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*House Committee on Agriculture Public Hearing
Fayetteville, North Carolina*

Testimony of W. Steven Burke · President and CEO, Biofuels Center of North Carolina

Mr. Chairman and Committee members: I am Steven Burke, President and CEO of the Biofuels Center of North Carolina. A private non-profit corporation, the Center was established by the North Carolina Legislature in 2007 to implement a policy, strategic, and agricultural imperative: to gain large internal capacity for alternatives to petroleum-based liquid fuels.

The Center is located on North Carolina's Biofuels Campus, in the Granville County town of Oxford. The 426-acre Campus is a former lead USDA Tobacco Research Station established in 1910 and turned over to the state in 2005. The movement from tobacco to biofuels nicely symbolizes evolutionary changes in state and national agriculture.

North Carolina's goal is ambitious: by 2017, 10% of the state's liquid transportation fuels will come from biofuels grown and produced internally. By current estimates, up to 600M gallons will be required.

The goal is not impossible, if a key recognition underlies policy and activities: development of large biofuels capacity must be seen as landscape changing, actually and figuratively, and as such must be judged nothing less than a societal and civic imperative. Such thinking shapes North Carolina's approach and, as a result, our response to Farm Bill and USDA programs.

Meeting so ambitious a goal requires long-term strategic thinking as well as varied partnerships, each based on shared commitment to gain from the state's biofuels endeavor. Collaborations include obvious partners, such as USDA, the North Carolina Department of Agriculture, the Farm Bureau, and others in the agricultural sector. New partnerships also create innovative solutions, some unconventional. For example, the Center is shaping with the NC Military Growth Task Force a project to highlight the connection between our state's military bases and regionally grown biofuels. Like other partnerships, it will reveal the non-standard thinking required for a landscape-changing new sector.

That changed landscape is manifest 19 miles due west of this room in the small town of Raeford, in one of North Carolina's three most economically disadvantaged counties. The newly opened Clean Burn Fuels production facility, the largest ethanol site on the east coast, will soon yield over 60M gallons annually. How can we think about the value and duplication of this facility across North Carolina's land?

Human life has been shaped by dependency upon the land – for food, for key materials, and for much energy. Although the last century was shaped by non-land based energy sources for most vehicular transportation, common sense and strategic reality now impel movement from carbon-emitting, variably available, politically destabilizing, and environmentally intrusive petroleum. Costly by many measures, that about-to-end-era freed the land unrealistically and only temporarily from its place in energy production.

Agriculture and the land are, so to speak, *back and strengthened* . . . for energy production. Both must provide expanding capacities to fuel our vehicles as well as our diets and materials for daily life.

Are we equipped to gain so much from our land and our agriculture, both crop- and tree-based? What approaches and policies will enable our doing so?

The questions are key for the sustained survival, under favorable terms, of our societies and way of life. They are also necessarily important to the thinking of both this Committee and North Carolina.

I address the questions under two large headings:

- NORTH CAROLINA'S NATIONALLY UNIQUE BIOFUELS ENDEAVOR
- GAINING FROM CURRENT AND FUTURE FARM BILL PROVISIONS

NORTH CAROLINA'S NATIONALLY UNIQUE BIOFUELS ENDEAVOR

Strong in agricultural heritage and capabilities, North Carolina is well prepared to shape an expanded role for its land. By policy and by establishment of its Biofuels Center, the state has committed to enrich its agricultural sector with growth and production of biofuels. Because doing so also enriches our economy, our energy security, and those rural areas most in need of vitalization, the commitment is the best juncture of policy, persons, and societal gain.

Six factors and recognitions shape North Carolina's approach to biofuels development:

1 · Biofuels Development is Technology Development

Biofuels must be seen and shaped as a *technology* – demanding and complicated, exploratory and entrepreneurial. Despite large production of ethanol in the mid-west and Brazil, the technology is new and unfolding, at an early stage comparable to main-frame computers. Like any new technology, biofuels will take time, prove expensive, yield risks and setbacks, and necessarily solve its problems. As technologies must, it will engage our best thinking, arouse entrepreneurial imagination, trigger new governmental programs and policies, yield large economic return, force leadership, and make the place better. Although based on agriculture –the first technology around which human societies formed – biofuels is as technologically complex as the devices in our pockets. Failure to understand this

complexity lessens the speed and effectiveness with which programs and funding move biofuels along the process of technology development, from societal need and research to outcome and change.

2 · A Comprehensive Approach is Required

North Carolina's approach to biofuels development is comprehensive, based on the recognition that piecemeal attention to resources and tasks yields less success. A dovetailed framework of strategy and activities must integrate every aspect of biofuels, from societal policy to new fuels enthusiastically placed in vehicles. The nation's only state-based agency constituted with a comprehensive mandate, the Center addresses over time: research, growing and agronomic analysis, pilot and large scale production, company development, distribution, land and land use, environmental and policy issues, and public preparation. Specific requirements are varied: farmers and landowners must commit to new feedstocks and new uses of biomass; economic analyses must verify that money can be made in growing, production, and distribution; consequential issues must be addressed, for large impact will be seen on land, biodiversity, water, and the environment. Credibly addressing issues will in fact likely prove crucial in coming years to sustained growth of the biofuels sector; addressing them is a responsibility as well as the task of a life-based technology. Problems must be solved; models for sustainability must be crafted. While few would argue that these are the tasks of biofuels development, no other federal or state models appear to have assumed the task of identifying, funding, and addressing them in a comprehensive framework.

Encouraging such models can prove valuable to the USDA, and will perhaps prove necessary for the success and survival of a national biofuels endeavor expanding in feedstocks, geography, and strategic importance.

3 · Sustained Commitment is Required

North Carolina grants that a long-term commitment is required. Technologies, a landscape changing sector, and visionary goals do not come about quickly or easily. As such, a sustained endeavor, over 15+ plus years, will yield daunting tasks and developing groundwork in the short term but verifiable and large return in the long-term.

4 · The Endeavor is Civic in Scale and Responsibility

Biofuels both springs from and shapes large societal imperatives: science and technology, agriculture and growers, crops and forests, policy and strategy, public behaviors and car culture, land and land use, energy and comprehensive energy policy, economic gain, production and distribution, climate, verified and functional sustainability, and something of daily survival in a changing world. As such, biofuels is nothing less than a civic endeavor. Smart places, agencies, and policy leaders should include it among imperatives for deliberate civic attention. Synthesis among the imperatives is challenging but required. As with any civic and societal mandate, the key framing question is constant and large: *how can this endeavor make better our place and our future?*

5 · Feedstocks and Biomass Must be Sustainable

Sustainability of varied crop- and tree-based resources over time must be ensured, for the feedstock requirements and drawdown in coming years – particularly if petroleum is constrained more quickly than expected – will be staggeringly large in North Carolina and beyond. Environmental, agricultural, and economic imperatives must be simultaneously served and balanced. While farmers are accustomed at thinking in such terms, not all parties seeing gain from biofuels necessarily will be, particularly in the short-term.

Leadership in the sustainability of this sector, through new programs and policies as well as model projects, will be increasingly needed. The USDA and the Farm Bill can be visible and forceful.

6 · The Imperative is Unquestioned

Smart places and leaders understand now that gaining alternatives to petroleum based fuels is not just desirable, not a luxury, and not just a useful addition to the agricultural sector. Biofuels are requisite for our future. Our best problem-solving and most targeted programs must be shaped to ensure their availability and benefit.

GAINING FROM CURRENT AND FUTURE FARM BILL PROVISIONS

The 2008 Farm Bill purposefully strengthens the agriculturally based biofuels sector and verifies the value of purposeful biofuels development to rural economic gain, energy independence, and the agricultural endeavor.

Key biofuels-directed emphases and programs have proven soundly useful:

- High priority for research and funding for cellulosic feedstocks, such as switchgrass and woody biomass, targets both national and North Carolina development.
- *Title VII Research* programs for research, development and demonstration of biomass-based renewable energy and biofuels are increasingly essential. Steadily expanding needs will be inevitable in coming years, particularly if fuel crises intrude.
- *Title IX Energy* programs usefully trigger and support a new sector with grants, loans and other incentives. The valuable Biomass Crop Assistance Program, supporting the production of dedicated crop and forest cellulosic feedstocks, will grow in importance and can be expanded to even more innovative new crops and new kinds of contract growing. The earlier mentioned Clean Burn Fuels facility gained from Title IX loan guarantees.
- *Title XV Trade and Taxes*, continues appropriate biofuels tax incentives, but also appropriately reduces those for corn-based ethanol as it expands tax credits for cellulosic ethanol.
- Other programs – in total yielding as close to a comprehensive framework as can be expected of a complicated federal bill – each contribute and should be maintained if not strengthened, including: increased emphasis on cellulosic ethanol production through blender tax credits; promotion of cellulosic feedstocks production; grants and loan guarantees for biofuels research,

development and production; studies of the environmental impacts of increased biofuels use; expansion of the biobased marketing program to encourage federal procurement of biobased products; and research on the use of low-value forest biomass for energy.

- The required joint study by USDA, DOE, EPA and DOT on the infrastructure needs and approaches for expanding the domestic production, transport and distribution of biofuels can prove imperative if the nation is to comprehensively, with minimal agency overlap and maximum national impact, shape a years' long biofuels mandate

The 2012 Farm Bill can well build on these appropriate programs with new thinking, expansion, or thrusts in eight areas:

- 1 · Evaluate the national agricultural biofuels status. Analysis of outcomes, learning, and experience for feedstocks, growing, and production can funnel new programs into targeted areas of emphasis – accelerating both economic and strategic gain.
- 2 · Force attention, by mandate and bully pulpit if not by programs and innovative activities, to comprehensive models at the state and regional levels.
- 3 · Strengthen by every means the application of core agricultural capabilities, programs, and research to a new and still unfolding sector.
- 4 · Increase loan guarantees and other incentives for a growing number of production facilities varying in type and technology.
- 5 · Develop and implement bold and practical strategies, policies, and programs to match a new and expanding sector to ever more land – and, in doing so, ensure that new biofuels working lands are exemplars of environmental, agricultural, and community stewardship.
- 6 · By mandate and programs, catalyze and support programmatic, policy, and behavioral attention to the imperative for sustainability. Research, data, and models will necessarily be developed, monitored, and evolved over time.
- 7 · Envision and develop, with national urgency, a program to brand technologically-based agricultural biofuels as an innovative and remunerative sector worthy of compelling both equivocal and new farmers.
- 8 · Initiate leadership in identifying the international issues of crop- and tree-based agricultural biomass. In time, as for any resource of international importance and survival, new policies will be required. Forward-thinking Farm Bill provisions can benefit the American biofuels endeavor and also catalyze smart policy thinking in an increasingly competitive new sector worldwide.

BIOGRAPHICAL INFORMATION

W. Steven Burke

President and CEO, Biofuels Center of North Carolina

Mr. Burke became President and CEO of the Biofuels Center of North Carolina in March of 2009. He served as founding Board Chair from July of 2007 until that date, and as Acting President since August 2008.

The Biofuels Center is a private non-profit corporation established by the State of North Carolina to craft and implement a policy commitment for a sustained statewide biofuels initiative. The Center is judged the nation's only agency working within a long-term and comprehensive framework for all aspects of biofuels development.

Mr. Burke departed the North Carolina Biotechnology Center in 2009 as Senior Vice President for Corporate Affairs. Over 24 years, he helped shape the approach and strategies of the Center, the world's first targeted initiative for biotechnology development. He was responsible for varied activities and programs addressing strategic, governmental, policy, societal, and international issues. Among key outcomes: oversight of *Growing North Carolina's AgBiotech Landscape*, shaping multi-party long-term state vision; development of a nationally unique program to strengthen niche biotechnology through five regional offices across North Carolina; development with partners of *North Carolina's Strategic Plan for Biofuels Leadership* and the Biofuels Center of North Carolina; activities and policy recommendations shaping forest biotechnology and establishing the Institute of Forest Biotechnology; envisioning and establishing with partners the Bent Creek Institute, working in Western North Carolina at the juncture of biotechnology with native plants; and a collaborative relationship with the German State of North Rhine – Westphalia.

Mr. Burke has been an active participant in the national and international life science and biotechnology communities since the mid-1980's. He speaks frequently throughout the United States and internationally on life science technology development, with particular attention to:

- The policies, issues, and development of biofuels and forest biotechnology.
- The factors, strategies, and issues shaping effective biotechnology and life science communities.
- The international and cultural imperatives of biotechnology development.

Mr. Burke serves on the Executive Committee of the Biofuels Center. He is a board member of the Bent Creek Institute and is Vice Chair of the board of directors of the Biotechnology Institute, a non-profit corporation working for strengthened biotechnology education nationwide. From 2001-2009, he served as founding board chair and board member of the Institute of Forest Biotechnology, a private non-profit corporation addressing the scientific, industry, and societal issues of forest biotechnology worldwide. He served two terms – in 1995-96 and 1997-98 – as chair of the 100+ member Council of Biotechnology Centers of BIO, the Biotechnology Industry Organization, and served on the Council's Board from 1993-

2000. He served from 1994 until June of 1999 on the Emerging Companies Section Governing Board of BIO.

Prior to joining the North Carolina Biotechnology Center in 1985 as its fifth employee, Mr. Burke taught Instructional Design at North Carolina State University in Raleigh, North Carolina. He has an undergraduate degree in Religion and Literature from Duke University, and a Master of Education in Instructional Design from the University of North Carolina at Chapel Hill. He owns, curates, and informs about the nation's largest collection of American folk art buildings.

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