

ETown: An Idea Whose Time has Come!

Hodjat Ghadimi, Research Associate
Regional Research Institute
September 2008

The ETown Vision

6 Es: Energy, Environment, Electronic, Experimental, Educational, and Ecological

The ETown will be a flagship for starting an era of zero-carbon footprint. It has the potential to capture the attention and imagination of the entire world. Among its most salient objectives are to become:

- An energy sufficient, environmentally responsible, knowledge-based economy
Technopole
- A combination of a *Science Park* and a *Smart City*
- A City as a *Laboratory*: dedicated to “living experimentation” of truly sustainable development
- A *research Nexus* for energy, environment, economic, engineering, design, and social research
- A setting for *Lifelong learning* for all ages
- A city of tomorrow to – Live, Work, Learn, and Play – in *harmony with nature*

Why Now?

Three megatrends in the past 3 decades characterize our time:

- (1) Globalization – global village and a more integrated world;
- (2) ICT Revolution – creating a shrinking world and formation of knowledge-based economies; and
- (3) Sustainable Development – increasing awareness about limits to growth, energy and environmental challenges, and concerns about future generations and sustaining the current development pattern.

The world has reached a turning point. The critical question: *Can development be sustained in an integrated world using accumulated human knowledge and the new technologies?*

General systems theorists often refer to *matter*, *energy*, and *information* as fundamental categories. As civilization has progressed from agricultural societies to industrial to post-industrial societies, there has been a shift of attention and importance from matter to energy to information. Some contend that these three fundamental categories are the sources of wealth and power. In the long run, matter and energy are becoming dearer while information is becoming cheaper. Just as matter and energy are mutually convertible, the same may well be true of matter-energy and information. Societies that excel in substituting information and knowledge for energy and matter will be those that thrive in the long run.

The Grand Challenges

After food, fossil fuel is humanity's most important source of energy. With looming peak oil, and with growing environmental concerns, the end of the era of cheap energy is on the horizon. Can we rise to the *Grand Challenges* of substituting information and human knowledge for dearer and environmentally problematic energy? This is the question that has captured the world's attention and imagination. The interdependence of development, energy, and environment is broadly recognized, and directions for the future are widely debated at global, national and local levels.

Global Debates

The United Nations Environment Program (UNEP) was established in response to mounting concerns over environmental degradation, and numerous international efforts have ensued. Notables are the World Commission on Environment and Development in 1983 (the Brundtland Report); the Earth Summit 2002 in Johannesburg South Africa; the Intergovernmental Panel on Climate Change, and the UN Conference on Environment and Development (UNCCD), also known as Earth Summit, Rio 92, which established a comprehensive plan of action for addressing both environment and development goals in the 21st century known as Agenda 21. Among the Rio 92 principles are:

- Principle 4: "In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it."
- Principle 25: "Peace, development and environmental protection are interdependent and indivisible."

And reinforcing the ETown concept is this conclusion from the IPCC 2007 report: "The capacity to adapt and mitigate is dependent on socio-economic and environmental circumstances and the availability of information and technology."

The National Agenda

The US leads the world in energy consumption and depends heavily on foreign sources for oil. Growing concerns over import dependency and global warming have made energy and environment the central focus of numerous institutions both in public and private sectors in the country. Energy and environmental issues also figure high on the political agenda and are hot topics in the current presidential election campaign. Obama's energy plan, for example, includes helping to "create five million new jobs by strategically investing \$150 billion over the next ten years to **catalyze** private efforts to build a clean energy future" and to weatherize one Million homes annually." Likewise, McCain declares that "We need to unleash the competitive forces of the free market to encourage clean alternatives--wind, solar, tide, nuclear, & clean coal."

Private initiatives

The private sector follows suit by keenly trying to reposition itself to seize the new opportunities in the surging green economy movement. Green products, processes and services are appearing and entrepreneurship in alternative clean energy is on the rise. T. Boone Pickens is perhaps the prime example of entrepreneurs investing in the future of energy, but legions of smaller scale endeavors also are underway.

Why Here?

This region enjoys a number of *strategic advantages* at this turning point in history, and is ideally positioned to play a leading role in the transition from the fossil fuel to the post-fossil fuel era as it did in the earlier cheap energy era.

Our energy heritage

Our energy heritage may be the most important of any of this region's strategic advantages. The region is the birthplace of the commercial energy sector and the heartland of this nation's energy supply with abundant fossil fuel resources. While oil seeps had been seen in the Middle East, Asia and other places throughout the world, the majority of oil discoveries in the first 50 years were in North America, mostly in the United States. The global petroleum industry first got its start in the Appalachian Basin in Titusville, Pennsylvania in the summer of 1859, where the first well drilled hit "black gold" at a depth just less than 70 feet. Thus began an international search for petroleum, forever changing the course of modern history. Pennsylvania was responsible for 1/2 of the WORLD'S production of oil until the East Texas oil boom of 1901, and West Virginia actually led the nation in oil production in 1899. While the glory days of petroleum in the northeast are probably over, this region was the most important oil-producing region in the world for several decades of the late 1800's.

The region is endowed with abundant coal reserves with discovery and mining dating back to as early as 1724. In many accounts coal fueled America's Industrial Revolution in the 19th Century

and it fueled America's naval battleships in the early 20 Century. Coal is critical to this region's economy and will continue to play an important role in the foreseeable future. In the early days of the coal industry there was little consideration for the environment but today coal mining and use is one of the major global environmental concerns. There is a tremendous amount of investment to make this valuable resource environmentally safe. West Virginia has 4% of all coal reserves, produces about 15 % of total coal production in the country, and accounts for about 50% of US coal exports shipped to 23 countries around the world. West Virginia has the potential to lead the world in clean coal technology development and implementation.

Natural attractions and amenities

The region is "almost heaven" with rolling scenic hills, streams, rivers and lakes. There are four discernable seasons in the region with mild climate, experience of wind, rain, snow, and sunshine but almost no harsh threat of natural disaster.

Rural character is an asset

The rural character and combination of farming and light industry in the region has helped to sustain the region's pristine environment for a large part. A pattern of 'living in harmony with nature' is deeply rooted and welcomed in the region.

Proximity to Washington DC

This region enjoys easy access to the most important capital city in the modern world. Washington DC is not only a hub of world and national politics, but it also enjoys a concentration of the headquarters of many knowledge economy firms. It also hosts various influential world development agencies, including the World Bank, the IMF, and numerous research centers and think tanks.

Potential Relevant Expertise

Our region hosts numerous universities, including West Virginia University, the University of Pittsburgh, Carnegie Mellon University, along with a number of smaller institutions. The Department of Energy's National Energy Technology Laboratory has offices in Pittsburgh PA and Morgantown WV, from which the WV High Tech Corridor extends southward toward Charleston. These and other institutions provide a rich source of policy, science and engineering expertise.

What is in it for WV and WVU?

Energy Davos?

ETown *can put the region on the world map* by a process known as place branding. Place branding is the practice of applying brand strategy and other marketing techniques and disciplines to the economic, social, political and cultural development of cities, regions and countries.

The race is now on to ensure that governments of countries, cities and regions fully understand the complexity of place branding, the patience and wisdom required to plan and implement it and the fact that if places really want to change their reputations, they have to actually change.

How will ETown become a 'marketing product', a brand? The 'product' idea was inspired by the success of the annual World Economic Forum held in Davos. This small city in Switzerland, with inventiveness, a great deal of organizational work and the obsessive persistence of the locals, has turned a small ski resort in the Alps into a Mecca for business people and politicians, where Bill Gates, George Soros, Tony Blair and others feel honored if they are invited to give voice to their views.

Upstage WV

ETown has the potential to upstage WV on a par with PA, VA, and Washington DC. It can bring a significant inflow of capital investment in buildings and infrastructure at the stage of construction and attract R&D funds on an ongoing basis. ETown can help transform the traditional extractive industrial base of West Virginia to a high-tech, knowledge-based economy.

Environmental Preservation

ETown and its emphasis on sustainability can pave the way for the co-existence of environmental preservation, energy sufficiency, and economic development. By incorporating smart growth, new urbanism, and green design concepts in its physical organization, ETown would be an exemplary sustainable urban and regional development pattern in full harmony with nature.

WVU's Strategic Plan

ETown could serve as a focal point for the implementation of the new Strategic Initiative for Energy and Environment, and can potentially help attract the best minds in the world in both engineering and social sciences.

A Multidisciplinary Flagship Project

ETown has the potential to integrate research in engineering, design, and social science disciplines throughout the development, promotion and implementation of the project.

An Instructional Laboratory

The project can contribute to a rich “laboratory” experience of undergraduates and graduate students alike.

Funding and Support – Big Science!

Federal Agencies

This is envisioned as Science writ large; a project that could catch the attention of major federal funding sources such as:

U.S. Climate Change Science Program: \$2 Billion/Year. Seeking better knowledge and understanding to inform policy

U.S. Climate Change Technology Program: \$3 Billion/Year. Seeking better and more cost-effective solutions

Foundations

Example: The Rockefeller Foundation – John D. Rockefeller has been one of the most influential people not only starting oil industry but also shaping capitalism and the way of life we know today: an era that has been characterized by relatively abundant and cheap energy - and it all began in this region. Perhaps there is a similarly critical role to be played by Jay Rockefeller in this turning point and start of post oil era. The Benedum Foundation serving West Virginia and Southwestern Pennsylvania is another candidate for funding.

A Public-Private-Partnership

ETown also can and should be a profitable adventure and can be promoted as a one-of-a-kind investment opportunity. It is possible to bring in real estate investors and developers as has been done in the case of science and technology and other public-private-partnerships.

Convince entrepreneurs

ETown, backed by universities and NETL, may have great potential for attracting major investment backing from such entrepreneurs as T Boone Pickens or even Mylan Puskar.

Vision 2015

West Virginia's strategic plan for science and technology calls for building the state's research capacity by recruiting scientists and engineers, constructing state-of-the-art science and engineering facilities, and developing new technology-based businesses. ETown broadens and embodies Vision 2015 by providing an integrated and comprehensive framework to achieve measurable growth in technology-based economic development.

Imagine West Virginia

Established as an R&D entity dedicated to transforming the economy of West Virginia has declared energy and environment as its top priority. They may have strong interest to join forces to promote ETown.

Final Words

ETown is no small project! It is a bold concept with the caliber of becoming a globally recognized endeavor capable of totally rebranding this region and putting it on the world's map. A revamped futuristic image of the region can help transform the state of West Virginia by attracting public and private investments in high-tech 21th Century knowledge economy ventures. For WVU, ETown can serve as an umbrella for numerous inherently interdisciplinary research and applied projects with great educational value and with potential to attract public and private funds. But the vision requires full support of the authorities at highest level in WVU and WV first to take off.