging economies, such conditions were considered much better.

Hence, most of these impediments must be handled at the national level by Germany and by developing countries; the multilateral level has little to contribute here. Germany could focus on a Green Deal, which includes an advanced engagement of German companies abroad. It could scale up its export support programmes and better focus them on climate aspects, including co-financing in recipient countries. It should launch information campaigns for German companies and provide forums for capacity building and information exchange with foreign policy makers. German businesses need to better understand technology transfer as an opportunity (to expand and grow) rather than a threat (to lose innovations and market share). Funding for RD&D should be much up-scaled.

As regards multilateral regulation on TT, interviewees were rather sceptical – or lacked concise ideas how this could look like. Clear targets and timetables for mitigation commitments and actions were considered an indispensable signal for companies to invest in TT. As of support for actual projects, on the one hand, interviewees suggested to work through existing institutions such as the World Bank or the GEF. On the other hand, most of them did not deem these institutions capable of implementing a large-scale kind of TT. Expectations on what role the UNFCCC process might play in practice therefore remain vague.

In light of these findings, two recommendations may be made.

First, there is a definite need for increased capacity-building in both developing and developed countries. Developing countries need to build up their capacities to provide investors with well-trained personnel. In particular, to attract foreign capital for a green economy, developing countries may look into a build-up of their “brain capital” in engineering and environmental studies. Businesses would profit by hiring local staff, which eventually may come at a lesser cost than professionals from industrialized countries. Host countries would benefit from a higher income class, generating more tax profits and a long-term build-up of a vital domestic climate technologies industry.

Developed countries such as Germany, on the other hand, should build capacities of their SMEs to understand the opportunities they have especially in developing countries. While initial investment may be viewed as risky, German enterprises have a

lot to offer in terms of energy efficient technologies that come at reasonable prices. At the moment, though, SMEs do not even consider developing countries as potential markets for their products. The German government needs to provide these enterprises with good information on developing country market opportunities. By doing so, Germany could maintain its role as a leader in climate friendly exports.

There are myriad options how capacity building in developing countries and Germany could be developed cooperatively: conducting joint conferences and business meetings; up-scaling the German “Export Initiatives for Renewable Energies and Energy Efficiency”; launching South-North public-private partnerships; requiring capacity building programmes and staff training for locals by foreign investors in developing countries; developing a common international database with market information; better mainstreaming technology transfer aspects into capacity building programmes by official development aid programmes; initiating South-North exchange programmes for policy makers; and more.

Second, market development in developing countries is key to a successful implementation of climate-friendly technology businesses in developing countries. Securing a leading role in a certain technology field, such as China did in its development of electric bicycles, ensures a stable market share in the long term. The lead market approach may prove highly beneficial in this aspect.

Such development could be supported unilaterally by countries like Germany or the EU, while much of the effort from the international level (UNFCCC and other organisations) should also be directed to this endeavour. In particular, financial support has to be granted to developing countries. Again, there are myriad options finances could be directed towards: social programmes that allow for cutting perverse subsidies for fossil fuels without hurting the poor; cross-financing the implementation of feed-in laws; co-financing the establishment of smart grids; providing investment incentives and subsidies for renewable energies; directing development aid to public transportation infrastructure; cross-financing housing insulation programmes; and more.

Increased financial transfers and forced capacity building will only be possible if the cooperation between developed and developing countries on technology transfer for climate technologies will not be considered a burden, but an opportunity for both sides. Building bridges between markets will prove beneficial for all parties, and in particular for countries like Germany with a highly export dependent economy. Businesses and their employees in North and South will have potentials for higher income, developed countries will profit from higher export quotas at least in the short- and medium-term, and developing countries will be able to veer away from their current low-efficiency fossil energy path and achieve greater energy independence. This report leaves no doubt that the current multilateral climate negotiations on “technology development and transfer” bear a large potential for an economic win-win-situation.

Sources

Interviews with ten policy-makers, business people and representatives from science and NGOs during February and April 2009.

Beise, Marian (1999): Lead Markets and the International Allocation of R & D. Paper prepared for the 5. ASEAT Conference “Demand, Markets, Users and Innovation: Sociological and Economic Approaches”. Manchester.

BMU (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety) (2006): Ecological Industrial Policy. Memorandum for a “New Deal” for the economy, environment and employment. Berlin.

BMU (2008): Ecological Industrial Policy. Sustainable Policy for Innovation, Growth and Employment. Berlin.

Annex: Interview-guide (in German)

Meinung und Status-quo:

1. In welchen Sektoren halten Sie einen Technologie-Transfer für besonders wichtig, um Entwicklungsländer im Einschwenken auf einen klimafreundlichen Entwicklungskurs zu unterstützen?
2. Wie wichtig finden Sie politische Regulierung, um einen Technologie-Transfer für effektiven Klimaschutz umzusetzen, und was kann / sollte über den Markt laufen?
3. Gibt es in Deutschland Politiken und Maßnahmen, die die Innovation und Demonstration von klimafreundlichen Technologien fördern?
4. Welche Politiken und Maßnahmen werden in Deutschland bereits umgesetzt, um Technologie-Transfer in Entwicklungsländer voranzutreiben?
5. Sind Ihnen aus anderen Ländern Politiken und Maßnahmen bekannt, die Vorbildcharakter haben? (*politische Rahmenbedingungen / best practice Beispiele*)

Fragen nach speziellen Technologien und ihren Hemmnissen:

6. Welche bereits entwickelten und welche zukünftigen Technologien von heute bis 2020 halten Sie für klimapolitisch besonders relevant? (*ggf. eine Auflistung und ein ranking von Technologien erbitten*)
7. Wo werden diese Technologien derzeit erzeugt, wo werden sie nachgefragt?
8. Was sind Hemmnisse in unserem Land / seitens Ihres Unternehmens bei der Markteinführung der von Ihnen genannten Technologien?
* Politische Hemmnisse * Wirtschaftliche Hemmnisse * Technologische Hemmnisse
9. Was sind Hemmnisse auf der Nachfrageseite – bzw. in den Entwicklungsländern – bei der Markteinführung der von Ihnen genannten Technologien?
* Politische Hemmnisse * Wirtschaftliche Hemmnisse * Technologische Hemmnisse

Fragen zu politischen Maßnahmen / Lösungen für den Technologie-Transfer:

10. Welche Maßnahmen würden Sie gerne unilateral von Deutschland eingeführt sehen, um den Technologie-Transfer (*ggf.: für Ihr Unternehmen*) effektiver / attraktiver zu machen? (*Push-Faktoren für Technologie-Transfer*)
* Forschung und Entwicklung * Demonstration * Capacity building
* Politische Rahmenbedingungen („enabling environments“) * Finanztransfers

* Usw.

11. Welche speziellen Maßnahmen könnten Entwicklungsländer einführen? (*konkreter als nur ihre Finanznot lösen und wirtschaftliche Stabilität gewährleisten*) (*Pull-Faktoren für Technologie-Transfer*)

- * Forschung und Entwicklung
- * Demonstration
- * Capacity building
- * Politische Rahmenbedingungen („enabling environments“)
- * Finanztransfers
- * Usw.

12. Welche Rolle sollte die internationale Politik spielen, bzw. welche Maßnahmen sollten auf der internationalen Ebene eingeführt werden?

Welche davon unter UNFCCC?

Welche in anderen internationalen Organisationen? (z.B. Weltbank, GEF; auch EU-Ebene!!!)

- * Internationale Forschung und Entwicklung
- * Demonstration
- * Finanz-Fonds
- * Politische Rahmenbedingungen
- * Informationsaustausch (z.B. Datenbank mit best-practice)
- * Usw.

13. Was erhoffen / wünschen Sie sich als Ergebnis von Kopenhagen für den Technologie-Transfer?