

Dear Readers,

The global economic crisis often over-shadows and limits progress on climate and energy policy on both sides of the Atlantic. This is a mistake, as there are many examples of how, in fact, the two issues are closely interrelated. Policy makers are searching for the best ways to stimulate investments for growth and generate new income opportunities. Europe, for example, is hoping to create the policy environment that will trigger an infrastructure revolution with the ultimate goal of a fully integrated continental energy grid. Meanwhile, the world is preparing for the next stop of the climate caravan in Durban, South Africa, where the overall governance architecture for financing a transition to a global low carbon economy will be one the key negotiation issues. A guiding principle for decision makers will be to address the interrelated priorities of economic recovery, job creation, and environmental protection.

This third issue of CONNECTED shows the urgency of leadership and game changers in times of the twin crises. In our "Face to Face" interview, two outstanding policy experts - Michael Oppenheimer, Princeton University, and Miranda Schreurs, Free University Berlin, observe that climate considerations have already entered various policy areas at the sub-national, national, and international levels. This mainstreaming needs to be accelerated if we still want to avoid a dangerous warming of the planet of 1.5°C or more.

In our op-ed, Kirsten Verclas and Jack Janes of the American Institute for Contemporary German Studies call on policymakers to refrain from sacrificing investment in a sustainable future for quick, short-term fixes. They argue that comprehensive clean air regulations can provide businesses and public-private partnerships with a clear timetable to ensure adequate financing of research and development in the clean energy sector.

CONNECTED 3/2011 shows once again how transatlantic cooperation can pave the way for new environmental leadership. We found various different examples: an initiative of the Heinrich Boell Foundation addresses game changers in the agricultural sector; the Californian-German policy exchange on renewable energies has been so successful that it

might be expanded well into the future; and the shared concerns of the German and US governments that climate change has severe security implications provide the basis for new bilateral mitigation and adaptation action. Opportunities for actions that are good for both the environment and the economy – and the transatlantic relationship! – are abundant. We hope you share our excitement and stay CONNECTED!

*Dennis Taenzler
adelphi*

*Alexander Ochs
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ISSN: 2191-8104

CONNECTED is a project by



and funded by



 OP-ED

The Global Economic Crises – The Right Time for Clean Energy and Environmental Regulations

by Kirsten Verclas and Jack Janes, American Institute for Contemporary German Studies, Washington, DC

In times of economic crises and fiscal budget shortfalls, the by now almost reflexive response from politicians and business leaders on both sides of the Atlantic is to tighten the budget by cutting government programs and easing regulations perceived to be an obstacle to businesses, innovation, and job creation. In the U.S., President Barack Obama [announced](#) in September 2011 that he asked the Environmental Protection Agency (EPA) to withdraw the draft Ozone National Ambient Air Quality Standards designed to ensure air quality in the United States. He justified this step as a reduction of “regulatory burdens and regulatory uncertainty, particularly as our economy continues to recover.” In Germany, the governing coalition under Chancellor Angela Merkel has continued to cut subsidies for solar power by emphasizing that not enough energy was produced through solar installations relative to federal subsidies and that other countries in the EU — such as Greece — would be more suited for solar power.

Although tight federal and state budgets are a legitimate concern, policymakers should refrain from sacrificing future investment and job growth for quick, short-term fixes. Clean energy continues to produce jobs in the United States and in Germany. A Pew Charitable Trusts poll in 2009 found that “between 1998 and 2007, [jobs in the clean energy economy grew by 9.1 percent, while total jobs grew by just 3.7 percent](#)”. More importantly, a report by the [Brookings Institution](#) found that 26 percent of all clean economy jobs are in manufacturing areas, which are important for low and middle class workers. In Germany, the same report states that the number of people employed in the renewable energy industry rose from 160,000 in 2004 to 300,000 in 2009. As Germany follows through on its 2011 decision to phase out nuclear power, this is likely to increase further. Government policy and investments should be designed to support this job

growth with targeted subsidies and innovative regulations.

The [transatlantic business relationship](#) is a cornerstone of U.S. and European economies: both continents conduct about 20 percent of their trade in goods with each other and remain each other’s most important trading partners. As companies are subject to regulations on both sides of the Atlantic, it is important for European and American policymakers to cooperate in this endeavor to spur job growth, innovation, and a green economy. To achieve them, the U.S. and Europe should cooperate on:

- enacting comprehensive clean air regulations that provide business with a clear timetable. This will not only provide companies with a clear regulatory framework, but also will begin to reduce costs for environmental and health impacts, which would eventually negatively impact the federal and state budgets in the long run;
- decrease rhetoric that clean energy and environmental policies will cost jobs, when the empirical impact on both sides of the Atlantic indicates the opposite;
- create private-public partnerships to ensure adequate financing of research, development, and innovation in the renewable energy sector; and
- provide a framework for transatlantic policymakers, business leaders, scholars, and non-profit organizations to exchange innovative policy ideas and solutions.

Protecting the environment and providing for an economic recovery and job growth are not mutually exclusive. It is time for the transatlantic leaders in the U.S. and Europe to recognize this and use their partnership to achieve both.



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The [American Institute for Contemporary German Studies](#) strengthens the German-American relationship in an evolving Europe and changing world.

POLICY UPDATE

Sunny times in the US?

In order to push the use of Concentrated Solar Power (CSP) in the United States, the US Department of Energy [has announced](#) a plan to invest \$60 million in the technology over the next three years. This investment is directed to applied scientific research to advance cutting-edge CSP technologies. Funded through the Office of Energy Efficiency and Renewable Energy, the DoE supports the [SunShot Initiative](#), a collaborative national effort aimed at reducing the cost of solar energy by 75 percent to make it cost competitive with other forms of energy by the end of the decade. The DOE expects to fund between approximately 20 and 22 projects. Industry, universities, and National Laboratories are invited to apply. In addition to the DoE's initiative, the US Department of the Interior announced the creation of 'solar energy zones' in deserts in the Southwestern US like the Mojave, which should facilitate the permitting process of new CSP plants.

Europe to be connected

On October 19, the European Commission presented the ["Connecting Europe"](#) initiative which includes guidelines for infrastructure projects in key sectors such as transport and energy. The initiative also introduces a new budgetary instrument, the so-called Connecting Europe Facility. "We are closing the missing links in Europe's infrastructure networks that otherwise would not be built," outlined José Manuel Barroso, European Commission President. About €9 billion is geared to help meet the 2020 energy and climate objectives. The initiative aims to build [energy solidarity](#) between Member States by further integrating the internal energy market, linking isolated regions to the European network, and promoting the development of renewables along with traditional energy sources. Among the priority projects in the renewable section are the Northern Sea offshore grid, to integrate electricity generated in the North Sea, the Baltic Sea, and neighboring waters.

Divided: Transatlantic perception on emission trading and air traffic

The US House of Representatives passed [HR 2594](#) by a voice vote in October 2011. Officially named the

European Union Emissions Trading Scheme Prohibition Act of 2011, the bill makes it illegal for US airlines to participate in the EU Emissions Trading System (EU ETS). Starting January 1, 2012, [aviation will be included in the EU ETS](#), including foreign airline flights landing or taking off from European airports. These flights will be subject to the system not only for emissions in European airspace, but for their entire journey. The US House action comes on the heels of a finding of the EU Advocate General that the inclusion of foreign airlines was compliant with European and international law in reaction to a lawsuit brought in London by American airlines against their planned inclusion. The European Commission has provided for exceptions for countries that institute "equivalent measures" for aviation in their countries, though it is not clearly detailed what these measures might be.

Stable costs of renewables in Germany

According to the four German grid operators, the Renewable Energy Sources Act (EEG) surcharge for 2012 will remain almost unchanged at 3.59 cents per kilowatt hour compared to the current value of 3.53. At the same time, renewable energy use continues to grow quickly: in the first half of 2011, the share of renewable energy in electricity consumption increased from 17 percent to over 20 percent. According to the [Ministry for the Environment](#), the benefits for energy security are significant: in 2010, the power generated from renewable energy sources made it possible to save about 2.5 billion euros on fossil fuel imports; around 80 percent of this is can be attributed to the EEG.

California's clean energy future goes to school

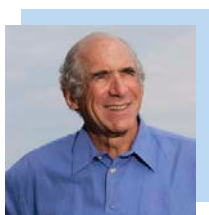
California's Governor Brown and California's legislators have paved the way for the further expansion of sustainable energy use throughout the state with a special focus on schools. ["California's children deserve clean air and a bright future,"](#) the Governor pointed out. [SB 585](#), helps school districts to finance solar installations at local schools by authorizing \$200 million for the [California Solar Initiative \(CSI\)](#). In addition to encouraging clean energy use in the school sector, the approved bill [AB 1150](#) authorizes the California Public Utilities Commission to collect funds for the [Self-Generation Incentive Program](#).

FACE TO FACE

A Transatlantic Conversation with Michael Oppenheimer, Princeton University, and Miranda Schreurs, Free University Berlin.

CONNECTED: *We have come a long way since the Earth Summit in 1992 when climate change was elevated on the political agenda to a problem heads of states needed to deal with. What have been the key scientific milestones since then? What do we know now that we did not know then?*

Michael Oppenheimer: In 1992 we had plenty of research indicating that greenhouse gases were accumulating. And we observed that the planet had already become warmer. However, we had not well established the link between the two. We didn't have definitive evidence, as we do now, that the build-up of greenhouse gases was indeed causing the observed warming. We now have that evidence. Secondly, we didn't have as much insight in the impacts of global warming on other features of the climate system, on the environment as a whole and on humanity.



"We have a much more de-tailed picture, which confirms that the climate problem is not only serious, but probably more serious than we originally envisioned."

Michael Oppenheimer

Now we have volumes of evidence that many features of our climate system are changing, not just temperatures. Precipitation in rainstorms is more intense, ice is melting not only at the poles but in glaciers around the world. We had fairly good measurements in 1992 indicating that sea levels were rising, but today we have definitive and very accurate measures of how rapid that rise has been. In the last few decades, we have made enormous progress in

exploring other changes in the climate, like changes in general circulation and increases in the intensity of hurricanes.

So overall, we have a much more detailed and complete picture of climate change itself, of the effects that climate change has had on natural ecosystems and species, and of the fact that humans are beginning to need to adapt to the changes in the climate. Altogether, our research emphasizes that the climate problem is not only serious, but probably more serious than we originally thought.

Miranda Schreurs: Not only has there been a considerable deepening in the understanding of the science of climate change, there has been much learning about the societal, political, and economic impacts of climate change. Climate change has become one of the most inter-disciplinarily studied issues around. Anthropologists have contributed to understandings of how different societies in the past adapted or failed to adapt to climatic changes. Sociologists have focused our attention on how climatic changes can intensify the work burden in drought-stricken regions, especially for women, who must spend more time looking for potable water or firewood. Economists have brought new policy tools to policy makers attentions so that now ideas like greenhouse gas emissions trading and the Clean Development Mechanism have become mainstreamed. Political scientists have helped explain why despite considerable scientific progress in understanding the causes and consequences of climate change, political action remains so difficult.

In the twenty years since the United Nations Conference on Environment and Development in Rio de Janeiro, climate change has gone from being an issue studied by a relatively specialized, and still quite small community of experts to among the most intensely studied problems facing the planet. Still, there is much we do not know about climate change—both in terms of its causes and consequences from a scientific perspective, as well as a more societal one. We are just beginning, for example, to think about how to adapt to climatic changes that we are likely to be faced with. We are just starting to try to design systems that better link efforts to prevent climate change to efforts to protection biodiversity. So, while much has been learned, there is still much learning we need to do.

CONNECTED: *The 1992 United Nations Framework Convention on Climate Change, the founding document of international efforts to fight global warming, still sets the widely accepted ultimate goal of climate protection: to “prevent dangerous anthropogenic [i.e., human] interference with the climate system.” What human meddling do you consider to be “dangerous”?*

Oppenheimer: There is a lot of controversy about that, with some scientists arguing that we are already in the realm of dangerous climate change due to already existing greenhouse gas accumulation in the atmosphere. They point out that many consequences of greenhouse gases already built-up in the atmosphere have not yet been fully manifested due to various lags in the climate system. My own view is that the risks increase rapidly with warming above about 2°C. This is a view that has been adopted by governments. The Copenhagen Accord embodies the scientific view that a warming of 2°C or more needs to be avoided. A crucial question is whether we will be really able to avoid that level of warming. Many of



“The precautionary principle suggests that even if there is some scientific uncertainty, a problem that could have such serious ramifications should be addressed.”

Miranda Schreurs

my colleagues and I myself doubt it. Unfortunately, I think it is likely that the world will go over that level and we may have to come back down later.

Schreurs: Humans have long exerted influences on climatic systems through the cutting of forests, the burning of fossil fuels, and land use change—such as with agriculture or the building of cities. As long as the scale of such activities was relatively small, and the world’s population was not too big, the impact on the larger climatic system was minimal. In the past 150 years or so, the industrial revolution that brought with it large scale use of fossil fuels has made it possible for humans to alter their natural environment in ways that were never before possible. With population growth and an expanding number

of industrialized and industrializing countries, the pressures on the planet are growing. The UNFCCC expresses concern about this development. It warns us to think about the extent to which we are now pumping greenhouse gases into the atmosphere and removing carbon sinks—like forests and grasslands—changes that could kick the natural climatic system seriously out of balance.

To simplify a highly complex problem and make it easier for all of us to understand, scientists have warned that a danger zone could be reached if global average temperatures rise much above 2 degrees Celsius above pre-industrial levels. Critics argue that there is not enough scientific evidence to make such claims, but the precautionary principle suggests that even if there is some scientific uncertainty, a problem that could have such serious ramifications should be addressed.

CONNECTED: *So if we are above 2 degrees, what could this dangerous climate impact include?*

Schreurs: Already global average temperatures are moving toward the 1 degree mark. While we cannot be certain that anthropogenic climate change is the cause, many regions of the world are experiencing severe weather-related events—record hot summers, pro-longed droughts, severe hurricanes, large-scale forest fires, prolonged rainfall, and melting glaciers. A rise to the 2 degree C mark or higher, is likely to result in even more extreme and frequent severe weather events. And one must remember, that we are talking about average global temperatures, which could mean that in some regions of the planet much higher temperature changes can be expected. Temperature changes are already considerably more extreme at the North Pole.

The impact of such temperature changes could make some parts of the planet unbearable to live in—perhaps parts of South and Southeast Asia and northern Africa where summer temperatures are already soring to highs that are threatening to human life. Other parts of the globe may experience desertification and such severe water shortages that – much like has been occurring in Ethiopia in recent times—large numbers of people will be forced to migrate in search of water and food. Given that a large percentage of the world’s population lives in cities that are on or near coastlines, higher sea levels

could require very expensive sea walls—options available only to the richest of societies. There is also the concern that climate change and pursuant water scarcity problems—could contribute to conflicts.

Oppenheimer: One of the “ifs” that becomes more and more likely above 2°C is a large-scale loss of ice from Greenland or Antarctica causing a rise in sea level of several meters and swamping much of coastal civilization. This may play out over hundreds

“There are some signs of hope. One comes in the form of “pioneers.” There are a growing number of villages, small cities, and regions that have decided to kick the fossil fuel habit and go 100% renewable. ”

Miranda Schreurs

of years, but we may, and I want to put the emphasis on may, make that outcome inevitable if we warm the planet by 2°C. Secondly, 2°C warming or greater appears to be accompanied by changes in water availability for agriculture and drinking, which would lead to an intensification of drought in many countries including India, Mexico, much of sub-Saharan Africa. In some of these places food availability is already an issue. Agricultural productivity would decline further, a very serious concern for food security, not only in those regions. Food security can have ripple effects worldwide. A third area of great concern involves the impact of a 2°C warming on ecosystems. There is not one common threshold for changes of our many diverse ecosystems, but we do see that sensitive ecosystems such as coral reefs are severely challenged by temperature changes. So, there is a lot of evidence that a 2°C will be dangerous, possibly catastrophic, though none of it creates a clear line; we only have a sense of what the risks could be in certain danger zones.

CONNECTED: *The dominating perception is that we are not doing enough about climate change: are there also developments that make you optimistic? What can the transatlantic community do to make you even more optimistic?*

Oppenheimer: We are in a situation where dealing with climate change has been disaggregated into many different fora. Some of them are international, some are national, and some are fairly local. So for instance, in Europe there are regional and national policies, and there is also pro-active international diplomacy. In some countries, including Germany, there are very effective national programs to change energy use patterns. In the United States, no comprehensive climate and energy legislation exists at the federal level. There are individual initiatives by the Obama administration, and then there are state-level programs that have begun to control emissions. Internationally, there are fora outside the UNFCCC, such as the World Bank, the WTO, and the international aid agencies, where climate has become an important issue which has to be taken into account one way or the other in these organization’s various activities. So climate is being “mainstreamed.” It is increasingly pervading decision making in many different areas.

What we still don’t have is a comprehensive international accord that brings all of these activities together. The UNFCCC provides the basic infrastructure to do so, but there are no specific commitments at this point to really force implementation other than what is embodied in the Kyoto Protocol, and Kyoto raises the issue of limited participation. So, on the one hand many are in despair because they think we will never get our act together.



See also:
Miranda Schreurs, Henrik Selin and Stacy D. Van Deveer:
Transatlantic Environment and Energy Politics. [Ashgate](#)

On the other hand, things take time. It takes time to change institutions, it takes time to build political infrastructure and so an alternating view is that we are moving along quite well in the right direction. In my view, the trouble is that there is a clock ticking, its avoiding 2°C warming. We may be making good progress over the political fence, given human histo-

ry, but that is not going to help us if there is an environmental limit that we are headed towards.

Schreurs: As Michael rightly points out, we are up against the clock. At the international level, the climate change negotiations appear to have stalled. There is little “hope” that a major international climate change agreement will be formulated in the short term. This is, of course, highly discouraging. But there are some signs of hope. One comes in the

“The transatlantic role is for Europe to continue to press forward, showing there are ways to cut emissions domestically which do not damage the economy”

Michael Oppenheimer

form of “pioneers.” There are a growing number of villages, small cities, and regions that have decided to kick the fossil fuel habit and go 100% renewable. A growing number of cities and states are taking climate change seriously and setting stringent short-, medium-, and long-term greenhouse gas emission reduction goals and backing these goals with serious policies. Today, over a quarter of German territory is made up of regions that have announced their plans to go 100% renewable. Both Germany and Great Britain have written into law their plans to become low carbon societies by the middle of this century.

It is also exciting to see that many good ideas are spreading. Feed-in-tariffs have become common as a tool to promote renewables. Renewable energy targets have been set in China, India, and many other developing countries. There is also a small technology revolution underway—as industries develop new technologies for greater energy efficiency, energy storage, electric automobiles, smart grids, and many other applications.

CONNECTED: *And what’s the role of the transatlantic partnership in this?*

Schreurs: The trans-Atlantic communities remain among the richest on the planet and among the world’s largest greenhouse gas emitters. Thus, they have a responsibility to be taking big steps to reduce their greenhouse gas emissions. Europe has in the

past decades succeeded in doing far more to reduce per capita carbon emissions than has the United States. Europe has also been more aggressive in implementing policies to address climate change although some cities and states in the U.S. are also quite active. Europe has taken on the role of the first mover and the policy implementer on climate change. There are many lessons here for the United States.

Much like California’s climate policies appear to have been influenced by developments in Europe, pioneers on both sides of the Atlantic could usefully share ideas with each other. It is also critical that they coordinate their efforts to share knowledge outside of Europe. Since the areas that will be hardest hit by climate change are likely to be in developing parts of the world, the EU and North America have an important responsibility to help developing countries improve their energy efficiency and introduce climate change policies and programs.

Oppenheimer: The transatlantic role is for Europe to continue to press forward, showing there are ways to cut emissions domestically which do not damage the economy and, at the same time, to provide the political energy at the international level with the expectation that other countries that are not currently taking a leadership role, like Canada or the United States, will eventually come along. We do see things happening. Australia just took a major step with the implementation of a carbon tax. New Zealand is moving forward. There are countries outside of Europe, such as China, that have become quite concerned. So altogether, we should not resign in despair, but concentrate on moving forward faster than we’ve been able to do so far.

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IN FOCUS

California and Germany are renewable

by Dennis Taenzler, adelphi

Climate and energy cooperation need to be based on strong political, economic and scientific relationships. In July, the visit of German Parliamentary State Secretary of the Federal Ministry for the Environment, Katherina Reiche, to California showed that there is a promising basis between Germany and California to foster innovation and a green transition in the energy sector. Katherina Reiche **stressed** in her opening speech of the **Intersolar North America 2011**, California's largest solar energy exposition with more than 800 solar exhibitors, that Germany and the United States share a common and urgent interest in promoting renewables to fight climate change and to overcome their dependence on fossil fuels.



German Parliamentary State Secretary Katherina Reiche discussing sustainable energy options in L.A.

Ramamoorthy Ramesh from the SunShot Initiative, outlined the Department of Energy's strategies to increase efficiencies and manufacturing throughout the US solar industry. San Francisco Mayor Edwin M. Lee **pointed out** that "San Francisco is home to more than 30 solar manufacturers, developers, installers and policy organizations, and has led the nation in bold and effective policies that drive solar adoption, so there's no better place for the solar industry to come together and meet." Throughout the panel discussions at Intersolar, however, it also became clear that there are still challenges such as complicated and time-consuming administrative

procedures that serve as barriers to people producing their own renewable energy in the state. As a result, participants showed a great interest in ways to streamline these procedures or follow the German example to develop a feed-in tariff system.

"Germany, the United States and California are faced with the same energy policy challenges - they have to modernize their energy systems and make them more efficient."

Parliamentary State Secretary Katherina Reiche

In an effort to deepen the transatlantic partnership, the Parliamentary State Secretary visited a number of companies at the exposition and met with representatives from the scientific community in Berkeley to learn more about the integrated research approach to climate change and energy research at the University of California. Institutions like the **Center for Information Technology Research in the Interest of Society (CITRIS)** work to combine the knowledge of engineering, social science, market, and policy research and to inform policy makers about how to establish the incentive structures needed to ensure a level playing field for alternative energies in the domestic as well as the global energy market.

Ms. Reiche also met with representatives from the State of California and local officials in San Francisco and Los Angeles. These meetings underlined the interest from both sides of the Atlantic to engage in a debate on how to design policy instruments to limit greenhouse gases and to strengthen energy independence. Further, major new questions such as that of sustainable mobility and electro-mobility were identified as important future issues. They also implicate complex areas such as consumer behavior as can be seen in a **study** by the University of California, Davis and the BMW Group that focuses on preferences of electric-car users. One of the main results is that consumers are more and more conscious when it comes to the question of the environmental performance of a car.

As a follow up the Katherina Reiche invited representative from California to come to Germany in order to get first-hand information on the integrated German climate and energy policy approach.

Wanted! Game changers for transatlantic low carbon solutions

by Dennis Taenzler, adelphi

How can one build a clean economy despite economic and political challenges such as the current financial crisis? What can a transatlantic dialogue deliver in this regard? Some answers can be found by the publication "**Sharing Solutions: Transatlantic Cooperation for a Low-Carbon Economy.**" The Heinrich Boell Foundation has invested significant effort over the past two years in its **climate network initiative**, which aims to bring together decision makers from politics and civil society from different regions in dialogue.

The approach of involving representatives of Central European countries in a transatlantic dialogue on climate and energy policies is instructive to shape such new alliances. As illustrated in the article "The New Europe – a U.S. inside the EU?", some of the transformation challenges in the United States may be easier to understand by reflecting on the current situation in central European states. This is not only true with respect to the need to modernize the energy system, adaptation to climate change will affect many stakeholders on both sides of the Atlantic and the exchange of experiences can offer some new insights how to prepare for changing weather patterns in the agricultural sector or how to adjust health care services in case of more frequent heat waves.



Heinrich Boell Foundation:
Sharing Solutions. Transatlantic Cooperation for a Low-Carbon Economy.

Download the report [here](#)

For more information on the climate network initiative, please see

<http://www.boell.de/climate-transatlantic/index-18.html>

and for a tour of the climate network during summer 2011, please see

<http://www.nfu.org/events/other-events/renewable-energy-tour>

The cooperative effort of the foundation's offices in Washington, DC, Brussels and Prague showed the urgent need to involve industry and farm organizations, especially in the US, to address the crisis and transformation needs in rural and heavy manufacturing areas. In addition, faith groups and veterans' organizations can help to foster dialogue and move beyond every day political party disputes. So-called "game changers", these groups may help to overcome the standstill in United States national climate policy making. They are willing to get engaged as Roger Johnson, President of the **US National Farmers Union**, describes in his contribution. However, Roger Johnson also touched on the structural barriers he and other colleagues are facing: the lack of long-term incentives for sustainable energy, additional cuts in the funding due to the global economic issues, and a transmission system that is hardly suited to accommodate small, distributed power generation. The game changers identified in the publication can help to join forces in order to form a powerful alliance.

REN 21: Capture of the Global Renewable Energy Situation

by Alexander Ochs & Maartje Tubbesing Worldwatch

Since its establishment in 2005, the REN 21 **Renewables Global Status Report (GSR)** has provided an annual comprehensive capture of the global renewable energy situation. Over the years, the GSR has expanded its scope and audience and has become the leading reference guide on renewable energy markets and policy. The GSR 2011, produced by the Worldwatch Institute in cooperation with local and regional partners in all parts of the world, bears testimony of an undeterred growth of renewable energies through 2010. According to the collected data, renewable energies supplied about 16 percent of global primary energy consumption, and 20 percent of worldwide electricity supply. Renewable energy sources include photovoltaic (PV), concentrating

solar thermal power (CSP), solar hot water/heating, wind energy, hydropower, geothermal power, biofuels, and ocean energy (both wave and tidal).



REN 21:
*Renewables 2011
Global Status Report*

Download the report [here](#)

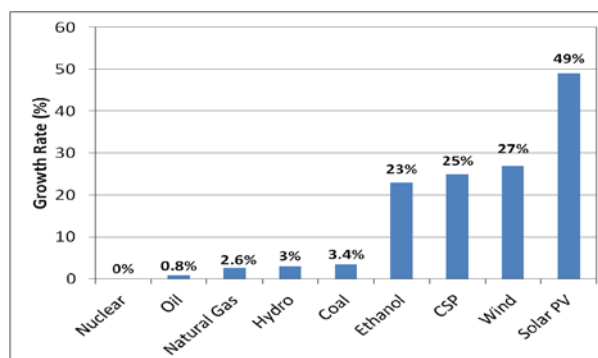
Despite the worldwide recession, the sector even broke a new investment record in 2010: \$211 billion were spent on renewable power and fuels – this is a 32 percent increase compared to the previous year. Renewables accounted for approximately half of the newly installed 195 gigawatts (GW) of electricity production in 2010. As of early 2011, renewable energies provided 3.5 million direct jobs worldwide, and many additional indirect ones. The main driver behind renewable energy growth is not just technical improvements and lower costs but, equally important, robust policies. Today, 119 countries have either renewable energy targets or concrete support policies – in 2005 only 55 had. Surprisingly, more than half of these 119 nations are developing countries. Developing countries have now also surpassed the developed countries in investments in renewable energy companies and generation projects. Out of the total investment of \$211 billion, developing countries' investment rose to more than \$72 billion, compared to OECD countries (\$70 billion) and U.S. (\$25 billion) investment in new renewable energy production. China alone attracted more than two-thirds of the developing countries' total investment and was the leader for the second year in a row with an investment of \$49 billion. As a result, production sites are spreading, changing the "geography of renewable energies."

To give an optimized overview over the regional data collected in the GSR, REN 21 launched a **Renewables Interactive Map** on their website in 2010. Amongst the most rapidly growing national renewable energy markets in 2010 were China (+ 26 percent, compared to 2009), Germany (+ 10.4), and the United States (+

5), bringing the share of renewables to 9 percent of total energy supply (18 percent of electricity production) in China, 11 percent of energy consumption (16.8 percent of electricity production) in Germany, and 10.9 percent of energy production (10.3 percent of electricity production) in the U.S.

Amongst all renewable and fossil energy sources, solar PV remains the world's fastest growing power production technology. PV's total existing capacity grew 72 percent compared to 2009, now producing 40 GW of power globally. Since 2005, it has grown by an average of over 49 percent annually. Falling costs and strong investor interests fueled this remarkable growth. Wind power capacity increased 24 percent relative to 2009. As the biggest provider of renewable energy after large conventional hydro, wind power now provides 198 GW of energy globally.

Compared to the fast growth of renewables, fossil energy sources have experienced only very moderate increases – although on a high level: in 2010, conventional energy technologies (including nuclear) still accounted for 84 percent of global energy production. In fact, nuclear energy today is the only energy source experiencing negative growth. The GSR 2011 also includes investment flows, industry trends, and policy analysis. Overall, it shows encouraging signs for the future of renewable energies.



Average annual growth rates of main energy sources between 2005 and 2010. © Worldwatch Institute, based on REN 21 (2011) and statistical data provided by BP's 2011 Statistical Review of World Energy.

EVENTS

Transmission Successes: Preparing the Grid for Low-Carbon Power

by, Maartje Tubbesing, Worldwatch Institute

On October 11, 2011, the **World Resources Institute** and the **Embassy** of the Federal Republic of Germany co-hosted a panel discussion on U.S. and German efforts to adapt the electricity grid to a rapidly changing energy landscape. The event featured Matthias Kurth, President of the **German Federal Network Agency**, and included responses from Kevin Kelley, Director of the **U.S. Federal Energy Regulatory Commission (FERC)**, Mike Gregerson from the **Midwest Independent Transmission System Operator (MISO)**, and author Peter Fox-Penner.

With an ambitious energy transformation under way, Germany's existing electricity grid needs a significant upgrade to cope with both decentralized energy feed-ins from small and medium-scale renewable power sources as well as electricity generated from larger centralized units such as offshore wind parks. Additional grid capacity and infrastructure, development of a European transmission system, and storage capacity are urgently needed to keep up with the shifts in production. Most of Germany's renewable power is produced in the sparsely populated north, whereas the large industrial consumers are found in the middle and the south of the country. Without an expansion of transmission lines, existing supply constraints could impede further development of renewable energy projects.

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The German Federal Network Agency is responsible for a wide range of networks in Germany, including electricity, gas pipelines, telecommunications, railways, and the postal system. Matthias Kurth de-

scribed the upcoming challenges of adapting the power grid to Germany's energy transition. The domestic share of nuclear energy (now at 20 percent) will be reduced to zero by 2022. At the same time, the grid must accommodate rising power inputs from renewable energy sources. Additional grids, development of a European transmission system, and storage capacity are urgently needed to keep up with the shifts in production. Simultaneously, Mr. Kurth called for a stronger emphasis on the demand side: two-thirds of German energy use is by the industrial sector, where he sees enormous efficiency possibilities.



The Federal Network Agency operates independently from policymakers, the result of a recent law that places responsibility for grid adaptation in the agency's hands. Mr. Kurth praised his agency's autonomy, saying that it ensures that infrastructure—the backbone of the economy—is not otherwise neglected in the political agenda. The United States lacks similar centralized authority over its transmission networks. Kevin Kelley, with FERC, described U.S. network regulation as more decentralized, with relatively strong state authorities and individualized state energy policies.

Kelley admitted that the U.S. grid system has been under-built for decades and now has a backlog of needed development. However, he said the prospect for more inter-state transmission lines is positive, as approximately half of U.S. states have developed renewable portfolio standards, which require grid expansions and more interconnecting transmission lines to accommodate the increased power generation. Mike Gregerson from MISO explained that the U.S. Midwest provides a good example of the need for adaptation: although Midwestern states already generate considerable electricity from wind energy, the lack of inter-state transmission lines could soon impede further development of wind power.

The panelists also discussed smart meters and smart grids. Although smart meters, which display a customer's individual energy consumption, are generally a good way to sensitize people to energy usage, they have to be included along with a smart grid and pricing mechanism, which reward efficiency. The panelists envisioned a future energy market with a significant policy overlay. Long-term planning of both large-scale infrastructure systems (for large units of renewable energy production) and micro-level systems (for individual, small-scale units) is what attracts so-called "patient capital" to the energy system. The development of renewable energy sites and the expansion of the electric grid must go hand in hand, the panel concluded.

Transatlantic consensus on the risks of climate change

by Dennis Taenzler, *adelphi*

Transatlantic partners differ in their approach with regard to some issues about how to initiate change and move forward. There are other areas where transatlantic partners seem to share a common perspective. One example for the latter was the United Nations Security Council meeting held at the **20th of July in New York** on the relevance of climate change for peace and security. Under the German presidency "the Security Council expresses its concern that possible adverse effects of climate change

may, in the long run, aggravate certain existing threats to international peace and security." Finally, this risk definition found its way into the **Presidential Statement** as a formal outcome of this session.

The debate in the Security Council prompted an unusually high number of interventions by member states on the occasion of this second debate on the potential security implications of climate change. The first- without a formal result – stalled in 2007. After a lively debate with seemingly unbridgeable differences between proponents and opponents of addressing climate change in the Security Council setting, a consensus was finally achieved based on the notion of all member states participating in the debate that the United Nations Framework Convention on Climate Change (UNFCCC) is the key arena to address the challenges of climate change.

Peter Wittig, Permanent Representative of Germany to the United Nations, stressed in his **statement** that the German government is convinced that it is the Security Council's duty to act with foresight and to do its best to prevent crises before they become acute. This was one major reason to put the topic on the Security's Council agenda. Peter Wittig further outlined that small island states already have to deal with rising sea levels, loss of land and increasing scarcity of resources. Ambassador Susan Rice of the U.S. joined Peter Wittig in his assessment and **framed** the opposition to an agreement on the threat of climate change to peace and security during the debate as "pathetic", "short-sighted" and "a dereliction of duty".

The fact that this perspective is shared by both governments may be a promising step in jointly addressing the agenda called for in the Presidential Statement: the Secretary-General should provide conflict analysis and so-called 'contextual information' when climate change trends are endangering the process of consolidating peace.



„ We need greater collaboration on the effects of climate change, especially at the local and regional levels, and better information about basic human needs—water, food, livelihood, and energy—so that we can anticipate and prevent resource-driven conflicts.“

Susan Rice

Germany's Nuclear Exit and Clean Energy Reindustrialization

by, Maartje Tubbesing, Worldwatch Institute

While U.S. policymakers remain hesitant to contemplate the transition to a low-carbon economy, Germany's energy transition is already under way. At two Washington, D.C. events on Monday, October 3 (Germany's Reunification Day holiday), Franz Untersteller, Environment Minister for the German State of Baden-Württemberg, discussed his country's efforts to phase out nuclear power and heavily promote renewable energy in the coming decades. Germany's decision this spring to phase out nuclear energy by 2020 has been regarded as a controversial path to reducing greenhouse gas emissions and tackling climate change. At a panel entitled "Leading the Way or Lights Out? Germany's Nuclear Exit and U.S. Energy Perspectives" held at the **Johns Hopkins School of International Studies (SAIS)**, Minister Untersteller described how Germany plans to achieve both the nuclear phase-out and the reduction of carbon dioxide (CO₂) emissions.

Minister Untersteller has been Environment Minister of the State of Baden-Württemberg in the Green-Social Democratic government since the March 2011 regional elections. Baden-Württemberg is a highly industrialized German state that is home to global industrial players such as Mercedes, Porsche, and Bosch. The region has the potential to serve as a model for other highly industrialized areas in demonstrating how high energy intensity can be combined with CO₂ emissions reductions.

Minister Untersteller described the German government's nuclear exit strategy as "irreversible," not just because the amendments to the Nuclear Energy Act were supported by an agreement of all parties in the German Bundestag, but also because the strategy is based on broad popular consensus. The nuclear phase-out by 2020 is flanked by several other elements:

- A substantial rise in the share of renewable energy in the country's energy mix, projected to reach 38 percent of the national electricity supply by 2020, compared to 20 percent today and 6 percent in 2000;
- The construction and use of flexible natural gas power plants;
- Infrastructure adaptation, especially high investment in the electric power grid; and
- An increase in energy efficiency, including a further decoupling of energy use from economic growth.

The nuclear phase-out already is having a dramatic impact on Germany's energy system, particularly in Baden-Württemberg. Two of the state's four nuclear plants have been shut down since March and will not return to power production. The two remaining plants will continue running until 2019 and 2021. Nuclear energy still accounts for half of total electricity production in Baden-Württemberg. In the medium and long term, renewable energy sources and natural gas plants are to replace this share. For the short term, including this winter, a coal-fired power plant will serve as a reserve supply.

Germany's rapid growth in renewable energy production is the result of a number of initiatives, most importantly a federal feed in tariff law that provides producers of renewable energy an additional incentive to sell their electricity back to grid. Despite the strong political support, however, Germany's ambitious energy transition will only be possible in tandem with modernization and expansion of the grid system, both in Germany and at the EU level.



Watch the Event Coverage also at E&ETV: http://www.eenews.net/tv/video_guide/1402

The panel at SAIS also discussed the options for a nuclear phase-out in the United States. Kate Gordon, Vice President for Energy Policy at the **Center for American Progress**, noted that the United States is in a very different position from Germany, lacking comprehensive energy and climate legislation. Nuclear power accounts for 20 percent of the U.S. energy supply—similar to Germany's share before the latest shutdowns. However, with a comprehensive strategy and political and economic courage, Gordon said, a similar energy transition is possible in the United States: the necessary technology already exists and should be included into business models for long-term planning. All panel speakers agreed on the importance of political and economic will to make a fundamental energy transition. While the idea of a nuclear phase-out has broad popular and political consensus in Germany, there is comparatively little debate on this topic in the American society. Panelist Kenneth Green, an environmental scientist and publisher, noted another key constraint to a substantial energy transition: the lack of capital for large-scale investments in the U.S. energy sector.

Whereas the panel discussion focused largely on Germany's nuclear phase-out, a Roundtable on German Success in Clean Energy Reindustrialization, held at the Center for American Progress (CAP) in cooperation with the Heinrich Böll Foundation examined the development of German renewable energy sources and the European framework for energy and climate policy. Untersteller said his country's leading role in renewables' technologies and innovation must be defended in the future. Germany's long-term transition plan—with its target of 90 percent fewer carbon emissions in 2050 compared to 1990—gives the industrial sector a high degree of predictability. Industrial players have consented to ecological modernization, with a special focus on energy efficiency.

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<http://www.solarpraxis.de/en/conferences/pv-power-plants-usa-2011/general-information/>

IMPRINT

CONNECTED is financed by the
German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety



as part of its contribution to the **Transatlantic Climate Bridge**.



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ISSN: 2191-8104