

CARBON REDUCTION TECHNOLOGIES AND THE REGULATORY SYSTEM – CAN YOU GET THERE FROM HERE?

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“With over 40,000 regulatory jurisdictions in the United States, Green House Gas mitigation technologies will be impacted by legislation and regulation intended to address a multiplicity of other purposes.” - From Summary Workshop on Carbon Management Gaps & Barriers - October 21-22, 2009

“The average lead time to get provisions regarding a new technology into the building, electrical, and fire, life-safety codes adopted and enforced by over 30,000 units of state and local government is between 3 and 6 years. In addition it takes between 2 and 8 additional years for most jurisdictions to adopt these provisions and some never adopt them” – Robert Wible at IEEE Smart Grid Technologies Conference – January 21, 2010

“We must build the infrastructure of tomorrow” – President Barak Obama, State of the Union Address – January 27, 2010

The Issue

Our nation’s scientific and engineering communities and the Obama Administration are making a considerable effort to stimulate the United States’ fulfilling its growing global commitment to reduce the carbon footprint of all of our citizens and our private sector. That effort includes changes in everything from power generation, manufacturing, farming, to building energy consumption and transportation.

While the President was in Copenhagen in December reaffirming the U.S. commitment to carbon reduction, the Department of Energy began releasing \$ billions of funds to stimulate alternative low to no carbon technologies. At the same time our nation’s engineering and scientific communities were trying to identify actions that need to be taken to make effective carbon reduction a reality.

The Founder Society's October 21-22, 2009 "Workshop on Carbon Management Gaps and Barriers in Electric Power and Transportation Sectors" contributed to that latter effort by bringing together national leaders in these fields. They applied an unbiased, interdisciplinary, state-of-the-art engineering expertise to assure that engineering communities, educators, the general public, and public policy makers have the best-available information, analysis, sound engineering advice, and recommendations regarding the mitigation of green house gas emissions.

Among the gaps and barriers identified in that workshop, and included in the four major findings and ten recommendations in their January 25, 2010 Summary Report, are the need for our country to immediately undertake a concerted effort to identify and undertake a program to eliminate or significantly reduce "legal, regulatory and acceptance barriers to implementation of options (technologies to reduce green house gas emissions)." Without undertaking such action, the implementation of carbon reduction technologies could be delayed for years and in some cases even derailed; we won't be able to get there from here.

How is that so? First of all the very Federal nature of our country's governmental structure leaves our nation's police powers with regulatory authority over health, welfare and safety in the hands of the 50 state and 4 territorial (and tribal) governments. Within their structures most states leave the promulgation of rules, regulations, and enforcement process and procedures governing construction and land use in the hands of the over 30,000 units of local or regional government. While every level of government has expressed concern with the need to adopt policies and programs to address the twin and related issues of Global Warming and Sustainability, no one presumes to call for a Constitutional Convention to try and restructure that 18th century arrangement of power and responsibility to meet the challenges of the 21st Century. We therefore have to begin as soon as possible to take a serious look at what can be done to identify and address the all too real barriers that a fragmented legislative and regulatory system presents to changes in technology and national needs.

Here, by level of government, are just a few examples of some regulatory areas that pose potential barriers to rapid deployment of the needed technologies:

EXAMPLES OF KINDS OF LEGISLATIVE / REGULATORY BARRIERS THAT NEED TO BE STUDIED & ADDRESSED

Issues controlled at local government level:

Zoning & Land Use authority - Including the siting of power plants, location of power transmission lines & pipelines

Building Codes & Standards - In 30 of 50 states Building codes including electrical, mechanical, plumbing, structural, fire life safety are both adopted and enforced by the local level of government. Even in the 20 or so states where codes are adopted at the state level, most states allow local amendments and all 50 states rely upon local administration and enforcement of their codes. While 48 states do have preemptive energy conservation codes for buildings, all administration and enforcement is at the local level.

Local transportation and roads – While states set many of the standards for road construction and construction of state highways, local governments control location and construction of non-state and non-Federal transportation and roadways. This includes many light rail and bus systems and the fuels which power those systems.

Issued controlled on regional level

Special economic development zones, fire, water districts, - Coastal development zones, fire & water districts all can create barriers to technology deployment. This includes bans on power transmission lines, pipelines, urban growth boundaries, and limits on access to water use. While recent Supreme Court decision on eminent domain gives some recourse to Federal, state and local governments to overcome these barriers, that process can be extremely slow.

Regional transportation authorities and regional transportation planning - While some state departments of transportation play a role here (especially as regards funding), regional authorities dominate the decision making process for application and use of new technologies and fuels.

Issues controlled at State level

Environmental quality, Safety and Natural resources – In addition to conforming to Federal EPA standards for air, water quality, and toxic wastes, many states have established their own additional standards for one or more of these areas such areas as drinking water quality and waste water.

Utility rates & Insurance – State Public Utility and State Insurance Commissions set rates and oversee the regulation of these industries which have direct relevance to development and implementation of Carbon reduction technologies

Interstate issues under interstate compacts – Regional (multi-state) compacts regulate or coordinate the regulation of pipelines, transportation facilities and systems and some resource management areas.

Issues controlled at National level (by Congress and Federal agencies)

Setting of national energy & environmental policies and goals The Federal government through the Environmental Protection Agency and other agencies set national standards for safety, water, air, waste, endangered species, toxics, among others, that have direct impact on carbon management technologies.

Mandated Federal architectural accessibility & minimum energy standards for appliance efficiency and construction (adoption and enforcement are totally at the state and/or local levels) & the interoperability for Smart Grid technologies.

Funding – Grants. While the recently proposed Federal budget has identified increased grant funding to EPA (and the Department of Homeland Security), it also has proposed reductions in Federal spending that will severely reduce the amount of dollars made available to state and local governments to support implementation of Federal statutes and regulations governed by other Federal agencies.

Lastly, Carbon Management Legislation - Pending legislation regarding Carbon Capture contained in the Waxman-Markey Bill – HR 2454 poses a wide range of Federal, State, Local government statutory and regulatory concerns. A recent paper by Arnold Feldman, JJDS Environmental Inc., & George Holliday, Holliday Environmental Services, Inc., on ‘CCS Legislation/Regulatory Issues’ provides a detailed discussion of these issues.

ADDITIONAL ISSUES:

Two additional items need to be addressed here as well.

1. Overwhelming Complexity:

Given the complexity of the above national (Federal, State, Local) legislative and regulatory systems, and as noted in the above referenced paper by Feldman and Holliday, the entire area carbon capture, building pipelines and carbon sequestration reservoir sites requires a detailed understanding of the interface between statutes at each level of government and the purpose and intent of such Federal Statutes as regulations as (but not limited to): National Emission Standards for Hazardous Air Pollutants, National Environmental Policy Act, Clean Air and Clean Water Acts, the Endangered Species Act and the National Historic Preservation Act.

Moreover their study notes that the siting of high pressure CO2 Storage capture sites may well require the relocation of those homes which will in effect sit on top of them. Lastly, while not in their paper as this is a technical issue rather than legislative/regulatory issue, the location of

carbon sequestration reservoirs in regions of high seismic risk has a number of potential consequences which require serious evaluation.

Working with early to mid-1900 Bureaucracies

All of the above statutes, rules, regulations, processes and procedures that interface and touch upon the implementation of Carbon Reduction Technologies are overseen, administered and enforced by over the bureaucracies in 40,000 jurisdictions that for the large part are little changed since they were first formed. In the building, fire and life safety codes arena for example, less than 10% of the jurisdictions that adopt and or enforce such regulations use information technology beyond email and fax machines in their programs; less than 8% use ePermitting systems, and less than ½ of 1% accept and conduct building plan reviews electronically. While these technologies where they are used have been shown to reduce by 70% the amount of time it takes to move a building through the regulatory process, funding to put these technologies in place has been severely restricted by the current economic recession with its severe drop in construction volume.

With President Obama in his first State of the Union Address calling for the nation to “build the infrastructure of tomorrow,” why should we waste billions of precious dollars in both taxpayer and private sector funds and years of time by going through archaic regulatory administration systems?

What Can Be Done?

Implement the Carbon Management Gaps and Barriers Workshop Summary Report Recommendation – “A concerted effort (is needed) to identify regulation and legislation that would apply to promising new technologies and simplify the process to avoid unnecessary delays.”

The recent paper by Feldman and Holliday makes an excellent start at analyzing the above issues as they relate to Carbon Capture and Sequestration. Similar papers need to be identified or research needs to be conducted to cover each of the technologies that will be involved in the reduction of green house gas emissions. Moreover, those studies need to include a review of technologies being considered for the development of the nation’s Smart Grid and public policy initiatives to support Sustainable Development for the nation.

Coordinate Studies and Research Findings into Cohesive Legislative / Regulatory Agenda

Once the above studies have been compiled or completed they need to be brought together and coordinated into a cohesive set of national legislative and regulatory streamlining recommendations to federal, state and local governments and to the public and private sector stakeholders in green house gas emission reduction. It needs to be emphasized here that “streamlining” is not code for “regulatory abandonment!” Streamlining is working with each level of government to make our regulatory system as effective and efficient as possible – which means bringing it into the 21st Century!

The Founder Society and its member groups should consider serving as a national voice and catalyst for undertaking these two efforts and thus fulfill the Summary Report’s overall recommendation that: **“A streamlined regulatory and permitting system that meets societal and environmental objectives in a timely manner must be in place if new GHG mitigation technologies are to be deployed at the pace and scale associated with GHG goals.”**

This author hopes the readers of this article will support such an endeavor.