# CONNECTED

Transatlantic Climate Bridge

## Dear Readers,

The consequences of Japan's devastating earthquake of 11 March are enormous. The radiation that continues to leak from at least three reactors in Fukushima raises doubts around the world about the role that nuclear energy can—and should—play in the future. Germany and the United States have reacted quite differently. Whereas the Merkel government has called for a phase out of all of Germany's nuclear power plants by 2022, the United States intends to continue supporting new reactors, according to Energy Secretary Steven Chu. Are these different responses to the catastrophe in Japan a sign of a deeper transatlantic divide on future energy policy?

This second issue of CONNECTED shows that such a divide is not necessarily imminent. According to German Parliamentary State Secretary Katherina Reiche, both countries share similar concerns. "Germany and the United States are facing the same energy policy challenges. Both countries have to modernize their energy systems and make them more efficient," Reiche stated on the occasion of the 3rd German-American Energy Conference in May in Berlin. In this issue's "Face to Face" conversation, Philip D. Murphy, U.S. Ambassador to Germany, and Klaus Scharioth, Germany's ambassador to the United States, agree. They point out that transatlantic climate diplomacy fosters mutual learning and can support innovation in important areas such as electric vehicles and mobility.

Meanwhile, a new flagship report by the Intergovernmental Panel on Climate Change indicates that an ambitious global energy transformation is in fact possible. The IPCC states that renewable energy can supply 80 percent of global energy demands by 2050. Martin Schöpe with the German Federal Ministry for the Environment highlights in this issue's op-ed the different pathways for international renewable energy governance that can make the vision of the IPCC a reality. Transatlantic cooperation can serve as an important engine for international initiatives such as the International Renewable Energy Agency (IRENA) and the Clean Energy Ministerial (CEM).

Sustainability pays for itself in many ways: environmentally, socially, and economically. Our featured study of the benefits that German municipalities gain by transitioning to renewable energy concludes that in 2009, renewables created municipal value in the order of €6.8 billion. For 2020, a doubling of this value is predicted. And these estimates were made before the Fukushima accident, which will further boost renewables, at least on the European side of the Atlantic. Exciting months lie ahead of us, during which Germans will design a roadmap that secures their energy supply while phasing out nuclear energy and reaching an ambitious greenhouse gas reduction goal of 40 percent below 1990 emissions by 2020.

We look forward to continuing to report on the steps that our countries are taking to transform and modernize their energy systems through activities at the local, state, federal, and international levels. We hope you share our excitement and stay CONNECTED.

*Dennis Taenzler*
*adelphi*

*Alexander Ochs*
*Worldwatch Institute*

## Content




CONNECTED is a project by

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WORLDWATCH INSTITUTE

and funded by

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

# OP-ED

## Energizing Transatlantic Relations

*by Dr. Martin Schöpe, The German Federal Environment Ministry*

The Intergovernmental Panel on Climate Change recently published a **Special Report on Renewable Energy Sources and Climate Change Mitigation**, which established that renewable energy has the potential to meet the entire world's demand for energy today and in the future several times over. Even by conservative estimates, more than three quarters of energy demand can be met by renewables by 2050. In so doing, the world could reduce its energy related CO2 emissions by 80%. These are more than promising prospects - from an economic, social, and ecological perspective.

Global governance strategies for the expansion of renewable energy have developed impressively over the last few years. This is in part thanks to transatlantic cooperation. Further, this is a mandate for the future: partners on both sides of the Atlantic, through cooperation, can greatly contribute to the promotion of economic growth, a growing number of jobs, global energy security, and last but not least, the mitigation of climate change.

*"Global governance strategies for the expansion of renewable energy have developed impressively over the last few years. This is in part thanks to transatlantic cooperation."*

*Dr. Martin Schöpe*

Germany and the United States, along with China and India, have hosted renewable energy international conferences every two years. The International Conference "Renewables 2004" in Bonn started off the series. The discussion was continued in 2008 in Washington, DC, focusing on central elements of the promotion of renewable energy.

A prominent theme of the discussion has always been something that has in the meantime become a motor of the global renewable energy expansion: the International Renewable Energy Agency (IRENA). Founded in 2009, the intergovernmental organization entered into force in 2010. 150 countries and the European Union have signed the statute, half of them have already ratified it – this is a historical development in establishing international organizations and underlines the relevance of the subject. IRENA's mission is to provide a blueprint for the future transformation of energy systems. Worldwide capacity building, exchange of successful policy measures, support of technology transfer, and the establishment of innovative financing instruments are to be the sustainable fuel of the IRENA motor.

These goals are not IRENA's alone; rather they are shared by a number of prominent and ambitious initiatives –in particular the US initiated Clean Energy Ministerial (CEM). The members of the CEM have come up with a number of action plans for various low carbon energy forms. Last year in Washington, they started to implement specific recommendations of these plans. The respective initiatives have the potential to be important impetuses for global renewable energy expansion. One such initiative is the establishment of global atlases for wind and solar energy, to which Germany is contributing along with other countries.

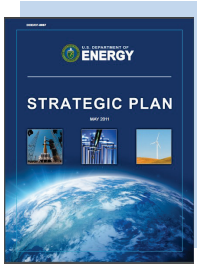
In order to make these bright future prospects of the IPCC report a reality, the core of a transatlantic project could be to coherently link these different approaches and to pave the way to a global sustainable energy system.

Dr. Martin Schöpe is Division Head for International and EU Affairs „Renewable Energy", Multilateral Cooperation with Industrialized Countries at the **German Federal Environment Ministry**

# POLICY UPDATE

## A strategic plan for the Department of Energy

The US Department of Energy is an "integrator" according to the **Strategic Plan** published in May. As **pointed out** by Secretary Chu, his department is "bringing together diverse scientists and engineers from national laboratories, academia, and the private sector in multidisciplinary teams, striving to find solutions to the most complex and pressing challenges." The Strategic Plan outlines four major goals of US energy policies - first and foremost to catalyze the transformation of the nation's energy system and secure U.S. leadership in clean energy technologies. Among the top priorities are improvements in energy efficiency as one of the most cost-effective step to comply with US energy goals.




Department of Energy (DoE*): Strategic Plan (May 2011)*

Download the report **here**

## Nuclear energy in transatlantic perspective

Following the Fukushima nuclear accident in Japan, the US and Germany have come to different conclusions regarding the future energy supply. The **German government** announced it would phase out nuclear energy by 2022. With this decision, "we have the chance to be the world's first industrialized nation to switch over to the electricity of the future" said Chancellor Angela Merkel. In contrast, Energy Secretary Steven Chu **declared** during an Oral Testimony at the House Energy and Commerce Committee that "American people should have full confidence that the United States has rigorous safety regulations in place to ensure that our nuclear power is generated safely and responsibly." An interesting transatlantic debate on the future of nuclear energy held at the John Hopkins University SAIS campus in Washington with U.S. and European officials is available on **C–Span**.

## Spring time for energy efficiency and climate policies in Brussels

The European Commission started the spring by adopting two key programs for European climate and energy policy. The **Roadmap for moving to a competitive low carbon economy in 2050** includes an emission reduction target of 25 percent by 2020.


European Climate Forum et al.: *A New Growth Path for Europe. Generating Prosperity and Jobs in the Low-Carbon Economy*

Download the report **here**

As part of the **Energy Efficiency Plan,** there is a clear commitment to achieve a 20 percent energy saving target in the same year. German Minister for the Environment, Norbert Röttgen, **commented**:"(t)he Energy Efficiency Plan is a move in the right direction, but it must be given binding support with concrete measures." This kind of climate and energy policy is likely to create 6 million new jobs in Europe by 2020 – at least according to the study "**A New Growth Path for Europe**" conducted by European Climate Forum, the Potsdam Institute for Climate Impact Research (PIK) and the Universities of Oxford, Paris and Athens.

## Climate winners: Houston and Evanston!

Texas takes it all: Dallas is NBA champion 2011 and Houston received the **2011 Mayors' Climate Protection Award** for large cities. This initiative is sponsored by the U.S. Conference of Mayors and honors mayors for innovative practices to reduce greenhouse gas emissions and implement sustainable energy solutions. The main reason for Houston's success is the city's Green Building Initiatives. Mayor Annise Parker **stressed**: "Improving buildings to reduce their energy use and carbon emissions is good practice and good economics." Evanston, Illionis, is challenging the leadership of Texas **as winner of the Award for small cities**. Thanks to the Climate Action Plan Evanston achieved a 22 percent reduction in greenhouse gas emissions between 2005 and 2010.

## FACE TO FACE

A Transatlantic Conversation with Philip D. Murphy, U.S. Ambassador to the Federal Republic of Germany, and Klaus Scharioth, Germany's ambassador to the United States. Both share a vision of transatlantic climate and energy cooperation - as the following interview substantiated.

***CONNECTED:*** *More and more embassies have recently been involved in promoting or implementing sustainable solutions. From your perspective: what was the most promising activity in the area of climate protection and energy security? Is there a good example for a flagship project?*

**Philip D. Murphy**: There are many exciting initiatives ongoing in the U.S. and Germany as we work towards our shared goal for a prosperous lower carbon economy. At the U.S. Embassy, we really look forward to expanding our collaboration with our German partners on initiatives that will create good jobs, promote energy security, and protect the environment.

*"We really look forward to expanding our collaboration with our German partners on initiatives that will create good jobs, promote energy security, and protect the environment."*

*Philip D. Murphy*

The German-led Transatlantic Climate Bridge is an exciting initiative for finding common ground, and I applaud German leaders for starting it. We are proud to have co-hosted many successful events with the Government of Germany, including NGO roundtables, Business Dialogue events, and meetings among leading technical experts.

Through these types of events, we are able to bring people and ideas together in order to learn new ways of approaching problems while we further cement our crucial transatlantic friendship. One low carbon and cost-effective way in which we have done this is to host video teleconferences between leading experts in both countries. Earlier this year, we hosted a dialogue, via video teleconference, between top climate policy makers in order to share their views with friends in the academic, business, NGO, and scientific communities on Cancun and the outcomes of the negotiations. I consider this type of communication and transparent dialogue to be among the most important things that we do.

**Klaus Scharioth:** This is in fact a good example. Since 2008, the German Embassy has been actively working to broaden the "Transatlantic Climate Bridge" initiative. The Embassy's 'climate team' focuses on climate and energy issues and expanding transatlantic communication in this field. With Embassy support, a very active and sustainable exchange of ideas has been initiated between German regions such as Stuttgart, Mannheim and counties in Northern Virginia. This contributed to the creation of America's first Community Energy Plan in Loudoun County, Virginia in 2010.

There are numerous examples of transatlantic cooperation as a result of the Embassy's work, but I will point to our latest event because it encapsulates the essence of the "Transatlantic Climate Bridge".

125 years ago the automobile was born with the Motorwagen No. 1, patented by Carl Benz in Germany. In 1908, Henry Ford invented assembly line production of cars. Henry Ford went on to work with Thomas Edison to build an electric car and although their effort stalled, electric cars are getting a second chance today. There is no question that electric vehicles are the future of the automobile industry and that they will have a transformative impact on all levels of society and business around the world.

With this in mind, the German Embassy organized "The Future of Emobility", a conference with the Representative of German Industry and Trade in Washington D.C. in March 2011. In light of the ambitious electric mobility targets set by both the US and German governments (Germany: 1 million electric cars by 2020; USA: 1 million electric cars by 2015), the event helped US and German policy makers and industry representatives see and hear about the

electric car industry development on both sides of the Atlantic, including R&D, infrastructure, and energy supply.

*"It is clear that industrialized countries such as the U.S. and Germany must reduce their oil dependence, reduce $CO_2$ emissions, and foster energy independence."*

*Klaus Scharioth*

The same morning, President Obama delivered a speech on energy security, calling for replacing a third of oil imports with "diverse and reliable sources of energy". It is clear that there is a transatlantic desire to reduce our energy dependence and electric mobility is one way of achieving this. Germany's 'National Development Plan for Electric Mobility' will speed up R&D in electric vehicles, their market preparation and introduction

***CONNECTED:*** *You are following the climate and energy efforts of your host country every day. What activities impress you the most? What would you like to see introduced in your home country?*

**Klaus Scharioth**: Though there is not much movement on climate and energy legislation on the U.S. federal level, I am extremely impressed by the amount of activity I see on the state and local levels. Regions buckling under the economic crisis see a solution in the creation of 'green jobs' and green industries such as solar and wind energy and electric car batteries.

Whether you believe in man-made climate change or not – in my view it is a scientific fact - , it is clear that industrialized countries such as the U.S. and Germany must reduce their oil dependence, reduce CO2 emissions, and foster energy independence. Germany has made great strides in developing a renewable energy industry which has already created 370,000 jobs and is enacting ambitious energy efficiency measures which will save energy, cut costs, create more employment, and reduce dependence on foreign oil and gas.

**Philip D. Murphy**: Germany has a truly impressive set of accomplishments as it expanded its renewable energy industry. Making the transition to a low carbon economy while staying competitive requires innovation. One specific example is Germany's creative use of market incentives such as its feed-in tariff system. This system has helped Germany create the world's largest solar market and expand jobs in the renewable energy sector. In the U.S., I hope we can similarly find and apply creative, market- based solutions that are appropriate for the U.S. economy.

Scientific and technological investment also plays an important role in both our economies. President Obama recognized this early on and made unprecedented domestic investments into green technologies. Like Germany, we seek to invest more than 3 percent of GDP in public and private research and development. I am proud to say that there are more than 50 bilateral cooperation agreements between individual institutions in the U.S. and Germany which are daily creating knowledge and innovating in diverse areas including life sciences, energy, earth sciences, public health, and physics. On February 18, 2010, the U.S. and Germany signed the first bilateral Science and Technology Agreement to further expand our cooperation, and we look forward to building on that accomplishment with our German partners.

***CONNECTED:*** *Since you mention innovation. In what areas do you see the most promise for transatlantic climate and energy cooperation in this regard? How can initiatives such as the Transatlantic Climate Bridge be helpful in supporting progress in that field?*

**Philip D. Murphy**: Innovation is terribly important. In April, I hosted a dinner for a group of German and American experts in science and technology to discuss innovation in our respective countries. I believe that when we put our brightest minds together to solve pressing challenges, there is potential to make dramatic advances in low carbon transition. One of the most exciting areas for innovation in the coming generation is in technologies that advance sustainable forms of energy.

To make progress on this, we are likewise expanding our outreach with Germany's leading research institutes and industry partners.

Large, medium, and small companies from both countries have made large investments on both sides of the Atlantic, creating technology and jobs. Recently I visited Frankfurt an der Oder, a charming city near the Polish border, which has been revitalized by the renewable energy industry, including an American solar company. This city and others like it all over Germany are examples of the success sustainable energy technology can create. I look forward to continuing our partnership with the Transatlantic Climate Bridge for dialogues and, ultimately, to find practical energy solutions that help all of our citizens.

**Klaus Scharioth**: I think electric-mobility is an excellent example of the importance of transatlantic cooperation. Both countries see the value in creating and investing in an electric car industry. Examples of joint ventures such as U.S. carbon fibre production for German electric vehicles show that American and German companies are already benefiting from each other's expertise and creating jobs. Standardization is an important field for political cooperation.

When we look at the challenges ahead, we see common issues: we must move away from oil in transport, increase building energy efficiency, build new electric transmission systems, and invest in energy storage R&D. In all these fields, we can bring Americans and Germans together to initiate or broaden existing cooperation. The people working on the "Transatlantic Climate Bridge" have a deep understanding of the political and technological developments on both sides of the Atlantic and can therefore address the issues of interest for both countries. In addition to the topic of electro-mobility, we have hosted a number of events highlighting sustainable building, sustainable city planning, and energy efficiency and we will continue to work on these issues. One particular bilateral cooperative achievement is the MIT-Fraunhofer Center for Sustainable Energy Systems - which is developing cutting-edge technologies and materials for designing and producing better solar modules.

For more information on the US Embassy in Berlin and the German Embassy in Washington, please see
**http://germany.usembassy.gov/**
and
**http://www.germany.info/**

# IN FOCUS

## Nuclear Power in a Post-Fukushima World

*by Shakuntala Makhijani, Worldwatch Institute*

In the aftermath of this spring's nuclear disaster in Fukushima, Japan, countries around the world are reevaluating nuclear power as a safe and viable clean energy alternative. The Worldwatch Institute recently weighed in with a report authored by nuclear energy expert Mycle Schneider titled *The World Nuclear Industry Status Report 2010–2011: Nuclear Power in a Post-Fukushima World*. The analysis concludes that the nuclear industry was already in decline before Fukushima, and that this latest incident has likely sealed its fate.

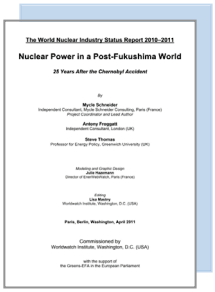
*"The already failing nuclear industry is unlikely to rebound from this latest major setback, which promises to exacerbate existing obstacles to nuclear power development."*

The report, released in April in conjunction with the 25th anniversary of the Chernobyl accident, contrasts the nuclear industry's stagnation with the rapid growth of new renewable energy capacity. Renewable capacity additions have been outpacing new nuclear plants for 15 years, and in 2010 global non-hydro renewable energy capacity surpassed installed nuclear capacity.

In the study, Schneider highlights the ongoing decline of nuclear power. As old plants are shut down and new additions continue to be slow and irregular, the total number of operating nuclear reactors has declined from 444 in 2002 to 437 today. The year 2009 marked the fourth year in a row that nuclear power generation registered an annual decline.

Licensing and implementation delays and cost overruns have plagued the nuclear industry and made new investments extremely risky. These issues have only become more problematic due to heightened safety concerns following the Fukushima accident.

The already failing nuclear industry is unlikely to rebound from this latest major setback, which promises to exacerbate existing obstacles to nuclear power development. Moreover, the rapid advance of


The World Nuclear Industry Status Report 2010–2011
Nuclear Power in a Post-Fukushima World
25 Years After the Chernobyl Accident

Mycle Schneider et al:
*The World Nuclear Industry Status Report 2010–2011: Nuclear Power in a Post-Fukushima World.*

Download the report **here**

renewable energy technologies has proven that they are a strong competitor for nuclear in the search for an alternative to fossil energy, making a nuclear revival not only unrealistic but also unnecessary. The report assesses the transferability of successful CEP policies from urban, industrial cities in Baden-Württemberg like Stuttgart and Mannheim to US regions interested in improving energy and urban development planning like Loudoun.

See also the blog **Climate Progress** edited by Joe Romm on **the situation of nuclear energy in the US**. Climate Progress was named by the Time magazine as one of the 25 "Best Blogs of 2010."

## Greening the Mountain West of the US

*by Aki Kachi, adelphi*

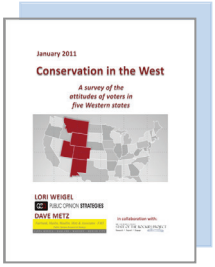
The heated debate and the slow progress of climate policy on the national level may give one a bleak impression of the situation on the ground in the US. However, break it down to the state level and you have a different picture. The US constitution reserves all powers to the States that are not explicitly given to the federal government. This policy freedom in combination with the diverse climate zones of the country make for a huge, diverse, and – in terms of policy – polarized country. Different states have not only vastly emissions, but have also developed dizzyingly variegated climate policies. It may be somewhat better known that the West Coast and the North Eastern US are more progressive and have comparable per capita emissions to western European countries, but what may really be surprising are the attitudes and policy measures being implemented in a different region: the Mountain West.

Sparsely populated, the Mountain West region is home to vast expanses of nature including 13 National Parks throughout the states of Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming. In a recent survey released by Colorado College voters in five of these states (Colorado, Montana, New Mexico, Utah, and Wyoming), showed not only an appreciation of nature, but also a progressive view of the compatibility of environmental protection, job creation and economic growth. 87 percent of residents consider the environment, including natural areas, wildlife, and air and water quality as a fundamental in their quality of life. 66 percent think that environmental laws to protect land air, and water should be strengthened or better enforced. 77 percent thought that environmental protection and a strong economy with good jobs were compatible, and 66 percent thought that renewable energy expansion was an opportunity for job growth in their state. Residents also said that they wanted to expand the share of renewables, 70 percent said it was time to replace coal with wind and solar. 88 percent said they would pay higher electric bills to see renewables expanded.

*"Voters in Colorado, Montana, New Mexico, Utah, and Wyoming showed not only an appreciation of nature, but also a progressive view of the compatibility of environmental protection, job creation and economic growth."*

These attitudes are further reflected in the policies that these states enact for themselves, both regionally and on an individual state basis. The Clean and Diversified Energy Initiative of the Western Governors' Association (WGA) is working to find policy instruments to meet the unanimously stated goal of increasing energy efficiency by 20 percent by 2020. The state governments have participated in discussions that formed the Western Climate Initiative, an emissions trading scheme among western states and Canadian provinces. Arizona and New Mexico have adopted California's stringent vehicle greenhouse

gas emissions standards. Net metering, which allows distributed renewable energy producers to offset their bills by selling electricity back to the grid is available throughout the region.




Public Opinion Strategies*: Conservation in the West. A survey of the attitudes of voters in five western states.*

Download the report **here**

Individually, many states have gone further. In efforts to increase the use of renewables, four states have mandatory Renewable Portfolio Standards (RPS): Colorado 30 percent by 2020, New Mexico 20 percent by 2020, Montana 15 percent by 2015, and Arizona 15 percent by 2025. Utah has a 20 percent goal for 2025. Colorado has continually increased its RPS requirements. Starting with a 10 percent requirement by 2015, enacted by a ballot initiative, it has since been amended, and now requires a 30 percent renewable share (3 percent from solar) by 2020. In 2006, Boulder, Colorado voters approved a tax on electricity derived from fossil fuels. Proceeds from the tax go to investment in renewable energy sources, energy efficiency for buildings, and transportation initiatives. Montana has banned new coal power plants until carbon capture and storage technology can safely reduce emissions by at least 50 percent Idaho has decoupled utility profits from the amount of electricity produced and sold to customers. Utah, Colorado, and Wyoming have done the same for gas.

While detractors have started to say that one should write off the US when it comes to global climate policy, a closer, considered, look shows there are many ways to engage, learn, and work with Americans on a number of jurisdictional levels. While much still remains to be done, actual views on the environment, and reveal a richer environmental policy mosaic: many efforts are being undertaken in the US and many states are greener than one might expect.

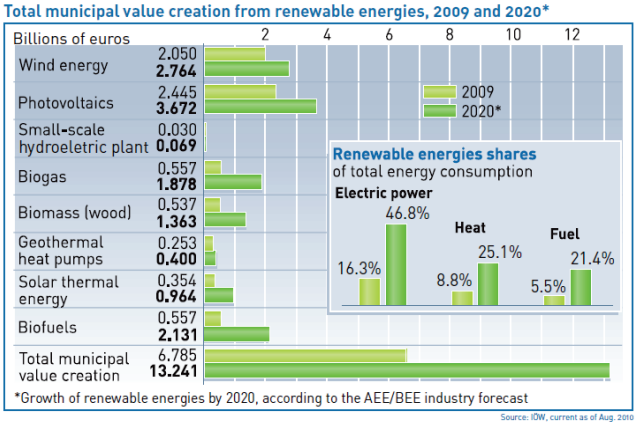
## Local value creation from renewables

*by Dennis Taenzler, adelphi*

How Can Municipalities Profit from Renewable Energies? That is the key question for many decision makers at the local level. A study by the Institute for Ecological Economy Research (IÖW) and the Centre for Renewable Energies of the University of Freiburg (ZEE) carried out in depth examinations of various value creation effects of renewable energy development at the municipal level in Germany. This 2010 study has now been published by the German Renewable Energies Agency (AEE). It does not include new developments in the field such as additional momentum due to the accelerated phase out of nuclear power in the wake of the Fukushima disaster.

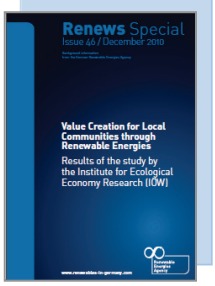
*"The value created by renewable energy for local municipalities in Germany came to €6.8 billion in 2009."*

The numbers for 2009 are impressive. In Germany, more than two million solar collectors and photovoltaic systems, 400,000 heat pumps, 22,000 wind energy systems, and 4,500 biogas plants came online. In order to calculate what this means for the municipalities, the researchers applied a concept of value creation that sums up net profits of the enterprises involved, net income of the employees involved, and taxes paid to the municipality.



As a result, the value created by renewable energy for local municipalities in Germany came to €6.8 billion in 2009. Wind energy contributed €2.1 billion and photovoltaics €2.4 billion. Investigating 16 value creation chains, the employment effects are distributed quite differently amongst the renewable energy fields and the various value creation stages. System production and maintenance dominate the jobs in the wind energy sector, planning and installation is the main field of activity with respect to small photovoltaic systems.

Forecasting development through 2020, German municipalities can expect at least €1.2 billion a year in tax revenue from the use of renewable energies. Municipalities will primarily profit from business tax receipts, which account for 64% of their tax revenues from renewable energy. The authors conclude that the biggest municipal taxpayers in 2020 will be the particularly high-turnover industries like wind, bioenergy, and photovoltaics..




German Renewable Energies Agency: *Value Creation for Local Communities through Renewable Energies.*

Download the report **here**

# EVENTS

## How green are e-vehicles? Electric mobility is still in its infancy

*by Matthias Kimmel, Worldwatch Institute*

Governments on both sides of the Atlantic must make their transport sectors cleaner and more sustainable in order to significantly reduce greenhouse gas emissions. With 1,590 million tons of carbon dioxide ($CO_2$) per year emitted in the U.S., 145 million tons in Germany, and 5,470 million tons worldwide, transportation is one of the major contributors to global warming. In relative numbers, cars, trucks, buses, planes, trains etc. generate a third of the United States', 17 percent of Germany's and 23 percent of the world's total $CO_2$ emissions.

There are multiple ways to reduce the sector's emissions, these include encouraging people to use public transportation, convincing industry to switch from road to rail, or by making current transportation technologies and fuels less polluting. Regarding the latter, the efficiency of petroleum-based engines in cars has improved considerably, particularly in periods of high oil prices such as 1975-1987 and the last few years. However, in the future it is a new technology, electric vehicles, that is seen as the route to a low-carbon transportation system. If charged with electricity from renewable energy, these cars have the potential to make individual transportation almost carbon-free.

*Panel discussion on electric mobility*
*© German Embassy Washington*

Yet in 2011 there are few electric cars on the road. A look into most car manufacturers' showrooms reveals that they are either not yet available or hardly affordable. Thus, what environmental benefit can we really expect from e-mobility? What is the current status of electric vehicle technology, and when will we be able to buy these cars?

The event "Opportunities and Challenges: The Future of E-mobility in Germany and the US," hosted by the German Embassy and The Representative of German Industry and Trade in late March in Washington D.C., aimed at providing answers to these questions. Panelists from the automobile and energy industries and German and US policy-makers offered insight into the progress electric car technology is making and the policies currently in place to support e-mobility.

They also discussed some of the key barriers to the further advancement of e-vehicles and their dissemination.

The German and U.S. governments both have public incentives to promote the dissemination of electric vehicles. Germany has allocated EUR500 billion for the next ten years and created a **National Development Plan** with the aim to transform the country into the leading market for electric cars with 1 million e-vehicles in 2020. The United States is even more ambitious, planning to have 1 million e-cars on its roads by 2015. The U.S. goal is backed by a bundle of grants, loans and other incentives worth several billion dollars, and available to the car industry and other customers.

*"Stronger cooperation between the car industry and the electricity industry, policies that foster renewable energy in the national energy mixes, and the availability of 100 percent renewable electricity plans to e-vehicles drivers are necessary components to really make e-vehicles 'green vehicles'."*

Despite of all the past and future investment, however, electric car technology is still in its infancy. As a BMW representative reported, his company is at the moment only conducting field testing with some 450 cars in the U.S. and a smaller additional fleet in Europe. Most other automobile manufacturers are still testing prototypes and do not plan to release their first electric cars for a few years. Nissan, one of the front-runners, released its first mid-size electric car, the LEAF, in late 2010. Some other manufacturers, such as Mitsubishi or Th!nk Global, offer small-size e-cars.

Problems with batteries are mentioned as the main reason for the slow diffusion of e-cars, as they cannot store enough energy to allow for long distance trips. As a result, without improvements in battery technology manufacturers would need to rely on additional batteries which make the car heavier, less efficient, more expensive – and thus not market-ready. Also, a lack of standardization among car manufacturers and countries are causing problems when it comes to infrastructure such as charging stations. This is particularly acute in Europe, where only little cooperation in the area of e-mobility exists between EU member states. The industry claims that improvements in technology are developing quickly and that costs will decrease soon as well. Some car manufacturers promise that they will be able to deliver e-cars to market in the near future.

However there is another important issue that needs to be addressed – one which seems to be hardly discussed, and when so, only reluctantly: the environmental aspect of e-vehicles. While e-vehicles do not emit pollutants and other greenhouse gases themselves, they are not necessarily environmentally friendlier than conventional, petroleum-powered cars. If exclusively charged with electricity from fossil-fuels, for instance, electric automobiles generate a comparably high amount of $CO_2$ emissions to that of those running on oil. In some cases, their climate performance can be even worse – caused by energy losses in electricity production, transmission and conversion – and an energy-mix dominated by coal.

Although e-vehicles can be somewhat less polluting than conventional cars if they are charged with electricity from a well-balanced mix of sources, only by utilizing electricity from renewable energy will e-vehicles significantly lower $CO_2$ emissions. Otherwise transport emissions are simply shifted to the power sector. Therefore, stronger cooperation between the car industry and the electricity industry, policies that foster renewable energy in the national energy mixes, and the availability of 100 percent renewable electricity plans to e-vehicles drivers are necessary components to really make e-vehicles "green vehicles." E-mobility would then not only be a fashionable trend but rather a real and sustainable solution for clean transportation.

For more information on the conference "Opportunities and Challenges: The Future of E-mobility in Germany and the US", please see **here**

## Greening our Cities – Hamburg and Portland discuss common approaches

*by Rebecca Bertram, adelphi*

In the age of urbanization the slogan "think global, act local" could not be more accurate in explaining the green quest of cities all over the world. In the US and Germany cities are competing for the attribute of being the "greenest". On March 25, 2011 city experts from Hamburg, Berlin and Portland came together to discuss their respective long term sustainable urban development strategies.

The event was jointly organized by the German Environmental Ministry, the Representation of the City of Hamburg in Berlin and the US Embassy.

*"The lack of a comprehensive federal energy and climate policy and major public subsidies for traditional fuels made green energy sources less competitive."*

Portland's Mayor, Sam Adams, and his delegation came to Germany to witness firsthand how progressive cities employ environmental standards. Mayor Adams pointed out that while Portland was eager to join in the efforts of greening their city, he is was faced with two major obstacles. The lack of a comprehensive federal energy and climate policy and major public subsidies for traditional fuels made green energy sources less competitive. An unclear financing structure without available loans for renewable energies increased this difficulty further.

The city of Hamburg was represented by its Coordinator for Climate Issues, Dr. Benno Hain who pointed out that ambitious climate and energy policy on a federal level had set a vibrant framework for action on the local level. Hamburg had set its own ambitious climate targets for which it won the newly established European Climate Capital 2011 award. The competition aims to provide an incentive for cities to inspire each other and share best practices. As such, more than 200 conferences and eco-activities will take place during the course of this year in Hamburg. While Hamburg and Portland remain at different starting positions in their quest of greening their cities, policy makers agreed that the green revolution on the local level would only succeed with a strengthened and vibrant international discussion on the issue at hand.

*Portland's Mayor Sam Adams and Hamburg`s Climate Coordinator Dr. Benno Hain*

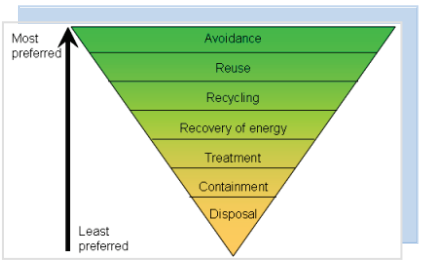
*© US Embassy Berlin*

See the film "Green cities – a transatlantic perspective" on the event in Berlin at **YouTube**

## Opposition to Waste-to-Energy: A Waste of Waste?

*by Sam Shrank, Worldwatch Institute*

At a May 11 event in Washington, D.C. co-hosted by the German Embassy and the Woodrow Wilson International Center for Scholars, panelists discussed the differences in how Germany and the United States deal with their municipal solid waste (MSW). Germany, which created a national ban on landfilling MSW without pre-treatment in 2005, sent only 1 percent of its MSW to landfills in 2007. Sixty-four percent of Germany's waste was recycled or composted, and the remaining 35 percent was incinerated in waste-to-energy (WTE) facilities. The United States, on the other hand, **landfills 69 percent of its MSW**, recycling only 24 percent and using 7 percent for WTE.




*The Waste Management Hierarchy (Source: Australian Department of Sustainability and Environment)*

At first glance, WTE would seem to be a win-win. It involves incinerating MSW to run a turbine and produce electricity. WTE reduces the amount of space needed for landfills by 90 percent, prevents the expenditure involved with procuring fossil fuels and disposing of MSW, and lowers greenhouse gas emissions by avoiding methane emissions from landfills and replacing fossil fuel consumption in waste transport and electricity production.

But WTE has many opponents, for a wide variety of reasons. Some object to the high costs. In the United States especially, with so much unused land, landfilling is cheap and the economics of any alternative are not good. Other critics worry about local air pollution or simply don't want an industrial facility that deals in garbage near their homes or businesses. And some see WTE as taking attention and urgency away from recycling and composting (a better method of dealing with waste) and therefore believe it does more harm than good.

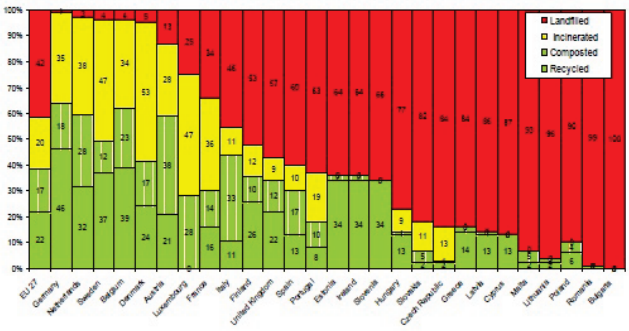
*Panel discussion on waste-to-energy*

*© German Embassy*

Waste management options are generally seen in a hierarchy, with waste avoidance at the top. Recycling and composting for biowaste are the next most preferable, followed by waste-to-energy, then landfilling at the bottom (with landfills that recover and use the methane emitted ranking higher than those that do not). Many environmentalists, who see producing zero waste as the end goal, believe WTE is an unnecessary and even harmful distraction from the push to recycle.

In a recent **New York Times article**, Laura Haight with the New York Public Interest Research Group (PIRG) called incinerators "the devil," pointing out that "once you build a waste-to-energy plant, you then have to feed it." In a **letter to the editor**, Allen Hershkowitz, Director of the Solid Waste Project at the Natural Resources Defense Council, argued that "recycling is the more energy-productive choice for the vast majority of materials found in the municipal waste stream, and the broader ecological winner as well."

I doubt that even WTE advocates would dispute this last point. But the real question is how much competition there really is between recycling and WTE, both of which are superior to landfilling on an emissions basis. Although opponents of WTE cite the fact that WTE emits more greenhouse gases than coal production, this is true only if landfill emissions from the waste that could be incinerated are not taken into account. Including avoided landfill emissions, **WTE is cleaner even than natural gas**. Not all waste can be recycled, and so WTE could conceivably play a role even in a world with maximized recycling. But this still does not address the question of whether promoting WTE would take momentum away from recycling.




*Disposal of MSW in EU-27 in 2007 (Source: Climate Relevance of the Waste Management Sector from January 2011)*

A possible way to begin answering that question is to look to Europe. Many countries, Germany included, rely heavily on incineration. Eight countries incinerated more than 25 percent of their MSW in 2007: Denmark (the world leader at 53 percent), Sweden, Luxembourg, the Netherlands, France, Germany, Belgium, and Austria. All recycle at a higher rate than the United States, including Germany at 64 percent, Belgium at 62 percent, and Austria at 59 percent. Clearly these countries have found a way to stimulate recycling to a far more significant degree than the United States while also relying on WTE. No country has yet found a way to minimize landfilling through recycling and waste avoidance alone.

The greenhouse gas emissions reductions from such an approach are not negligible either. In 1990, Germany's waste management industry **was responsible for emissions of just under 40 million tons**. In 2006, the industry provided emissions reductions of over 15 million tons of CO2e, for overall mitigation of 55.6 million tons per year. Germany sees roughly 10 million tons more of mitigation potential between now at 2020, mostly through improved recycling and waste treatment. The German government also analyzed the EU-27, finding 192 million tons CO2e of mitigation potential by 2020 compared to 2007, 32 percent of the EU-27's voluntary climate target.

In the United States, recycling rates have stagnated and perhaps even fallen. The 2008 estimate of 24 percent of MSW being recycled cited above is less than the high of 33 percent from 1999 (other estimates of the current U.S. recycling rate are as high as 32 percent, but all seem to agree that the rate is not rising). The recycling rate in U.S. communities that utilize WTE is **higher** than the national average.

While the statistics laid out here represent correlation, not causation, they put a major dent in the argument that WTE and recycling cannot coexist. There are legitimate objections to WTE, including its cost and potential emissions, though the local air-pollutant emissions of WTE have been dramatically lowered. But with the U.S. making so little progress toward creating a sustainable waste management system, we shouldn't make the best the enemy of the good. What is most critical is creating a paradigm shift in the way that we think about waste and waste management (or, now, perhaps materials management), an effort in which WTE, recycling, and most importantly, waste avoidance, can all play a role.

# UP AND COMING

## "Cal Energy Corps" Program in Berkeley - Call for Internship Placements

The University of California, Berkeley, is looking for internship placements in clean tech companies in Germany for the summer 2012 as part of the California Energy Corps program. This undergraduate internship program has been created to engage the best and brightest students from UC Berkeley in the design, development and delivery of sustainable energy and climate solutions around the world. Cal Energy Corps participants spend up to ten weeks working with partner organizations in the United States and overseas.

For more information, please see **here** or get in touch with **Kaja Sehrt**, Berkeley Research, Office of the Vice Chancellor for Research.

## Solar Energy Business Conference

Denver, Colorado, USA
June 28, 2011
**http://www.gaccom.org**

## Green Photonics – Sustainable Solutions with Light

Erfurt, Germany
July 6, 2011
**http://www.amcham.de**

## Intersolar North America

July 12-14, 2011
San Francisco, California, USA
**http://www.intersolar.us**

## ACEEE National Conference on Energy Efficiency as a Resource

September 25-27, 2011
Denver, Colorado, USA
**http://www.aceee.org**

# IMPRINT

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

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

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

Transatlantic Climate Bridge

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**ISSN:** 2191-8104