

Louisiana's Alternative Energy Policy: How the 'Bayou State' Could Become the 'Biomass State'

by John W. Sutherlin, PhD

This article first appeared in *Louisiana Progress Journal*, August, 2009. Used by permission of author.

Introduction.

Louisiana ranks among the largest oil and natural gas-producing states in the US and has for many years (See Figure below). As almost anyone in the state knows, when Jules Clement of the small town of Jennings noticed gas bubbles on his property, the race was on to develop (and profit from) the first well. Texas wildcatters

would descend on this small community almost overnight. This well would begin producing on September 21, 1901, and a new era of economics and politics began. According to the Louisiana Oil and Gas Association (LOGA), within a decade Louisiana would discover natural gas near Shreveport and build a refinery that would take oil from across the state through an ever increasing complex network of pipelines.

According to a Minerals Law Institute publication, Louisiana has drilled almost a quarter of a million wells

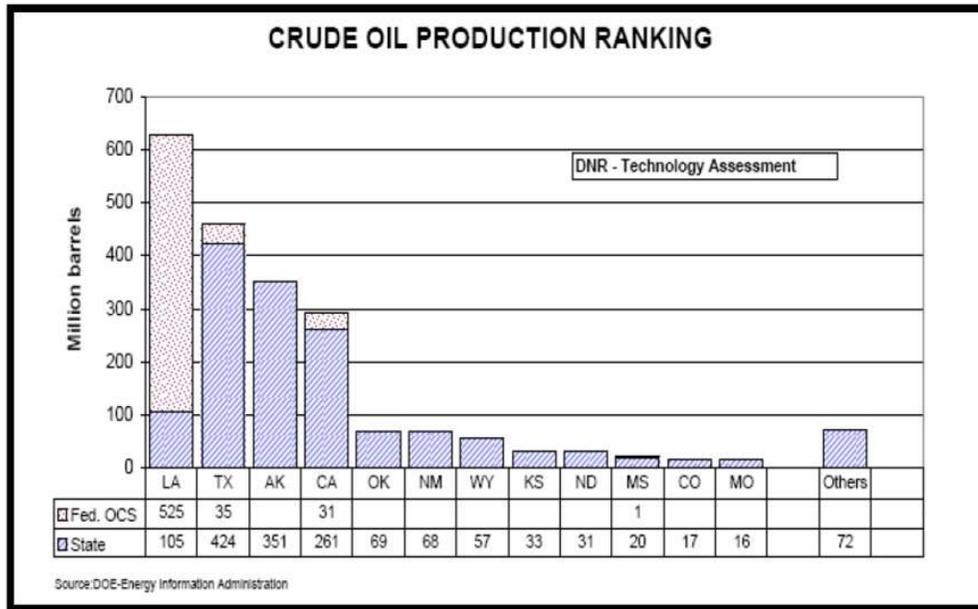


Figure 1. Louisiana Department of Natural Resources, Technology Assessment, Crude Oil Production Ranking

(Cusimano and French, 2003). Since Louisiana has a tremendous offshore oil sector, it remains a major player in the oil industry and increasingly the refining sector (See Figure 2).

As Crouch (2007) demonstrates, Louisiana's peak production years were in the early 1970s. As for the national trends, Baker Hughes (a Houston based company) has been tracking the number of rigs since 1944. A recent count shows that nationally the year 1981 was the peak (more than 4,500 active rigs) and there has been a remarkable decline ever since to the present (less than 1,000 active rigs).

These changes are in large part attributable to national efforts at

conservation and extension of environmental standards to those in the oil and gas sectors. In some ways, the efforts to ensure compliance with an environmental regime have progressed to better manage groundwater, drinking water and surface water (Rosenbaum 1998). For states like Louisiana, so heavily dependent upon the oil and gas sectors, times have become more difficult economically. These difficulties are only exacerbated due to a lack of a comprehensive energy policy for the state.

National Issues.

When prices for gasoline began to spike in 2008, where they eventually topped \$4 per gallon at the pump (this stemmed

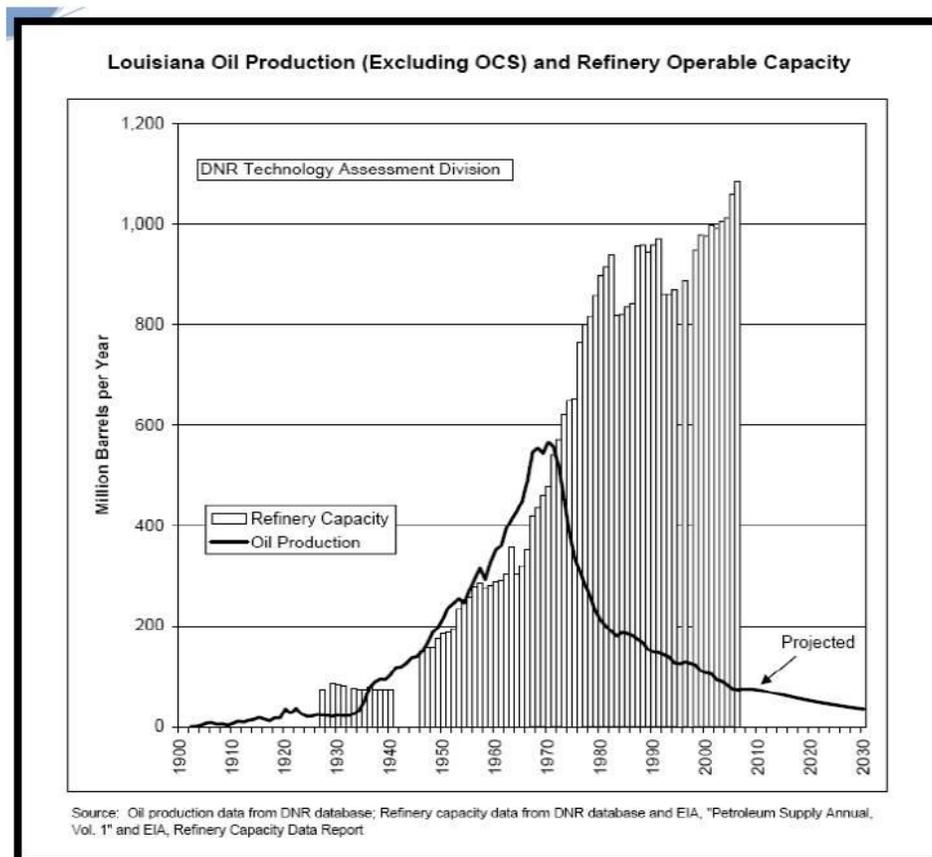


Figure 2. Louisiana Department of Natural Resources, Technology Assessment, Production vs Refining Capacity

from \$140-plus per barrel of oil), there was a renewed interest in non-fossil or alternative fuels, such as solar, wind or biomass (i.e., making fuel from plants or wood debris). As some have suggested, the trend, if this can be called a trend, in the future pricing of oil is volatility (Mouawad 2009). Couple the so-called 'go green' movement with the apocalyptic doom associated with those claiming the world would soon run dry (Goodstein 2004; and Roberts 2004), Louisiana would appear to need to adjust, if it could, to the new rules of a greener game.

However, alternative fuels are dependent on higher prices for traditional fuels (i.e., oil and gas) and price supports to level the distribution playing field (Davis 1993). And, to be fair, while many environmentalists, conservationists or those simply wanting to be less reliant upon traditional means would turn to alternative fuel sources, the vast majority of energy consumers will only switch if there is no perceived disruptions to level of service and for a better price (Pearce and Turner 1990). Still, there is considerable debate on the actual 'costs' of relying upon fossil fuels that are non-market driven, such as contributing to climate change or depending on hostile Middle Eastern states for energy (Grafton et al. 2004). But, for Louisiana, what does all this mean?

Louisiana's Energy Structure

Managing the oil and gas sectors in Louisiana seems like a straight enough proposition, that is until one tries to meander through the state's constitution and the array

of agencies and commissions charged with administering certain aspects of the industry. This is important because if Louisiana is to develop an alternative energy sector, then having an energy structure will be essential. During the fiscal legislative session in 2009, much of the budgetary pain felt by all people in Louisiana had to do with relatively low prices for oil and natural gas over the previous year's sky-high prices. The conundrum is that in order for Louisiana to recover, the rest of the nation must shoulder the burden of high energy costs (Alford 2009). Many bemoaned the fact that despite the immense pressures on Louisiana, the 2009 legislative session felt short with few solutions (PAR 2009).

Bureaucracies. First, the bureaucracies will be considered. The Louisiana Department of Natural Resources (LDNR) was created in 1976 (R.S. 36:351) "to preserve and enhance the nonrenewable natural resources of the state, consisting of land, water, oil, gas, and other minerals, through conservation, regulation, and management/exploitation, to ensure that the state of Louisiana realizes appropriate economic benefit from its asset base." Specifically, the LDNR Office of Mineral Resources is charged with overseeing this enormous sector. The person who heads this agency is appointed by the Governor. But, as many things are in the Bayou state, overlapping political offices are sometimes created to encourage patronage over sound policy-making. In Article IV, Section 10 of the Louisiana Constitution, the Department of Agriculture and Forestry (LDAF) was

created and is directed by a Commissioner popularly elected from a statewide campaign run at the same time as the Governor's race. The Commissioner is charged with, inter alia, promote and protect agriculture and forestry (Office of Forestry) and has primacy over rural community development. Further, The LDAF has an Office of Marketing and Agro-Economic Development specifically charged "to promote the development and growth of markets for Louisiana agricultural and forestry products and to develop the channels of distribution through which these products are sold." Now, add to this bureaucratic mixture the Louisiana Department of Environmental Quality (LDEQ). This agency has struggled for legitimacy as it was branched off the LDNR in the mid-1980s. Originally, the LDEQ was "envisioned to manage all environmental concerns." According to their website, "the initial argument was whether areas such as wildlife and fisheries, parks and recreation, wetlands, scenic streams, litter control, drinking water, and agriculture and forestry were considered environmental management areas." Most of these areas remained with other departments and this has resulted in past clashes between agencies where both LDNR and LDEQ administrators are appointed by the same Governor, but are pursuing different agendas, often because of federal mandates. Finally, the Louisiana Department of Transportation and Development (LDOTD) has the duty to oversee massive public works projects and, obviously, road usage. They would have to

become involved for any energy project that intended on using Louisiana's roads, bridges and waterways.

Executive Branch. Next, the Executive Branch of state government will be reviewed. There are actually two entities within this structure that can impact energy policy in Louisiana: the Governor and the Public Service Commission (PSC). Clearly the Governor sets an agenda to lead that goes beyond his (or her) articulated duties and responsibilities as found in the Constitution. One aspect would include cabinet appointments. If the Governor selects a person to serve as, for example, administrator of LDNR with a strong background in renewable fuels or alternative fuels, then that sends a strong signal to the Legislature to pass 'green' legislation. On the other hand, appointing a pro-oil and gas person to head LDEQ does just the opposite. Yet, the Governor can develop an agenda through Louisiana Economic Development that invests in new technologies or new companies. On the other hand, the Governor may develop a task force charged with reviewing the issue, or sign an executive order encouraging citizens, businesses and government agencies to 'go green' or reduce their carbon footprints.

Often these measures are purely political and have little long-term merit. Consider, for example, that Governor Mike Foster issued an executive order on October 25, 2001 (followed by several others that supported the original one) that established the Louisiana Comprehensive Energy Policy Advisory Commission. The charge for this

Commission was that it “shall review existing state energy policies and shall develop recommendations for a comprehensive energy policy for the state of Louisiana.” In doing such, its focus would primarily be on the oil and gas sectors, but it would also “determine the feasibility of the state constructing, or encouraging the construction of electrical cogeneration facilities to increase the supply of electricity and reduce its cost” and “review efforts by the federal government to implement a national energy policy and recommend ways that Louisiana can influence and participate in that plan to benefit the citizens of Louisiana and the nation.” Needless to say, this effort failed to produce a viable energy policy for the state, and only resulted in a couple of tax credits for the existing oil and gas sectors. When one moves into the present, with so many alternative energy technologies being promoted (many with limited scientific justification), the need for such is overwhelming.



Figure 3. The PSC Advertisement for the Geaux Green Campaign

Yet, the PSC has significant input into this process. According to Article IV, Section 21, subpart B, the PSC “shall regulate all common carriers and public utilities and have such other regulatory authority as provided by law. It shall adopt and enforce reasonable rules, regulations, and procedures necessary for the discharge of its duties, and shall have other powers

and perform other duties as provided by law.” This means that the PSC can set policy regarding electricity generation, usage and pricing across the state. The PSC is made up of five (5) Commissioners elected in districts almost as big as Congressional ones. Thus, these Commissioners wield massive power. This may help explain why some previous Governors (Huey P. Long) and those wanting to become Governor (Foster Campbell) have gone this route. In 2007, the PSC developed a pilot program with Entergy Gulf States based on a voluntary green pricing tariff (GPT) program. This program was entitled ‘Geaux Green’ (See Figure 3). The idea here was to encourage citizens and businesses to voluntarily pay higher fees to offset future costs of greener or alternative energy. This was done through the use of radio, television, billboards, bill inserts and internet advertising in the Lafayette and Lake Charles markets. Despite months of publicity, millions of dollars and massive commitments from private businesses, barely 1,000 people expressed any interest whatsoever. The long-term viability of this program and others like this remains doubtful.

The Legislature. Like all other states, except Nebraska, Louisiana has a House and a Senate. In each chamber, standing committees represent the continuing issues that are important to the state. On the House side, there is one committee that directs energy policy now that the natural resources and environmental committees have been

collapsed. The Natural Resources and Environment Committee reviews all bills on matters of minerals management, natural resources generally and materials that travel through pipelines. What is striking is that this committee has no direct responsibility for alternative energy or renewable fuels. In the Senate, the same set of issues is dealt with, except the upper house has been able to hold onto the Environmental Quality Committee as a separate entity.

On the other hand, several legislators, especially State Senators, have taken the lead on alternative energy and renewable fuels development. While this seems at first glance unlikely, this may be the best place for energy policy to be constituted. Senators Gerald Long and Nick Gautreaux emerged as savvy green

politicians through a series of resolutions and bills offered to support various portions of a total energy package for Louisiana. This is not to suggest that Louisiana (nor the nation) will at anytime soon rely mainly on energy from sources other than fossil-fuel based. Market pressures will circumvent any efforts to push 'King Oil' off its throne. Before analyzing their efforts, a reasonable attempt will be made to determine which of the major alternative sources of energy are most desirable for Louisiana.

Louisiana's Alternatives.

The major technologies that will be considered here are solar, wind and biomass. Within the scientific community, there is much agreement that the developed world has many more decades to go before we run

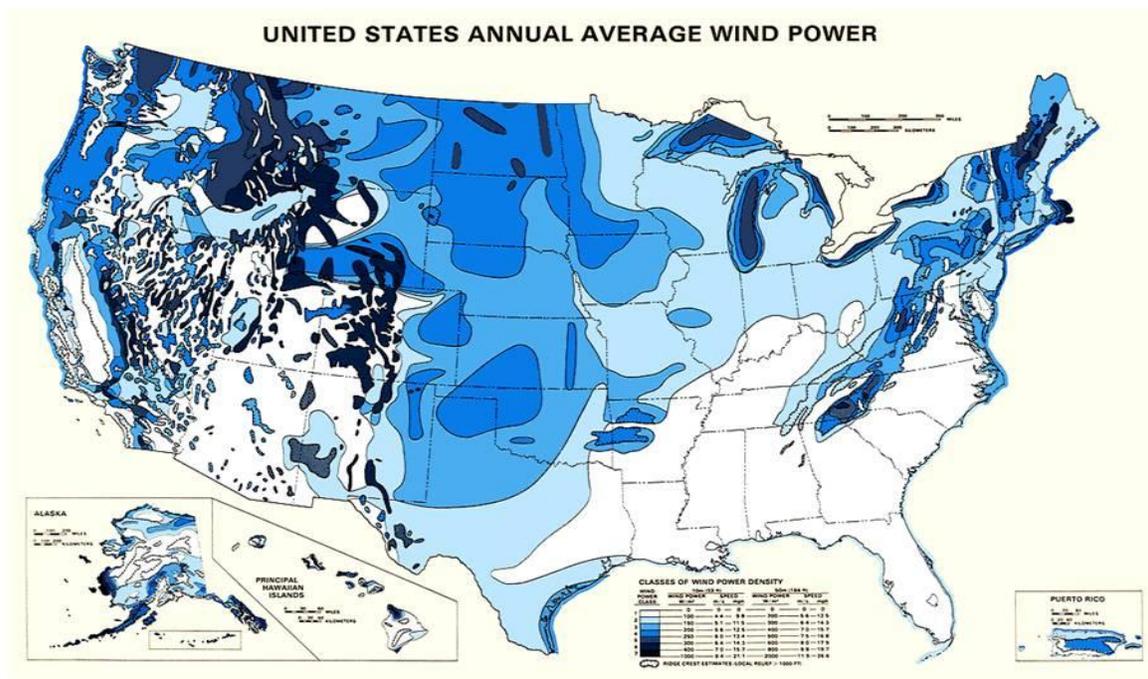


Figure 4. American Wind Energy Association, Optimal Wind Location

out of oil or natural gas (Dresselhaus and Thomas 2001). On the other hand, experience has taught us one thing: ignoring an issue does not eliminate it. Thus, the present and future generations will spend much time and money researching to find the optimal solution or solutions for a given area.

Solar. For example, those states in the southwest, such as Arizona or New Mexico, have ample sunlight compared with northwestern states, such as Oregon or Washington; therefore, the former have a technical and economic justification for pursuing solar power over the latter. Yet, even in the former states, natural gas is still cheaper to exploit than solar power (MMS 2006). Louisiana does not have a sufficient number of sunny days to support a solar

only solution. But this would not preclude solar power from being a partial way out of the energy malaise.

Wind. This brings the discussion to wind power or turbines. According to the American Wind Energy Association (See Figure 4), the optimal locations (as represented in the darker colors) are in the mountain states, such as Idaho and Colorado. Louisiana, as well as all other Gulf South states, is among the least favorable for wind development. In other words, Louisiana does not have the average wind speed necessary for energy production through the use of a wind turbine.

As early as 1981, experts had dismissed Louisiana's potential for accessing wind power (French 1981). But, Louisiana does have access to areas that do

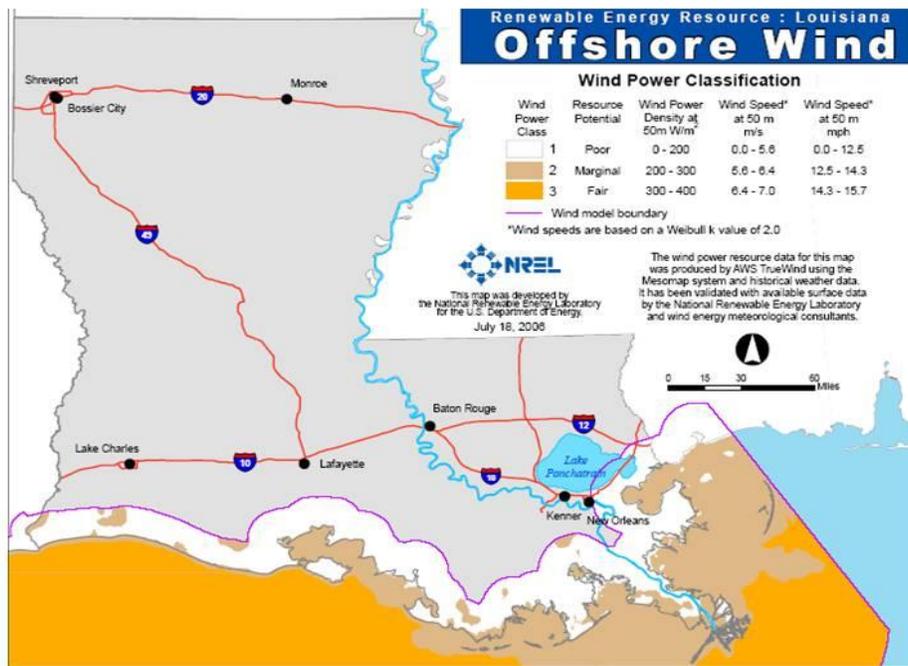


Figure 5. Louisiana's OCS Wind Potential

have sufficient wind speeds: the outer continental shelf. Louisiana may be able to exploit winds off its coast to develop power (See Figure 5).

There are clearly huge costs for building turbines and recovering any power generated offshore. Still, this may be an area worthy of review although it could only be part of any total energy policy for the State of Louisiana. A recent study demonstrates that states with a strong energy policy, such as those with renewable portfolio standards (RPS) and mandatory green power options, positively correlate with wind power development on a state level (Menz and Vachon 2006). However, these RPS states are almost entirely located in those areas where wind power is optimal.

Still, Louisiana may be able to use the same offshore infrastructure for any wind power project on the OCS (Crouch 2004).

Biomass. Over the past several years, there has been a plethora of studies and articles published on the subject of converting biomass to energy. Clearly, the focus has been on ethanol from corn and/or sugarcane. Whether in the US or Brazil, who is often considered a world leader in this sector, unreported subsidies (Pimentel and Patzek 2007), excess and unsustainable waste or residual production (Braunbeck et al. 1999), and sustainable crop production (Smeets et al. 2008) have called into question the reliance upon corn or sugarcane for long-

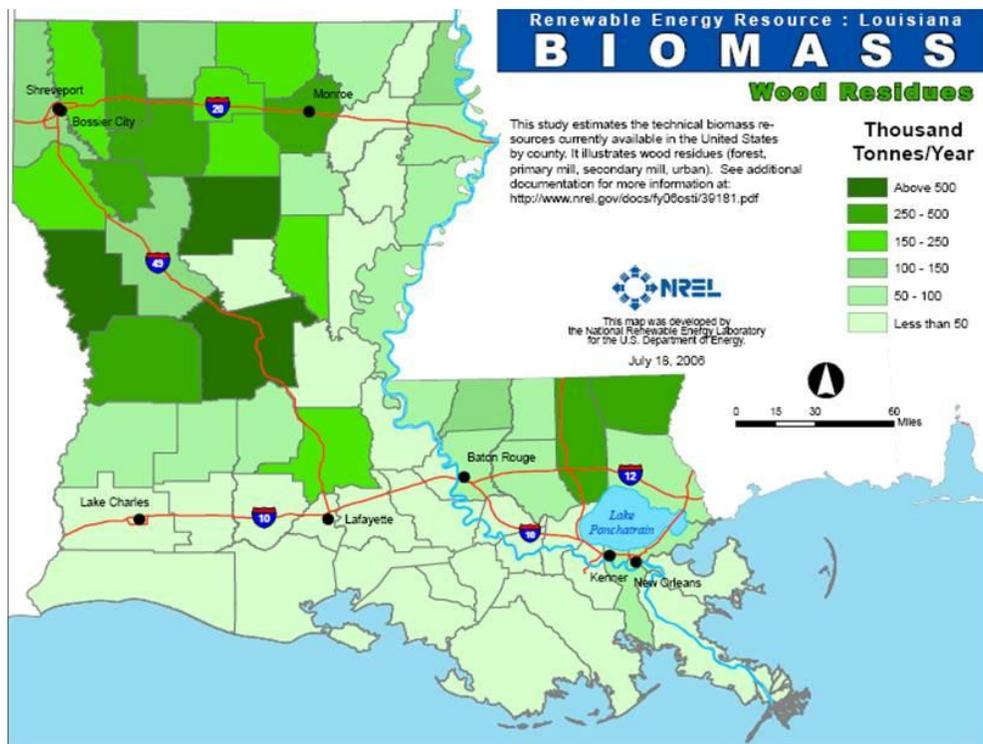


Figure 6. Louisiana's (Non-food Crop) Biomass

term energy independence. On the other hand, biomass-to-energy projects that depend on non-food crops, such as switch grass or wood, increasingly appear more exciting. While there is still considerable debate about the overall ability for biomass to discharge oil or natural gas as the fuel of the future (Berndes 2003), whether abandoned landfills contain sufficient quantities of biomass (McKendry 2002), or if pyrolysis of wood is best for all wood types (Mohan, Pittman and Steele 2006), the verdict so far is rather good for biomass.

Louisiana has an enormous biomass supply located in that part of the state where oil and gas, especially the OCS sector, are less prevalent (See Figure 6 above). Thus, the potential for Louisiana to become a significant player in the emerging biomass-to-energy industry is great. What is lacking is the governance structure together with leadership.

Recent Legislation.

As stated earlier, Senators Long and Gautreaux took major steps in addressing the state's inadequate energy system. First, Senator Long authored a resolution to develop a Wood Products Development Foundation, to encourage the creation of electricity from woody biomass. On a more substantial cord, Senator Gautreaux offered several more bills in this session to ensure that he remains the 'greenest politician' in Louisiana. In the 2007 session, Senator Gautreaux secured the passage of Act 271, which provides a state tax credit for wind

and solar energy systems, up to fifty percent of the total cost, but not to exceed \$12,500. Not long afterwards, Gautreaux was named the 'father of the Louisiana solar industry' by the Louisiana Clean-Tech Network. In the 2009 session, he followed this with efforts to push for biomass to have the same tax credits as solar and wind, but this effort eventually got bogged down in a conference committee. Further, he added legislation to allow tax credits for those purchasing clean burning autos, including those using compressed natural gas.

Dr. Sutherlin is an Assistant Professor of political science and Co-Director of the Social Science Research Laboratory (SSRL) at the University of Louisiana at Monroe.

On another note, there was also legislation looking to monitor the biomass industry where all such funding through state or federal incentives would be handled through the LDAF, but the Governor's Office pressed to have the head of LED be a co-administrator on such matters. This additional layer of bureaucracy from another appointed position (answerable to another state-wide office) appears to be an extra layer too many.

Conclusions.

Louisiana does not at present have the bureaucratic, political or regulatory structure needed to become the 'Biomass State'. However, that issue may be addressed with continued pressure from the Legislature and a Governor willing to use some of his political capital to develop an enduring commitment to energy policy. Perhaps legislation authorizing a state

agency (i.e., LDNR or LDAF) as the central authority would be a step in the right direction.

Undoubtedly, there is a passion for biomass on local levels unlike anything found with either solar or wind power (Estill 2005). Louisiana must find progressive leaders willing to capture that enthusiasm and harness that power for change. If not, then years from now, Louisiana will look back and shake its head bemoaning its lost opportunity to become a progressive energy state.

Bibliography

- Alford, Jeremy. 2009. "Will Oil Save the Day?" *Baton Rouge Business Report*, June 30.
- American Wind Energy Association. 2009. Optimal wind power locations. <http://www.awea.org/faq/usresource.html>.
- Angelini, Luciana G. et al. 2009. "Long-term evaluation of biomass production and quality of two cardoon (*Cynara cardunculus* L.) cultivars for energy use," *Biomass and Bioenergy*, 33 (5): 810-816.
- Berndes, Göran, Monique Hoogwijk and Richard van den Broek. 2003. "The contribution of biomass in the future global energy supply: a review of 17 studies," *Biomass and Bioenergy*, 25(1): 1-28.
- Braunbeck, O. et al. 1999. "Prospects for green cane harvesting and cane residue use in Brazil," *Biomass and Bioenergy*, 17 (6): 495-506.
- Connelly, James and Graham Smith. 1999. *Politics of the Environment: From Theory to Practice*. London: Routledge Press.
- Crouch, Bryan. 2004. "Offshore Louisiana Wind Power." Baton Rouge: Department of Natural Resources, Technology Assessment Division.
- _____. 2007. "Louisiana Crude Oil Refinery Survey Report," 16th ed. Baton Rouge: Department of Natural Resources, Technology Assessment Division.
- Cusimano, Charles V and T. Michael French. 2003. "Developing a Louisiana Energy Policy." Baton Rouge: LSU Law Center, 50th Mineral Law Institute.
- Davis, David H. 1993. *Energy Politics*, 4th ed. New York: St. Martin's Press.
- Dresselhaus, M. S. and I. L. Thomas. 2001. "Overview Alternative Energy Technologies," *Nature*, 414(15): 332-337.
- Estill, Lyle. 2005. *Biodiesel Power*. Gabriola Island (Canada): New Society Publishers.
- French, Mike. 1981. "Evaluating Wind Energy Potential in Louisiana." Baton Rouge: Louisiana Department of Natural Resources, Research and Development Division.
- Goodstein, David. 2004. *Out of Gas: The End of the Age of Oil*. New York: W.W. Norton.
- Grafton, R. Quentin et al. 2004. *The Economics of the Environment and Natural Resources*. Oxford: Blackwell Publishing.
- Hempel, Lamont C. 1996. *Environmental*

- Governance: The Global Challenge*. Washington, DC: Island Press.
- Louisiana Department of Agriculture and Forestry. 2009. <http://www.ldaf.state.la.us> .
- Louisiana Department of Environmental Quality. 2009. <http://www.deq.louisiana.gov> .
- Louisiana Department of Natural Resources. 2009. <http://dnr.louisiana.gov> .
- Louisiana Department of Transportation and Development. 2009. <http://www.dotd.louisiana.gov> .
- Louisiana Division of Administration (Governor's Office). 2009. <http://doa.louisiana.gov> .
- Louisiana Oil and Gas Association. 2009. <http://www.loga.la> .
- Louisiana Public Service Commission. 2009. <http://www.lpsc.org> .
- McKendry, Peter. 2002. "Energy production from biomass (part 1): overview of biomass," *Bioresource Technology*, 83 (1): 37-46.
- Minerals Management Service. 2006. "Technology White Paper on Solar Energy Potential on the U.S. Outer Continental Shelf," available at <http://ocsenergy.anl.gov> .
- Mohan, Dinesh and Charles U. Pittman, Jr., and Philip H. Steele. 2006. "Pyrolysis of Wood/Biomass for Bio-oil: A Critical Review," *Energy Fuels*, 20 (3): 848-889.
- Mouawad, Jad. 2009. "One Year after Oil's Price Peak: Volatility," Green, Inc, Blog (New York Times). July 10. <http://greeninc.blogs.nytimes.com> .
- Pearce, David W. and R. Kerry Turner. 1990. *Economics of Natural Resources and the Environment*. Baltimore: The Johns Hopkins University Press.
- Pimentel, David and Tad Patzek. 2007. "Ethanol Production: Energy and Economic Issues Related to U.S. and Brazilian Sugarcane," *Natural Resources Research*, 16 (3): 235-242.
- Public Affairs Research Council of Louisiana. 2009. "Short Session, Short on Ideas," *Commentaries*. June 26. <http://www.la-par.org/>
- Roberts, Paul. 2004. *The End of Oil: On the Edge of a Perilous New World*. New York: Houghton Mifflin.
- Rosenbaum, Walter A. 1998. *Environmental Politics and Policy*, 4th ed. Washington, DC: Congressional Quarterly.