

**NADO RESEARCH FOUNDATION'S  
CENTER FOR REGIONAL DEVELOPMENT  
& ENVIRONMENTAL STEWARDSHIP**

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**GETTING STARTED IN  
REGIONAL ENERGY & FUELS PLANNING:**

**SHARING THE  
LAND-OF-SKY EXPERIENCE**

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**LAND-OF-SKY REGIONAL COUNCIL  
ASHEVILLE, NORTH CAROLINA**

**DECEMBER 2007**

# GETTING STARTED IN REGIONAL ENERGY & FUELS PLANNING: SHARING THE LAND-OF-SKY EXPERIENCE

Land-of-Sky Regional Council  
Asheville, North Carolina

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## Summary

Land-of-Sky Regional Council (LOSRC), our local governments and partners have designed a framework for a regional clean energy and alternative fuels planning and business development project. This project not only benefits our region, but will be of value to many of NADO's other members because it:

- Shows how to take a leadership role in creating a robust energy and fuels economy and a secure, clean energy future for their regions
- Is timely, given the current level of national, regional and local concern about energy and alternative fuels, clean air, climate change and energy security
- Is replicable anywhere in the US
- Fits in well with the Comprehensive Economic Development Strategy (CEDs) process for those Regional Development Organizations (RDOs) that also are Economic Development Districts (EDDs) under the EDA planning system

## Introduction

In fall 2005, hurricanes Katrina and Rita devastated the Gulf Coast region of the United States and sent fuel shortages rippling across the Southeast. It instantly created lines at gas pumps in our region. Significantly, it went beyond concerns about higher prices, raising the specter of "no gasoline available at all" due to shutdowns of two major gasoline pipelines from the Gulf Coast to our region. From a regional planning perspective, it reminded us of our fragile energy supply network. It also reminded us of a major "leakage" in our local, regional and state economies – energy dollars flowing out to other states and abroad to pay for imported energy and fuels.

In October, 2006 Land-of-Sky Regional Council conducted a pilot for the National Association of Development Organizations (NADO) Research Foundation to "facilitate a working group to address replicable local government initiatives for sustainable energy practices on a regional basis." This paper and accompanying PowerPoint presentation lay out an approach that RDOs can use to help their communities and the local governments that serve them to create robust, resilient, secure clean energy and alternative fuels economies.

Our contract with and funding from NADO has allowed us to:

- Design our planning and business development process
- Describe how we developed it
- Develop funding for the next steps
- Describe some early results of the project

The result is a product of immediate value to NADO and its membership, and it provides a progress report on our strategic planning for our region's short- and long-term clean energy and alternative fuels needs.

# **PART 1: WHY ANY REGIONAL DEVELOPMENT ORGANIZATION SHOULD CONSIDER ENERGY & FUELS PLANNING**

**Here are some reasons for RDOs to seriously consider working in this arena:**

1. It is critically important to the missions of your member governments
2. As an emerging strategic issue, it's related to your mission as an RDO
3. It is related to critical threats (energy security, energy supply disruption) and opportunities (booming alternative energy capital investments, redirecting dollar leakage from your region)
4. It is crucial to economic development in your region. It can enhance your region's competitiveness – industrial and otherwise
5. It is tied to other regional issues you may already be working on (transportation, air quality, job creation, entrepreneurial development)
6. It is fundable

## **Energy and fuels are critically related to the missions of your member governments**

Local governments have several key roles with regard to energy and fuels:

- To lead by example and demonstrate energy-efficient use of energy and fuels while wisely spending local tax dollars
- To provide an adequate energy infrastructure to support local economic vitality
- To ensure a stable and secure energy and fuels supply chains in order to protect public health and safety
- To guide development of the built environment into patterns that lead to efficient energy use by the community as a whole
- To build a stronger local economy by plugging the leakage of energy dollars from the region

## **As an emerging strategic issue, it's related to your mission as an RDO**

Local governments typically have heavy operational workloads, and rely upon their RDOs to scan the horizon for emerging issues on their behalf. Energy supply and fuels planning clearly is an emerging issue because of:

- Uncertainty related to long term supplies of fossil fuels
- Uncertainty related to future fuel costs
- Increasing acceptance of the need to deal with climate change
- Emerging technologies that make renewables a serious consideration for future fuel supplies
- Increasing growth in energy sector companies and investments

**Energy and fuels planning is related to critical threats (energy security, energy supply disruption) and opportunities (booming alternative energy capital investments, redirecting dollar leakage from your region)**

### **Threats:**

- Energy security and energy supply disruption
  - Energy supplies originating outside the US and outside RDO regions can put local economies at risk if supplies are suddenly disrupted or gradually dwindle;
  - Diverse sources of supply and distributed power generation are less subject to disruption by natural or human causes.

### **Opportunities:**

- Booming Investments in the Clean Energy Sector
  - Five drivers of energy sector changes
    - Environmental problems
    - Rising fuel costs
    - Electricity rate caps coming off
    - Energy security concerns
    - Climate change

Source: Tom Tuffey, ARC Conference on Energy & Business Incubation, Aug 19-21, 2007

- Changing energy markets and regulatory policy
  - Rising oil prices are driving renewable energy markets;
  - 2007 climate change regulation new driver for alternative energy development;
  - Regionally these two drivers are spurring development of:
    - Alternative Energy and Jobs
    - Efficiency Investments in residential, commercial and public facilities
- Key renewable equipment in short supply
  - Wind -- Shortage of turbines and gearing components
  - Solar -- Shortage of key input Silicon
  - Biofuels – Shortage of processing plants
  - Growth rates of 25% per year over the last 5 years
    - Predicted rate of growth of similar magnitude in the next five years.
- Investment trends
  - US ranked #1 for renewables by Ernst &Young
  - Mature, highly-capitalized foreign firms seeking a US presence
  - Silicon Valley venture capitalists moving to clean energy, and looking outside California
  - Venture capital and private equity capital up 167% since 2005

*Source: NC State Energy Office (NCSEO)*

- “The clean energy sector will grow a hundredfold to become a multi-trillion dollar global business in a few decades. We have natural advantages -- notably our natural environment, and our more progressive, cosmopolitan culture -- that make this region stand out for any clean energy company searching for a base in the US. We may want to pursue a broad-ranging strategy that seeks to grow local businesses, and at the same time seeks to attract large or high-profile incomers.” – David Wallace, former Western Representative of NCSEO, November 6, 2007.
- Redirecting Dollar Leakage from your Region

Many of the actions needed to deal with regional energy security and protection from supply chain disruptions are the same actions needed to plug leaks in our local economy and recirculate more dollars locally and regionally. Examples:

- Efficiently use all energy imports to minimize dollar loss outside the region
- Capitalize upon place-based energy resources to promote local jobs while reducing energy imports and dollar leaks
- Renewable energy sources are more suited to small enterprises in many communities, including rural areas

**Energy and fuels planning is crucial to economic development in your region. It can enhance your region’s competitiveness – industrial and otherwise.**

- Successful industrial recruiting depends upon a stable, clean, affordable energy supply;
- Efficient use of energy and fuels goes directly to a company’s bottom line profitability;
- Public and private dollars freed up through energy and fuels efficiency can be used for additional economic development activities;
- Knowing what future energy and fuels mix will power your region helps workforce development institutions to develop strategic training curricula and business incubation strategies.

**Energy and fuels planning is tied to other regional issues your RDO may already be working on, such as:**

- Air quality
- Public health & safety
- Economic development
- Resilient local economies
- Waste reduction and energy efficiency
- Development patterns
- Transportation
- Traffic congestion

## Energy and fuels planning is increasingly more fundable

National, State and Local funding sources are increasingly aware of energy, fuels and climate issues and increasingly are willing to fund work in this area. For example:

- Economic development organizations will consider funding for energy-related business incubators and for clean energy company technical support
- Environmental agencies and foundations will consider funding for energy efficiency assistance and carbon emissions reductions
- Planning agencies will consider funding for improved transportation efficiency and compact growth planning
- Agricultural agencies will consider planning and support for biofuels feedstocks and improved on-farm energy efficiency and renewables generation

## Goals Summary

In summary, we offer the following goals for local governments and RDO regional planners working on their behalf:

- Be prepared to provide for public health and safety in the immediate circumstances of local disasters and/or supply chain disruptions – including energy and fuels supplies
- Make local government operations a model for entire local economies that are more efficient, less polluting and more locally-sourced
- Create stable, resilient regional economies able to withstand and perhaps even thrive during nearby and faraway disasters and price fluctuations
- Plug economic leaks and create jobs by focusing upon energy efficiency and locally-based energy assets
- Leverage local sustainable values and high quality of life to recruit “clean energy cluster” businesses to the region

## PART 2: THE LOSRC EXPERIENCE TO DATE

The origins of our energy and fuels work at LOSRC lie in the convergence of:

- Our concerns about the integrity of our gasoline supply chain after Hurricane Katrina
- Our ongoing interest in a more resilient regional economy
- Our emerging awareness of energy-related challenges, price escalation, climate change, local/regional air quality concerns, etc.
- The importance of energy to our economy, local governments, and public health, including an awareness of our region's weak economic position on energy and fuels (we import almost all fuels), as well as opportunities to turn our energy "balance of trade" around and "plug the dollar leaks" estimated at \$377 million per year

### Building on Past and Present Energy-related Programs at LOSRC

LOSRC's long record of natural resource and economic development work in the past has provided staff resources and regional credibility that support our strategic planning for energy. These efforts include:

- Waste Reduction Partners is an innovative "retired engineer" technical assistance program which assists WNC businesses, industries, and institutions to become more competitive and efficient by reducing wasted energy and other materials. Since 2000 the WRP program has helped clients save over \$10.6 million in energy and utilities costs, and has an on-going contract with the City of Asheville to perform industrial water efficiency audits.
- The Southern Appalachian Mountains Initiative (SAMI) was an eight-state air quality modeling effort with a focus on national parks and wilderness areas. Modeling included projections of future energy use and incentive programs to support efficient energy use.
- The Clean Air Campaign is a region-wide public education and outreach program intended to reduce air emissions and to inform the public on what they can do to reduce emissions through efficient energy use.
- The Mountain Area Early Action Compact is a regional agreement among local governments to avoid ozone nonattainment designation. Efficient use of energy and fuels is part of this initiative.
- Congestion Mitigation and Air Quality (CMAQ) planning provides the basis for specific energy-related air quality initiatives in the region.
- The Clean Vehicles Coalition and Clean Cities Program focus upon promoting alternative fuels and efficient energy use in the transportation sector.

## Forming an Energy Planning Team of Staff Members and Key External Partners

Our internal “Resilient Regions” team began the effort by networking with other organizations such as area chambers, other economic development organizations, the WNC Green Building Council, local government planning groups and transportation planning organizations to identify the energy interests in the region and their needs, concerns and priorities. We then:

- Conducted a strategic “environmental scan” or SWOT analysis
- Designed a framework for regional energy & fuels planning
- Launched an economic cluster inventory of sustainable energy related businesses
- Researched funding sources and wrote grant applications to keep the work moving ahead

## Strategic Energy Planning

Using a strategic planning framework, we conducted an external scan (Opportunities and Threats) and an internal scan (Strengths and Weaknesses) related to the energy and fuels future of our region. These combine to form a “SWOT” analysis to guide strategic planning. Strengths and weaknesses internal to the region make us more or less vulnerable to external threats and disruptions, and more or less able to capitalize upon the global clean energy and alternative fuels investment boom.

The External Scan included information from:

- The North Carolina State Energy Plan – The State Energy Office’s western representative provided key strategic information on the state energy plan, upcoming legislation, etc.
- The North Carolina state biofuels plan
- The Appalachian Regional Commission blueprint for energy
- Local plans & efforts from other areas, including the State of Illinois, Portland, OR, and Austin, TX
- Our existing programs and partners (Clean Vehicles Coalition, Waste Reduction Partners, Rural Transportation Planning Organization, air quality partners, Clean Air Campaign, agricultural partners, Southern Appalachian Forest Work Group, Southern Roundtable on Sustainable Forests, etc.) to identify and compile SWOT trends and forces.



## SWOT Analysis Summary

- **Strengths of our region & RDO**
  - Abundant supply of untapped renewable energy:
    - Solar
    - Wind
    - Biomass
  - Good track record of energy efficiency and water conservation improvements
  - Strong entrepreneurial culture
  - Strong culture of sustainability, environmental responsibility
  - Numerous sustainable energy businesses already here
  - Several COG programs related to energy and fuels already in place
    - Waste Reduction Partners (WRP)
    - Clean Vehicles Coalition
    - Clean Air Campaign
    - Working lands program (farmland preservation, private forest management)
    - Rural Transportation Planning Organization (RPO) & multimodal transportation planning
    - Smart growth & Brownfields planning
    - WNC Green Building Council (incubated with assistance from LOSRC and WRP)
    - Green housing program under development
  
- **Weaknesses of our region**
  - Huge economic leaks in the form of imported energy & fuels (estimated at \$377 million per year)
  - Virtually no developed native energy or fuels sources – dependent upon other regions and nations for our energy & fuels
  - Lack of information on clean energy and alternative fuels business clusters
  
- **Opportunities for our region**
  - State-level efforts
    - Biofuels plan
    - Energy plan
    - Legislation in the General Assembly (GREEN, H839/S939 SEO funding, SB 3 Renewable Portfolio Standard, etc.)
  - Potential for USDOE Clean Cities designation
  - AdvantageWest Advantage Innovation 2007 fall recruiting campaign
  - Opportunity to get our efforts adopted into The Hub Project's technology cluster
  - Sudden interest of our two major utilities in demand-side management:
    - Both of the state's major electrical utilities must address future demand for electricity
    - Both Duke Energy and Progress Energy Carolinas have announced the development of significant demand-side management programs
    - Duke Energy has proposed an innovative market-driven approach to promote energy efficiency in place of new power generation with a net cost savings to its customers

- A filing to the NC Public Utility Commission for Duke's Save-a-Watt program is under review
  - Progress Energy Carolinas has set a goal for a reduction of 2000 Megawatts of demand through efficiency in generation and distribution and demand side management programs and partnerships
  - If approved by the Public Utility Commission, Duke Energy programs alone will invest over \$50,000,000 annually in NC's sustainable energy marketplace
- Green housing programs emerging at the North Carolina Housing Finance Agency
- North Carolina Rural Economic Development Center's interest in investing in our work
- Strong NGOs such as the WNC Green Building Council, which is offering the NC HealthyBuilt Homes Certification program with the Asheville Homebuilders Association
- **Threats related to energy and fuels:**
  - Continuing geopolitical chaos
  - Continuing severe storms, droughts, abnormal temperature fluctuations:
    - Affecting demand for energy and fuels
      - Disrupting offshore and onshore petroleum production, refining and distribution functions
  - Continued high prices for petroleum;
  - Peak oil
  - De-funding/inadequate funding of North Carolina State Energy Office
  - Inadequate funding of regional planning
  - Continuing conflict over coal:
    - Mountaintop removal mining;
    - Air quality concerns (Sox, NOx, heavy metals)
    - Concerns over contribution to climate change

## Analyzing Patterns of Existing Energy Businesses in the Region

With a directive from the NC State Energy Plan, State Energy Office and Land-of-Sky Regional Council Board, staff formed an ad hoc group in 2006 to explore the concept of promoting clean energy and energy efficiency businesses in the WNC region. The concept began with the identification of existing businesses, industries, and the supportive business development infrastructure that currently supports or could support a sustainable energy sector in the WNC region.

The ad hoc group utilized engineers in the Waste Reduction Partners program to develop lists of existing businesses and industries in WNC that produce renewable or energy efficiency products or services. The ad hoc team also compiled lists of examples of physical infrastructure, business development/research, social infrastructure, applicable workforce development efforts, and early adopters of sustainable energy technologies.

Based upon the preliminary surveys of the ad hoc energy team's analysis of the sustainable energy business clusters, several findings can be made:

- The WNC region has very supportive business development infrastructure for sustainable energy and fuels enterprises
- The WNC region has been first in the state in a number of private and public sustainable energy developments in biodiesel production, Green Power investment, NC HealthyBuilt Homes programs, Clean Smokestack Act emission controls, alternative fuels business, and many others
- While there are few examples of renewable energy products manufacturers, the WNC region does have key supply chain component manufacturers across the mineral, electrical, metal fabrications and forming, and plastic products sectors
- The WNC region already has a good network of renewable energy designers, distributors, installers and service providers. The presence of this business service sector is highly desirable for growing business clusters and recruiting other sustainable energy product manufacturers to the WNC region

The preliminary survey demonstrated the strong evidence that our region could grow an emerging ‘business cluster’ in the sustainable energy and alternative fuels area. The ad hoc group worked with the leaders of The HUB Project economic development initiative and AdvantageWest regional economic partnership to help focus economic development interest, programs and funding on this sustainable energy business cluster. To date, the AdvantageWest regional economic development group will be conducting a target recruitment effort for the energy and environmental sector in December 2007. Leaders of the HUB plan have begun to articulate interest in “green businesses” under its technology cluster. The area's largest electric utility, Progress Energy Carolinas, also has formed a Community Energy Advisory Council to examine a balanced approach for addressing future electricity needs. The approach will include efficiency and renewable energy options. A member of the Land-of-Sky Regional Council staff has been appointed to this advisory council.

## **Funding to Support Energy Planning**

Our conceptual approach is to use whatever resources we have at hand to get started, and to build resources from there. For example, we:

- Used small grants (NADO, Clean Air Campaign) and existing energy/fuels related work (Clean Cities Program, Clean Vehicles Coalition) to get started
- Involved our state partners (DENR Division of Pollution Prevention and Environmental Assistance, State Energy Office, NCDOT, NC Solar Center, etc.) which provided staff assistance, and in some cases financial resources
- Identified sustainable energy-related economic development interests in the region and attended meetings of other organizations (The HUB, A-B Technical Community College Center for Sustainable Technology, City of Asheville’s Johnson Controls charrette, etc.) to identify the energy interests and their needs, concerns and priorities
- Drafted proposals for longer-range funding as opportunities arose (NC Rural Center Research and Demonstration grant and Economic Innovation grant)

## Designing the planning process and the group process

Rather than an energy plan, we designed a dynamic framework for energy planning and implementation. In the overall planning part of the framework, our design covers all the bases in terms of identifying, involving and getting ownership of all the energy interests in the region – but would not attempt to develop a multi-year action plan such as our five-year CEDS. Such a framework provides a vehicle or vessel into which we can drop emerging opportunities, threats, etc. as they arise. The basic group process work, ownership, group legitimacy, etc. will already be established, allowing the group to move quickly and nimbly to develop shorter-term action plans and seek funding for special projects such as USDA 9006 energy loans or USDOE sustainable cities designations.

The “framework group” (described below) is designed have 3-6 meetings to raise the level of awareness and understanding of the region’s energy needs (much like the self-education process our internal energy planning team conducted); plus some basic group organizing and process development; plus reaching agreement upon a consistent process for researching, evaluating and selecting energy-related opportunities and projects for implementation.

The framework group is like an “energy commission” – a respected group that everyone in the region would come to recognize as the “go-to” group for energy/fuels projects. Establishing the legitimacy of this group would be very important. Its legitimacy would be one of the important features to pre-establish during the framework development process.

The framework group is designed to be as small as possible and still meet the criteria of legitimacy, representation of all key interests, and an action orientation. It could divide project opportunities and delegate them to appropriate implementation parties, rather than having all the implementation capability represented in the framework group itself.

The small framework group is designed to be action-oriented. It will be comprised of staff-level people who are “doers” rather than policy board members, but will promote a continual flow of information to and from a much larger group of stakeholders in the region. The group will be able to make decisions and delegate projects in days and weeks rather than months and years. The small energy framework group will maintain contact with a larger set of stakeholder interests by taking issues and ideas out to those groups via our month-to-month contacts with them, as well as by keeping all in the loop via an e-mail “peer group.”

## Stakeholder Identification and Representation on the Framework Group

The following structure for the energy framework group yielded a workable group of about 20 members:

- 1 Public Sector – 7 members:
  - a Local government -- 3
  - b State government --2
  - c Federal government –2
  
- 2 Private for-profit Sector -- 6 members:
  - a Producers & Distributors – 2
  - b Consumers – 4 end users to be targeted:
    - ⇒ Industry -- 1
    - ⇒ Commercial buildings -- 1
    - ⇒ Housing -- 1
    - ⇒ Transportation – 1
  
- 3 Private nonprofit Sector – 4 members representing interests such as green building, efficient transportation, air quality, etc.
  
- 4 At-large open slots – 3 members representing opinion leaders in the energy and fuels areas

## Recent Progress on our Energy and Fuels Planning Work

Activities LOSRC has been engaged in during 2007 include:

- Encouraging AdvantageWest (a regional economic development organization) to focus upon sustainable energy in its fall 2007 recruiting campaign
- Writing Clean Cities program plan and actively pursuing an alternative fuels infrastructure for our region
- Participating on Progress Energy's Community Energy Advisory Committee to advise the utility on how to meet our region's future demand in the most healthy, sustainable and efficient way
- Working with an adjacent RDO and the two RPOs adjacent to the Great Smoky Mountains National Park on alternative fuels and vehicles options for the Park, as well as trans-park transit routes to get cars off the road and improve air quality
- Integrating all this work with our CEDS, and with our air quality and transportation planning efforts
- Designing a longer-range planning process
- Negotiating with a state rural development organization for longer term funding (see next section)
- Working with the NC General Assembly to get sufficient funding for our State Energy Office
- Writing up the preliminary results of our cluster inventory

## Clean Energy and Alternative Fuels Business Development Grant

Our next funding opportunity is a three-year planning and business development project, for which we are applying for an Economic Innovation Grant from the North Carolina Rural Economic Development Center (RC). This project proposes to use business development as a vehicle to implement a clean energy future for our region. Goals of the project include:

1. Pursue economic development approaches that support small and mid-sized energy businesses that are more likely to invest in -- and be invested in -- our community
2. Use a balanced approach to recruiting energy businesses by supporting regional entrepreneurs and selectively inviting outside companies to join growing clusters of energy-related companies within the region
3. Move toward using more regional energy resources in the future, principally energy efficiency and renewables like wind, solar, low impact hydro, and woody biomass
4. Assemble an integrated infrastructure that supports clean energy and alternative fuels businesses of all types -- design, fabrication, installation, retrofit, and maintenance -- with support services such as workforce development, business incubation, capital access and public education
5. Establish an economic development and recruiting policy focused upon local energy resources, local companies, entrepreneurship, diverse sources of energy production, and engaging the public in providing a market for regional energy-oriented entrepreneurs
6. Articulate a value system based on sustainability and resilience in our regional economy as a basis for building public support, regional entrepreneurship and place-based recruitment

## PART 3: HOW CAN YOU DO IT?

### Action Steps

Here are several steps for beginning an energy planning process in your region:

1. Organize an Energy Planning Team composed of internal staff and key outside partners;
2. Use existing expertise or self-educate if you don't have experienced staff;
3. Conduct a cursory strategic plan to identify focus areas for your region;
4. Assess funding and other resources to support your efforts and talk to potential funders to see how your region's needs match their funding and research objectives;
5. Engage your RDO board in the energy issue (tell them your findings, solicit their ideas, build enthusiasm);
6. Identify short-term opportunities to generate excitement and longer-term strategic planning actions;
7. Design a planning process and a public involvement process.

### “What to do on Monday morning”

RDO staffers, board members and other local government officials often hear presentations such as the above “How you can do it” suggestions at conferences, and make notes to take action when they return to the office. Upon returning home, however, these good intentions often are lost in the process of catching up for the time lost at the conference. With this in mind, here are some tips to help RDOs “plunge into” a clean energy and alternative fuels planning process:

- Call a meeting of planning, community development, economic development, and environmental staff
- Assign this paper as background reading before the meeting
- Begin by showing the LOSRC PowerPoint slide show from the 2007 NADO annual conference in Austin, TX
- Discuss your RDO's issues, interests, resources, and expertise in the energy and fuels area
- Make assignments to conduct research, make key outside contacts and report back to the group;
- Create your own version of the LOSRC PowerPoint presentation framing your own regional issues, resources, and SWOT analysis -- and show it to your board

The Land-of-Sky Regional Council energy planning team extends our best wishes to all RDOs in creating clean, secure, robust energy and fuels economies for your regions!

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