

Land of Opportunity

The American Response To Climate Change

The Adirondack Model: Using Climate Change Solutions to Restore a Rural American Economy

Working Memorandum Green Economy & Local Government Strategies

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Adirondack Background

The Adirondack region is unique in many ways. The Adirondack Park was formed in the late 19th Century primarily to protect the forests, mountains, lakes, wetlands, and rivers that provided the water resources that fed much of New York's canal system, which was a key component of the State's economic engine at that time. Over the past five generations, the Park has provided a dependable, clean, and abundant flow of water that helps sustain its natural and human communities and still underpins the economic vitality of the region.

Creation of the Park has done much more than protect water resources. For example, the six-million acre Adirondack Park is a biological treasure trove, and is one of the world's last remaining bastions of the vast temperate deciduous forest that once covered much of Europe, parts of Asia, and most of Eastern North America. Over 90 percent of this type of forest has been lost to fragmentation and development worldwide. The Park is also recognized as a world model of conservation that integrates public wildland protection and private land stewardship in a lived-in landscape where about 140,000 people make their home in more than 100 individual communities and host about 10 million visitors each year.

In an effort to balance the need for environmental protection with the needs of human communities in the Adirondacks, the Park was placed under the regional planning and zoning authority of the New York State Adirondack Park Agency more than a generation ago. Recently, the Park was included in a federally funded study of the environmental, social, cultural, and economic threats and opportunities facing the 26-million-acre Great Northern Forest that runs from Lake Ontario across Northern New York, Vermont, and New Hampshire to the coast of Maine. That study focused upon ways to enhance the quality of life for local residents through the promotion of economic stability for the people and communities of the area by maintaining large forest areas, encouraging the production of a sustainable yield of forest products, and by protecting recreational, wildlife, scenic, and wildland resources.

At the dawn of the Twenty-first Century, the natural and human communities of the Adirondack region are once again threatened, not by unsustainable resource extraction as in the past, but by the pervasive impacts of acid deposition, mercury contamination, and accelerated global climate change. With its relatively small population, the Adirondack Park has a limited potential to achieve globally significant reductions in greenhouse gas emissions. But dollar savings related to energy conservation, efficiency, and production from local, renewable sources could be significant for struggling households, businesses, institutions and local governments in the Park. The Energy Smart Park Initiative estimates that annual *per capita* residential and commercial energy costs are at approximately \$2,000 and rising very rapidly, putting the total annual energy bill for the Park at about \$260 million. Saving 20 percent of the energy used in the Park would save about \$52 million per year - over half a billion dollars in 10 years - dollars that can stay in the Park and help build economic strength, encourage energy independence and enhance the quality of life for human communities.

The Adirondack Park is an ideal place for exploring ways to make climate action planning a practical reality for rural communities. The transition to a clean, green, energy future will benefit the Park's human communities as well as the natural communities. It will unearth new job creation potential, new business opportunities, training, certification, skill-building, and educational needs which will, in particular, provide opportunities for young people to remain in the area. It will lay the groundwork for local governments to take a leadership role in developing more independent and lower carbon local economies. It will include defining the value to the Park of "greening" the tourism industry and outlining the steps required to become a Green tourism destination. This "greening" process will likely emphasize the health and economic benefits of producing and buying local food.

The region is already experiencing impacts from changes in the global system of climate patterns. Adirondack residents, visitors, businesses, and government representatives are increasingly seeking ways to lessen their own impact, reduce costs, and anticipate future needs in this uncertain context. It is through local choices, made as communities and individuals, about energy supply and use, transportation, solid waste and land use that Adirondack towns and villages can lead in addressing these challenges. *(Adapted from Energy Smart Park Initiative, November 2007 work plan draft)*

"What we have before us are some breathtaking opportunities disguised as insoluble problems." --John Gardner, 1965 speech

Introduction

The 103 towns and villages existing within the confines of the Adirondack Park have special constraints on their ability to develop local economies. Local governments often have limited staff and limited access to current scientific information, adequate planning and implementation funds. Outreach to remote, underserved areas is difficult. Many rural residents maintain multiple sources of employment to survive in a challenging economic situation and have little time for long-term reflection and planning. This section focuses on helping them find the information, tools, and resources they need to help their constituents understand what climate change means for them, identify and act on opportunities to improve the resiliency of local economies, reduce their own dependence on imported energy, and lead a pathway toward the lower carbon economy of the future.

The purpose of the Green Economy & Local Government Strategies working group is to examine and collect data and tools supporting possible strategies to help local governments, individuals, and businesses in the Adirondack Park drive local economic development through energy efficiency improvements, locally produced energy sources, green design, and “smart growth” style community planning. as well as mitigating and reducing carbon emissions from local activities. It will look at what needs to be in place in order to adapt to a future in which climatic disruption and a warmer environment is possible. It also looks at the unique characteristics of the Adirondack region both in terms of the challenges (rural, small villages, virtually no public transportation, cold long winters, struggling economies) and in terms of the opportunities (highly desirable tourist destination, pristine and beautiful landscapes, year-round access to outdoor recreation, history of independence and self-reliance, representing 1/5th the land area of one of the largest and most important states in the nation.)

I. Executive Summary

A recent report entitled *Green Recovery* from the Center for American Progress produced in September of 2008 (http://www.americanprogress.org/issues/2008/09/green_recovery.html) outlines a green economic recovery program to strengthen the US economy over the next two years and leave it in a better position for sustainable prosperity. It details how to expand job opportunities by stimulating economic growth, stabilizing the price of oil, and making significant strides toward fighting global warming and building a green, low-carbon economy. The report suggests that by implementing the policies they recommend, we address the immediate need to boost a struggling economy and jump-start a long-term transformation to a low-carbon economy. Their program would create 2 million jobs in the US by investing in six energy efficiency and renewable energy strategies. As we look at the Adirondacks, five out of six of these investment areas are both relevant and necessary to boost local economies in ways that will greatly reduce our impact on climate change. The five relevant areas are:

- Retrofitting buildings to improve energy efficiency
- Constructing “smart” electrical grid transmission systems
- Wind power
- Solar power
- Next-generation biofuels

The sixth area concerns investing in mass transit and freight rail, perhaps a more difficult challenge in the

Adirondacks.

The report indicates that investments in these areas will produce employment opportunities across a broad range of familiar occupations: roofers, welders, electricians, truck drivers, accountants, and research scientists. It will also strengthen career ladders by providing pathways for workers to move up from lower-paying to higher-paying green jobs that can be created on a geographically equitable basis throughout all regions of the country. There is an enormous opportunity for communities and regions to grow their economies and jobs by supporting and investing in energy efficiency, alternative sources of energy, and local food production, among other things.

This sector will explore how the Adirondack communities can take a leadership role in this area. Creating incentives and opportunities for young people to stay in the Adirondacks will be extremely important for a sustainable future. The unique characteristics of this region additionally offer opportunities that may help incentivize a transformation to a more resilient and greener economy. This paper examines the challenges and barriers to developing greener, lower-carbon local economies, and it outlines specific recommendations for taking action.

The charts below indicate projected impacts on jobs in a lower carbon economy.

Determining the economic impact of new jobs

US Wind Manufacturing

By 2026, 32,000 f-t workers

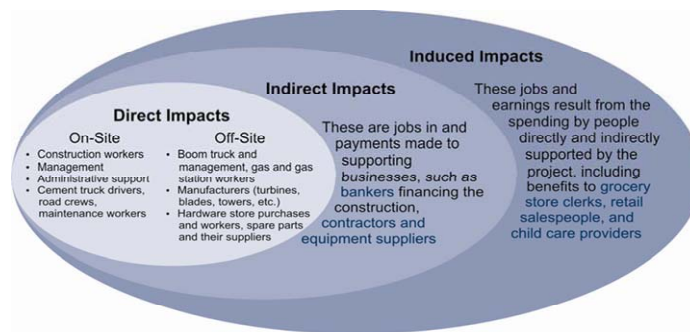
US Construction (1 –year window)

By 2021, 65,000 new annual jobs

US Operations

By 2030, 215,000 total operations workers

"20% Wind Energy by 2030", Appendix C. p. 199-211
Energy Efficiency & Renewable Energy, US Dept of Energy, July2008
<http://www1.eere.energy.gov/windandhydro/pdfs/41869.pdf>



II. Issues & Challenges Facing the Sector

Climate change will affect the individuals, schools, villages and towns and the economy of the Adirondacks.

Greenhouse gas reductions will be determined through cooperative efforts of individuals, local governments, schools and businesses in the Adirondacks.

The Adirondack economy is already sensitive to **high costs due to demand for fossil fuels** used for heating, power, and transportation sources. 50-60% of Adirondack households rely primarily on fuel oil compared to the NYS average of 33.5% (2000 US Census).

The physical layout of the Adirondack Park, with small hamlets separated by large tracts of rural landscape, creates a **heavy dependency on the automobile for travel, education and commerce**. USA Today reported that rural households spent as much as 16.02% of household income on gasoline compared to 2.05% for urban households (and that is before the recent energy price increases). Oak Ridge National Labs and the Energy Information Administration report that people in the lowest income bracket now spend 40% or more of their income on energy.

In the Park:

- Residents travel between towns, villages, and sometimes even counties to work, shop, find social networks and events, and seek medical care.
- Public transportation is slowly becoming available but is still extremely limited. Within school districts, student bus service is a major expense.
- Older cars, which many residents drive, are much less fuel efficient.
- The rigors of winter driving and the need for self-employed to transport not only themselves but equipment for work and services results in a preference for larger, less fuel efficient vehicles such as trucks and SUV's.
- Municipal operations are affected:
 - Community road maintenance and snow removal is an opportunity for more fuel efficient equipment.
 - Municipal services (fire departments, police departments, rescue squads, and street lighting) are costly to operate.
- School districts face cost increases for heating, power and transportation
 - Bus service covers large geographic areas

In this cold northern climate, homes, businesses and municipal **heating needs and costs are greater**. Homeowners, renters and rental providers face challenges in controlling fuel oil use. A majority of the housing stock is old and may be poorly insulated.

- The median construction date for private homes in Essex, Franklin and Hamilton counties ranges from 1955-1964. Rental properties are even older, having a median construction date ranging from 1944 to 1956. Significant portions of the housing stock predates 1939. {U.S. Census 2000}
- The NYS Division of Housing and Community Renewal conducted a state wide study of affordable housing needs. Its May 2008 report on the North Country (including the six northeastern counties) identified deferred maintenance as a major issue and cited investment in aging housing as one of the Region's greatest unmet needs. For example, in the Franklin, age, deterioration from the harsh climate, and neglect has left much of the rental housing so inadequate that it cannot meet HUD Housing Quality Standards. That means that low income residents eligible for housing assistance outnumber available HUD rental units.
- Resources for improvements are inadequate. Wait lists exist for weatherization funds that could

address some of the climate related issues. The regional wait list includes 1,800 households with a wait time of 2 years.

- Mobile homes comprise a higher percentage of housing stock than other parts of New York. Clinton County has increased from 16.4% in 2000 to 18.4% in 2006; Franklin (2000-12.6%); Hamilton (2000-13.4%).
- Landlords may precipitously close their doors when energy bills become too high leaving residents without alternative housing. Town Supervisors and others reported this to the Governor's Economic Security Forum in Plattsburgh, July 16, 2008.
- The quality of housing available varies due to interpretation of building codes. The North Country report cites anecdotes of renters who remain silent on building deficiencies for fear of eviction.

Concerns about **property tax rates complicate the energy dynamics**. Governments and school districts are constrained by limited revenue streams. Individuals and businesses feel overburdened by the tax structure. Residents demand short term tax relief over energy efficient investments that will pay off, but only in the long term.

Climate change will impact **businesses related to tourism**. Around 9 million tourists visit the Adirondacks each year and many residents are employed by the tourism and retail sectors.

- Warmer winters with reduced ice and snow cover will offer less protection for native fish from winter weather and will generate earlier peak streams flows in spring which can harm young native brook trout. Rising summer temperatures could deprive trout of cold water refuges in Adirondack lakes and rivers, affecting fishing opportunities that lure tourists.
- Increase in temperature will change snow falls, impacting skiing and snowmobiling.
- Maple sugar production will be affected by temperature increases.
- Higher fossil fuel prices may limit visitors. Boating, snowmobiling and other activities may be curtailed as prices rise and climate conditions change.

Second home development has stimulated local economic growth through construction and renovation projects, attracting new part-time residents even as year-round population declines. However, increasing second home development threatens to strain local services, raise property values and taxes well above affordable levels, stretch available energy and other natural resources, and change community cultural patterns. According to the Carsey Institute report *Place Matters: Challenges and Opportunities in Four Rural Americas*, "amenity-rich regions [like the Adirondacks] need to manage growth and develop inclusive policies that enable long time residents and workers to find affordable housing and living wage jobs in their communities. Communities must work to avoid an "Aspen effect" that forces the middle- and lower-middle-income service sector residents out due to high costs of living. Open space acquisition and land protection strategies are essential to protect the environment. Broadband Internet access should be a priority."

III. Opportunities in this Sector

Adirondack residents and local governments can begin acting to create a "**green economy**" that takes advantage of new business opportunities and technologies that are being created to mitigate climate change. The Adirondacks can become a model region, providing leadership for the U.S.

Setting a goal for the Adirondacks to **mitigate green house gas emissions** and adapt to changes at the local level will be an outcome of this conference. This conference will endorse initiatives for immediate incremental reductions in green house gas emissions and added support for local governments trying to make difficult transitions within their communities.

Implementing a plan to reach or exceed this goal is the next step. Local and regional efforts already underway include data collection to inform evidence-based decision making, including information disseminated at this conference. Increased energy efficiency throughout the building sector, and increased use of renewables, such as wind, hydro, solar, geothermal, biomass, cellulosic biofuels etc. as sources of energy production will be fundamental to any decrease, both in emissions and long-term costs. Initiating the incremental immediate improvements while developing intermediate and longer term planning will position residents and businesses of this region for the future.

A first step is to **increase regional capacity** through facilitation and support of mutual education to implement initiatives.

The small towns and villages within the Park are constrained by budgetary and personnel limitations. Working regionally will raise the “learning” curve for all; save money through increased buying capacity; train a “green” workforce more economically; and promote distribution of information across sectors.

Activity is already underway through existing alliances, collaborations and programs which may be adaptable to other towns and villages. Examples are the Common Ground Alliance, which has issued action items; Transition Communities in Saranac Lake; the Energy Smart Park Initiative’s recent report and NYS Apollo Alliance Ten-Point Program for Economic Development.

This region needs to support the extension of the broadband network to more areas of the Park as a way to entice low impact business.

The Adirondacks can provide a welcoming, supportive environment for new businesses by marketing a “Green”Park whose quality of life and commitment to sustainable practices can be an attractive asset.

Creating and promoting “model” green design solutions in tourism, business, school districts and colleges, and town and village life as “end destinations” can attract tourism and business organizations.

Following are the Key Approaches recommended by this sector:

Key Approaches Recommended

Adirondack communities should work together to represent their needs to state agencies:

Through the Energy Smart Park Initiative or Common Ground Alliance or other representative partnerships, identify road blocks in State programs that prevent action by Adirondack Park communities. One example would be the requirements of NYSERDA Energy Efficiency Support, which prevents smaller communities in the Adirondacks from participating or don’t allow enough flexibility to meet their needs.

Lower cost of operations in all residences, businesses, and in municipal and state facilities:

1. Start now with low cost, affordable replacements and changes such as light bulb replacements to

Selection of tools and resources available for Local Government leaders in the Adirondacks

- Smart Growth: NYS Dept. of Environmental Conservation
<http://www.dec.ny.gov/environmentdec/38265.html>
- Community Planning and Watershed Protection: NYS Dept. of State: www.nyswaterfronts.gov
- Energy Efficiency: NYS Energy Research and Development Authority: <http://www.nyserda.org/>
- Renewable Energy Opportunities: <http://www.nyserda.org/>
- Shared Services / Intermunicipal Cooperation: <http://www.dos.state.ny.us/lgss/smsi/index.html>
- Climate Planning: <http://www.dec.ny.gov/60.html>

- CFL and LED as appropriate, for immediate reduction in electricity costs.
2. Retrofit existing residential, public, and commercial building stock with extensive weather proofing adaptations such as insulation and sealing to promote heating and cooling savings.
 3. Adopt advanced codes to ensure all new construction exceeds Energy Star rating for energy efficiency and addresses other critical “green” building design issues.
 4. Create purchasing policies that favor recyclables and “green” materials.

Best practices: Village of Lake Placid

Invest aggressively to begin transition to alternative fuels to relieve dependence on oil-based fuels

1. Invest in these adaptive changes which have immediate return on investments
2. Produce and use alternative fuels to stimulate new businesses:
 - New alternative energy providers will arise to meet the market need
 - Existing business will revitalize by offering new technologies
 - New business will identify this region as a beneficial for business development
 - lower cost of operations will attract new businesses
 - businesses with environmental goals will see this as a favorable region for operations
 - reliable sources of power and electricity will be an asset

Best practices: Geothermal: Nature Conservancy in Keene Valley, Indian River School system, Hospice of St. Lawrence Valley
Wood Pellets, Mt. Abraham Union HS, Vermont
Transition Town, Saranac Lake Green Circle

Plan to attract & develop new green businesses

1. Stimulate the interest of visitors to the region to develop or migrate businesses
 - o Marketing
 - o Start-up incentives
2. Establish a centralized Adirondack Park economic development office to address this region’s specialized needs as proposed by the Common Ground
3. Encourage broad band introduction and other technologies to create self-sufficiency and reduce need for travel to employment
 - o Web-based businesses
 - o Web-based marketing and distribution for products, produce and services
4. Create employment opportunities that offer a living wage
5. Offer educational services to create a skilled workforce of technicians and others for new industries
6. Develop funding partners to initiate start-ups

Adapt our Workforce

1. Attract new workers with technology-based skills to relocate, providing skilled labor to install, adapt and renovate building stock
2. Retrain current workers for “living wage” jobs that provide skills that are usable locally and can be portable
3. Retrain workers whose industries may lose jobs as a result of climate change
4. Expand and improve training facilities to meet training needs
5. Create housing stock that is less expensive to heat and power, attracting new residents and maintaining or increasing disposable income of current residents

Best practices: North Country Workforce Development Board, Workforce Development Institute

Develop Self-reliance and reliability

1. Adapting new technologies to localize sources of power and heat, less subject to external state or national decision-making
2. Reliable local sources will reduce interruptions or cessation of operations when traditional fuel and power sources are unavailable or funneled to other regions
3. Strengthen and expand public transportation services through new routes, more runs, and use of alternative fuels

Localize businesses and services

1. Promote local agriculture to reduce “delivery” costs, providing less expensive produce and products while creating new or expanding existing businesses
 - Develop marketing and distribution networks both physical and web-based
 - Promote cooperative education efforts through Cornell Cooperative Extension, Adirondack Harvest and other spinoffs
 - Promote investigation of crop and livestock selections that are appropriate to our climate and growing season
 - Investigate opportunities to expand the growing season
2. Examine forestry products and services including the harvesting of biomass fuels
3. Attract services that residents currently travel great distances to reach
 - Reduced cost of operations for existing providers will strengthen those businesses
 - Linking our region to the external world through lower cost, reliable internet devices such as broad band
 - Existing businesses can market and sell through web-based sites

Best Practices: Adirondack Harvest**Adapt businesses that are climate-dependent:** tourism including skiing, snowmobiling; forestry

1. Improve efficiencies of operation through implementation of adaptations for heating and power
2. Plan for climate changes such as warmer winter temperatures that affect the local economy
 - Maple syrup production may decrease as trees migrate north
 - Snow fall may decrease: snow-based enterprises need to develop year-round attractions
3. Find partners to invest in biomass businesses using forest products or other local sources for production and local as well as regional distribution

Best practices: Lake Placid Golden Arrow
Aspen, Colorado: microhydro generation from snow melt directed through turbines

Adapt Housing

1. Refurbish local housing stock that is aged and inefficient consumer of heat and power through incremental to major adaptations
2. Increase the supply of adequate and affordable housing for workforce retention and attraction
3. Establish safety nets for extreme weather and extreme fuel prices
4. Change building and zoning codes
 - Require efficiencies in new construction and improvements in existing stock
 - Encourage development of residential use in upper floors of Main Street businesses

Best Practice: Adirondack Housing Trust
Essex County Office of the Aging
Community Power Network of New York

Contact List for Best Practices:

Jamie Rogers, Mayor, Lake Placid mayor@lpvillage.org
 Gail Brill, Transition Town, Saranac Lake gailbrilldesign@gmail.com
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 Alan Hips, Adirondack Housing Trust alan@hapec.org
 Patty Bashaw, Essex County Office of the Aging
 Sue Montgomery Corey, Community Power Network of New York suemc@capital.net

IV. Possible Policy Initiatives/Pilot Projects

In November, 2007 Keene, NH developed a plan to adapt to climate change: “Planning a Climate Resilient Community.” There are elements in their plan which are very relevant to our region. The plan uses ICLEI-Local Government for Sustainability guidelines. The local government made the decision to improve resiliency to climate change by assessing local needs, creating an action plan, implementing the action plan and monitor the plan through continuous reevaluation.

The community identified vulnerabilities and assets by examining three sectors which Keene defined as the Built Environment, Natural Environment, and Social Environment. The plan clearly defined how recommendations were prioritized for action, based on an evaluation system that assessed:

- Impacts to local business, environment and community
- Influence of visibility and support of existing initiatives
- Investment potential: funding availability; ease of implementation, time sensitivity; and cost effectiveness.

This conference will provide data on our natural environment and tools to change our built environment. Our workgroup will use this information to begin a process that can be modeled on the Keene, NH approach.

General Actions Required

Immediate Priority (within one year)

1. Set concrete strategies to implement an immediate goal of 20% reduction in green house emissions by 2015 (E\$PI 11/2007). This could include community-based climate mitigation plans, like that of Keene, NH .
2. Develop and disseminate information on alternative fuel sources and energy efficient appliances for target sectors and towns and villages.
3. Adapt sustainable community practices into local and regional planning efforts
 - Aggressively fund “smart growth,”¹ sustainable and green design for community and intermunicipal planning and implementation in all Adirondack towns and villages that

¹ Smart Growth principles include the following actions: Create Range of Housing Opportunities and Choices, Create Walkable Neighborhoods, Encourage Community and Stakeholder Collaboration, Foster Distinctive, Attractive Communities with a Strong Sense of Place, Make Development Decisions Predictable, Fair and Cost Effective, Mix Land Uses, Preserve Open Space, Farmland, Natural Beauty and Critical Environmental Areas, Provide a Variety of Transportation Choices, Strengthen and Direct Development Towards Existing Communities, and Take Advantage of Compact Building Design.

- choose to follow that path.
 - Promote rehabilitation of existing structures to work toward meeting standards.
 - Adapt building codes to incorporate green practices into new building design and construction.
 - Change zoning to promote use of unused upper levels of Main Street businesses for residential rental units.
4. Encourage communication with residents to adapt concepts and processes from Transition Towns reference?), Sustainable Growth (reference) and other model programs.
5. Provide and disseminate easily understandable information about renewable resources through a web site.
6. Address the following questions:
- Are enough energy auditors available to determine current conditions?
 - Are there comparable calculators to determine the best alternative?
 - Are grants or loans available to defray the investment in changing Energy sources?
 - How long before a return on investment is realized?

Intermediate Priority (within three – five years)

7. Create training and employment opportunities for residents in “green” industries that will provide self-reliance and reduce out-migration for better paying positions. This might be part of community-based climate adaptation planning. The Common Ground Action plan has identified these steps:
- Inventory needed services & skill sets
 - Identify training partners
 - Identify trainers
 - Schedule training
 - Use new technologies (on-line, video, etc)
8. Convene local government boards and councils, both civil service, elected, and appointed representatives locally and regionally to provide a leadership role in developing regional capacity to understand and take action to install renewable energy resources and develop economic planning for the post-oil age.
9. Support regional sector planning among communities
- Expand the Common Ground model, the Local Agriculture working groups, Housing taskforces, and forestry products.
 - Use “Best Practices” Models that Build on Local Successes and encourage community-to-community information sharing.
 - Expand funding for shared services, intermunicipal affordable housing, “green” transportation coordination and watershed-based planning approaches.
10. Provide links to existing cost-benefit calculators to quantify the return on investment of particular renewable investments to identify and install the best short-term incremental adaptations.

Long-term Priority (yet within 5-10 years)

11. Work regionally to develop sources of financing for retrofitting and new construction for businesses such as tax credits and other financial vehicles
12. Attract Adirondack friendly businesses by marketing the high quality of life to visitors and/or second home owners to induce them to relocate their businesses or services

13. Increase the tax base by promoting creation of and training residents for “living wage” jobs
14. Reduce the cost of operations of tax-supported organizations through improved energy efficiencies that are cost effective and have a proven return on investment
15. Encourage tourist-based businesses to use strategies to improve the energy efficiency of their facilities.

V. Suggested issues for discussion at the Conference

1. How to create a regional effort for economic development and support for local governments, with tasks, deliverables and timelines?
2. How to fund it?
3. How to develop a sector process to increase understanding of the benefits of “green” practices.
4. How to bring broadband into the Adirondacks?
5. How to strengthen existing collaborations, alliances and sector “best” practice organizations for broader regions?
6. How can state/federal agencies recognize, through funding assistance or in some other way, the unique state-wide ecological benefits provided by the Adirondacks in a way that benefits residents, municipalities and businesses?
7. Develop a timeline and detailed steps.
8. Encourage state agencies to develop more user friendly processes and applications for funding to promote energy improvement.

Funding Available for Municipalities and Regional Governments

- New York State Energy Research & Development Agency (“NYSERDA”) programs
- NYS Department of Environmental Conservation and Department of State
- LIHEAP (?), HUD and weatherization programs
- New York Power Authority programs (like IEEP for municipally- owned electric utilities)
- Dormitory Authority, Office of Government Services, etc.

Specific Tools

- Online Tools
- Accessible Data Sources

Appendix: Gaps in Our Knowledge

- Rurally-oriented programs: How can Adirondack towns and villages, residents and businesses access services, subsidies, and information that is targeted toward larger, more densely populated areas, such as NYSERDA programs and “smart growth” planning and implementation funds?

- Demographic transition and the baby boom: how can we integrate second home owners and retirees while creating a “green” economy?
- Easily accessible information on building conditions and utilities cost for governmental entities: These are available to municipal planners. These planners may want or need assistance in developing specific information to weigh strategies and pay-backs for renewable initiatives.
- Emergency services are a special segment that require review, particularly in light of the overlap of services areas among providers and town/county boundaries.
- Planning for projected volatile weather occurrences and resulting need for emergency planning and services

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- Smart Growth Network <http://www.smartgrowth.org/about/principles/default.asp?res=800>
- Adirondack Harvest www.adirondackharvest.com
- Cornell Cooperative Extension www.cce.cornell.edu
- Transition Towns www.transitiontowns.org
- NYSERDA www.nyserda.org
- Workforce Development Institute www.wdi.org
- Community Power Network of NY

Wind-Related Jobs and Economic Impact

In July, 2008, the US Department of Energy, Energy Efficiency and Renewable Energy Sector published a comprehensive report: 20% Wind Energy by 2030 available as a PDF at this site: <http://www1.eere.energy.gov/windandhydro/pdfs/41869.pdf>. Of interest to this working paper is Appendix C which provides an informative overview of “Wind-Related Jobs and Economic Development.”

Using the JEDI model, this report determined the job creation resulting from investment in wind power, examining :

- **Direct Impacts:** on-site/immediate effects including construction labor, management, support staff and manufacturing related to production of the wind structures.
- **Indirect impacts:** tracks the increase in economic activity including supply line vendors and contractors to the banks, auditors, and others who benefit from the initial transaction.
- **Induced Impacts** are “changes in wealth that result from spending by people directly and indirectly employed by the project” (p.201). i.e., grocery stores, retail, child care

Job growth: to reach peak construction in 2021, 9,000 jobs would be created annually reaching 65,000 jobs by 2021.

Operations: direct, indirect and induced operations workers would total 215,000 in 2030, of which 13% would be directly operations and maintenance (O&M) and 22% would directly relate to operations (distribution, utility services, etc.).

For New York, the economic impact from construction and 20 years of operation are \$37.7 billion, with 71,000 jobs created during the construction period (1 year) and 274,000 for operations (20 years). This represents about 8% of the projection for the total U.S.

Specific to wind power, land owner payments and property taxes might generate \$8.8 billion between 2007-2030.

Economic Impact of Wind Energy Generation

Economic Impacts from Construction & 20 years of Operations

New York State

Total dollar impact
\$37.7 billion

Jobs created during construction
71,000

Jobs in Job-Years created during Operations period
274,000

20% Wind Energy by 2030, Appendix C p. 199-211
Energy Efficiency & Renewable Energy, US Dept of Energy,
July 2008
<http://www1.eere.energy.gov/windandhydro/pdfs/41869.pdf>

Figure C-7. Jobs per year from direct, indirect, and induced categories

In the last ten years of the scenario, the wind industry could support 500,000 jobs, including over 150,000 direct jobs.



Photovoltaic activity reported in Solar Electric Power: the U.S. Photovoltaic Industry Roadmap (January 2003. Golden, CO: National Renewable Energy Laboratory). By 2020, the current direct and indirect workforce of 20,000 is anticipated to grow to 150,000. “Why PV is Important to the Economy” (http://www1.eere.energy.gov/solar/printable_versions/to_economy.html)

This report also contains data on the economic impact of down time due to disrupted power.