CENTER FOR ENERGY STUDIES LOUISIANA STATE UNIVERSITY

NEWSLETTER–FALL 2000

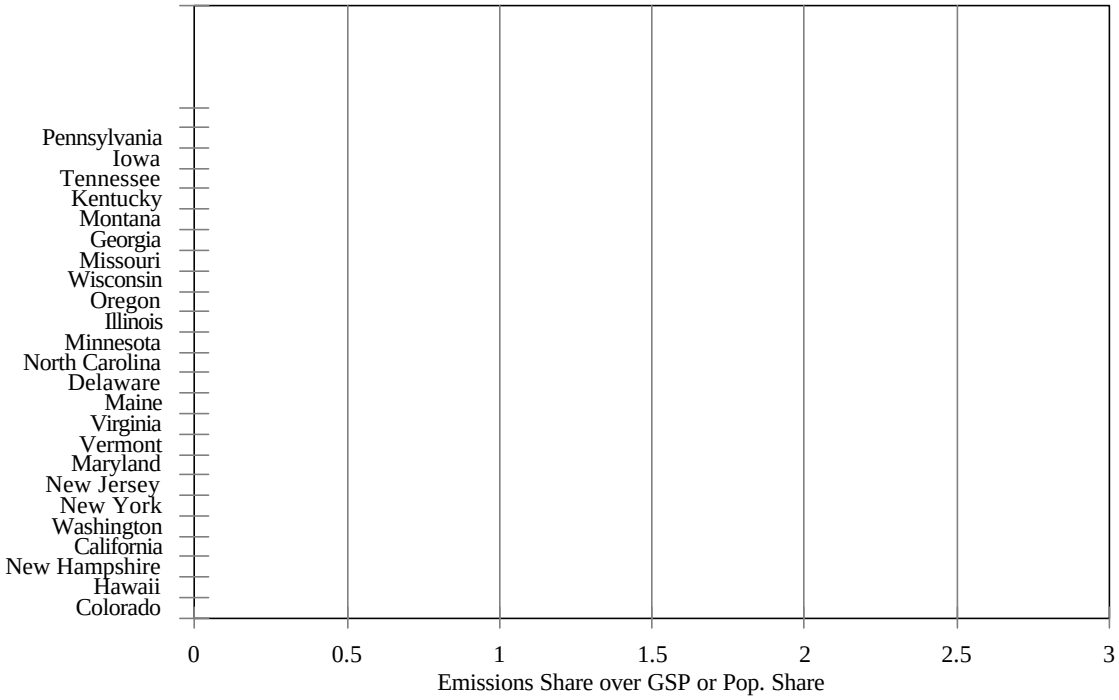
Greenhouse Gases in Louisiana

Fear of sudden, dramatic changes in global climate patterns caused by concentration of carbon dioxide and other "greenhouse gases" in the atmosphere is a major consideration driving both energy and environmental policy. Using a grant from the Energy Section of the Technology Assessment Division of the Louisiana Department of Natural Resources, the Center for Energy Studies (CES) recently completed two reports on Louisiana's greenhouse gas emissions–an inventory describing emissions from Louisiana's major sources and a modeling exercise estimating how emissions might change in the next 15 years under four different scenarios.

The inventory is part of a national effort by the U.S. Environmental Protection Agency (EPA) and a prerequisite for participation by the state in further greenhouse gas monitoring and control programs. EPA has prescribed a method for estimating emissions which is applied to state-level data to estimate the state's greenhouse gas emissions. Table 1, from the inventory, compares the magnitudes and shares of total emissions attributable to major sources in Louisiana and in the nation as a whole.

Table 1. Comparison of the Total U.S. and Louisiana Greenhouse Gas Emissions

Sectors	Louisiana		U.S. Total		Louisiana Emissions as a Share of U.S. Emissions
	Emissions (MMTCE)*	Sectoral Distribution	Emissions (MMTCE)	Sectoral Distribution	


Pennsylvania
Iowa
Tennessee
Kentucky
Montana
Georgia
Missouri
Wisconsin
Oregon
Illinois
Minnesota
North Carolina
Delaware
Maine
Virginia
Vermont
Maryland
New Jersey
New York
Washington
California
New Hampshire
Hawaii
Colorado
0
0.5
1
1.5
2
2.5
3
Emissions Share over GSP or Pop. Share

Hawaii

model to translate expected patterns of growth in major emitting sectors into expected, future emissions. The model was used to compare emissions under four different scenarios.

The first three were based on energy forecasts developed by the U.S. Energy Information Administration (EIA).

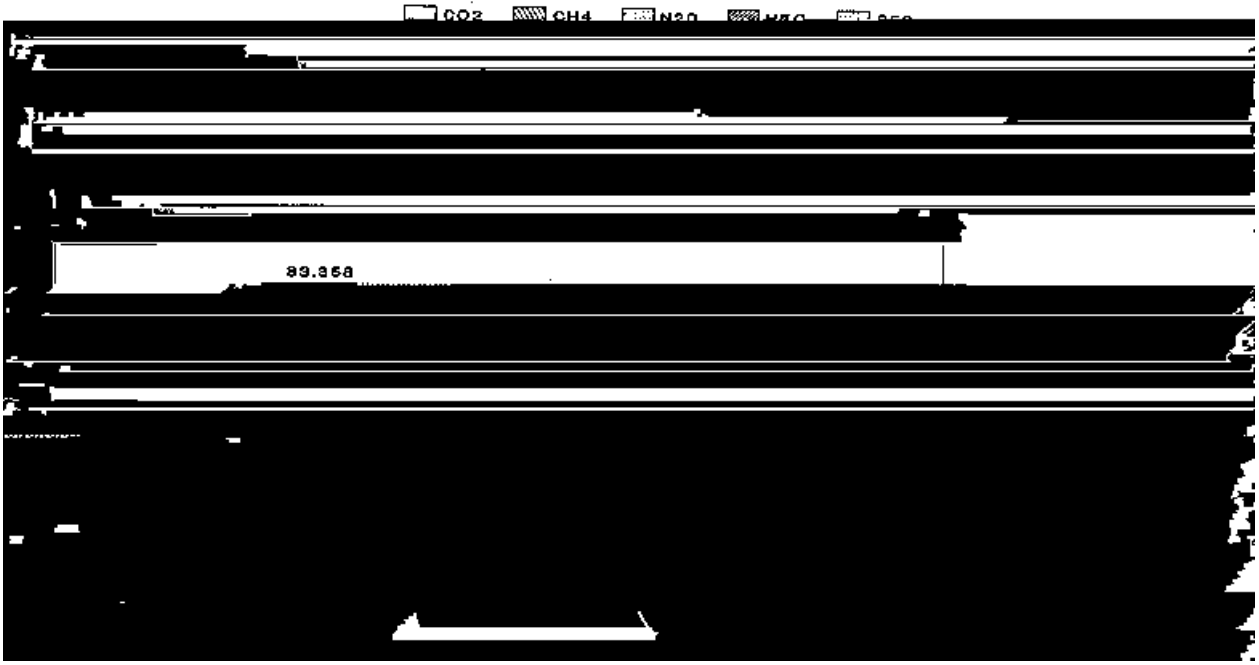
- The first scenario used growth rates from EIA's forecast for the nation as a whole.
- The second used the forecast for the West South Central states (Arkansas, Louisiana, Oklahoma, and Texas).
- The third scenario was based on EIA's forecasts for incorporating improved emission control technology for major sectors of the economy.
- Under the final scenario it was assumed that sources of greenhouse gas emissions would grow at the same rate that they did over the 1990 to 1996 period as calculated or estimated by CES.

Figure 2 depicts the level and composition of emissions in the year 2015 for each of the four scenarios. Two implications of the comparison stand out. The first is humbling if not downright discouraging, but the second is almost a "silver lining."

- Under any of the four scenarios the growth of greenhouse gas emissions TDs

[1]See James Hansen, et al, *Global warming in the twenty-first century: An alternative scenario,* PNAS [Proceedings of the National Academy of Science] Early Edition, www.pnas.org. June 16, 2000.

Figure II - Emissions in 1996 compared to forecasts based on alternative growth rate assumptions.



quantitative methods. He has previously taught at Auburn University, The American University of Armenia, and most recently, Wichita State University. Mark was also a Fulbright Scholar at the International Executive Development Center in Slovenia in 1999, and in his relatively short career has over 70 academic publications in scientific, energy, and engineering journals on an array of topics. His research has been supported by NSF, Eurasia, USAID, as well as local industry, and he has consulted frequently. Mark received a B.S. in agricultural engineering, and an M.S. and Ph.D. in industrial engineering (1991), all from Purdue University. He will begin work at the Center in January 2001 as an Associate Professor-Research.

Offshore Platforms

The Center's long-term forecast of offshore platforms in the Gulf of Mexico reported on in an earlier newsletter, has generated interest among offshore analysts, the trade press, and, best of all, its sponsor–the Minerals Management Service (MMS). As a consequence, the Center will be working with the Resource Evaluation Division of the MMS's New Orleans office on modeling the offshore platform installation and removal processes. The project is supported financially by the joint MMS-

Overcoming technical, informational, and regulatory barriers to better use of decentralized, small electricity generating possibilities, like small turbines and fuel cells, located at or near their principal point of consumption is the objective of the Center's DER Initiative. In an effort to "practice what it preaches," LSU has a request for bids now active which will result in a 10 Megawatt cogenerating plant that will supply a considerable portion of the University's electricity load. Further, the request calls for the new facility to be so clean and air-quality friendly that it will emit no more than 15ppm of nitrous oxides and 20ppm of carbon monoxide. That is "so clean" it could be located in such dirty-air pools as Los Angeles or Houston. Moreover, the facility will be wired for noninvasive monitoring and research by faculty and students in the Colleges of Engineering and Basic Science. Pre-bid analysis indicates this can be done while lowering the University's electric bill.

This "win-win" result has required creative cooperation between the University's operational/ "business" side and its research/education side. Professor Sumanta Acharya of Mechanical Engineering and Joe Kelley and Peter Davidson of the Office of Facility Services have played lead roles in bringing this about as has Ritchie Priddy, DERI's manager Houston. will be located for (for) 3 TD 0.058 Tc

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- **Slim-Hole Drilling and Completion**
  Recent advances and a worldwide review of slim-hole technology will be discussed; systems application, tools, rigs, bits, and motors will be presented. Information developed under the Mauer Engineering DEA 67 Joint Industry Research Project (JIP) also will be discussed.

Contact Don Goddard at 225/578 4538 for reservations. There is a nominal workshop fee of $50.

Seismic Permit Database

The Basin Research Energy Section of the Louisiana Geological Survey has completed and posted on the PTTC website a database describing the characteristics of seismic permits issued in Louisiana during the 1993 to June 30, 2000 period. The database gives information on the location covered by the permit, to

produced the first oil discovered in commercial quantities in Louisiana. To commemorate the one hundredth birthday of the State's oil industry, the Louisiana Legislature has created the Louisiana Oil Centennial Commission. Its job is to coordinate and promote the celebration. Bob Baumann has been appointed to serve on the Commission by Governor Foster.

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