



## **Economic Transition in Central Appalachia: Ideas for the Appalachian Regional Development Initiative**

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& Kentuckians For The Commonwealth (KFTC)**

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### **I. Introduction and Overarching Recommendations**

The Obama administration's interest in investments in Central Appalachia that would create new opportunities and advance economic transition in the region is timely and welcomed. Central Appalachia has long been among the poorest regions in the United States. The historic and future decline of the coal economy--and the impact that economy has had on the region's ability to diversify--heightens the need for new visions, strategies and efforts. We are grateful for the opportunity to provide input into this important effort.

Our organizations have developed the Appalachian Transition Initiative to define the situation as we see it in the region and chart paths forward to a more just, sustainable and prosperous future. We recently launched a website, [www.appalachiantransition.net](http://www.appalachiantransition.net), that is a resource for local and regional transition efforts. Included on the website are stories of local projects; reports, studies, websites and organizations related to a variety of transition strategies; and a blog tracking news related to transition topics. A new effort is an essays project in conjunction with the Central Appalachian Prosperity Project that includes 24 white papers on a wide variety of transition ideas, approaches and strategies.

The administration's approach to promoting economic transition in Central Appalachia should be built on a strong analysis of the current conditions and challenges in the region, and on an understanding of the history of efforts to promote economic development. These issues create challenging dynamics in both the targeting and implementation of efforts. Three issues in particular should be addressed in the approach to this initiative:

#### **1. Develop measures to geographically target resources to those counties that most need the support.**

Appalachia as defined by the Appalachian Regional Commission is a very large and diverse area, and should not be conflated with Central Appalachia. Over the last fifty years, there has been real improvement in economic status for much of the Appalachian

region. While absolute improvement has also been made in Central Appalachia, the gap between that region and the rest of the country is as large as ever, and the region remains a large pocket of economic distress (see map page 23). There are complex reasons for this, but it was in part the result of historic policy design. The early economic development strategy of the Appalachian Regional Commission was to target resources to larger and more prosperous urban areas on the region's perimeter and small cities, leaving fewer dollars for poorer rural areas. It was only later that funds began to be targeted to region's economically distressed communities.

Additionally, coal mining and in particular mountaintop removal does not characterize the economy of the entire region—only a targeted subregion located in Central Appalachia. The area where mountaintop removal mining has been happening is also the subregion with the highest poverty levels. Since this initiative is related to the administration's approach to regulating mountaintop removal, it is important that geographic targeting of resources take the location of mining jobs and surface mining into account. We strongly recommend that the administration develop a geographic index for targeting resources that takes into account 1) the level of economic distress in the county using the ARC's existing index; and 2) the existence of mountaintop removal and other coal mining and level of dependence on coal for employment.

## **2. Design ways to ensure that investments reach low-income people and communities.**

Like many high poverty areas, challenging local politics can sometimes make it difficult for outside investments to be most effective in reaching and impacting low-income people and communities. This is an important lesson of numerous past development efforts in the region. The administration should work to design mechanisms that promote broad community participation in planning and decision-making, and should be creative about targeting resources to a variety of entities including non-profits, community-based organizations, and non-traditional institutions where possible or appropriate. The recent announcement of a USDA partnership with the Federation of Appalachian Housing Enterprises for the administration of \$25 million in Section 502 housing funds is an excellent example of this kind of non-traditional funding approach.

## **3. Promote initiatives that build community, leadership and entrepreneurial capacity.**

The administration should see itself as a partner with Appalachian communities and people in creating a new and better economy in the region. Using that approach, investments should not simply provide needed services and create jobs, but should be designed in ways that empower local people and organizations to take on new leadership roles and leave lasting business and institutional infrastructure in the region beyond the time in which monies run out. An approach that puts the building of human and social capital at the center will result in better outcomes for the region in the long-term.

## **II. Green Jobs Policy and Program Options**

The region's tremendous natural assets and long history of environmental degradation mean numerous opportunities for job creation and economic transition in the specific area of Green Jobs. A federal Green Jobs strategy for Appalachia should build upon and link to the efforts of non-profits and community-based organizations in the region. Smart, expanded public investment and support for greening the economy of Central Appalachia could create jobs, reduce poverty, and improve environmental conditions in the region.

In this paper, we outline five Green Jobs strategies for the region and include a list of key policy and program options in each area. In addition to these five strategies, the administration should consider cross-cutting efforts that combine these and other strategies in local and regional efforts. For example, the administration should target a community or communities in the Central Appalachian coalfields as a participant in the new USDA Rural Innovation Initiative, an effort to bring together funding from twenty USDA programs to support comprehensive local approaches to revitalization appropriate to place-based needs and opportunities.

The five Green Jobs strategies considered here are:

- Increase energy efficiency in homes, buildings and businesses;
- Expand local renewable energy production;
- Increase sustainable management of forestland and build a sustainable forest economy;
- Support expansion of a sustainable local food system;
- Invest in environmental remediation and restoration of land.

### **1. Increase energy efficiency in homes, buildings and businesses**

Central Appalachia has long neglected investment in energy efficiency. That neglect is due in part to reliance on coal as the source of over 90 percent of the region's electricity at historically low prices. Now Kentucky, for example, uses the 6<sup>th</sup>-most energy per capita of any state, and its residential sector is 24 percent more energy intensive than the national average.<sup>1</sup> Central Appalachian residents are especially vulnerable because the price of coal-fired electricity is rising (it is up 40% in Kentucky in the last five years alone) and will only rise further in the future as thin seams of coal in the region are mined out, aging power plants are replaced, and new environmental regulations raise the cost of coal relative to alternatives.

Particularly impacted will be the many thousands of low-income residents living in sub-standard housing with inadequate insulation. More than 100,000 families in Central Appalachia lack access to quality housing. While three quarters of the residents in the region own their homes, most lack the income to make desperately needed upkeep and repairs. Central Appalachian homes are three to four times more likely to be substandard and three times more likely to lack a completed kitchen on average in comparison to homes elsewhere in the nation. One out of ten U.S. homes with incomplete plumbing is located in Appalachia. And any energy efficiency effort in

Central Appalachia must take into account that approximately 25 percent of the housing stock consists of manufactured homes, a share that rises to 40 percent in some counties.

The region's challenge also creates a large and immediate green jobs opportunity in weatherizing and retrofitting residences and buildings and developing new housing across the region. A recent Appalachian Regional Commission study estimates that a set of modeled energy efficiency policies in the region would save Appalachian consumers almost \$10 billion annually on their energy bills by 2020 and create over 37,000 jobs.<sup>2</sup>

There are an important set of programs, services and efforts in the region that are actively addressing these issues and whose work could be enhanced and expanded to create green jobs in Central Appalachia.

- The Federation for Appalachian Housing Enterprises (FAHE) is a 29 year old regional non-profit made up of 43 local housing groups in Central Appalachia whose work includes rehab of existing housing in addition to new home construction.
- Frontier Housing, a non-profit based in the region, has developed an innovative program to replace highly inefficient mobile homes built before the 1976 HUD manufactured home code with new Energy Star manufactured homes in partnership with a local producer; their proposal to help people pay for that replacement was included in the Waxman-Markey climate change bill, and may be part of the jobs bill. There are nearly two million inefficient pre 1976 mobile homes nationwide, with 300,000 located in Central Appalachia.
- MACED has started work with the East Kentucky Power Cooperative, the provider of electricity for approximately 500,000 homes in Kentucky, to create a model for on-bill financing of residential energy efficient improvements.
- In Kentucky, Finance and Administration Cabinet Secretary Jonathan Miller is raising the profile of energy efficiency and mobilizing a wide range of interests in support of his Clean Energy Corps, an effort to build access to residential energy efficiency through weatherization grants, financing programs and training.<sup>3</sup>

The region's school buildings could provide another important, highly visible testing ground for energy efficiency improvements. The school buildings in many communities in Central Appalachia are in need of upgrades in order to save energy and improve student health and learning. The eastern Kentucky coalfields, for example, contain two of the six counties in the state identified as having the highest level of school facility improvement needs. Perry County, Kentucky, has an estimated \$30 million in such needs. These building needs show up in energy costs, which have risen from \$90 million in Kentucky in 2000 to \$187 million in 2007. As evidenced by the lack of a single Energy Star school in Appalachian Kentucky, not nearly enough is being done to cut those costs.

This need is a tremendous opportunity to create good green jobs, save money spent on energy in schools that can better be used for education, and introduce youth of the region to the work and technologies of energy efficiency and renewable energy production. The improvement of local schools in the region also assures that they

remain important centers for building and preserving community in the coalfields for many years to come.

There are local models to build upon. Wyoming County, West Virginia--a coal-producing county--has worked hard in recent years to qualify eight of its schools as Energy Star and saved over \$1 million in energy costs in the first three years. There are also local leaders and organizations whose efforts can be included in a region-wide initiative, including Rep. Ben Chandler (D-KY), the sponsor of the 21<sup>st</sup> Century Green High Performing Public School Facilities Act (H.R. 2187) which passed the House each of the last two years.

### ***Recommendations:***

*Provide funding to replace highly inefficient, pre-1976 mobile homes across the region with Energy Star manufactured homes using the Frontier Housing model.*

The manufactured homes built before the 1976 HUD manufactured housing code are highly inefficient, and therefore expensive for low-income families to heat and cool, in addition to being health and safety risks for the families that live in them. Legislation currently under consideration would provide a \$7,500 down payment advance for families to move from these homes into Energy Star manufactured homes that are built on a permanent foundation, offering them the tax and safety benefits of home ownership. Such a program would dramatically increase energy affordability and living standards for the very low-income participants in the program and additionally create jobs through the manufacture of new homes and the recycling of discarded homes. Such a program would be particularly beneficial for Central Appalachia, which has a disproportionate share of such homes.

*Promote on-bill financing of energy efficiency improvements through seed financing for a pilot program between MACED and East Kentucky Power Cooperative and the creation of a regional consortium to examine its feasibility across Central Appalachia.*

On-bill financing provides a model with great potential scalability in the region.<sup>4</sup> By paying for energy efficiency improvements through the monthly energy cost savings resulting from the improvements, the program eliminates the barrier of up-front costs and makes efficiency upgrades affordable for residents and businesses. Additional subsidy could be built into the program for low-income homeowners to expand benefits and participation. By tying the payback to the property's utility meter rather than the owner, on-bill financing provides incentives for landlords and short-term homeowners to make improvements. Monies to capitalize a fund and pay for initial operating costs for the eastern Kentucky pilot could provide an important testing ground for this idea. A region-wide consortium of utilities, non-profits, financial institutions and others coordinated by the ARC and DOE could produce an analysis of the feasibility of region-wide replication.

*Support comprehensive community-based energy planning and project development in the region through targeted funding along the lines of the DOE Energy Efficiency and Conservation Block Grant program.*

Energy opportunities and challenges in the region create a need for funding that supports local, comprehensive, community-wide assessment, planning and implementation of projects that improve energy efficiency and create local, community-scale renewable energy production. Local models in Central Appalachian communities can create important sites of learning for the entire region and build local leadership and community capacity. A program of planning and implementation grants could jump-start such models. See attached a proposal developed for the communities of Benham and Lynch in Harlan County, Kentucky that is the example of the kind of effort that could be supported. Such a program could build upon or be designed as a set-aside of the DOE's Energy Efficiency and Conservation Block Grant program. It should make sure to include eligibility for non-profit organizations as well as local governments, and include opportunity to pursue renewable energy as well as energy efficiency projects.

*Support the Federation of Appalachian Housing Enterprises (FAHE) in increasing the capacity of affordable housing providers in Central Appalachia to rehabilitate existing low-quality housing and to produce new energy-efficient, sustainable single and multi-family housing affordable to low-income people in the region.*

FAHE has launched an initiative among their members to significantly increase the production of green, energy-efficient housing and rehabilitation services to ensure that the lowest-income people in the region have access to sustainable housing that they can afford. FAHE is using a collaborative framework that they have developed and tested to facilitate affordable housing providers in identifying and overcoming barriers to green housing rehabilitation and production. The goal of the collaboration is to double the number of green housing units being produced or rehabilitated in Central Appalachia in one year. In addition, the collaborative framework of the project will ensure that solutions developed provide a regional infrastructure for ongoing sustainable housing development in Central Appalachia well into the future. Funds are needed to support this initiative in providing training for groups new to green building, in providing financial incentives to participating housing providers to defray initial increased operating costs inherent in the learning curve, and to capitalize a loan fund to provide financing of housing units.

*Allocate additional Weatherization Assistance Program (WAP) dollars to Central Appalachia to help more low-income homeowners conduct deeper retrofits of their homes.*

Central Appalachia's large volume of inefficient housing and greater than average share of homeowners whose income is less than 200% of the federal poverty level means that the DOE's WAP is critically important to the region. However, even with supplemental stimulus dollars the program is only beginning to address existing need in the region. Additional funds to reach more homeowners, provide deeper retrofits that allow more replacement of heating and cooling systems, and/or tie grants to an on-bill financing program for deeper retrofits would help low-income people save money, create jobs, and reduce energy consumption. An ARC report found that \$4 billion in expanded weatherization spending in the region over the next 20 years would result in \$11.4 billion in savings in energy bills.<sup>5</sup>

*Provide commercial energy efficiency audits, information and financing to small businesses in the region building on MACED's Energy Efficient Enterprises program.*

For the last several years, MACED's Energy Efficient Enterprise program has been developing and testing models for providing energy efficiency information, auditing and financing to the region's numerous small businesses. MACED has discovered large gaps in understanding of potential energy savings on the part of small businesses, and is now developing a strategy that involves packaging information about energy improvements common to types of businesses and industry sub-sectors, combining it with financing where appropriate, and then marketing those improvements region-wide. Federal funding could help test this "packaging" strategy for its viability and impact. A Southeast Alliance for Energy Efficiency report found that lighting accounts for 13 percent of commercial energy consumption and heating and cooling for 28 percent. A program involving \$1.2 billion in public spending over the next twenty years could result in an estimated \$83.8 billion in commercial energy bill savings by 2050.<sup>6</sup>

*Improve school energy efficiency in the region through basic upgrades, improved energy management and building retrofits.*

Central Appalachia could host a pilot of Rep. Ben Chandler's proposed 21<sup>st</sup> Century High Performing Public Schools Facilities Act, which would allocate monies to school districts based on their eligibility for Title 1 funding, assuring that the poorest school districts receive the most resources. These funds then can be used for a variety of projects that improve energy efficiency and green the schools in those district. By reaching all of the region's neediest schools with a small amount of grant money, the program will promote deeper thinking and planning about what can be done and assure that simple and highly-cost effective projects are pursued at schools across the region. Programs that provide district-level staffing and resources to improve school energy management, like the Kentucky Energy Efficiency Program for Schools, could also be funded in the region. And for schools that need more extensive retrofits, subsidized bond or other financing could allow these school systems to save money on energy and provide a more comfortable learning environment for students.

*Train local governments and support local public sector energy efficiency improvements through expansion of the Penn State University model.*

Dr. Amy Glasmeier (now at MIT) and others at Penn State University have worked with Local Development Districts in Pennsylvania and through the Appalachian Regional Commission to develop a program that provides training and tools to local government officials to help them in assessing, planning and developing municipal-level projects that improve energy efficiency. The program targets water and wastewater treatment, lighting, utility bill and building assessment, and other strategies. Such a program could be expanded to include more local governments in the Central Appalachian region.

*Provide training for local people in the skills of energy efficiency improvements.*

The programs described above would ramp up the demand for energy improvement contractors and workers. There is danger that such programs would simply draw workers and contractors from adjacent, more urbanized areas unless intentional efforts are made to recruit and train a Central Appalachian workforce. A Central Appalachian enterprise and workforce development strategy aimed at developing "green contractors"

could go a long way in providing needed new jobs in the region. There are a number of emerging potential partners in such an effort. A \$3.8 million DOL grant to Mountain Empire Community College in southwest Virginia, in cooperation with MDC, is supporting a green jobs training model linked to obtaining a GED and college credit.<sup>7</sup> The new Alliance for Sustainability, led by workforce policy expert Regional Technology Strategies (RTS), is organizing regional community colleges to explore increased training in green industries. Kentucky recently became licensed to provide the Building Performance Institute certification through its community colleges for energy auditors and contractors. Unions like the Laborers International (LiUNA) and the International Brotherhood of Electrical Workers (IBEW) are potential partners. Also, the Citizens Conservation Corps of West Virginia has been developing training programs for weatherization workers. These and other efforts could be expanded and accelerated through federal workforce development dollars, such as through DOL's Energy Training Partnerships, Green Capacity Building and Pathways out of Poverty programs.

## **2. Expand local renewable energy production**

Central Appalachia's historic reliance on coal has also meant little progress in diversifying into renewable energy sources. However, the region possesses real potential for renewable energy from a number of sources. Wind power is possible at a distributed scale and at utility scale on ridgetops in Central Appalachia. At least 3,830 MW of wind potential exists on private land in West Virginia.<sup>8</sup> The best wind potential in all of Kentucky is in the counties in the southeastern coalfields.<sup>9</sup> A recent National Renewable Energy Laboratory study indicated that at the higher hub heights of modern wind turbines, the wind potential in the region's states is greater than was often previously assumed.<sup>10</sup>

Leaders of Kentuckians For The Commonwealth in the towns of Benham and Lynch have launched the Benham and Lynch Community Energy Initiative to address the need for renewable power and energy efficiency in these small former company towns in the heart of the coalfields. The Initiative has partnered with the Massachusetts Institute of Technology and MACED to conduct initial research on the potential of local wind generation. The nearby mountains have the highest wind potential in all of Kentucky. The communities are also pursuing energy efficiency projects, as the town of Benham uses the highest amount of electricity per residential customer of any utility in the state.<sup>11</sup> See more about the Benham and Lynch proposal in the appendix. In southern West Virginia, the leaders of Coal River Wind have developed a model and a proposal for a 328 MW wind farm on Coal River Mountain as an alternative to mountaintop removal mining in the same location.<sup>12</sup> An economic impact analysis suggests greater long-term jobs and economic impact from the wind farm than from mining--particularly if local production of turbine components can be incorporated.<sup>13</sup>

Community-scale woody biomass for energy is also a significant opportunity. The ARC estimates that the total annual biomass resources for the Appalachian states at over 108 million tons.<sup>14</sup> Solar potential exists in Central Appalachia particularly in distributed applications for solar thermal and solar PV. Small and micro-hydroelectric power has a

significant potential. The Idaho National Laboratory has estimated 518 MWa of potential in Kentucky and 484 MWa in West Virginia.<sup>15</sup>

The region is also a potential site for the manufacturing of components for solar, wind and other energy sources. An ARC report found that counties in Appalachia as a whole currently possess almost 200,000 jobs in parts manufacturing industries that could be modified to produce renewable energy components. Those jobs represent 3,000 manufacturers within the region with the potential to be retooled to become part of the renewable energy industry. 28,000 of those jobs are in counties currently categorized as economically distressed or at risk of becoming distressed.<sup>16</sup> Also, non-profits like MACED and the Kentucky Highlands Investment Corporation (KHIC) are providing training, financing and technical assistance for renewable energy entrepreneurs in solar, biofuels and other areas such as through KHIC's recent Energy Boot Camp program.<sup>17</sup>

### ***Recommendations:***

*Provide grant funding and financing for community-scale renewable energy demonstrations in the areas of wind, solar, low-impact woody biomass and low-impact hydro.*

Community-scale renewable energy production that is locally owned has the potential to maximize the economic benefits of energy production for local communities. In addition, community-scale projects can be high-efficiency, reusing waste heat in the case of biomass projects and minimizing line loss. A program to create local demonstrations across the region, including at public buildings and institutions like hospitals, in small town main street areas, and at a county scale could go a long way in leveraging new beneficial energy activity. A proposal from East Kentucky Biodiesel to create a pilot pyrolysis/gasification facility utilizing biomass grown on former surface mine land, explained on page 19, has the potential to be the first stage of a regional network of community-scale bioenergy production. A wide range of USDA and DOE programs promoting renewable energy and energy efficiency projects could be set aside or repurposed for efforts of this kind.

*Expand USDA Rural Utility Service (RUS) financing for renewable energy production (and energy efficiency) to utilities located in Central Appalachia.*

President Obama's 2011 budget proposes additional funds to USDA "to help transition fossil fuel-dependent utilities to renewable energy."<sup>18</sup> Central Appalachian utilities are among the most fossil fuel dependent in the country, reliant on coal in aging power plants for well over 90 percent of their electricity. A 2009 study by the Ochs Center for Metropolitan Studies showed that East Kentucky Power Cooperative, a major provider of electricity in the Appalachian Kentucky, could create 8,750 jobs and inject \$1.7 billion into the regional economy through a program of energy efficiency investments and expanded renewable energy capacity.<sup>19</sup> A combination of grants and loans through RUS (and similar USDA programs like REDLG) to Central Appalachian utilities could help them begin to make this transition and create new jobs and economic opportunities in the process. One potential step forward in this direction is the new Rural Energy Savings Program legislation filed by in the House by Rep. James Clyburn and in the Senate by

Sen. Jeff Merkley.<sup>20</sup> It would create a pool of RUS funds for rural electric coops to create on-bill financing programs.

*Create a special category and set-aside of USDA Rural Energy for America (REAP) grants and guaranteed loans for renewable energy and energy efficiency projects in Central Appalachia.*

The USDA REAP program provides valuable, much needed funds for small businesses, farmers and others to pursue renewable energy projects and energy efficiency improvements. Even with expanded funding for this program, however, valuable projects including ones MACED has helped support are being denied funding. Those projects that are receiving REAP grants are creating important models in the region. Organizations like MACED and the Natural Capital Investment Fund in West Virginia can also provide financing to small businesses that can be packaged with REAP grants, which will help leverage federal dollars and increase impact.

*Fund community-based wind monitoring efforts to help communities assess the feasibility of wind power.*

Wind power along the ridgelines of Central Appalachia is widely recognized as an important regional opportunity. However, there is a lack of site-specific data for communities to understand the actual opportunities for wind development in the region, holding back project development. A program of grants and equipment loans could help communities better assess these opportunities.

*Support the establishment of renewable energy component manufacturing in the coalfields of Central Appalachia.*

Manufacturing of component parts for the wind and solar supply chain offer some of the greatest economic opportunities for the nation as a whole. However, the lack of manufacturing infrastructure in the heart of Central Appalachia threatens to leave the region out of these opportunities. An initiative should be developed with the goal of establishing at least one significant supply chain manufacturer in the coalfields of Central Appalachia. This initiative should include research to identify if there are any opportunities with existing manufacturers in the region. If no such opportunities arise, the focus should be on the feasibility of establishing a new facility. New approaches like the Cleveland model of community-based, worker-owned companies in new green industries are promising ways to create jobs that help low-income workers accrue long-term wealth.<sup>21</sup> A project to establish a model facility in a coalfield community could go a long way in creating good opportunities and promoting a needed discussion about the region's energy future.

*Provide competitive grants for school-based renewable energy projects eligible for schools in Central Appalachia.*

A number of potential models exist for renewable energy production at the school level, which can save schools money and create important opportunities for student and community learning. The model of Russell High School in Greenup County, Kentucky, is one example of the use of wind and solar demonstrations to save money and provide training for vocational students. Opportunities also exist to fund fuels-for-schools

initiatives (like those in the western U. S.) utilizing local, sustainably harvested woody biomass as a building heat source.

*Support workforce training and enterprise development in the new renewable energy industries.*

MACED and other entrepreneurial development organizations like the Natural Capital Investment Fund have worked with a number of entrepreneurs in the region interested in starting new companies in wind, biomass, or solar. These folks lack access to training that would deepen their understanding of the technologies, and often lack the business management skills to make their fledgling enterprises survive. In Kentucky, for example, state tax credits were recently enacted for renewable energy installations like solar panels, but included requirements that installers be North American Board of Certified Energy Practitioner (NABCEP) certified. Only a handful of people in the entire state have that certification. Federal workforce and business services dollars could support targeted scholarship, training, and technical assistance programs that could help more renewable energy businesses get off the ground. As mentioned in the energy efficiency section above, the Department of Labor green jobs training programs such as the Green Capacity Building program, Energy Training Partnerships, and Pathways out of Poverty program could be allocated for such investments.

### **3. Increase sustainable management of forestland and build a sustainable forestry economy**

Appalachia's forests are among the most ecologically diverse in the world.<sup>22</sup> The Natural Resources Defense Council has named the Cumberland Plateau in Central Appalachia one of thirteen of the world's Biogems.<sup>23</sup> The region's forests are the origin of water for a large portion of the eastern United States as well as an important source of clean air and the sequestration of carbon. Tremendously beautiful, they are also a source of pride for residents and an attraction for visitors.

However, the region's forests have not been properly managed to maximize their ecological and economic benefits to the residents of the region and beyond. Over 100 years ago, the Appalachian forests were almost completely logged to provide lumber for a growing economy. Now, the region's forests have grown back but poor management practices threaten their future. The forests suffer from high-grading—the removal of high quality trees to the degradation of forest quality—and the prevalence of predatory or irresponsible logging practices. As climate change increases, the lack of ecological resiliency will make these forests more susceptible to damage from wildfire, pests, ice storms and other weather events.

Over 90 percent of Kentucky's forestlands are privately owned often in small tracts of an average of 40 acres. In the coalfields, much is corporately owned by absentee landholding companies. There are few incentives or resources for private landowners to pursue sustainable management and certification of the land. Despite the fact that nearly half of the land area in Kentucky is forested, only roughly 1,000 acres of land are certified as sustainably managed by the Forest Stewardship Council. In recent years, the state Division of Forestry has suffered from major budget cuts that have dramatically

reduced the number of foresters in the field to help landowners with stewardship plans. Federal programs to help landowners pay for the development of management plans have been inadequately funded or eliminated.

Timber is a significant industry in the region; in Kentucky it generates an estimated \$4.5 billion in economic impact and directly employs over 30,000 people, making it the third-largest manufacturing industry.<sup>24</sup> But value-added processing of wood and forest products has long lagged behind in Central Appalachia. 13 of the top 20 counties in Kentucky in the volume of logging are in the Appalachian portion of the state, but only six of the top 20 counties in employment in secondary wood products businesses are in that region.<sup>25</sup> There is a real need for greater support of business development and workforce training to increase the amount of value-added production happening in the region in order to retain more of the forest's wealth. These challenges are occurring in the context of a growing demand for green wood and forest products in the marketplace and the potential for a greater premium for these products. Government procurement policies that require LEED certification for public buildings and other requirements are also increasing the demand for sustainably-harvested wood products.

Ecosystem services are also a tremendous green economic opportunity for the region. In 2007, MACED launched a program to broker the sale of managed forest carbon credits focusing on the many moderate-income landowners owning small tracts of forestland in the region. MACED provides education, assistance with obtaining the necessary certification and forestland inventory, and financing for these expenses. To date, 60 landowners representing over 30,000 acres have applied to join the program and MACED sold its first batch of credits last year. While currently focused on voluntary carbon markets, there are real economic opportunities for the region to the extent that domestic working forest carbon credits and funding for sustainable forestry practices targeting family forest landowners are part of federal climate change legislation. Ecosystem services payments can be a source of green income for the region that could extend beyond carbon to include water quality and other benefits.

Ecosystem services including carbon sequestration are one of a range of potential alternative value streams that, if approached properly, could provide new income sources for the region. Non-timber forest products such as medicinal herbs and botanicals are an additional value stream, as is the opportunity in woody biomass for energy.<sup>26</sup>

### ***Recommendations:***

#### ***Fund a regional certification support center.***

The fragmentation of ownership of forestland in the region coupled with the cost of certification has limited the number of acres that have come under Forest Stewardship Council and other certification schemes. At the same time, wood processors in the region are obtaining chain-of-custody certification in recognition of the reality that markets are shifting to sustainability standards, but the lack of certified land means they are currently unable to access these markets. Additionally, smaller wood companies in the region lack the technical know-how to obtain certification, and may be left behind as

these markets develop. A regional certification support center would hold a group certificate that would allow landowners to more affordably obtain certification, and would offer assistance to businesses and landowners as they navigate the process. Discussions are underway by regional forestry actors on the need for such a center, but start-up and operating funds are lacking.

*Support stable, adequate incentives for working forest carbon sequestration for family forest landowners and private forestland.*

Proper management of forestland is an important part of the global solution to climate change. However, climate change legislative proposals threaten to leave out forestry-based solutions, or to ignore the opportunities in better management by small private landowners. Either through working forest offsets or federal payment programs as part of climate change legislation, small private landowners should be financial incentivized to adopt management practices that increase carbon sequestration on their lands.

*Create a Sustainable Wood Products Competitiveness Corporation in the region to promote cooperation and regional marketing efforts among green secondary wood processors and provide needed technical assistance.*

The value-added wood processors in the region are struggling through the slump in the housing market and are attempting to learn how to transition to the new markets for sustainably harvested wood. They could use assistance in cooperating on product and market development; accessing the web for marketing, developing and testing regional brands; joining to meet workforce development needs, and other areas. A Wood Products Competitiveness Corporation once existed in Kentucky, modeled after a successful model in Oregon, but failed to receive continued funds. The Sustainable Woods website launched by the National Network of Forest Practitioners and designed to support web marketing by secondary wood processors in the region could provide the beginnings of such a region-wide effort.

*Provide expanded cost-share funds for the development and implementation of management plans and certification requirements through region-specific resources modeled on the Forest Land Enhancement Program (FLEP).*

The region's large number of moderate income nonindustrial private landowners makes a program like FLEP, operated by the US Forest Service, essential to better forest management. FLEP set up cost-share payments for implementing sustainable management practices. The program was part of the 2002 Farm Bill, which authorized \$100 million nationally for the program. However, much of that money was diverted to fighting wildfires and the program was not reauthorized in the 2007 Farm Bill. A program like FLEP targeted to Central Appalachia could go a long way in accelerating better management practices.

*Provide resources to Central Appalachian states to expand the technical assistance resources available to help landowners with stewardship planning.*

Developing management plans is the first step towards sustainable forestland management. While states offer free assistance to forestland owners in developing stewardship plans, budget cuts have led to long waiting lists. The federal Forest Stewardship program, which operates through the states, has been inadequately funded

through the years. Additional resources targeted to the Central Appalachian states could help address the backlog and increase the amount of forestland under a management plan.

*Support research and the development of guidelines for the sustainable harvesting of woody biomass.*

Energy from woody biomass is widely recognized as an important opportunity for the region. It is also widely recognized as an important threat, and many people are concerned about the impact of poor harvesting practices and unsustainable harvesting volumes on the ecological integrity of the region's forests, the markets for other forest-related products, and the long-term economic viability of the region's forest economy. There is a great need for research that assesses the region-wide, sustainable potential for biomass and that regularly monitors the impact of biomass harvesting on the region's forests. There is also a need for Central Appalachian-specific harvesting guidelines that could be adopted by Central Appalachian states as part of Renewable Portfolio Standards and other energy policies to assure that harvesting is done in a way that does not degrade forestland or deplete soil quality. Third, there is a need for research on energy technologies for the region that maximize both the ecological and economic benefits of woody biomass utilization for communities.

*Provide pilot funding for a land bank to allow community purchase of pre-and post-mined land for sustainable forestry activities.*

A major issue throughout Central Appalachia's history has been absentee ownership of the land in large blocks, making it difficult for communities to practice sustainable management of the land and gain income from forest management. New and emerging markets for ecosystem services like forestry carbon sequestration, energy from woody biomass, non-timber forest products, and sustainably-harvested wood products broaden the opportunities for income streams from land beyond coal. Those opportunities could provide leverage to finance local purchase of large blocks of land. Efforts are emerging that promote community purchase of land threatened by development, such as the proposed Community Forestry Conservation Act—which allows the issuance of tax-exempt bonds to finance purchase of land—or the Community Forests and Open Space Conservation Program, which provide matching grants for land purchase. Similar programs could exist for land threatened by destructive mining practices like mountaintop removal and for already-mined land. The Woodland Community Land Trust in east Tennessee provides one such model—the Land Trust provides low-income housing and operates sustainable forestry on land that has been acquired.<sup>27</sup>

#### **4. Support expansion of a sustainable local foods system**

In recent years, Central Appalachia has like the rest of the country seen growing interest in building a sustainable and locally-integrated food economy. The rapidly growing demand for local, healthy and sustainably produced foods in the region's urban fringe (including cities like Lexington and Knoxville) is juxtaposed with a fairly widespread lack of access to good foods (due to distance, income and market hurdles), especially for lower income people. Health problems linked to access to good food are major issues in the region. In addition, there is significant economic and job creation potential in the

food and farming sector. Economist Ken Meter found in 2007 in Virginia that \$2.2 billion in annual income could be created for farmers if all of the state's residents bought local farm products just one day a week. That is an amount of income equivalent to  $\frac{3}{4}$  of all Virginia commodity agriculture sales.

The Central Appalachian Network (CAN) includes several organizations that are developing and implementing models for a sustainable local agriculture economy. CAN is made up of seven community-based non-profit economic development organizations. It includes MACED; the Appalachian Center for Economic Networks (ACENet) and Rural Action in southeast Ohio; the Center for Economic Options (CEO) and the Natural Capital Investment Fund (NCIF) in West Virginia, Appalachian Sustainable Development (ASD) in southwest Virginia; and the Jubilee Project in Tennessee.

A major focus of CAN and its member groups has been to build healthy local food systems that create green jobs and economic opportunities in the region. CAN's goal is "farm to table" sustainable agriculture value chains, an approach that reduces transportation by minimizing the distance food travels; improves land stewardship; builds rural wealth, capacity and equity; and provides better food access and security for communities in Central Appalachia. CAN's approach takes advantage of existing resources in the region—the region's farmers, their existing knowledge, and the region's farmland—and takes advantage of the growing demand for local and sustainably produced products.

CAN member groups are pursuing an array of efforts that:

- Provide outreach, education, training and technical assistance so producers can transition to new crops and markets and more ecologically sound practices;
- Set up the infrastructure to get farm products to market in the quality and quantity needed (including aggregation, sorting, processing, cooling, packaging, identification of distribution outlets and shipping);
- Connect local and regional food producers, processors and distributors to each other to allow the system to become more localized;
- Link to market partners of some scale, including local and regionally based grocers and retailers; schools, colleges and universities; food processing facilities; and other institutional buyers.

About sixty farmers participate in Appalachian Harvest, a program of ASD based in southwest Virginia. Appalachian Harvest farmers grow organic produce and free range eggs, which ASD then sorts in a packinghouse and sells to about 600 supermarkets and other institutions at a premium under its Appalachian Harvest brand. ACENet in Appalachian Ohio has created a commercial kitchen and thermal processing facility for local food entrepreneurs to develop value-added products with the assistance of a food scientist and business counselor. The kitchen incubator generates approximately \$700,000 in annual sales for local entrepreneurs. The Jubilee Project in northeast Tennessee operates a community kitchen, manages a co-op of thirty local farmers, and is accessing markets in the local school system. Other organizations like Rural Action in southeast Ohio are demonstrating success with farmers' markets and produce auctions.

Currently, CAN is working to replicate and scale up its existing models and support other efforts in the region. It is completing a field guide to developing sustainable agriculture value chains to be used by farmers and organizations in the region; has conducted research on a regional supply chain assessment; and last year announced \$100,000 in grants to eight other organizations in Central Appalachia that are creating their own models for producing and selling sustainably-grown food.

***Recommendations:***

*Provide direct funding to enhance local food systems in Central Appalachia through a multi-year grants pool administered jointly by the Appalachian Regional Commission (ARC) and USDA.*

Grant funding targeted to Central Appalachia can help scale up existing models for building sustainable agriculture value chains pioneered by CAN and other groups as well as provide initial funding for new ideas and projects that have the potential to be scaled up and replicated. The region is experiencing tremendous new interest in this sector as evidenced by the applications to CAN's recent grants pool which range from custom processing for small-scale meat producers to production of regional staple foods like grains and beans. A grants pool could target innovations across the value chain, including those that 1) build and expand supply and production practices; 2) support greater processing, aggregation and distribution of local products; and 3) develop and access larger and more diverse markets. The ARC's Asset-Based Development program is designed around strategies like sustainable agriculture and has the regional knowledge and expertise to be an important partner. USDA is expressing increased interest in the area of regional food system funding initiatives, for which Central Appalachia would be an excellent location. These federal agencies would have a number of partners in national and regional foundations and a growing body of local donors who are putting money into these efforts.

*Provide support for learning efforts associated with the grants program including a regional conference, documentation and evaluation component.*

In April 2009 CAN held a regional gathering in West Virginia titled "Growing a Healthy Food System from the Ground Up." The event demonstrated the excitement and innovation in this sector across the region as well as the value of peer learning and documentation of the models that are being created. ARC has supported CAN documentation efforts, and an ARC-sponsored public event and next stage evaluation and documentation effort could expand and deepen that learning and provide opportunities to showcase the models and efforts funded through the grants program. It could also build capacity at the local and regional levels. Extension staff and resources in the region have been whittled down and are now facing huge cuts in many of our states at the very time that farmer/entrepreneur training needs—to meet the demand for healthy and sustainable foods—are expanding dramatically.

*Protect small farmers and local growers from loss of access to markets as a result of food safety legislation.*

Legislation currently under consideration establishing federal food safety standards could be problematic for many small family farmers, including those in Central

Appalachia. The standards under discussion are designed for large-scale, industrial growers and are not appropriate for small family farms. Food safety legislation should be appropriately responsive to the degree of risk, size of farm, and unique character of organic and sustainable farms so that small sustainable farmers are not effectively excluded by standards designed for large conventional farming operations. Ironically, legislation created in response to food safety problems created by large corporate growers could end up denying access to grocery stores and institutional markets for small growers.<sup>28</sup>

*Create new funding and programs within USDA targeting rural food entrepreneurs, family farmers and local foods infrastructure, and include a set-aside of funds for Central Appalachia.*

The new leadership in USDA has taken positive steps forward in embracing the importance of local and regional food systems, including allocating extra points for them in existing USDA programs. However, when dollars are still stretched too thin and not enough programs target small farmers, assistance is still not adequate. There is a great need for support for training and technical assistance around marketing and product development in addition to funds for building infrastructure for local processing, aggregation and distribution.

*Coordinate the efforts and resources of EPA, USDA and other federal agencies to channel investments and create incentives for restoration of working farm landscapes in Central Appalachia.*

2009 data show that Kentucky and Virginia have lost between 35 and 50 percent of their tobacco acreage since the end of the federal tobacco program, meaning that a lot of farmland is essentially up for grabs. An investment in working farm landscapes, including soil restoration, water systems and farm scale alternative energy will increase carbon sequestration (a ten year Rodale study showed that 3,200 lbs. of carbon is sequestered per acre with minimum tillage organic systems), improve soil and water quality, and increase the economic productivity of farm (and forest) land. A preserved and enhanced farm landscape also complements the many heritage, cultural and ecological tourism efforts underway around the region, while conventional, big box development generally undermines these efforts. Such an effort might include cost share programs and tax incentives not to “develop” land in the strip mall sense but to restore and increase the productivity of farm landscapes. USDA NRCS could expand upon recently developed, small cost share programs in areas like cover cropping and soil building.

## **5. Invest in environmental remediation and restoration of land**

The land in Central Appalachia has suffered serious damage over the years from the impacts of coal mining. Communities face challenges in how to remediate surface mined land as well as how to deal with the impacts of acid mine drainage, subsidence, slurry ponds and other issues. While the 1977 Surface Mining Reclamation and Control Act (SMCRA) sought to address the reclamation of land that was mined both before and after passage of the act, numerous problems with the design and implementation of the

law have meant inadequate progress in remediating those sites. Enhanced investment in environmental remediation of mined land is now a massive green jobs opportunity in the region—one that includes jobs accessible by many current coal miners. According to a recent study, one abandoned mine drainage watershed remediation project in Pennsylvania would create between 1,000 and 5,000 jobs depending on the treatment provided.<sup>29</sup>

A range of issues relate to abandoned mine lands—those lands either mined before SMCRA went into effect and unreclaimed or mined lands for which no responsible party exists. When SMCRA was established, it included an Abandoned Mine Lands (AML) fund to pay for the remediation and restoration of older mining sites existing before the law came into effect. That fund has been capitalized by a tax on current mining. However, a number of problems have plagued the AML program. A portion of the monies earned in this fund have never been appropriated for projects and instead were held to shore up the federal deficit. As of 2008, \$2.2 billion remained in the fund out of over \$8 billion that has been collected and earned.<sup>30</sup> Yet Kentucky alone has over \$330 million in unfunded projects in the federal AML database, and the state reports that even more needs exist.<sup>31</sup> A 2006 bill passed by Congress included a measure to pay out those unappropriated monies over seven years, but more could be done to accelerate investments in this work and expand the federal commitment to fully cleaning up impacted areas.

A second problem is in the allocation of monies in the AML Fund. Because the fund is generated from a tax on current mining but is intended to address mining in previous years, and because of the way resources are allocated, too much of the money goes to western states like Wyoming that have current mining but have already addressed abandoned mine problems. This particularly leaves out Central Appalachia, which has the highest number of abandoned sites. The President's FY '11 budget wisely proposes eliminating those payments, but doesn't reallocate monies to states that need them.

For all surface mined lands, an important problem relates to the reclamation practices most commonly pursued through the years. The dominant approach has involved compacting the soil to create low-erosion grasslands using mostly non-native species, an approach that has largely stunted the land's ability to regenerate. Newer reclamation methods focus on reforestation and on multiple land use, including for agriculture and bioenergy, and prioritize putting the land on the road to long-term restoration.

Remediation of mined sites can never restore them to their pre-mining condition, and innovations in remediation methods should not be used as an excuse for destructive mining practices. But the region has vast areas of damaged land already, and work to remediate that land in the right way will put people to work in Green Jobs and help build ecological wealth for future generations.

### ***Recommendations:***

*Change the allocation formula for the Abandoned Mine Lands Fund to favor those states and regions with the greatest need for mine land clean-up.*

Monies raised to address abandoned mine land problems should be allocated to those places that have those problems. While the administration is appropriately advocating for the end of payments to states without remaining sites, it should not keep those funds to decrease the federal budget deficit. Instead, it should invest them in communities like Central Appalachia that are living with the effects of these sites on water quality, natural beauty and economic opportunity.

*Make the full remediation of every abandoned mine land the explicit goal of the Abandoned Mine Land Reclamation Fund, extend the fund until all water issues are resolved, and accelerate payout of existing funds to the extent possible.*

These priorities, outlined by Downstream Strategies in their recent report “Creating Green Jobs and Economic Diversification in Central Appalachia by Reclaiming Polluting Coal Mines,” assure that the industry responsible for the damage pays for the remediation, and that the tax on existing mining is not eliminated until all remaining sites are remediated—including those addressing water issues.<sup>32</sup> The Fund is set to sunset in 2022, but should not end until the work has been completed. The administration should also expand the program to include the reclamation of sites post-1977 for which there is no responsible party, allow flexibility in including a broad range of remediation projects, and accelerate payout to the extent possible to create jobs and speed up the remediation process.

*Provide support for the Appalachian Regional Reforestation Initiative’s (ARRI) Green Forest Works for Appalachia program.*

ARRI, an initiative of the Office of Surface Mining, is working to replace traditional reclamation methods focused on soil compaction and quick-growing grasses with efforts focused on long-term regeneration of forest land. ARRI estimates that there are between 750,000 and one million acres of post-bond released mined lands in the region that are compacted grasslands. ARRI’s proposal, “Green Forest Works for Appalachia,” proposes to create over 2,000 jobs by planting trees on over 175,000 acres over the next five years.<sup>33</sup> This proposal would create needed jobs and help create an ecological asset that could have long-term value in the region.

*Promote pilot projects that combine reforestation of surface mined lands with bioenergy production.*

As outlined in his paper “The Inextricable Bond: Central Appalachia’s Relationship to Land and Energy in the 21<sup>st</sup> Century” for the Appalachian Transition Initiative/Central Appalachian Prosperity Project, East Kentucky Biodiesel entrepreneur Nathan Hall proposes using former surface mined land for the production of biomass for local energy use.<sup>34</sup> Hall proposes using high efficiency pyrolysis/gasification (P/G) technologies in facilities that produce energy either for electricity or for fuels. One byproduct of P/G is biochar, a substance that retains rather than releases a significant portion of the carbon in the biomass when it is added to the soil rather than combusted. As a soil additive, it improves the land’s progress toward healthy regeneration. His proposal outlines a pilot 10 MW pyrolysis/gasification biorefinery that would require \$20 million in funding for a 4,000-8,000 acre bioenergy feedstock/land reclamation project that is locally/community owned. It could be the first step towards a network of

pyrolysis/gasification facilities that could be a major provider of energy for the region, as described in Hall's paper.

*Supportive other innovative efforts at land reclamation.*

The work of John Todd and Samir Doshi at the University of Vermont is an example of other innovative efforts to clean up past damage from mining in ways that maximize long-term ecological viability and create economic benefits for communities. Their model of successional soil restoration and multiple use of restored land for agriculture, forestry, bioenergy and carbon sequestration is outlined in their paper "Soil as a Pillar for a New Appalachian Economy" for the Appalachian Transition Initiative/Central Appalachian Prosperity Project.<sup>35</sup> Such efforts should be piloted and advanced.

## **Appendix: Community-Based Efforts Benham & Lynch Community Energy**

Benham and Lynch are adjacent former coal camp towns in Harlan County, Kentucky with a combined population of 1,500. Residents and leaders in these communities have been working for the last few years to identify projects and efforts that would produce local renewable energy, improve energy efficiency and diversify the local economy. Benham has a municipal utility, and in 2007 used the 4<sup>th</sup>-most residential electricity per residential customer of Kentucky's 59 utilities. The communities sit at the foot of Black Mountain, Kentucky's highest mountain range and the site of the greatest potential for wind power in all of Kentucky. At the same time, the communities are struggling with several proposed adjacent surface mining projects that would threaten local access to water and harm the natural beauty and quality of life in the towns. The combination of need, potential and community interest creates a unique opportunity to establish a local model for energy savings and green job creation in the Appalachian coalfields.

Partners in this effort have ranged from the Benham Garden Club, which developed a program to distribute energy efficient residential lighting, to the Massachusetts Institute of Technology (MIT), which produced a report for the community on models for developing locally-owned wind power and a second report on viable strategies for local renewable energy and energy efficiency improvements. KFTC, MACED and other partners have also provided support in beginning to explore the feasibility of a range of renewable energy sources and efficiency strategies. In addition to wind, potential exists for micro-hydro power utilizing the creek that runs through the towns, small-scale solar energy, and dramatic efficiency improvements ranging from retrofits of the highly-inefficient coal camp housing to improvements to the infrastructure and small stock of public and commercial buildings.

These communities have a long history of pursuing economic revitalization and diversification as evidenced in a series of local heritage and tourism projects, including the conversion of a historic school building into a bed and breakfast and the creation of a local coal mining museum and exhibition mine. The communities have also developed a feasibility study for the production of bottled water that could create jobs through providing clean drinking water to an area where clean sources are lacking.

The Benham and Lynch Community Energy Initiative is a proposal to create a local model for energy savings and green job creation through a program that includes the following elements:

*Improve residential energy efficiency through funding and establishing financing mechanisms that create a permanent infrastructure for energy investments.*

One viable model is a program that sets up a subsidized revolving financing mechanism using on-utility bill payback for the weatherization and energy efficiency improvement of the stock of coal camp housing. Such a model would remove the barrier of up-front costs for improvements to residents and calibrate monthly energy bill savings to be greater than payback for the improvements. Additionally, it creates a continually

revolving fund that could be used for other local energy projects in the future. MACED, which is working with East Kentucky Power Cooperative on such a model, could assist the communities in setting up the fund and establishing the process for auditing, underwriting and payback.

*Improve the non-residential building stock and wastewater treatment infrastructure through rehabilitation and energy efficiency improvements.*

The small stock of municipal, small business and non-profit-owned buildings provide the basis of local pride and potential for local economic development, but are in need of building rehabilitation in some cases and energy efficiency improvement in others. Additionally, the wastewater treatment plant is, as in many towns, a major local energy user. MACED's Energy Efficient Enterprises program provides one potential model for auditing and financing these improvements; additionally, Penn State University has developed a model for assessing and upgrading water and wastewater infrastructure in Central Appalachia that could be utilized.

*Explore and expand renewable energy production through research and demonstration projects.*

The communities need funding for feasibility studies and, if appropriate, implementation grants in the areas of mountaintop wind, mine tunnel wind and microhydro. Also, grants and subsidies are needed for immediately-implementable renewable energy projects in point-of-use wind and distributed solar PV and solar hot water. Several non-profits and companies have been discussing feasibility studies, and TVA and East Kentucky Power Cooperative have conducted wind studies on other parts of nearby Black Mountain.

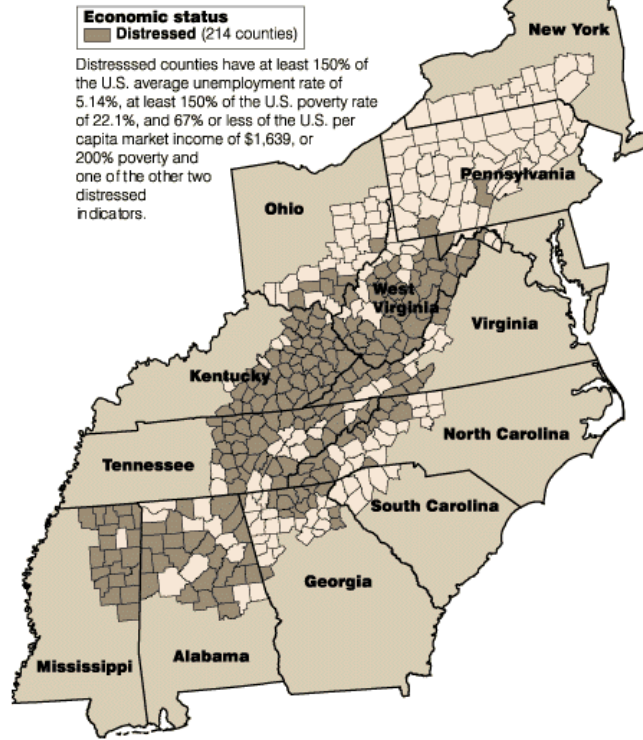
*Support advancement of existing economic diversification efforts.*

The communities have identified projects that expand and further existing tourism and economic diversification efforts including projects related to Portal 31, the new exhibition mine, as well as needed seed financing to establish a bottled water plant identified as a viable project by the communities through a feasibility study.

*Provide training for local people in business development and in the skill of energy efficiency improvements and renewable energy installation.*

The state-wide energy curriculum being implemented by the Kentucky Energy Corps through the community and technical college system provides one avenue for the energy training needed. The state will create that curriculum by utilizing the Building Performance Institute model launched in New York state. MACED provides training and technical assistance to new and existing entrepreneurs on managing and growing businesses which could help with new or existing energy contractors created in the community through this process.

## Distressed counties in Appalachia 1960



**Economic status**  
 Distressed (214 counties)

Distressed counties have at least 150% of the U.S. average unemployment rate of 5.14%, at least 150% of the U.S. poverty rate of 22.1%, and 67% or less of the U.S. per capita market income of \$1,639, or 200% poverty and one of the other two distressed indicators.

Data sources: Census data from USDA, Economic Research Service (ERS), 1960; Poverty: Office of Economic Opportunity data from USDA, ERS, 1960; Income: U.S. Department of Commerce, Bureau of the Census, 1960.

## Distressed counties in Appalachia 2000



**Economic status**  
 Distressed (111 counties)

Distressed counties have a three-year average unemployment rate that is at least 1.5 times (150%) the U.S. average of 5.3%; have a per capita market income that is less than two-thirds (67%) of the U.S. average of \$20,409 and have a poverty rate that is at least 1.5 times (150%) the U.S. average of 13.1% OR have 2 times (200%) the poverty rate and qualify on one other indicator.

Data sources: Unemployment: U.S. Department of Labor, Bureau of Labor Statistics, 1995-97; Poverty: U.S. Department of Commerce, Bureau of the Census, 1990; Income: U.S. Department of Commerce, Bureau of Economic Analysis, 1996

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