TRANSATLANTIC URBAN CLIMATE DIALOGUE – WORKSHOP # 2

Renewable Energies and Implementation Actions in Community Energy Planning

Arlington/Alexandria, Northern Virginia

May 2nd–May 4th 2012

Workshop Proceedings

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Transatlantic Urban Climate Dialogue

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The Project

The second workshop of the **Transatlantic Urban Climate Dialogue (TUCD)** took place in Arlington/Alexandria, Virginia, May 2nd–4th, 2012. This workshop is one of four problem-focused, goal-oriented and geographically-specific exchanges between local climate and energy policymakers, governmental and non-governmental technical experts from academia as well as practitioners from German and North American metropolitan regions. The participants represented the urban regions of Northern Virginia, Guelph/Ontario, Stuttgart and the Ruhr Valley. The overall goal of this project, scheduled to take place between 2011 and 2013, is to strengthen the formal search, review and application of mutually beneficial local-level energy and climate change policies between Germany and North America.

This dialogue is grounded in several model institutional partnerships and precedents of successful exchanges on urban sustainability between German and North American regions. These partnerships are characterized by the inclusion of governmental, academic and commercial partners. For instance, since 2000, the Northern Virginia Regional Commission has worked with the Verband Region Stuttgart to exchange and apply urban climate and sustainability policies. Guelph, Ontario, has worked since 2006 with metropolitan regions in Baden-Wurttemberg to share best practices in applying comprehensive energy planning practices. The work of each of these partnerships has incorporated formal transfers and applications of urban sustainability innovations across the Atlantic.

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→ Compare workshop proceedings Workshop #1, Gelsenkirchen, October 16th–19th, 2011 – www.fu-berlin.de/tucd

Part I | Site Visits

The TUCD is structured to formalize and apply knowledge transfer among the participants. To this end, the TUCD emphasizes the merging of informed field visits and critical dialogue among the policymakers and the technical experts in order to advance applications of local energy and climate planning policies and practices. The purpose of the site visits is to create a more formal learning context prior to the workshop so that each of the participants is informed about the applications of large-scale sustainable energy projects in the Northern Virginia area.

The site visits of the first day included:

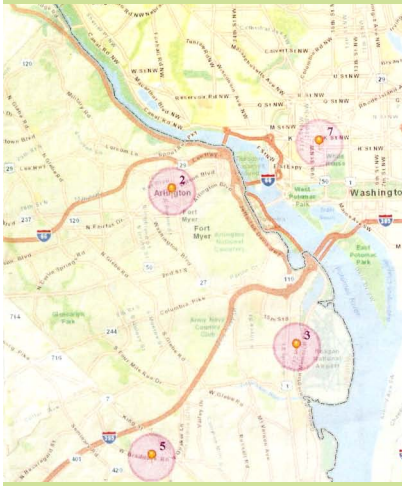
1 Arlington County Offices →

2 Crystal City Community Energy Projects →

3 Washington Gas HQ Facility →

4 Alexandria City Energy Efficient Schools →

5 Tysons Corner Redevelopment Area →



Map of Site Visits

Arlington County Offices

Community dialogue to broaden efforts

The site visits started with a visit to **Arlington County Offices**, where the group was welcomed by Jay Fisette, Chairman of the Arlington County Board of Supervisors.

Arlington is an urban county of approximately 26 square miles located directly across the Potomac River from Washington D.C. The County's proximity to the nation's capital, its public transportation network and its highly skilled labor force has attracted an increasingly varied residential and commercial mix. The County's current population of 212,000 is forecasted to grow to approximately 247,000 by 2040. Arlington's economy revolves around the U.S. Government and the related consulting business for the federal government.

Since 2010 the County has sought to expand its efforts to reduce greenhouse gas (GHG) emissions by developing an Arlington Community Energy Plan (CEP). The origins of the Arlington County CEP extend back to the AIRE (Arlington Initiative to Reduce Emissions) program. AIRE set a specific goal of lowering County government GHG emissions 10 percent from 2000 to 2012. The County broadened the AIRE effort with meaningful community dialogue on cutting-edge energy efficiency and resulting GHG emissions reductions and energy generation, distribution, and storage in the greater Arlington community. A Task Force Report, accepted by the County Board in May 2011, puts forth numerous recommendations and strategies to manage energy use, distribution, generation, and storage between 2011 and 2050.

The recommended "headline target" is for Arlington to reduce its annual GHG per capita emissions to at least 3.0 tons (mt) from the current 13.4 tons over the next four decades. To this end, the CEP recommends specific energy policies in the areas of buildings, district

Arlington County Offices

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energy (DE), renewable energy, and transportation. This section will specifically address the DE component, which speaks to the CES Task Force Scale Projects that address entire neighborhoods in the County. The Scale Projects are large enough to address both energy demands and supply within a single project but small enough in the number of decision-makers. Over time, a "connecting of the dots" of the projects is expected.

District energy systems (DES) allow for more efficient use of heat from local CHP (combined heat and power) generation, which decreases the fuel waste in the generation of electricity. This approach is one of the largest and most significant changes to Arlington's energy future. The County uses half of all its energy in such high-density areas. By 2030, 146 MW of CHP are expected to be distributed to such areas, consisting initially of a combination of natural gas engines and small turbines and possibly fuel cells. By 2050, at least 10 percent of the needed energy could come from biofuels and recovered waste heat.

Crystal City

The TUCD delegation then travelled to **Crystal City**. Crystal City is one of the largest and densest energy consuming areas of Arlington County, using 19 percent of all energy and creating 20 percent of GHGs of the entire County. The Arlington CEP has concluded that high-density areas such as Crystal City and the Ballston Rosslyn Corridor have the potential to economically make transition towards neighborhood-scale DESs starting as early as 2015. Specifically, the CES Task Force calls for the development of Integrated Energy Master Plans (IEMP) for Crystal City, Columbia Pike, Rosslyn and East Falls Church. In the case of Crystal City, the first steps are being taken by Vornado/Charles E. Smith L.P. in cooperation with the County and Washington Gas, the local natural gas utility. Vornado is one of the biggest owners and managers of real estate in the Washington area in general and Arlington in particular.

The expectation is that this will serve as a framework to create IEMP "Scopes of Work" for other comparable high-density areas.

The group was welcomed by Patrick J. Tyrrell, Chief Operating Officer of Vornado/Charles E. Smith L.P. Arlington County, in conjunction with Vornado/Charles E. Smith L.P., and Washington Gas/WGL Holdings, Inc. issued a Request for Proposal (RFP) for Consulting Services for a Decision Grade Integrated Energy Master Plan for Crystal City (IEMP). This request comes in conjunction with major renovations and new developments planned for the site over the next 40 years (the "2010 Crystal City Sector Plan"). Such plans anticipate an additional 15 million square feet of commercial office, retail, hospitality, and multi-family residential buildings. It also comes in reference to the Community Energy Plan (CEP), which aims to reduce energy-related GHG emissions per resident to 3.0 mt CO2e/capita/year by 2050.

The Scope of Work of the RFP focuses on the integrated energy master planning, which includes an analysis of potential district energy implementation in Crystal City. The areas that should be integrated and assessed include energy-related investment returns, but also

First steps to an integrated energy master planning

Electric Vehicle Charging Station

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on the competitiveness of Crystal City as a whole; increased energy supply reliability and affordability, and reduction of GHG emissions; and the enablement of possible additional new areas in the future, technologies, and wider County energy services.

One of the goals of the IEMP is that total energy usage should be substantially less than a comparable development elsewhere in Virginia. The indicative target is that the energy use will be 60 percent less than current practice by 2050, with GHG levels being at least 70 percent less.

Washington Gas HQ Facility

Reducing the carbon footprint

The group continued the site visits to **Washington Gas/WGL Holdings, Inc.** and was welcomed by Adrian Chapman, President and Chief Operating Officer for WGL Holdings, Inc. and Washington Gas.

Washington Gas delivers natural gas to more than one million residential, commercial and industrial customers throughout Washington, D.C., and the surrounding region. Washington Gas is a regulated subsidiary of WGL Holdings, Inc., a public utility holding company. The unregulated affiliates of WGL Holdings are in energy-related businesses, selling natural gas and electricity in competitive markets, and providing heating, ventilating and air-conditioning products and services.

The delegation was shown around its newly opened Springfield Center HQ facility, which reflects the current state-of-the-art in construction and energy efficiency, including an abundance of recycled materials and reclaimed local wood.

Bloom Energy Box

The building is a model of corporate sustainability with its Bloom Box fuel cell, the first on the east coast. **The Bloom Box is a solid oxide fuel cell that converts clean natural gas directly to electricity reducing greenhouse gas emissions by approximately 40 percent compared to conventional grid electricity.** The unit will provide up to 35 percent of the electricity demand for complex, and will run 24 hours a day, 365 days a year. The use of this technology at its Washington Gas facility is in line with the WGL Holdings Inc. vision to be the preferred source of clean and efficient energy solutions that include natural gas, electricity and renewable sources such as solar and wind.

The building is also targeting LEED Gold certification (Leadership in Energy and Environmental Design), the second highest certification level awarded by the U.S. Green Building Council. To meet the LEED Gold Certified standards, 21 percent of the building's construction materials were harvested and manufactured in the region and more than 31 percent of the building materials are from recycled content.

Washington Gas' commitment to reducing its carbon footprint is reflected in the company's operating practices which target a significant reduction in greenhouse gas emissions from its gas delivery system and by upgrading and replacing infrastructure. Washington Gas' objective is to realize at least a 12 percent reduction in greenhouse gas

emissions per term of natural gas delivered in 2015, and at least an 18 percent reduction by 2020.

Alexandria City Energy Efficient Schools, James K. Polk Elementary

The site visits then took the participants to **James K. Polk Elementary School** in Alexandria.

As part of the Alexandria Public School System's **„Greenovation" strategy** toward green building technology integration in Northern Virginia., the James K. Polk Elementary School has received numerous sustainable building upgrades through this effort. The school's renovations are equivalent to meeting the LEED gold status. Polk started the rehabilitation/ redevelopment of the school about 5 years ago in 2007. The facilities were 55 years old with old systems (air, heat, water, etc.) that were no longer functionally efficiently.

Delegation members witnessed a presentation of 5 primary school students about the "Greenovation" highlights of Polk, such as:

- *Eco-Air Fresh Air System: Ecology Focus – Geologic system that preheats and precools ventilation air to more efficiently control climate and temperature change*
- *Gymnasium Construction and Vegetated Roof: Ecology Focus – Native and drought resistant plant species*
- *Sun Shades, Solar Tubes, and LED light fixtures: Focus – Natural lighting, energy savings*
- *Solar Hot Water/Photovoltaic Systems: Focus – Solar energy PV panels that produce 14 kilowatts per hour per year. 16 solar hot water panels that translates into 6000 cups of hot tea per day. Designed to put them on the walls so the community could see them and become a learning environment for the students and the neighborhood.*
- *Geothermal Well that direct heat and cool air into the classrooms /Greenovation Lab: Focus- Soil composition, temperature, and contamination*
- *Classroom Heating, Ventilation and Air Conditions-Systems (HVAC) and indoor environmental quality: Focus – Indoor air quality vs. outdoor air quality*
- *Recycling: Focus – Waste vs. reuse*
- *Composting: Focus – Biodegradable products*
- *Landscape: Focus – Impact of runoff on the natural environment*
- *Storm Water Management (low impact development on the buildings and adjacent grounds). Water runoff from the roofs flow through planters as a way to slow and filter the run off. Aqua Circle also slows the rate of the run off before it flows into large collection and storage retention basins.*

Environmental Ambassadors

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During construction low VOC materials (volatile organic compounds) were used and efforts were made to get as many materials from local vendors (within 500 miles) to reduce the overall carbon footprint of the renovation.

In February of 2010, Polk celebrated the opening of its new gymnasium. The gymnasium's design included a modular approach, allowing the walls to be erected within three days. It contains solar tubes providing natural light to illuminate the space, LED lighting, and sound absorption panels. The gym's exterior showcases which are a native Virginia plant design, tying another natural element to the construction design. During the summer of 2011, Polk added four new classrooms using the same modular approach that was used for the gym. This approach allowed the building of new „green/energy efficient" classrooms while school was in session.

At Polk, the traditional mechanical/boiler room has been transformed into a student accessible **„Greenovation" Learning Lab** where students come to learn about geothermal and solar technologies, as well as environmental stewardship. Students come in and help the school engineer monitor the different systems, where they learn the basics of energy efficiency, storm water, recycling, etc. Polk is integrating their green features into the curriculum. There is a special student club called the "JK Polk Green Owls".

Green features as part of the curriculum

Similar systems have been installed in the T.S. Williams High School Minnie Howard campus. Alexandria City Public Schools plan to take the lessons learned from their experiences and apply them to others expansions/additions for other schools.

Tysons Corner Redevelopment Area

The tour finished with a visit to SAIC (Science Applications International Corporation) in the **Tysons Corner Redevelopment Area** in Fairfax County. Tysons is to become a leader in environmental stewardship through protecting and improving the existing man-made and natural environments. Improvement through enhanced storm water management and promotion of green buildings, and a green network of parks and open spaces will all contribute to this stewardship. SAIC vice president, Douglas Koelemay, together with Fairfax County and other SAIC senior officials informed the group about the energy efficiency and conservation concepts for redevelopment in Tysons Corner.

Downtown feeling by implementing green building design

By 2050, Tysons will be transformed into a walkable, sustainable, 24-hour urban center that will be home to up to 100,000 residents and 200,000 jobs.

The Comprehensive Plan envisions a downtown feel by creating:

- *a mixed-use urban center;*
- *a friendly place for bicyclists and pedestrians;*
- *a focus of development around the four new Silver Line Metrorail stations.*

As Tysons redevelops over time, the existing transportation network will be expanded and transformed to contain complete streets, with expanded bicycle facilities. Moreover a variety of urban parks, plazas, open spaces and recreational facilities will be created, connected by a „greenway", a network of trails for pedestrians and bicyclists.

The Plan also calls for all new residential buildings to achieve LEED certification, or an equivalent green building standard. Office and other non-residential buildings are expected to achieve the higher standard of LEED Silver.

The transformation envisions the use of low impact development techniques such as rain gardens, vegetated swales, porous pavement, and vegetated roofs. It also calls for the retention of the first inch of rainfall on-site, or for storm water management measures equivalent to the current LEED standards.

All these measures aim to transform Tysons into a place that is more sustainable than today.

Keynote Presentation | Professor John Randolph[1]

[1]Chair of Urban Affairs and Planning at Virginia Tech

*The **major factors/driving forces** that influence the design/development of CEP are the following:*

- *Energy Prices and Investment*
- *New and Innovative Technologies*
- *Public Perceptions and Preferences*
- *Public Policies Influencing Investments in New Energy sources and Technologies (US Government Stimulus Bill and the Energy Efficiency and Conservation Block Program)*

Barriers:

- *Legacy of inefficient or outdated/obsolete vehicles, buildings, land use, and transportation systems.*
- *Legal and institutional constraints such as the absence of enabling authorities for local government to apply higher energy efficient codes.*
- *Limited federal, state and local governmental policies to finance and support investment.*

Recent developments positively affecting CEP:

- *The overall momentum of the US "green" building movement*
- *Creation of some regional/local energy retrofit investments and programs (LEAP)*
- *Advances in building energy codes*
- *Appliance and vehicle efficiency standards (such as Corporate Average Fuel Economy (CAFE) standards*
- *Renewable energy developments such as the Renewable Portfolio Standards, energy credits, NET metering, investment and production tax credits.*
- *Solar PV and Wind international standards, especially where Germany is a global leader (although in 2011 the US doubled its capacity from 2010).*
- *Consumer preferences are changing. For example, in the US there is a trend towards more compact, transit oriented development and increasing transit alternatives.*
- *Demographics changes in which there are fewer people, more mixed households, increasing married couples without children, a greater desire for more urban amenities.*

- *Redevelopment and sustainable land use: smart growth; new urbanism design; "5 D's of sustainable land use": Density, Diversity, Design, Destination and Distance to transit (inherently part of the European development pattern).*

Leading examples can be found in Mannheim – St Paul – Portland, Oregon – Arlington, County.

Conclusions:

- *There is a need to recognize the co-benefits of community energy planning and other aspects of smart growth, new urbanism, and general sustainability.*
- *Carbon emission per capita is a better measure.*
- *Improved leadership, visionary targets, evidence-based planning and project development, implementation and early action / early adoption can lead to substantial outcomes*

Questions:

- *Would the move in the US to more compact development still occur whether or not climate change was an issue? Is the energy question a key to advancing climate change policies in the US?*
- *How much are states barriers or opportunities? Are the states the critical keys to transformation?*
- *How do communities learn from each other? Who are the early adopters and how can the second tier city adopters learn from the pioneers? What can the pioneering cities learn from each other (such as Portland, Oregon learn from Mannheim, Germany)?*
- *How can US communities prepare to mitigate against or adapt to the effects global climate change when there is so much doubt concerning its existence in many parts of the US?*

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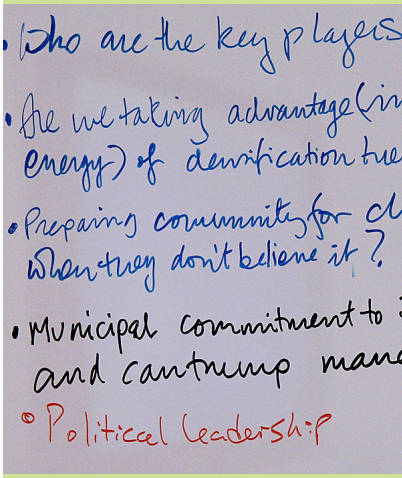
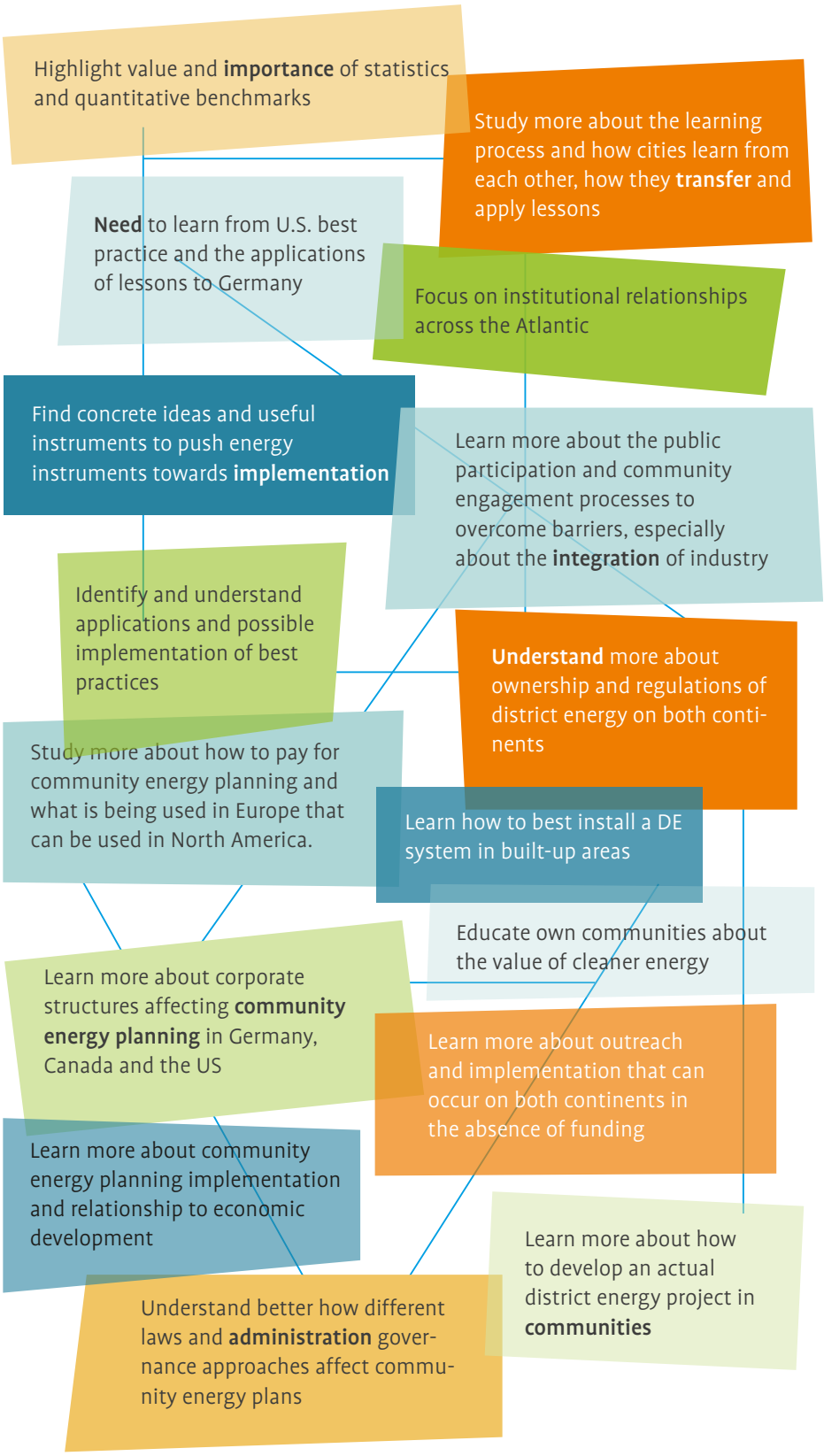
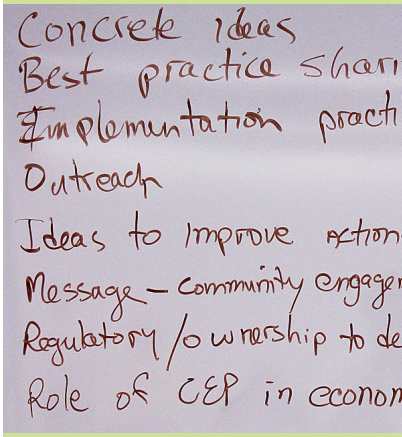
→ www.mannheim.de/
→ www.stpaul.gov/
→ www.portlandonline.com/
→ www.arlingtonva.us

Keys to transformation



Round-table Exchange of Current and Future Objectives Among the TUCD Participants





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Other Related Themes Discussed Included:

Leadership from the Public Space. *Need to stress "leadership from the public space" to promote real transformation of community energy plans.*

Building Labels. *Building labels are important prerequisites for promoting transparency and awareness. Europe has substantial experience to share with North America on this matter.*

District Energy Implementation. *There are questions on both continents concerning how to get started and work with developers. Can one start with one building, based on the above-mentioned public space commitment?*

Renovation Models. *Renovation starts with substantial engagement by the private and public sectors. Bottrop is a useful model in this context.*

Economic Development. *Questions were raised about how to fit CEPs into broader economic development processes. Well-developed CEPs will attract investment and jobs*

Trends and Governance

Changing urbanism

While there have been cyclical ups and downs in the energy sector since the crisis of the 1970s, signs suggest that energy prices, especially oil, will not decrease. Moreover, there are also the impacts of climate change which fuel concerns will remain a long-term trend. There also are changing perceptions about urbanism in both Europe and the US, with greater attention to quality-of-life issues. There are ways that energy also can play into this paradigm.

Cultural issues

When asked how cities learn from each other in the United States and Europe, the issue of addressing culture was raised. The US participants shared how to prepare communities for global climate change when there is often little political support or acceptance to act on the general threats that climate change presents. In this case, "energy competitiveness" may be the better strategy or term to overcome these types of perceptions or barriers. In politically conservative areas, communicating cost-efficiencies and economic value of CEPs is a useful way of convincing skeptics about how to respond more adequately to the threats of climate change.

In the US, policy support is growing from the ground level, but state-level efforts are needed to support this as well. A critical and persistent issue in North America continues to be cities compensating for the federal policy void on comprehensive energy planning. But while grass roots are driving multiple local efforts, there are some efforts at the federal level in the US that are supporting directly and indirectly CEP development and implementation. Vehicle efficiency standards are one example. However, in general, the absence of meaningful national leadership in the US means translates into more complications and challenges in the United States than in Germany. That is not to suggest that the picture concerning CEPs in Germany is perfect, and there is a need to understand that Germany, too, is facing a range of political challenges as it implements its "Energiewende."

The discussion also turned to the building sector and its vital role in CEP planning. In Europe, the building sector is responsible for about 40 percent of the energy consumption. The EU has placed special emphasis on energy efficiency in buildings and its plans to achieve the EU's climate objective of reducing greenhouse gas emissions by 80–95% by 2050.

Therefore the renovation of the built environment has a high role in CEPs to promote jobs creation, promote energy efficiency and reduce carbon emissions.

District Energy and Labeling

A Community Energy Plan is an opportunity for more efficient and sustainable use of energy. During the second TUCD Workshop in Northern Virginia, the key roles District Energy and Energy Labeling play in CEPs in Germany, Canada and the US was repeated. The fundamental idea of modern District Energy is to use renewable energy sources, such as biomass, solar or geothermal heating. With few exceptions, there are no obligatory requirements in the US for the disclosure of the energy consumption of the existing or new homes, offices, apartments for real estate sales. However, in Germany it is a prerequisite to disclose energy information before purchasing or renting any form of commercial or residential real estate. In Germany, it is very uncommon to purchase a home without energy certificates or a home inspection. In Canada the real estate's Multiple Listing Service does include the energy performance of the residential properties (most single family homes). However this is a voluntary (although popular) rather than an obligatory requirement. This voluntary model may be useful in the Northern Virginia region.

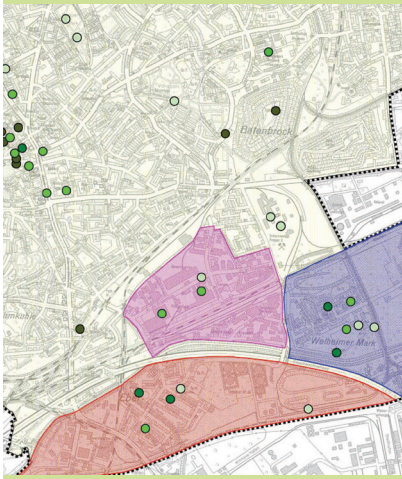
Disclosure of energy consumption

Case Studies for North Rhine-Westphalia (NRW) and Stuttgart

Through planning and strategy implementation, urban communities in Germany have proven their ability to promote sustainable CEPs by incorporating energy efficiency, district energy and renewable energies. In Germany there are multiple energy agencies and consumer organizations in the federal states that work to provide professional information on energy efficient building renovations. Bottrop is one example.

Bottrop (NRW) *Bottrop's Center for Consultation is a pilot program that provides technical and policy consultations and advice about energy efficient building retrofits. The Center is privately sponsored but the City of Bottrop is a major financial supporter and shareholder. A key value of the Center is that the citizens of the City see the tangible outcomes and benefits and can use them both to reduce energy consumption and to increase the value of their own homes.*

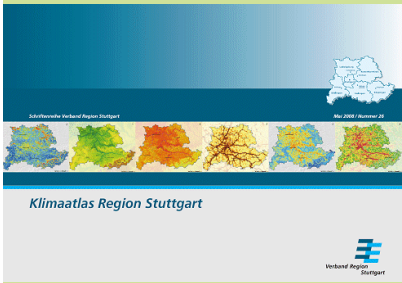
Dinslaken (NRW) *is another successful example of how municipal energy suppliers realize concepts for climate-friendly renovations. Dinslaken has taken a comprehensive approach to energy management that includes development of a biomass-powered district heating, intensive use of industrial waste heat and solar PV. Dinslaken's CEP also applies a District Energy system that reduces energy costs and CO_2 emissions. The residents of Dinslaken are not obligated to connect to district energy systems, but generally participate willingly because of the appreciation and awareness of the cost savings. Over 50% of the buildings in Dinslaken are linked to the district heating system. It is estimated that the City has reduced emissions of C02 by over 250 tons per year.*



Bottrop's flagship projects

DINSLAKEN

*The **Stuttgart region** relies on regional approach as a foundation of its climate change program. A core element has been the development of the regional "Stuttgart climate atlas." The atlas identified several specific geographic areas in the region that suffer from impaired air quality or "climatop" (defined by intensive heat island, low-air exchange and low-wind affects). Addressing these "climatop" factors are factored in to the region's planning and ultimately affects the planning of a development's density, applications and financing of "green" rooftops, transportation, and other factors. As in most European and North American cities, buildings are the largest consumer of energy in the Stuttgart region. The Stuttgart region also is no exception to other European cities in the vast and efficient development of district energy systems, as well as renewable and energy efficiency measures.*



Stuttgart Climate Atlas

Case Study Guelph, Ontario

The province-level mandates from 2005 require that cities such as Guelph require smart meters for all residential and small commercial customers. Traditional residential meters measure the total amount of electricity used during a given period. A smart meter, however, monitors and records on an hourly basis how much energy is used and then transmits the data to central computer systems for processing, customer access and billing. Objective of the smart meters is to shift usage away from on-peak times to reduce the province's peak demand.

Guelph also relies on energy conservation programs that resulted in energy savings of more than 22 million kilowatts hours of electricity in 2010. While the advantages of the smart meters are well documented, their deployment has introduced multiple communication challenges. These include lack understanding about the variability of electricity pricing among consumers. The confusion of communication is further complicated when explaining the relationship between electrical generation, distribution and environmental protection.

"Your smart meter is cooming soon"

Communication challenges

Conclusions:

- *If the elected leadership is not on board the CEP process, the result will be modest incremental change, not the necessary transformative.*
- *Transparency that energy labeling (voluntary or regulations) provides is critical to building awareness of community and landlords, and how energy value is translated into property.*
- *District energy implementation can be used to lure the support of developers.*
- *Leaders must engage private sector and public sectors together to take renovation/retrofit to scale.*
- *Need to understand how to replicate the transferability of the Bottrop model.*
- *Need to understand how to better integrate community energy strategy (the evidence from Bottrop and Guelph) is a good investment strategy, hence a possible economic development strategy. The question is how to fit the CEP into the broader, regional economic development process.*

Economic Development – Getting Private Sector Participation

InnovationCity Bottrop is a solid model of a public initiative that attracts private partners and seeds private investment. The Bottrop model also raises the ecological consciousness of the residents about higher prices for green energy in addition to the money savings. The next steps for Bottrop include carrying out development of a **master plan for the City's various districts** to reduce CO_2 emissions and improve the quality of life. This plan is consistent with others in the broader Ruhr area, where many jobs have been created through the transformation of energy industry. Public Private Partnership in North Rhine-Westphalia is an example of a public initiative that was very effective, brought in private investments and created jobs. The largest companies in the region supported the Bottrop information center as a way to develop German economic strategy in energy efficiency technology.

Dinslaken is another example of the local private sector striving to create new initiatives that focus on economic development. Sustainable sources of energy production are „strictly economic" based on monthly energy fees and focused on small, decentralized power plants instead of large national energy plants. „**Kreativ.Quartier Lohberg**" of Dinslaken, a former coal plant, is an example of this approach. In 2020 about 1000 people will live in this new creative quarter, which will provide specific benchmarks for architecture, planning, outreach and civic empowerment. International and national landscape design experts, contemporary artists also have been included in the development of the project to add their creative ideas.

In **Stuttgart** the redevelopment of the old knitwear factory Terrot was integrated into the newly constructed building with a day care senior center. The property developers of the project "**SeelbergWohnen**" promoted vibrant neighborhoods and community engagement in the design from the start. The "Siedlungswerk Stuttgart" is the main corporate promoter of the project. The Siedlungswerk has been involved in the construction of more than 27,000 residential units in the region and is ranked as the one of the most prominent companies in terms of urban development in Baden-Würtemberg. This regional company is a leader on developing climate related technologies and combining them with marketing and social aspects of these apartments that played an essential role.

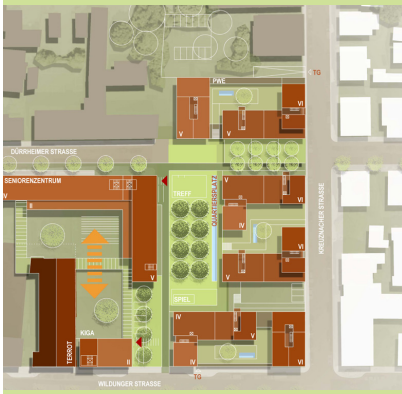
Public initiative for private investments

www

→ www.kreativquartier-lohberg.de

www

→ www.seelberg-wohnen.de



Planung Projekt SeelbergWohnen

In **Guelph** the Community Energy Plan (2007–2010) focuses on economic development and solar PV. Canadian Solar realizes that the CEP process can help develop long-term business prospects. This is seen in the Hanlon Creek Business Park, a greenfield development that has the potential to host district energy systems. Equivalent opportunities are to be found in Guelph's downtown redevelopment plans, where Guelph Hydro has contracted with the City to be the thermal energy contractor/developer.

Conclusions:

- *The civic leadership needs first and foremost to bring private sector companies into the discussion.*
- *The local elected officials leaders should frame the conversation and questions as opposed to focusing on the challenges and barriers, etc.*

Education and Public Outreach

The discussions also turned to recognition that public awareness is a vital element in the policy-making process. For instance, education and information dissemination to the public about the consequences of climate change and about the benefits of energy efficiency can make substantial contributions to the acceptance and support of green energy in urban areas.

North Rhine-Westphalia (NRW)

- *In Bottrop the Center for Innovation/Consultation provides comprehensive consultations by certified energy experts. Property owners work together with energy experts to tailor energy solutions for each building. This can include recommendations for specifically technical applications linked to the needs/demands of the individual property owner. It can also include specific recommendations about qualified craftsman.*
- *Bottrop has surveyed over 90% of the homes in the city.*
- *North Rhine-Westphalia has launched another International Building Exhibition (IBE) in Essen for the "green" building sector.*
- *Regional fairs are crucial to inform public about the services and companies with the new green building sectors in Germany.*
- *Five universities are currently involved with the work of InnovationCity Bottrop to connect the expertise at the universities with the innovations taking place in the City's "green" building sector.*

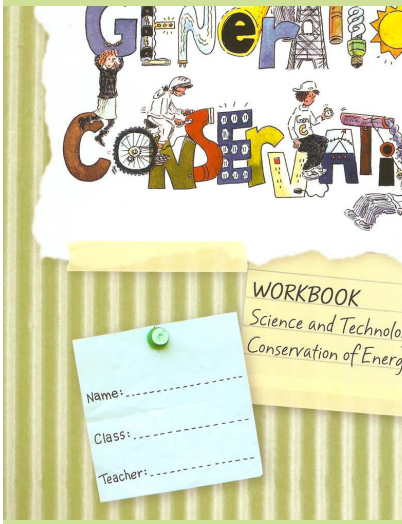
Guelph

The City of Guelph recognized that people generally react negatively when they lack comprehension of many technical and policy matters affecting CEPs. In response, Guelph Hydro has reached out to inform the public about energy-related matters by:

- *Training their own staff and members of the city council to assist the community on smart meter installation.*
- *Creating a website with time of use-calculators to help consumers assess off- and on-peak electric use and demand and to see what they are using and learn why.*
- *Direct mail campaigns*
- *Dispatching community outreach teams to explain the details to the customers. Teams are stationed at shopping centers and operate in multiple languages.*
- *Creating the "kidzpower" program, initiated by the Horizon Utilities Corporation which tries to extend the students' knowledge of generating electricity and conserving energy.*

www

→ www.horizonutilities.com/pages/default.aspx



Generation conservation

Lessons Learned

Lessons From European Cities for North America Include:

- *Thoughtful public outreach efforts that promote informed engagement and market and policy transformation*
- *Policies are needed to support energy efficient technology and the fusion of land-use and transportation*
- *The need for investment into distributed and district energy systems*
- *Stronger emphasis on support for the development and application of renewable energy technologies*

Lessons for European Cities From North America Include:

- *The development of new technologies and standards for green buildings (such as code development, electric vehicles, smart grid and related technologies).*
- *Voluntary policy options such as renewable portfolio standards or credits can incentivize applications of renewable energy*

Next Steps

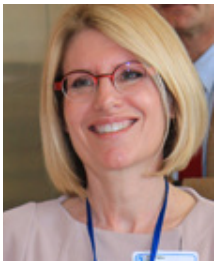
- ***Building Labels.*** *The transparency labeling introduces (as in the energy certificates in Europe) vital to promoting awareness and markets change. Europe can share much with the US on this topic.*
- ***District Energy Implementation.*** *Implementation of DE systems can start with as little as two interconnected buildings and then grow as demand grows.*
- *Bottrop's and Guelph's engagement of the private sector and the public sectors have lessons for other regions in North America and Europe.*
- *Too often conversation about CEPs lacks the voices of economic development in room. Energy's relations to broader economic development processes must be further studied and assessed. Guelph will study how to gain further support to develop a "roadmap" for future cooperation.*
- *Local fairs and public events are useful instruments to bring together home owners and small-sized companies in the energy retrofit business.*
- *Bottrop's district energy system that serves multiple political jurisdictions offers lessons and has potential to inform equivalent efforts in Northern Virginia (such as Arlington/ Alexandria), given the waste-to-energy systems in both regions (NRW and Virginia)*

The next workshop of the Transatlantic Urban Climate Dialogue takes place on November 26th to 28th, 2012 in Stuttgart, Germany.

Preliminary List of Themes for Stuttgart:

- → Transportation Planning: vital to think about alternatives, rail, compact development, regional transport models, etc.; electrical vehicle, storage and micro-grid and other regulatory issues, etc. Light rail CEP and developing of line, etc.
- → Innovation City template/road map: community based effort
- → Large scale renovation: how to bring energy and climate labeling and performance into the market
- → Professional cluster management: use as an effective instrument to push energy, transportation and climate activities in the right direction, sector-by-sector.

List of Participants A–Z



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Transatlantic Urban Climate Dialogue

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