



Conference on energy-change in Poland
University of Szczecin
September 23rd/24th

International Association of Lawyers Against Nuclear Arms

Conference on energy change



Paradigm in law and policy

Minutes of the Conference on Energy Change

Chairs:

Prof. Pasquale Policastro, University of Szczecin

Prof. Michael Rodi, IKEM, Berlin/Greifswald

Dr. Peter Becker, IALANA

Mr. Rainer Braun, IALAN

Friday evening

23 September, University of Stettin

18:00 Reception and introduction by Mr. Policastro

On Friday evening the conference started with Mr. Policastro welcoming the conference participants and speakers. The latter consisted of experts from the legal, academic and non-profit sector, a potent interdisciplinary mix. The conference was attended by mostly students, researchers and teachers who are active or interested in the field of energy, and the move away from nuclear in particular.

Mr Policastro drew attention to the ever-increasing need for energy change. From an economic or environmental point of view, it is becoming clear that our current fossil and nuclear-based energy mix is unsustainable. Energy policy across Europe takes this new reality into account, but often fails to convey the urgency of the matter. The media could contribute significantly; through the dissemination of accurate information they can raise public awareness on the dangers of fossil fuels and nuclear energy, and on the benefits of renewable alternatives. Information and awareness play a crucial role in successfully moving forward with the energy transition. Overall this awareness of both the public and of policy makers has increased all over Europe, resulting in a general trend away from conventional energy and towards renewable energy sources (RES).

Poland stands in strong contrast with this trend. Already heavily relying on a mix of fossil and (imported) nuclear, Poland is now planning the construction of its first nuclear power plant, locking the country further into the tight web of conventional energy, infrastructure and economic subsidies. Could the Polish government realize their nuclear plants if the public, as well as policy makers, were fully aware of the risks, economic costs and available alternatives? Speakers Prof. Michael Rodi from the University of Greifswald and Dr. Peter Becker, one of the founders of IALANA addressed the availability of other alternatives such as renewable energy and renewable storage. Through international cooperation and investment in research, the use of these alternatives can be further explored and optimized. Dr. Becker stated that the nuclear movement made spectacular progress over the past decades, although much work still needs to be done. A combination of increased public awareness, current events such as Fukushima and overall environmental concerns, the

movement has gained widespread public support and even shapes policies on a national level. In terms of size, influence and credibility the movement is at a height it has never reached before, illustrating the potential and capacity of a civilian movement to turn into a true influential political voice. This is an inspiring development, and all the speakers agreed that through international cooperation and initiatives like this conference, true energy change can be achieved.

After a brief round of audience participation, the meeting ended and participants were invited to continue discussions during a joint dinner at the University.

Saturday, 24 September, University of Stettin

I) The process of finalizing civil use of nuclear energy

9: 30 Welcome of the participants and aims of the conference
Pasquale Policastro

Prof. Policastro welcomes all participants, speakers and other interested parties and applauds their motivation to foster the discussion on nuclear energy and related questions. He mentions that this debate is taking place all around Europe. However, the level and extent of the discussion differs significantly from country to country, and populations' attitudes can vary significantly too. France, Germany and Poland are all European countries; what's more, part of the European Union, but their population, policy and ensuing energy matrix is extremely different.

Of course, there are fundamental historical differences between these nations that account for much of this diversity. For decades Poland has known a communistic-socialistic rule of law, where powers were concentrated without sharing.

The transition of the energy system in Poland in the 90's was marked by a trend of authority shifting away from smaller states, and smaller power plants too. This was supported by cities and large municipalities, since the change of the economy (manifesting in for instance an increase in shares) was very important for business and trade (brokers etc). The EU is not in favour of long term contracts, considering this system of concentration of capital to be against the Union's market principles. When Poland joined the EU, this authority and financing structure was one of the first points of reform on the Polish agenda. This and many other underlying historical and economic causes leading up to our current situation will be discussed during this day.

II) The steps to energy change

10:00 The Protest Movement: NGO's and Greens
Rainer Braun, Executive Director of IALANA and the German section

Originally, the anti-nuclear movement was the core of a social movement, which considered civil nuclear use and nuclear arms to be 2 sides of the same coin (or sword in this case). The Green Party, founded in 1980, is today very successful and can in the future be part of the national government. One of Germany's Länder, Baden Württemberg, now has a prime minister from the Green Party for the first time in history, showing how this previously considered 'radical' movement has become an accepted and mainstream organization. As mentioned, the Green Party came in part from the anti nuclear movement, inspired by President Eisenhower's speech 'Atoms for Peace' of 1953. Arguments against nuclear focused on security and safety risks, waste problems, the terror threat, proliferation risk and uranium mining (the latter has a considerable destructive effect on the land and the local

population). In the 70's about 400 nuclear plants were operational world wide, and there were plans for the construction of 24 000 more! This news sparked actions across the globe starting in France and the US with students mostly. In Germany the movement was led by a mix of conservative parties who valued traditional life conditions, and 'left' thinkers who shared a vision of a nuclear free world.

Three locations should be mentioned with regard to incidents with nuclear energy plants: Harrisburg in the US (only 3 new plants were built in the US after Harrisburg), Tschernobyl (which marked the general German attitude) and of course Fukushima. Mr. Braun met with Japanese scientists before the Fukushima incident, and surprisingly enough they were very much against nuclear weapons, but in favor of nuclear energy.

Across the globe, the anti-nuclear organizations took different shapes. The Greens' anti-nuclear movement was the first one to get more than 100 000 people on the street in a collective non-violent effort involving a wide variety of people (ranging from mothers and lawyers to farmers and priests even). In Latin America the anti nuclear movement was a fundamental part of the democratization process. The movement triggered strong counter reactions, of course. Large public demonstrations like the anti nuclear ones were very rare in those days, and it attracted a lot of attention and rather brutal repressions.

One of the main arguments brought forth by the pronuclear camp is that nuclear energy is cheap. This is not true, no nuclear plant could be built without vast amounts of state subsidies, which are necessary for R&D, waste disposal, plant removal and maintenance purposes. Since this is to a large extent financed with government funds, *the costs are not paid by the nuclear industry, but by the government and therefore the taxpayers (us).*

One thing is clear: The intense energy-consuming lifestyle of the 80's and 90's can no longer continue. Alternative solutions to nuclear are the 3E's, which stand for:

1. Energy savings
2. Energy efficiency
3. Renewable energy

Central is the fact that nuclear power is loosing its legitimacy and support. Even in France, a country that has long supported nuclear energy, 56% of the population now anti-nuclear. These successes, though encouraging, are also evidence of a deep contradiction within society.

The major lesson learnt through this movement is the power of collective action and the importance of constant voicing of opinions and of awareness raising, networks and internationality. Finally, legal actions made a significant contribution to the slow down and stop to constructions of nuclear plants, showing once more that law and society are inextricably linked.

10:45	The legislation leading to the finalization of civil use of energy Dr. Peter Becker IALANA and law firm Becker Büttner Held
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Mr. Becker started his career as a lawyer taking on political law suits, and has won important cases that improved and reshaped the previously restrictive admission system of medical schools in Germany. He sees law as an instrument that can adjust flaws in the legal system

and society in general. It is a tool that, when wielded correctly, has the capacity to improve people's lives.

Nuclear energy has been woven into the fabric of today's energy system through historical developments. The bombs Little Boy and Fat Man were dropped on Japan in 1945 driven by scientific curiosity, rather than by conflict resolution. President Eisenhower stated this:

'The Japanese were ready to surrender and it wasn't necessary to hit them with that awful thing'¹

It was in the political interest of the State to integrate nuclear power. The research process around nuclear was starting to receive significant state subsidies due to the combination of technical possibilities, potential for improvement and the unknown (and often neglected) risks. From that point in time until now, we can see that nuclear goes through different phases:

<i>Phase 1</i> Research into nuclear power mainly to obtain the nuclear bomb (arms race)
<i>Phase 2</i> Nuclear know-how applied to energy sector: Civil use
<i>Phase 3</i> Increased risk awareness: the end of nuclear power entirely?

Let's take a look at the history of nuclear in Japan. In the beginning, the novelty of the nuclear sector clouded the risk evaluation and the high potential of this new energy made people (excessively) optimistic, thinking the risks will diminish and then be eliminated altogether given more time and thorough research. The probability of accidents was grossly underestimated (as was the case with the melting core of nuclear research facility Chalk River Laboratories in Canada in 1952). Even prudent Switzerland suffered a nuclear power incident before their plant ever even became operational. The lesson we can learn from this is that no matter how good the research is and how thorough the precautions are, there will always be unknown/underestimated risks associated with nuclear.

Let's take a look at Germany. Germany's first Atomgesetz was written in 1959, and it transferred an obligation to promote the civil use of nuclear energy to the state. Several plants were implementing systems and procedures that were not transparent and therefore inconsistent with the terms of their contract. For instance, the capacity of the plant would far exceed the limitations foreseen in the contract. The state would find out about this breach of contract after the fact, basically too late to take any real measure. Though it displeased the state, these plants were not forced to decrease their capacity and construction since that made no economic sense anymore, the building was built, the damage was done. However, when the Greens came into power they inquired the state of Baden Wurtemberg why their nuclear power plant, though not in compliance with the original contract, was approved in the end. A committee took a closer look at the matter and going through the paperwork, it turned out that the plant never obtained the official green light to operate. In the light of past violations that had been tolerated, plant owners had deliberately begun to operate without an official approval! The court ruled in favor of the Greens and subsequently, the plant had to be phased out. The State generally is not persistent (or brave) enough to implement its own legal system after the fact, which in combination with the general audacity of the nuclear industry has led to several cases of misuse and illegal plants.

The first step-out contracts and phase-out legislation came into place in 2000 and 2002 following an increasing political strength and presence of the Greens and the nuclear

¹ <http://hnn.us/articles/44317.html>

movement during the 80's. In 2009 the conservatives and the liberals won the election, and decided to prolong the running time of plants, to the displeasure of the German Minister of Environment. After the Fukushima incident, it appeared the German government made yet another 180° turn in policy. In reality, this 'sudden' change of heart had been brewing behind the scenes of German politics for months already due to the general dissatisfaction with the initial decision to prolong nuclear life spans.

An Ethics Commission was to be installed with judges and experts to estimate to necessity and risks of nuclear energy, and they established that nuclear electricity was not entirely necessary these days. They came to this conclusion because, despite decades of research and subsidies, the problems of civil use of nuclear remain the same as in the beginning: high risks due to technical failure and human error, increasing costs (the Olkiluoto plant in Finland cost the government a whopping € 5 billion), and finally the long-term problem of nuclear waste, which lasts for 200 000 years.

11: 30	Reflections on spreading the experiences in Eastern and Western Europe Dr Roman Ringwald, lawyer, Becker Büttner Held
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The disaster of Fukushima left us with many questions: Japan is modern, high-tech and well organized, one does not expect accidents like these to happen there. The shock amidst the Japanese population was therefore much larger too. The general belief that nuclear energy, when in competent hands, is reliable and certain is now called into question, even in Germany where natural disasters like earthquakes or tsunamis are not likely to take place. After all, the Fukushima reactor was built after a careful environmental study and was meant to be designed to match its surroundings. Still all the precaution and studies could not prevent this accident. It is not unthinkable that German nuclear plants are subject to a similar design flaw.

Another important argument is a financial one: Who pays for the damage? Apart from the subsidies a plant requires to be built in the first place (and these are substantial to say the least) the potential post-accident phase should also be considered when thinking about the costs of nuclear. *No private insurance exists for nuclear power plants*, which means that in case of an accident or catastrophe they will and cannot be financially accountable for the damages. The insurance is 'covered' by the state (meaning the public), and not by the plant owners. The financial risk assessment in the industry can therefore not be accurate!

Across the European Union governments and politicians have many different points of view, but overall an apprehensive or full-out negative attitude can be discerned. In France, a generally pro-nuclear nation, the population is becoming increasingly negative towards nuclear, and Ms. Aubry (left wing) openly stated to be against nuclear in the long run. In the UK politicians are of the general opinion that nuclear is currently economically efficient, but not sustainable in the long run.

When thinking about economically efficient, the inquisitive mind wonders about the following: Nuclear is a relatively old technology, and it has always received significant state subsidies.

But if a forty years old technology still needs subsidies to remain on the market, it is not economically efficient. It is not even economically independent!

This is interesting because the main argument against an energy shift to renewables is often an economic one, stating that a full integration of these new technologies is simply too costly, especially in today's economic climate. True, like nuclear, renewables require

subsidies. But they are a *new* technology with high potential development and a steep improvement curve, unlike nuclear which has not advanced for decades.

Let us get back to the question of risk insurance. How does one deal with the risk of nuclear energy? The risk must be related to the maximum potential damage in case of an incident. In the case of nuclear, this potential damage is so enormous that the price will always be too high. Furthermore, the nuclear power plants are operated by dominant market players, and this weakens competition and severely distorts the market.

Nuclear plants produce cheap energy, but the costs of construction, maintenance, waste management, risks and removal costs should also be part of the price tag of nuclear. This would make for an incredibly high and unmarketable end price.

Many argue that nuclear energy is at least a temporary solution, a bridge to renewables if you will. However, energy supply from renewables is volatile, and the power plants to complement this volatile supply have to be *flexible* to fill in the gaps of renewables. Nuclear production is *constant* and is by definition not an energy source that could complement, help or integrate renewables.

Furthermore, on an EU level there is a serious issue of market distortion and competition. Nuclear energy's weakening effect on competition is against EU law. A court case about nuclear and competition issues is currently running in Belgium where a nuclear energy facility wanted to prolong the plant's life span. They were taken to court by another energy producer purely on competition grounds. The plaintiffs are making the case that the nuclear energy plant is weakening the market system and driving up prices by increasing the premium for 3 or 4 other market players.

Some facts argue in favor of nuclear energy. For instance, climate change is not caused by nuclear since the latter emits no CO². But not emitting carbon does not make an energy source clean; nuclear waste is unsustainable in its own unique way. Moreover, the centralized nature of nuclear plants results in a loss during the transportation of energy, making it less cost effective than is often claimed. More decentralized energy production plants would be preferable in the interest of energy efficiency. There are many decentralized alternatives available, intelligent clean solutions such as smart modules, feed-in, storage, decentralized energy production, wind, solar, water, geothermal etc.

A non nuclear market is possible, but more legal instruments and policy are needed to drive us down that road.

12:00	How to come to social awareness concerning energy-change? Felix Ekardt, University of Rostock, Member of the Scientific council of the BUND (Bund für Umwelt und Naturschutz Deutschland) and Friends of the Earth, Germany
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Without social awareness, large public projects, initiatives and processes tend to fail. Energy and climate change are no exceptions to this. Sustainability in this context means long term solutions for future generations worldwide, and these solutions are linked to energy and climate. Can we say that climate and energy policy has been successful over the past decades, on both an EU and a national (German) level? Policy has certainly set ambitious goals and standards. But has this resulted in tangible results in practice? For instance, have emissions decreased? The answer to this very basic question is: no. In fact, despite our best policy efforts global emissions have *increased* by 40%. Though Germany says emissions have been reduced by 25% since 1990, this figure fails to take some determining factors into

account. Take emissions or carbon per capita for instance. If you look at the figures per capita, Germany is actually one of the higher emitters with a whopping 9 ton per person, and is far away from the 1 ton target of the IPCC. Another distortion in emission statistics comes from the relocation of pollution; by producing elsewhere emissions on a national level are decreased, though in reality they simply take place elsewhere and are therefore not reduced (known as the relocation effect or rebound effect). Mr Ekhardt does not believe that the current legal system can and will achieve the emission reductions that are necessary. One flaw in the current approach is the lack of coordination of policies: we have separate legislation for the housing sector, for the automotive industry etc. None of these efforts are harmonized which leads to a fragmented and therefore less efficient system.

When trying to change energy habits and reducing emissions, social awareness of the energy consumer may be the more effective tool. Technical and legal progress can not succeed without a change in consumer (and producer) behavior vis-à-vis energy use. New technical breakthroughs and legal initiatives can not successfully change our energy system or reduce emissions on their own. They must be accompanied with an increase in social awareness, and a structural change in attitudes and behavior.

If the public is more aware of the consequences of today's energy consumption, the change in overall behavior could trickle down to other parts of life too. For instance increased environmental consciousness could alter food habits; people may consider eating less meat or buying biologically produced goods.

One can argue that the change towards a sustainable society is already on the way. The Greens are gaining political momentum, and climate and energy concerns feature high on the agenda of governments, organizations and companies worldwide. However, the change is taking place too slowly, and no significant energy change has actually occurred yet. Why is that? There appears to be a vicious circle between the public and governments, where politicians do not act since the public does not seem concerned and voters do not act out of complacency and lack of information.

Factors that come into play here are human egoism and conformity; this notion of normality where the way things are is accepted as status quo, and any change to the current state of affairs is an effort and a potential risk. Politicians do not want to be voted out of office for implementing tough new climate policies and constraints, and voters are hesitant to change their behavior. The result is an inevitable back and forth between policy and society, and which one should or will start the other.

What would a better climate and energy policy look like? Mr. Ekardt suggests to change the basis of EU climate policy to use the current ETS (emissions trading system) transforming it into an abstract ETS on primary energy with serious goals. In addition to that, he suggests conventional energy plants be given no more subsidies.

12:30	Support schemes in the electricity feed-in law of 1990 and the renewable energy laws of 2000 Dr. Martin Altröck Lawyer, Becker Büttner Held
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Development of renewable energy in Germany is progressing quickly, and legislation on the matter goes into great detail regarding regulation, production and consumption. The relevant legal basis for renewable energy took shape around 1997. Energy production from biomass, wind and solar has increased significantly since then. In 1990 only 3 % of all electricity was renewable, now this figure has risen to 17%. The system of feed-in tariffs used in Germany greatly contributed to the successful expansion of renewables. The

certificate system used in the UK and in Poland is also showing promising results. Under the latter scheme, a *producer* must include a certain amount of renewable energy in his portfolio. The feed-in tariffs (or FITs) oblige *grid operators* to give grid access to renewable energy producers who want to feed their electricity into the grid, and to pay them a set amount of money. Practice has shown that countries with a certificate system spend more per kWh of wind energy (for instance) than countries with a FIT system. The certificate system is designed for large quantities of energy production, which is a significant up-front financial investment and responsibility for many who are interested in producing renewable energy. FITs are designed to support small-scale production of renewable energy as well, which makes the tariffs a more accessible, widespread and decentralized option. Moreover under the FIT system, grid operators are also obliged to optimize, boost and expand their grid systems to allow for the regular feed-in of renewables. This results in an overall improvement of energy infrastructure. Finally there is a long-term tariff for renewable energy producers, which provides investors with security on investment.

As mentioned before, the legal framework of this development started in the 90s but lacked a differentiation between the different types of sources of renewable energy for a long time. The EU directive on the energy market liberalization led to a major amendment in 1998, in which the target group was defined more precisely. It allowed for the first legal claim on grid operators, obliging them to provide grid connection to renewable energy producers. The EEG (Renewable Energy Law or Erneuerbare Energie Gesetz) of 2000 went to a very high degree of regulation, enforcing a minimum price, FITs and a distinction between the different renewable sources. The Biomass ordinance which was implemented in 2001 directly led to a sharp increase in energy generation from biomass, clearly indicating the fundamental make-or-break role legislation play in renewable energy development and in sustainable development in general.

However sophisticated the legislation is, there remains room for improvement. For instance, the current framework lacks an equalization scheme especially targeting the industry, right now each user (normal end consumers) is now paying more for electricity out of the EEG.

III)	The Conditions for Energy Change in Poland
14:00	The legislative nuclear package in Poland Maciej Szambelancyk Lawyer WKB, Warsaw and Poznon Polish partner firm to the AEEC (Associated European Energy Consultants)

Coal and lignite are the cornerstones of Polish energy supply. Poland is therefore strongly affected by the CO² reduction legislation and schemes imposed by the EU. In Poland, energy demand is forecasted to grow by at least 25% over the coming decades; at the same time old energy plants and installations are approaching their expiration date. Bridging the gap between demand and supply will require huge investments, and renewable energy can not fill the gap in its current state of development. Renewable energy could be part of the solution though, and its potential in Poland needs to be examined in more detail.

Against the background of rising demand and decreasing supply, the Polish government is now considering an increased use of nuclear in their energy matrix with the construction of their first nuclear plant. The Polish Nuclear Power Program is now being formed, but since it is subject to multiple EU laws and rules it is a very slow process and far from being completed. The nuclear program lays out a detailed plan and time-table for the construction and subsequent running of a nuclear power plant in Poland. By 2030, about 15% of Polish energy will be coming from nuclear. Prospective sites for the reactor are currently being

reviewed. The possible interaction between the nuclear plants and the environment are being considered here. The legislative package (on which Maciej's law firm WKB worked) consists of 2 major legal acts:

- 1) The Act on preparing and accomplishing investments within nuclear power facilities.
- 2) The Atomic Law (amending act which implements the 2009/71/Euratom Directive).

The Key Decision or Master Decision is the final piece of the application that is needed to legally construct and run a nuclear power plant. It sets forth the conditions the investor must comply with to obtain a permit for the construction of a plant. This Key Decision is issued to the investor under very strict circumstances, and the granting process can be very long. Not many investors are keen on keeping millions of Euros on their account without a date or an insurance that the plant will be granted permission to operate.

Polish public opinion is split in two. Recent polls show about 40% of Poles against, about 40% in favor and 20% undecided. Generally, the population is integrated into the debate through questionnaires and environmental studies.

15:00 Position of the greens on nuclear and renewables in Poland

**Ewa
Green Party**

Ewa is a member of Polish parliament (joined in fall 2010) from the Green Party. The entry of the Greens into local administration was an exceptional development. She worked in the energy sector (masters in electrical engineering from the technical university). With the change of the political climate in Poland in 1989, Ewa started a private insurance company as a job on the side, while remaining focused on the social movement and ecological and energy issues.

The renewable energy sector faces several problems in Poland. Though the overall view may look promising, a close look at the figures reveals a more negative development, especially when the country's future nuclear energy plants are taken into consideration. Building or expanding nuclear facilities is a rather controversial idea these days, however in Poland the topic did not yield a big public discussion at all. These matters lack transparency and tend to stay internal to the energy sector and the relevant authorities, resulting in public misinformation (or no information at all) and an overall lack of awareness.

West Pomerania produces 30% percent of all the energy of Poland. Of this 30% share, only 10% is renewable. The current monopolies on the electricity and automotive markets constitute a major constraint to the development of renewable energy. Legal support for renewable development exists, but lacks effectiveness, coordination and depth. There are EU funds available especially for the development of renewables in a context such as Poland's, but the application process is very heavy in terms of administration and complexity. Naturally, this holds back development even more. As a result the projects that successfully went through the procedure and were implemented were well-prepared and large. The smaller decentralized structure in Germany is quite on the other side of the spectrum. Municipal, local or regional development plans often do not address the question of energy in general and tend to overlook renewables entirely. This lack of planning affects the execution of renewable projects; from planning a wind park to actually starting to build one, 5 years can easily pass. This is the result of the monopoly of big players on the energy market. Their rigidity and dominance caused the government to neglect the potential and promotion of renewable energy and clean technologies.

The Green Party in Poland now faces the challenge of proposing solutions to the energy question under very limiting, sometimes almost impossible circumstances. Both in legal and financial terms, the country is not entirely capable of moving away from coal. The option gas would involve an increase dependence on Russia. History and recent trade disputes indicate that the Polish public probably prefers nuclear energy over Russian gas.

Discussion platform

Next steps - The knowledge-based society

Prof. Michael Rodi

Prof. Pasquele Policastro

Dr. Peter Becker

Mr Policastro explains that the Polish industrial and societal system was a complex one, since all sectors (energy, industry etc.) were governed by different rules principles. One could say that national principles tended to become mere guidelines, and were generally overruled by sectoral principles. This legislative segregation could have a negative effect on European integration.

Either way, we are standing at the crossroads of energy productions. Coal must be replaced. We should see this inevitable imminent shift as an opportunity to create jobs and a sustainable energy system at the same time.

Prof. Rodi argues that a bottom-up approach is more effective and could help ease the transition. However, the structure of our society has complicated an effective bottom-up approach. Through legal and political order as well as the democratic nature of our society, the approval and participation of many different stakeholders is required for any new process to be accepted, ranging from business and academic to governmental and societal. Briefly reminiscing about his reform projects in Vietnam, Mr Rodi mentions that this type of problem rarely arises in authoritarian states.

Since the treaty of Lisbon, the EU has an energy competence (though it is more of a relocation of competence than the creation of new ones), indicating a movement in the right direction on that level too. Another bottom up approach might help to identify new ways of fostering this development through projects and research in the field of energy and the environment.

All participants and speakers agreed that regular international briefings such as this conference make a valuable contribution to the global debate on nuclear energy. The expertise and information that was exchanged should be made available to a wider audience to raise awareness and foster the discussion. The meeting was concluded with a brief round of audience participation, and ended at 17:30.

Anika Nicolaas Ponder

IKEM (Institute for Climate Protection, Energy and Mobility) in Berlin

Author of the minutes of the Energy Change Conference

