Germany Renewable Energy Study Tour

September 23rd - 29th, 2012

Tour Summary, Findings, and Recommendations
Introduction

Incentive-based rate structures, which include Standard Offer Contracts, Renewable Energy Dividends, Renewable Energy Payments, and Feed-in Tariffs (FITs), have become the most widely used policies in the world for accelerating renewable energy development. But not only do they increase renewable energy generation, they improve local economic development by creating jobs and additional investment. Their success has been demonstrated in countries like Germany and Denmark, where the policies have contributed to rapid increases in renewables.

However, despite their acceptance abroad, support for incentive-based rate structures within the U.S. has been slow to develop. Rural electric utilities (REUs), which serve over 40 million rural residents in 47 states, face a number of challenges in utilizing incentive rates to take advantage of their vast renewable energy potential. Incentive rates are policy instruments that most REU board members and managers have little or no experience with. Furthermore, the historical mission of REUs has been to deliver affordable and reliable electricity. As such, any rate design which offers a “premium” price to stimulate local production is seen by many REU board members and managers as working at cross purposes with the utility’s central mission.

While these are legitimate impediments, such pitfalls can possibly be avoided through properly designed policies. In fact, several states and municipalities within the U.S. are beginning to implement incentive rates. Vermont, Hawaii, and Maine are currently experimenting with their use, offering energy generators access to the grid, stable long-term purchase agreements, and payment levels based on the costs of renewable energy generation.

Recognizing the potential of incentive-based rate structures to help the 25x’25 Alliance achieve its vision of producing 25 percent of our nation’s energy from farms, forests, and ranches by the year 2025, the 25x’25 Steering Committee launched a Distributed Energy Initiative in 2011. This project is exploring how incentive policies might be used to accelerate economic development and the implementation of distributed renewable energy generation through REUs and other power providers that serve agricultural and rural communities. Its ultimate goal is to partner with REUs in developing and testing renewable incentive rates and sharing these results through a “Distributed Renewable Energy Roadmap” report for use by other utilities interested in similar policies.

As a critical part of the project’s exploration phase, the 25x’25 Alliance committed, with support from the Rockefeller Brothers Fund, the Bohemian Foundation, the Heinrich Böll Foundation, and the German American Chamber of Commerce of the Southern U.S., to providing select utility representatives and rural energy leaders with firsthand knowledge of the policies that have enabled Germany to generate 25 percent of their energy from renewable sources and led to over 200,000 farmers becoming energy producers. Through meetings with German government officials, policy experts, and trade representatives and visiting rural communities where renewable energy technologies have been installed as a result of incentive policies, the tour fulfilled its objectives of:

- Examining how incentive-based rates were developed, designed, and implemented in Germany.
- Studying their impact on individual communities and various stakeholders in the country such as ratepayers, utilities, farmers, and the renewable energy industry.
- Determining lessons that might be brought back for application within the United States.

The tour and select participants were featured in stories produced by the Iowa City Press Citizen and in the Indiana Business Journal.

Within this document, you will find information on the tour as well as the group’s findings and recommendations for future actions by the 25x’25 Distributed Energy Work Group.

German renewable energy generation development from 1990 to 2010 including changes in federal policy. The Renewable Energy Sources Act (EEG) established Germany’s feed-in tariff in 2000 and has received a number of adjustments since its passage. German Federal Ministry for the Environment, Nature Conservation, and Nuclear Security, “Renewable Energy Sources in Figures: National and International Development,” July 2011, Pg. 17.
Key Tour Findings

At a Glance:

1. Germany’s decision to transition from a centralized to decentralized generation platform has yielded significant economic, national security, and environmental benefits for the nation. Individual energy producers and rural communities have been major beneficiaries of this policy.
2. Renewables are part of a larger strategy that is driving economic transformation in Germany. German ratepayers are willing to invest in and accept higher near-term energy costs in order to reduce future energy costs and create new economic opportunities.
3. FITs were established via a national policy directive tied to a comprehensive long-term energy security plan. The U.S. lacks such a plan and, given our current economic and political environment, passage of a national energy plan with specific goals and mechanisms for achieving goals is unlikely.
4. While the adoption of a national FIT within the U.S. is unlikely, opportunities exist to integrate their core components into locally designed rate mechanisms. Such local policies can be created to take into account the unique needs, opportunities, and goals of individual utilities and communities.
5. Policies supporting renewable energy development can serve as a smart, long-term investment vehicle for local communities.
6. By providing transparency, longevity, and certainty (TLC), properly designed renewable energy policies create the framework that enables private investors (i.e. RECs and members) to own, build, and operate distributed energy generation.
7. Local leadership was the catalyst for transitioning to renewable energy and has evolved into a network of local energy cooperatives that are pooling community resources to invest in renewable energy and energy infrastructure that they could not afford as individuals. Since 2005, more than 80,000 citizens have set up around 600 energy cooperatives.
8. Germany has successfully demonstrated that technical and policy challenges related to renewable energy can be overcome.

Germany’s feed-in tariff (FIT) has helped to make the country a world leader in renewable energy. Since its establishment in 2000 as part of the Renewable Energy Sources Act (EEG), renewable energy in Germany has grown from just 6 percent to 25 percent of their total energy consumption in 2012. But this is not just a statistic, the results of the policy can be seen all across the country as solar panels line barns and village homes and wind turbines dot the horizon. What is equally remarkable is that the energy transition, contrary to the expectations of its critics, has not necessitated significant transmission upgrades or negatively affected the reliability of power. In fact, Germany had just 15 minutes of unplanned power interruptions in 2011.

The success of Germany’s FIT in tapping the country’s renewable energy potential is attributable to its three basic components:

- Access to the grid for renewable energy
- Standard, long-term contracts extending out to 20 years for the purchase of renewable energy

Study tour participants pose by a barn lined with solar panels, a common sight throughout Germany’s countryside.
• Payment rates based on the actual cost of generation for specific technologies plus a modest return on investment

Combined, these aspects provide investors with the transparency, longevity, and certainty (TLC) they need to build new installations. The standardization of the process has helped to reduce the length of time that it takes to get projects online. While wind can take years to be completed because of a variety of regulations, solar projects in Germany can be installed in just 8 days compared to the ambitious DOE SunShot Initiative in the U.S. which strives to shorten the length of time for getting solar projects online from one year to 100 days. In addition, the FIT legislation laid out annual rate reductions for most renewable energy technologies to encourage industries to cut costs and to account for inevitable price reductions from technological advances and mass production. Since the law passed in 2000, prices for most renewable technologies have fallen sharply. Most notably, solar declined from around 51 eurocents /kWh in 2001 to around 18 eurocents /kWh in 2012. Even critics of the law in its present form, such as Christian Democratic Union Party Parliamentarian Thomas Bareiss, concede that the FIT was initially necessary to spur the development of renewable energy within the country.

The FIT policy is part of a much broader national energy plan, or “Energy Concept,” that defines long-term renewable energy targets for Germany such as 80 percent of electricity production by 2050. While there are many different drivers for the development of this policy, the primary factors have been public demand for phasing-out nuclear power, creating investment and economic development in new technologies, energy security, and meeting greenhouse gas reduction commitments. Unlike the United States, Germany’s electricity market is not being influenced by the sudden rise in natural gas production from hydraulic fracturing.

It is important to note that the success of Germany’s renewable development has not been limited to wind and solar. As the experiences of Jühnde and Seeger Engineering AG demonstrate, biomass and heat generation has played an important role in meeting the country’s energy goals with installed equivalent capacity rising from just 65 MW in 2001 to near 1,600 MW in 2009. In Jühnde, the community owned project uses manure, silage, and woodchips to create biogas to heat 145 homes in the 800 person village. Seeger Engineering AG specializes in using biomass for heat and often views the production of electricity as a secondary goal. Their presentation pointed out that a
A significant portion of the wood pellets used in Europe originate in the United States. Despite our nation’s immense biomass potential, our production largely goes abroad because a weak domestic market.

Many rural communities in Germany are facing similar challenges to their U.S. counterparts such as an aging population and the loss of younger people who leave villages for cities to pursue better job opportunities. Places like Jühnde and Dardesheim have created dependable, quality jobs through their renewable energy commitments. These are in addition to the jobs created in the manufacture and installation of renewable energy. Rural areas, in part because of their open spaces, have uniquely benefitted from the energy transition. Nationwide, the German Federal Environment Ministry estimates that 367,400 jobs in Germany are now related to renewable energy.

The energy transition in Germany is not just a transition from conventional fuels to renewable sources; it is a transition from centralized to distributed generation and from large company ownership to individual and public ownership of generation. Contrary to the United States, the majority of renewable energy in Germany is owned by private individuals and farms. Another important development has been the evolution of local energy cooperatives that are pooling community resources to invest in renewable energy and energy infrastructure that they could not afford as individuals. Since 2005, more than 80,000 citizens have set up around 600 energy cooperatives.

The addition of renewable energy has greatly altered Germany’s power market and is one of the many contributors to the rise in the nation’s energy prices. Since 2000, the cost per kilowatt-hour in Germany has nearly doubled. However, according to the Germany Federal Environmental Ministry, the feed-in tariff made up just 2.3 cents of the total 24 cent cost per kilowatt hour (\$/kWh) in 2010. The bulk of the rising costs were attributable to taxes on electricity which rose from 5.3 cents /kWh in 2000 to 7.6 cents /kWh in 2010 and
generation, transportation, and distribution costs which rose from 8.6 cents /kWh to 13.9 cents /kWh. While the cost of the FIT is expected to grow as more renewable energy is brought online, over the long term the FIT is expected to reduce prices. This is because of the lower costs associated with adding future installations and the absence of fuel costs, unlike traditional sources of power, for sources such as wind and solar – an aspect that becomes especially important in driving down costs once the tariff rate has expired.

For industry, renewable energy has been a remarkably different story than that of the average consumer. Industry currently pays electricity prices at roughly 4 times less than the average consumer and many industries have been exempted from paying for the cost of the renewable energy transition. The energy transition has been especially beneficial for companies able to purchase energy over the market where prices have actually decreased or remained static. In fact, market energy prices during the daytime are now less expensive than in the evenings due to the influx of solar. That some industries have been exempted from paying for the transition and, at the same time, have benefited from it, is a subject of considerable contention within Germany.

While not as applicable to the current circumstances of the United States, there will be challenges for Germany as it strives to go beyond 25 percent renewable energy. Some impediments highlighted within this tour are:

- **Transmission upgrades** – To date, Germany’s transition has not required significant upgrades in transmission. However, Rainer Baake of Agora Energiewende argues that achieving the next 25 percent will require expensive investments in new transmission. This is especially true for costly offshore wind projects that large utilities have been eager to see come to fruition. Determining how best to distribute these costs will be debated.

- **Industry vs. Residential Rates** – As electricity rates rise for the average consumer and decrease for “energy intensive” industries, there will be increasing calls for industry to pay their “fair share” of the cost of the energy transition.

- **Intermittency** – As the energy system becomes more dependent on renewable energy, the need to address intermittency becomes more pressing. Our tour of Entetrag’s hybrid power plant, where they are experimenting with using surplus wind power to produce hydrogen for use by fuel cell vehicles, represents one possibility. Storage will help address the “peaks and valleys” associated with renewables.

The participants found Germany’s FIT to be a powerful tool for advancing renewable energy and generating economic development. Moreover, the transition to nearly 25 percent renewable energy in Germany proved technically possible without radical upgrades to their electric systems. In Germany, the FIT is the primary source of funding for renewable energy projects. When combined with tax incentives in the United States, incentive-based rates for renewable energy could be cost competitive over the long run against traditional energy sources.
Recommendations for a Path Forward

Each of the tour participants concluded it was crucial that the experiences in Germany serve as a foundation for additional action. Through conversations and interviews, a number of interrelated possibilities were identified.

- **Initiate renewable energy dialogues in partnership with the National Rural Electric Cooperative Association.**

Many rural utilities are skeptical of distributed energy as a source of cost competitive and reliable power. For this reason, the conversation begun through the 25x’25 Distributed Energy Initiative and its study tour in Germany should be expanded to include other rural electric cooperatives and organizations representing their interests. As the trusted voice of rural electric cooperatives (RECs) across the nation, the National Rural Electric Cooperative Association (NRECA) is best poised to serve as an ally in opening doors to new communities. Other organizations cited for engagement include the National Rural Utilities Cooperative Finance Corporation, CoBank, the National Renewables Cooperative Organization, the Rural Electric Statewide Managers Association, and the Generation and Transmission Managers Association.

Through these conversations, concerns and questions about renewable energy would be identified. Information would also be exchanged regarding a wide range of renewable energy technologies (e.g. wind, solar, biomass, and heat) and methods for encouraging their growth. One possible outcome of this work could be a “Renewable Energy Toolbox” report which would serve as a source book for REC questions related to implementing renewable energy, such as integrating new installations, balancing costs, dealing with interconnection issues, and negotiating purchase agreements. This document would offer real world examples and summaries of the various challenges that were experienced along the way and how they were resolved. Participating utilities have offered to use their own success stories as case studies. Workshops present another venue for sharing ideas, information, and best practices.

Another possible opportunity is to facilitate and support a mutually beneficial exchange between U.S. and German energy cooperatives. Many of the energy cooperatives in Germany have formed in just the past few years and, through formal exchanges, could take advantage of the extensive experience of cooperatives within the U.S. Similarly, German cooperatives could share with their American counterparts some of the challenges and benefits they have experienced in their energy transition for potential application within the U.S.

- **Model various incentive based rate mechanisms for multiple renewable energy technologies (e.g. wind, solar, biomass, and heat) using a cross-section of generation & transmission and distribution cooperatives.**

Study tour participants believe that additional study of the implementation of incentive based rate mechanisms would be beneficial. This would include modeling incentive rates that encourage distributed generation for multiple renewable energy technologies and forecasting what impact they would have on ratepayers. It would also examine the long-term economic impacts of increasing renewable energy as well as its effects on existing infrastructure. To guide the development and execution of these models, a diverse team composed of energy policy experts, multiple stakeholders, and an organization widely recognized by rural electric cooperatives like NRECA or the National Rural Utilities Cooperative Finance Corporation has been recommended. Small municipal utilities should also be considered for the purposes of modeling.
Explore ways to overcome embedded barriers to distributed generation within the rural cooperative community.

There are a number of significant barriers to renewable energy generation within cooperatives. In addition to a general lack of quality information, the following concerns have been cited and should be examined:

- Balancing the need for certainty for renewable energy investment with meeting the certainty needs for purchasing power from other sources of generation through “all requirements” contracts
- Determining the limitations of the REC’s distribution grids to interconnect renewable energy generators in remote areas without adversely affecting safety, power quality, or the ability to transfer loads to backup feeders
- Pinpointing potential conflicts with local and state policies such as building codes and permitting processes
- Energy storage solutions as a means of offsetting intermittency associated with renewable energy

Invite Generation & Transmission Cooperative (G&Ts) to join in the project.

The focus of the 25x25 Distributed Energy Initiative’s outreach efforts to-date have been largely on distribution cooperatives. Given that many distribution cooperatives must work closely in planning additional generation with their G&T, generators should have an important place in this project as it moves forward.

Consider using “energy for economic growth (EEG)” as a way to discuss incentive-based policy mechanisms for distributed energy generation.

Terms like “feed-in tariff” translate poorly and often elicit unnecessary barriers. Instead, the group recommends using terms like “energy for economic growth (EEG)” in describing incentives and focusing on the basic aspects of effective policies. In the case of incentive-based rate mechanisms, these are:

- Grid access
- Standard, long-term contracts
- Payment prices based on the actual cost of generation for specific technologies

Path Forward

Lessons learned from this tour will be shared with rural utility leaders and other stakeholders across the country with the goal of generating conversation about various mechanisms that might be used for increasing renewable energy and economic development in rural America. The 25x’25 Alliance Project Leaders are eager and prepared to continue this exploration of incentive policies and invites the participation of any groups that might interested in joining them.

For More Information

For more information on this tour or initiative, please contact info@25x25.org or call 410-252-7079.
Tour Participants

The following individuals participated on the 25x’25 Renewable Energy Study Tour:

- **Jerry Vap** - Member, Nebraska Public Service Commission and 25x’25 Distributed Energy Initiative Work Group Chair
- **Peggy Beltrone** - President, Exergy Integrated Systems
- **Michael Bowman** - Wheat, Corn, and Alfalfa Producer
- **Mark Farnsworth** - General Manager, Highline Electric Association
- **Warren McKenna** - Manager, Farmers Electric Coop (Kalona, IA)
- **Milo Mumgaard** - Senior Policy Aide for Sustainability, City of Lincoln, Nebraska
- **Michael Northrop** - Program Director, Sustainable Development, Rockefeller Brothers Fund
- **Nathan Rudgers** - Senior Vice-President and Director of Business Development, Farm Credit East
- **Neil Veilleux** - Senior Consultant, Meister Consultants Group
- **Darren Von Ruden** - President, Wisconsin Farmers Union
- **Greg Wagoner** - Vice President, Business Development, Wabash Valley Power Association
- **Andrew Walmsley** - Director of Congressional Relations, American Farm Bureau Federation
- **Bryan Washburn** - CEO/General Manager, Jasper County Rural Electric Membership Corporation
- **Tom Wind** - President, Wind Utility Consulting
- **Ernie Shea** - Project Coordinator, 25x’25 Alliance
- **Tim Fink** - Project Lead, 25x’25 Alliance

To view the full biographies of study tour participants, click here.
Tour Itinerary

Sunday, September 23rd

Orientation Session in Frankfurt

Tour participants were presented with background information on the tour, Germany’s energy policies, and how those policies related to events throughout the week.

Monday, September 24th

Visit to Seeger Engineering AG in Hessich Litchenau

For more than 30 years, the team at Seeger Engineering AG has been working across the globe to provide biomass energy and thermal solutions. Gregor Rinke of Seeger Engineering AG spoke with the tour about the impact of Germany’s energy policies, particularly the feed-in tariff, on the rapid growth of bioenergy within the country. Biomass and biogas now provide the energy equivalent of 2 to 3 nuclear power plants in the country. The tariff provides different levels of incentives depending upon the source as a means of promoting sustainability. Wood pellets were particularly recognized as a reliable source of energy for heating. According to Rinke, a significant portion of Europe’s pellet supply comes from the United States which has a fairly limited domestic market for the product.

Tour of Jühnde Bioenergy Village

Jühnde is a small village of around 750 people located in Southern Lower Saxony. The community holds the distinction of being the world’s first “Bioenergy Village," producing almost all of their demand for electricity and heat since 2006 through a biogas plant sourced by wood chips and local silage and manure. The community owned project received support from Georg August University in Göttingen, the German Agricultural Ministry, the European Union, and Germany’s feed-in tariff policy. Jühnde has adopted a cooperative model for funding and operating the plant, with members being able to pay a fee in order to get voting rights and connection into the system. A presentation on the village and its system can be found here. A summary of the project from the International Energy Agency can be accessed here.
Tuesday, September 25th

Tour of Dardesheim

Dardesheim is small town of less than 1,000 not far from Magdeburg that has become a leader in renewable energy. There, a private company has partnered with the community in developing a large wind farm, several biogas plants, solar arrays, and a hydropower pump storage facility. The 60 MW wind farm is home to over 30 different turbines, ranging from an 80kW Lagerwey set up in 1994 to a 125m-tall Enercon E-112 which has a capacity of 6 MW. Renewables produce an estimated 150 million kWh per year – 40 times the city’s power. In addition to supporting 8 quality jobs within the community, the company contributes a portion of their profits for reinvestment in the community. Within the presentation given by Thomas Radach, Technical Manager of Windpark Druiberg, he discussed the efforts to secure public support for the project. Their motivations were primarily economic development. The company is also experimenting with a new regional model for managing power through a broad portfolio of renewables. Mr. Radach’s presentation (in German) can be found here.

Visit to Bathge Farm

Gerd Bathge owns a farm of around 800 hectares of land with over 350 cows in the village of Stegelitz near Magdeburg. With solar panels lining his barns and a current lease of land for wind turbines, Mr. Bathge is an example of how individual farmers have directly benefited from Germany’s energy policies. At this meeting we also met with representatives from a middle-sized solar company and wind company. The visit to the farm was covered in a story within their local newspaper.

Wednesday, September 26th

Visit to German Agricultural Association (DBV)

Founded in 1948, DBV is the professional representation of German agriculture and forestry which constitutes an important pillar of the nation’s economy, generating about 50 billion euros each year. The presentation provided by DBV focused on the role of bioenergy within Germany. Despite initial support and goals for biofuels usage within the country, the general public has been slow to adopt its use out of concern that the fuel will damage engines and indirect land use change. The successful expansion of bioenergy within the country has also generated a “food vs. fuel” debate with bioenergy detractors arguing that it has resulted in the conversion of cropland once used for food and feed to dedicated energy crops. Nonetheless, the DBV believes that there is room for growth in the industry and it could be used to offset some of the challenges of intermittency posed by other forms of renewable energy. To view their presentation, click here.
Meeting with Josef Göppel, Christian Social Party Parliamentarian

Josef Göppel is a farmer’s son from Rauenzell near Ansbach, Bavaria. In 2002 he was elected in the German Bundestag where he is a member of the Committee on Environment, Conservation, and Nuclear Safety as well as the Committee on Food, Agriculture, and Consumer Protection. Since 1991, Göppel has led the environmental working group of the Christian Social Party (CSU), whose environmental platform he helped to form. He has developed a reputation within his party as a champion of the Renewable Energy Sources Act (EEG) which established the feed-in tariff program. As a representative of an agricultural area, Göppel has seen firsthand the benefits that the law has produced in generating new revenue for farmers and rural areas. This is a marked change from the 1970’s when many rural communities were struggling economically. Mr. Göppel anticipates that the energy sector will continue to decentralize and that the business model for large utilities will change from that of generators to predominately sellers of electricity. He has also been very supportive of the development of energy cooperatives. According to Göppel, large-scale utilities have not invested heavily into renewable energy despite being included within the feed-in tariff. Instead, they have decided to place their largest renewable investments into offshore wind farms which have been slow to develop due to a number of technical and financial challenges. With respect to intermittency concerns, Göppel offered that biogas could play a valuable role in offsetting reduced periods of generation from solar and wind. Furthermore, because of reduced costs and the other benefits of renewable generation, Göppel believes that the feed-in tariff will no longer be needed as an incentive for renewable energy by the end of this decade.

Roundtable Discussion at the German Chamber of Commerce - Berlin

Lars Velser – Project Manager, German Wind Energy Association

Lars Velser serves as a Communications Director for the German Wind Energy Association (BWE). Since its founding in 1996, BWE has become one of the world’s largest renewables associations with some 20,000 members. Velser emphasized the growth of German wind energy within his presentation, particularly community owned developments. Wind currently supplies around 30,000 megawatts of energy to the country and directly and indirectly employs over 100,000 people. Contrary to solar, one of the largest challenges facing the industry is the length of time it takes from inception to completion of a product. According to Velser, this is largely attributable to governmental requirements, such as siting issues with birds and bats and grid limitations. To view his presentation, click here.

Toby Couture – Director of Renewable Energy, IFOK

Toby Couture is Director of Renewable Energy for IFOK where he specializes in the environmental, economic, and financial aspects of energy markets and provides services in a wide range of areas including policy, strategy, finance, and sustainability. Couture pointed
out in his presentation that 90 percent of renewable energy in the world has been developed with support of feed-in tariff policies whose origins trace back to PURPA legislation within the U.S. The policy, if well designed, can deliver more distributed renewable energy at a lower cost than many other policy mechanisms. Traditionally, feed-in tariffs offer 1) a price for electricity sold to the grid, 2) a stable, long-term contract, and 3) grid access. Couture argues that the German tariff degression has been an important policy element since it attempts to keep the incentive on pace with reduced installation costs. The addition of significant amounts of renewable energy has had a significant impact on Germany’s energy market, including making energy cheaper during the day than in the evenings. Furthermore, despite increasing energy rates, many Germans pay less in their energy bills than Americans because of their higher energy efficiency.

Thursday, September 27th

Meeting with Thomas Bareiß, Christian Democratic Union Parliamentarian

Thomas Bareiß was born in 1975 in Albstadt, Baden-Württemberg. A business manager by profession, Bareiß has been a member of the Bundestag since 2005. Since 2010, he has been the coordinator for energy politics of the Christian Democratic Union (CDU). During his tenure, Bareiß has been critical of the feed-in tariff, arguing that it is providing too generous of incentives at the cost of higher rates for consumers. Instead, he favors a more free market approach for renewable energy. He is especially critical of the incentive rates that were initially established for solar, given both the cost of the technology and the country’s limited solar resources. Though admitting that they are unpopular with the public, he supports both nuclear and natural gas. Nonetheless, he believes that the feed-in tariff was needed for the first seven years in order to launch the country’s renewable energy sector and to begin the process of reducing carbon emissions.

Meeting with Hans-Josef Fell, Green Party Parliamentarian

Han-Josef Fell was born in 1952 in Hammelburg. He is a member of the Green Party in the Bundestag and also serves as spokesman on energy for the Alliance 90/The Greens parliamentary group. In addition, he is a member of the Environmental Protection Committee, substitute member of the Committee on Economics and Technology, and substitute member of the Defense Committee. As one of the writers of the Renewable Energy Sources Act (EEG) adopted in 2000, Fell is a considered one of the founding fathers of Germany’s feed-in tariff. During our conversation, he focused on the goal of producing 100 percent of the world’s energy from renewable sources in order to reduce greenhouse gas emissions and create new jobs and investment. He expressed concern that consumers under the current feed-in tariff are subsidizing industry since many industries have been exempted from paying for the feed-in tariff policy while, at the same time, benefitting from reduced market prices for electricity. He believes that the German system of funding the transition through rate payers, as opposed to taxpayers, is a more effective system.
Stakeholder Roundtable at U.S. Embassy Moderated by Gus Recinos, Head of Global Affairs for the U.S. Embassy

Rainer Baake – Agora Energiewende

Rainer Baake is Director of Agora Energiewende, an organization dedicated to engaging energy stakeholders, including actors from politics, civil society, business and science, in developing a common understanding of the problems and potential solutions related to the energy transition. Baake stated that public opinion, which favors both renewable energy and the nuclear phase-out, has played an important role in the transition. According to Baake, the realization of 25 percent renewable energy has not necessitated radical upgrades in infrastructure or resulted in changes in reliability. However, he believes next 25 percent will pose more technical problems and require upgrades to the grid and other infrastructure.

Other participants:

Marek Goerlich – CLAAS KGaA mbH

Volker Holtfrerich – Head of Strategy and Policy, National Association of Water and Energy Industries (BDEW)

Sabine Lieberz – Senior Agricultural Specialist, U.S. Foreign Agricultural Service

Meeting with the Association of Municipal Businesses (VKU)

Thomas Stiefelhagen – Head of Production, German Association of Municipal Businesses

Marcus Merkel – Senior Advisor, EWE NETZ GmbH

The Association of Municipal Businesses (VKU) is the German association of small utility providers. Its 1,400 member companies are active in energy supply, water supply, and waste management. VKU provided a presentation on the energy transition from the perspective of a small utility. An important distinction between Germany and many places in the United States is that German consumers can choose their electricity provider. There are roughly 3 million customers switching power providers per year, meaning that power providers are not necessarily locally oriented. According to the representatives, the energy transition has been met without substantial reliability problems, however, there are issues that remain to be addressed such as how best to distribute the cost of upgrading and extending electrical systems as well as how to address intermittency. They agreed that effective regional planning will be needed to incorporate further renewable energy.
Friday, September 28th

Tour of Hybrid Power Plant in Dauerthal

One of challenges facing Germany’s energy transition is intermittency. Rather than shutting turbines down at peak, a more effective strategy would be to develop energy storage systems. This is what is being experimented with through ENERTRAG’s hybrid power plant pilot project in Dauerthal. ENERTRAG is a European energy supplier specializing in sustainability. Their hybrid power plant in Dauerthal uses surplus wind to produce hydrogen through electrolysis for transportation fuel. When wind energy is at a minimum, biogas and hydrogen can be used to produce electricity to meet power demand. The project is partially funded through public funds.

Meeting with Dr. Martin Schöpe – Federal Ministry for the Environment, Nature Conservation and Nuclear Security

Dr. Martin Schöpe has been working since 2003 on the linkages of energy and the environment at the international and European level within the Federal Environment Ministry. Within his presentation, he described the primary motivations of the energy transition as energy security, sustainable growth, and climate protection. Dr. Schöpe cites the clear national goals as part of their success. The 2010 Energy Concept established goals for renewable energy (35 percent by 2020 and 80 percent by 2050) and greenhouse gas reductions (80 percent by 2050). Moreover, there are specific goals for certain technologies, such as producing 14 percent of their heat from renewable sources. Like other speakers, he noted that market energy prices are cheaper during the day for businesses, but those benefits are not being directly passed on to the average consumer who is facing higher electricity rates.

Meeting with Thomas Chrometzka, German Solar Association (BSW)

Thomas Chrometzka is the head of international affairs for German Solar Industry Association (BSW-Solar). With more than 800 member companies, they are the interest group of the German solar energy industry. Chrometzka pointed out that 75 percent of German energy, including transportation fuel, is imported. Currently Germany leads the world in solar production, with more than 27 GW PV capacity connected to distribution grids. The share of solar power in the German electricity mix could increase by 70% in the next four years, from around four percent today to approximately 7% in 2016. Since 2008, costs of new solar power systems have been halved. To view Thomas Chrometzka’s presentation, click here.