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Shifting from the Economics of Obesity to Sustainable Energy

The Potential for Clean Energy, Low-Carbon Gains through a 'Sustainable Energy Utility.'

by John Byrne, Francis Hodsoll and Kristen Hughes

In the aftermath of the climate talks in Copenhagen, it is evident that fundamental change is needed in how we write energy and environmental policy. Even without much "light" at the end of the Copenhagen tunnel, a clean energy economy is emerging.

From 2006 to 2008, energy efficiency and renewables attracted **\$12.5 billion** in U.S. private investment via venture capital funds according to a [Center for American Progress, 2009 report](#). If investments continue to grow, a significant level of reduction in carbon will be realized while the UN tries to recover from self-inflicted wounds at Copenhagen.

It seems to us that we should be asking how we might deliver a revolution in energy services similar to the one in information. We take for granted today what was not possible just a few years ago. Access to information and services without the constraint of bureaucratic gatekeepers is ordinary now but was unimaginable before the Internet. In the blink of an eye, information and its delivery has been revolutionized, with start-ups such as social networking sites achieving extraordinary success in only a few years.

A growing number of communities are developing comprehensive energy approaches that promise fundamental lifestyle changes similar to what we witnessed with information. These experiments include a "net zero energy" buildingscape (Austin, Texas), carless transport during certain hours (London), low/no-carbon communication (Google's green data network) and industrial ecology-based manufacturing (Kalundbord, Denmark). All of these initiatives represent efforts to boldly craft 21st-century answers to the new era's economic and social needs that go beyond the carbon accounting model hotly debated for 15 years. Indeed, these options seek to remove the problem rather than waste time counting molecules.

Unleashing the social and market forces that are needed to achieve a real transition to sustainability will require new institutions. The Sustainable Energy Utility (SEU) is just such an institution and [was recently mandated by law in Delaware](#). Also by law, the state of Delaware is now required to reduce in-state energy use from all fuels by 30% before 2017 and source 20% of electricity from renewable sources by 2020. The SEU does not spend time penalizing failure to switch to clean energy; instead, it marshals capital and policy to reward and support those communities and businesses willing to build an entirely new future.

Just What Is a Sustainable Energy Utility, and Why Do We Need It?

Designed as an independent, non-profit, and financially self-sufficient entity, the SEU delivers energy efficiency, conservation and distributed renewable energy to everyone. Its distinction lies in its potential to help overcome the formidable disincentives to investing in sustainable energy, such as the misalignment between the utility provider's and customer's returns on investment and the government rules that create risks for the future value of investments. The SEU seeks to capitalize on the fact that with sustainable energy the individual benefits may be small in isolation, but they are massive in aggregate.

The SEU counteracts these challenges by providing a framework for the delivery of distributed energy services that are competitive, financeable and low/no-carbon in character. One method of accomplishing these ends is to monetize future benefits through service guarantees. The SEU assembles the capital needed to invest in sustainable energy projects and recovers its investments by sharing in the monetized

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gains.

Other methods for phasing out the use of 'obese' energy resources borrow from models in Vermont, California and New York. Learning from others and offering new tools for energy sustainability, the SEU is becoming a model in its own right with Washington DC, Philadelphia and Seoul, South Korea investigating its use.

The SEU is a major departure from the supply-side approaches practiced by most U.S. energy utilities. Its economics depends upon reducing rather than increasing supply. The SEU also differs in its approach from traditional demand-side utility policies by placing the economics of users, rather than utilities, as its foremost concern.

Creating 'Green' Jobs and Unleashing Market Forces

With national unemployment hovering around 10%, the SEU is uniquely suited to create sustainable jobs. Investments in onsite renewable energy can produce 2-5 times as many new, permanent jobs as investments in conventional energy. Investments in energy efficiency and conservation could generate 3-4 times as many new, permanent jobs as conventional energy options. Importantly, the bulk of these jobs cannot be outsourced.

To achieve success, the SEU approach requires the creation of an economic climate and incentives to attract investors. The SEU's financial resources include tax-exempt bonds and the proceeds of carbon allowances sold in auctions of the Regional Greenhouse Gas Initiative operated by Northeast states. These are targeted to provide seed capital to companies and communities prepared to take large-scale actions.

The SEU is a bold strategy to change how energy systems interact with ecosystems and society. While it has had a 'driver's license' for less than one year, its achievements with a 'learner's permit' have been substantial. The SEU enabled Delaware to be the first state to fully deploy American Reinvestment and Recovery Act appliance rebate funds; and its 'green bond' authority is working to invest over \$25 million in green infrastructure that will drive down the energy requirements and costs of its public building stock.

On top of these achievements, the SEU has spurred new solar power projects that could move the state from 8th place to 1st place in installed solar capacity per-capita among the 50 states; and it has opened a 'sustainable communities' program that has attracted pledges of more than \$40 million in private equity. Not bad for eight months' effort in a small state.

Dr. John Byrne (pictured top, left) is Distinguished Professor of Energy and Climate Policy, and Director of the Center for Energy and Environmental Policy (CEEP) at the University of Delaware. He is a shared recipient of the 2007 Nobel Peace Prize with other researchers of the Intergovernmental Panel on Climate Change.



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Jim Pierobon

February 22, 2010

Delaware may not be the largest market for bundling distributed renewables and efficiency projects but it is worth watching -- and replicating -- what succeeds there.

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