
The Wirth Chair in Environmental and Community Development Policy



UNIVERSITY OF COLORADO AT DENVER & HEALTH SCIENCES CENTER

The Graduate School of Public Affairs

Policies and Programs Affecting Resource Efficiency in the Built Environment

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Roundtable Forum Summary Report

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Highlights from a Roundtable on Policies and Programs Affecting Resource Efficiency in the Built Environment June 2, 2004

Introduction and Overview

Increasing energy efficiency and the use of clean energy strategies are essential to reducing the production of greenhouse gases that result in global warming.

On June 2, 2004, the Wirth Chair in collaboration with the Colorado Energy Partnership¹ convened a roundtable of over forty Colorado leaders from the public, private and NGO sectors. The purpose of the roundtable was to explore policy, program and business opportunities for boosting resource efficiency in the built environment, focusing specifically on energy efficiency and renewable energy.

A series of informative presentations were offered to both educate participants, and to stimulate points of discussion. (See attached agenda, biographical sketches of presenters, and a full list of participants.²)

Presenters for the roundtable were:

- Mayor Steve Burkholder of Lakewood, Colorado;
- Carol Tombari, State and Local Initiatives Office, National Renewable Energy Laboratory (NREL);
- Megan Edmunds, Executive Director, E-Star Colorado;
- Mark Falcone and Tom Gougeon of Continuum Partners;
- Andrew Bermingham, Montreux Energy

The roundtable addressed the challenge of how we can increase local demand for clean energy and

¹ The Wirth Chair hosts the Colorado Energy Partnership (CEP), a collection of public and private sector entities that are voluntarily investing in clean energy strategies as a means of reducing greenhouse gas emissions. For more information on the Colorado Energy Partnership, see <http://www.cudenver.edu/cbep/>. For more information on the Wirth Chair, see www.cudenver.edu/wirthchair/

²Thanks are again extended to all those who presented and participated in the roundtable. We are also indebted to Rebecca Schlachter, a research assistant with the Chair, for her valuable note taking and general assistance in the course of the proceedings.

other resource efficiencies as a means of broadening our fuel portfolio, achieving greater energy security, providing sound economic development for our communities and guaranteeing human and ecological health. As Andrew Bermingham noted in his remarks, “We have made a Faustian bargain in our current energy economy. We have great material prosperity and happiness thanks to our energy economy, but we may have sold our souls. In this era of primary reliance on fossil fuels, we are leaving something that ‘isn’t pretty’ for future generations.”

The role that policy plays in increasing the demand for greater resource efficiency was a specific focus during this roundtable, especially policies that provide funding mechanisms for sustainable development. Additional leverage held by the public sector, the role of consumers, and the opportunities facing the private sector were addressed, as well. Participants and presenters agree that there is far too much illiteracy about energy issues in our communities, and that educating children, as well as consumers, will be integral to forging a sustainable future.

Highlights from the roundtable are summarized below in two sections. The first focuses on the story of Lakewood, Colorado and its new Bel Mar development. The second looks more broadly at policies to promote energy efficiency and renewable energy.

“Maintain a Higher Aim for Your Community”

Lessons from Lakewood

- Redevelopment can provide important opportunities to implement efficient building technologies and site planning. Urban ills throughout the state of Colorado and the country include increasing traffic congestion and dead or dying shopping malls. Efforts countering these ills can spur a willingness to “reinvent the community,” specifically its land use patterns. A good case for what can be done at the local level is provided by Lakewood, Colorado’s Bel Mar project. This project, which transformed a 36 year-old dying shopping mall into a vibrant 22-block mixed use development that is now transit and pedestrian friendly, is a leading Colorado example of a sustainable redevelopment project.
- Redevelopment projects benefit from public/private partnerships. Leadership from both the public and private sectors is essential to efforts such as Bel Mar. Each sector brings different skills and powers that can lead to “thinking outside of the box.” Leadership from the private sector cannot be underestimated. Continuum Partners approached Lakewood, as one example, for the redevelopment of the old Villa Italia mall. Continuum is a development firm that seeks “smarter solutions, more profitable solutions, more sustainable solutions.” It is a firm that concertedly pursues projects that are “appealing models that can help accelerate a shift in the market place” in creating more livable communities. Leadership in Lakewood, in turn, helped move the Bel Mar project forward through a public/private partnership.
- The public sector can assist in building partnerships by offering expedited permitting. In development, time is money. Consequently, expedited permitting has been offered in several communities throughout the country to developers and builders who are going the

extra mile in building resource efficient developments. This is not yet an approach adopted in any Colorado communities.³

- The public sector can be a leader in demonstrating more sustainable resource use in the activities of the government itself. The City of Lakewood replaced all of its streetlights, as one example, with LED lighting. They estimate a six year payback for this investment. Lakewood also has partnered with the National Renewable Energy Lab (NREL) to begin demonstration of the use of fuel cells, solar photovoltaic technology and biomass. Through demonstrations of emerging technologies, the public sector can help forge the transition to viability in the marketplace for these technologies. Another example from Lakewood in this regard is the City's decision to use a 20 percent biodiesel fuel mix in all diesel engines in the city fleet. The measurable reductions of greenhouse gas emissions through this action is also something that the City is tracking, with the expectation that such reductions may be profitable for the city once all greenhouse gases are regulated.
- A key role of the public sector to enable more responsible development is creative financing for those projects. In the Bel Mar example, Tax Increment Financing (TIFs)⁴, Public Improvement Fees (PIFs), and revenue sharing were employed. The latter was a 3.5 percent sales tax total, the revenues from which help repay the bond assumed by the developer to undertake the project.
- Public policies can help create alternative financing options. Rather than mandating how business should be run, this approach instead entices more resource efficient development practices through provision of financing mechanisms. The "green bond" measure currently included in the federal tax bill is an example of this approach. The measure would provide private developers the right to use tax-exempt bonds to build buildings that are less fossil fuel dependent. The role of government, in part, is to lay the groundwork that enables the private sector to make a profit. In turn, the local government and community benefit from a prosperous business community.
- An important public power gained through partnership is the power of eminent domain. In the Bel Mar example, the City of Lakewood used its eminent domain powers in 47 locations. This is a policy that the state legislature in Colorado modified in the 2003-2004 session by making requirements of eminent domain more stringent in terms of "blight."⁵
- Support for a project can be increased by building effective representation and participation into the review process. The process put in place for a development project can affect the success, failure, and caliber of the project. In Lakewood, for example, a Design Committee was appointed that had representatives from Lakewood city government, the developer, and the community. This eliminated the "us versus them" mentality that can characterize development projects. The Committee was able to troubleshoot a variety of aspects of the

³ See www.cudenver.edu/wirthchair/june2.htm for information on the City of San Diego's expedited permitting process, in exchange for agreement by the builder to build to certain standards.

⁴ The TIF for the Bel Mar project guaranteed repayment to the developers for the cost of infrastructure, i.e., Continuum financed the project and the sales tax revenue provided the income stream to repay the loan.

⁵ See <http://www.leg.state.co.us/> for information on HB 1203.

development. Additionally, the planning process for the City of Lakewood was modified as a consequence of the Bel Mar project with site plan reviews providing required flexibility. In this way, the City was able to see several of its sustainability goals realized, as outlined in the comprehensive plan.

- Energy efficiencies can be achieved both through the application of appropriate technologies and land use planning. Land use patterns are a linchpin in the creation of more sustainable communities. For example, it doesn't really matter how "green" a building is if the land use is bad. Or, if buildings are not properly oriented toward the sun, solar gains will be lost. Following on the land plans, buildings themselves become additional opportunities. Bel Mar includes the first LEED⁶ (Silver) rated commercial building in the country and uses renewable energy (solar and wind) on site. Another key example of resource efficiency is the fact that 85 percent of the material comprising the old mall was either reused or recycled and never left the site.
- Transportation planning is also a "potent" tool in determining a community's energy consumption and its overall nature. The FasTracks transit build-out measure facing voters in November 2004 has already motivated affected communities to begin rezoning that will enable transit-oriented development and enhance community livability, despite the fact that the measure has not yet been passed. The build-out of the light rail system throughout the Denver metro region may well stand as one of the most important decisions of the early 21st century in guiding land use, auto use, economic development and the formation of more livable communities.
- Education and competition are both keys to greater sustainable development. Policy can spur both. Auto manufacturers in the late seventies, for example, were enticed to compete in the creation of more fuel efficient autos as a consequence of a policy forcing them to do so. Evolution toward more livable communities can similarly be catalyzed by policy.
- Calculate "true costs" so that smart development choices can be made. If there is recognition of true costs and profits, business will be smarter about what it really costs for its building, transportation and production choices. We need to "get smarter" about how we attribute our costs. For energy, as one key example, we do not pay the full cost in the price we pay. That is, if externalities were internalized into the costs of energy at all points of production and consumption, the price of fossil fuels would increase dramatically – thereby making energy efficiency and renewables more cost competitive.
- Without consumer demand, one presenter noted, market transformation is impossible even with public policy drivers. At this roundtable, it was agreed that education is the responsibility of all involved: the private sector, the public sector, and education community, and the NGO community. Key questions when consumer education, in

⁶ The LEED (Leadership in Energy and Environmental Design) Green Building Rating System™ is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings. Members of the U.S. Green Building Council representing all segments of the building industry developed LEED and continue to contribute to its evolution.

particular is the aim include consideration of what motivates consumers: price, quality, durability, and/or efficiency

***Energy Efficiency and Renewable Energy:
Economic Development Strategies for the 21st Century***

The aim of resource efficiency, when considering energy consumption, should focus first and foremost on energy efficiency. The least expensive kilowatt is one that is not generated at all.

- Public policies can work with market forces to encourage consumers and developers to build and buy more energy efficient structures. Energy efficient mortgages, now available in Colorado through E-Star Colorado, are an example of an instrument that makes energy efficiency simple for the consumer. Additionally, homebuilders like Oakwood Homes in Colorado are finding that energy efficient homes sell more readily as well – a fact that has changed, again, in just the past four years. Oakwood has also made the commitment to inspect each of its homes to guarantee that they were built according to promised standards. Lack of inspection capacity often is a challenge for the public sector in oversight of the built environment.
- While it is difficult to market energy efficiency, it shouldn't be impossible. In a society where pet rocks and Beanie Babies and Britney Spears sell, why can't we sell the benefits of energy efficiency (e.g., comfort, durability, indoor air quality, human health benefits)? [Megan Edmunds, E-Star Colorado] As energy costs continue to rise, of course, consumer attention is more directed toward reduction strategies. This achieves the idea of “solution selling” that responds to consumer pain. As always, education of consumers is essential. Builders are a key constituency in educating the consumer about residential and commercial buildings.
- Retrofitting older homes makes an important contribution to increasing energy efficiency. An important challenge in making the residential built environment more energy efficient is not in new homes alone, but in retrofitting older, more energy inefficient homes. What economic development strategies, programs and policies can address this need? A city in Australia has passed a regulation that mandates a home increase its energy efficiency before being sold. Are there finance mechanisms through refinancing mortgages that could tie to energy efficiency upgrades? How can utility companies be enticed to provide a greater array of energy efficiency programs and what policy barriers are in place today that prevent them from seeing this as a profitable sector in which to invest?
- Building codes are a key strategy toward ensuring energy efficiency in the built environment. Policy makers hear from builders and developers that a uniform code in Colorado could have a significant impact on energy efficiency, although the “home rule” structure of the state makes this difficult. Costs are reduced on the building and development side when, instead of complying with a wide variety of building codes in different jurisdictions in which they may have projects, they have one uniform code.

- There are many programs and standards that indicate and measure building energy efficiency including Built Green Colorado, the LEED standards of the United States Green Building Council, and programs like Energy Star of the Environmental Protection Agency.⁷
- Utility policies and programs greatly affect energy use. Net metering, renewable energy standards, systems benefit charges, and appliance rebate programs are all examples of utility policies that greatly affect energy efficiency and renewable energy use. For more information on utility policies, see www.cudenver.edu/wirthchair/june2.htm
- Increasing efficiency is an alternative to building new capacity. Energy efficiency has been proven as an approach in the construction of what has been called an “energy efficiency power plant” or a “virtual power plant” in Austin, Texas and in the Northeastern United States. Through the policies of building codes and through utility rebate programs, enough energy can be saved to prevent, in turn, the need to build new power generation. In Austin, an aging coal fired power plant was taken off-line due to efficiency approaches.
- Renewable energy technologies also represent a keen economic development opportunity. The money spent on energy efficiency and renewables, where the “fuel” upfront is *free*, stays in the local economy. A small town in Iowa that invested significantly in energy efficiency, for example, concluded that its investment had a multiplier of \$2.28. Gasoline, by comparison, has a multiplier of \$.90.
- Incentivize the use of renewables. The Renewable Energy Mitigation Program (REMP), in place in the cities of Aspen, Basalt, and in Pitkin County, Colorado is an interesting program that both provides a finance stream for reinvestment in energy efficiency and renewable energy projects, and addresses the notion of “growth paying its own way.” Through REMP, residential buildings are assigned an “energy budget.” If that budget is exceeded, particularly for use of energy intensive luxury applications such as spas, pools and snow melted driveways, the owner or builder must either pay a fee into the REMP, or agree to have a renewable energy application placed on the dwelling. The program has succeeded in raising several million dollars, and has resulted in the installation of many renewable energy systems. Additionally, REMP addresses the burden of the inspection units of local government by providing that 10% of each fee supports inspection overhead. For more information, see www.aspencore.com

Next Steps

In the spirit of its ongoing mission--to bring together representatives from a variety of sectors including government, business and industry, and the non-profit community in search of policy solutions that supersede partisan or sectoral politics and that promote sustainable development--the Wirth Chair will investigate establishing a local task force to continue defining policies that can better promote energy efficiency and clean energy strategies in the built environment.

⁷ For information on the Colorado Built Green program, see <http://www.builtgreen.org/about/default.htm>.
 For information on the EPA Energy Star program, see <http://www.energystar.gov/>.
 For information on the LEED standard, see http://www.usgbc.org/leed/leed_main.asp.

For more information on this task force, call 303-352-3768, or e-mail wirthchair@cudenver.edu.

The Chair will also convene a western regional roundtable on the role of energy efficiency in reducing greenhouse gas emissions in the Inter-Mountain West in September 2004.

This report was prepared by Heidi VanGenderen and Allan Wallis. Full information regarding the roundtable, including power point presentations made available by presenters can be found at www.cudenver.edu/wirthchair/june2.htm