

# THE FULL ECONOMIC COSTS OF LOUISIANA'S OIL/GAS AND PETROCHEMICAL INDUSTRIES

People First; Developing Sustainable Communities

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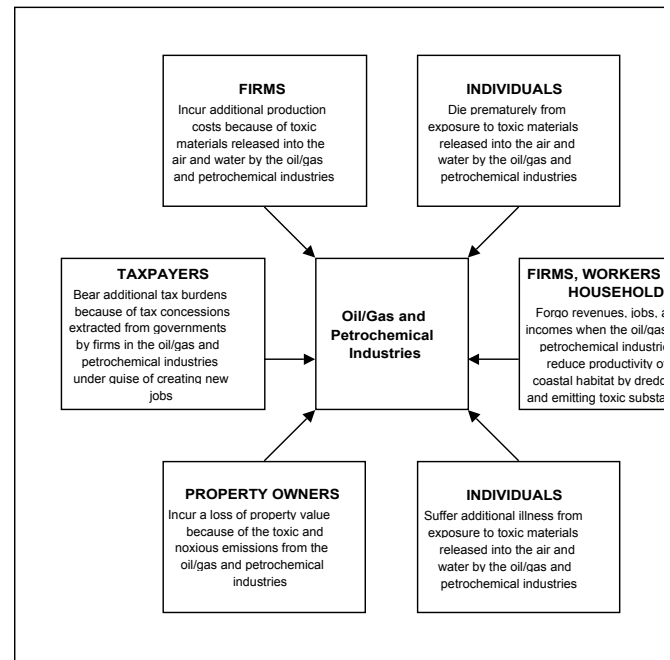
By all conventional measures, the oil/gas and petrochemical industries make important contributions to Louisiana's economy. In 1994, the oil/gas and petrochemical industries employed 97,600 workers (5% of the statewide total), and paid \$530 million in state taxes (about 10 percent of total state revenues).<sup>1</sup> But these benefits come at a cost. By destroying wetlands, emitting toxic and noxious pollutants, and extracting large tax concessions from the state legislature, the oil/gas and petrochemical industries reduce incomes, profits, and jobs in other sectors of the economy. As Louisianians work to make their communities healthier and more prosperous, it is especially important to identify where these costs outweigh the benefits. Although a full accounting of these has not been completed, this paper highlights readily-available information regarding two categories of costs: damages to the state's wetland ecosystem; and fiscal and regulatory subsidies.<sup>2</sup>

## Costs the Oil/Gas and Petrochemical Industries Impose on Others

**Ecosystem-Degradation Costs.** The coastal wetlands of Louisiana are a fragile and unique ecosystem. They also make substantial contributions to the state's economy, but because of the loss of the wetlands and declines in the productivity of those that remain, these economic contributions are falling and will fall further unless activities that interfere with the ecosystem's basic processes are arrested and reversed. Scientists recently concluded that, since 1930, Louisiana has lost about 1 million acres (more than 1,500 square miles) of coastal wetlands. Draining wetlands, dredging them, and building canals through them account for 30–59 percent of the total wetland loss between 1955 and 1978. The oil/gas industry provides the major impetus for these activities. In addition, the withdrawal of oil and gas can induce subsidence and encourage saltwater intrusion into, and destruction of, wetlands.<sup>3</sup>

By buffering against high winds and absorbing stormwater surges, coastal wetlands prevent inland damage from coastal storms. About three-fourths of Louisiana's population lives within 50 miles of the coasts, and the loss of wetlands increases their vulnerability to flooding of residential and commercial structures, damage to transportation infrastructure, and the long-term intrusion of saltwater into domestic and industrial water supplies. By one recent estimate, the protection provided by each acre of coastal wetlands has an annual economic value of about \$7,000. Applying this estimate to each of the remaining 1.7 million acres of wetlands in the Barataria-Terrebonne Estuary System (BTES) yields a value of about \$12 billion.<sup>4</sup> This estimate does not include the potentially large value of protection afforded hazardous-waste storage tanks and other structures that may become exposed as wetlands are lost.

If the value per acre applies to the 1 million acres already lost, the loss of protection from storms and saltwater causes economic damage of about \$7 billion per year. The current rate of additional wetland



loss is about 16,000 acres per year, indicating that the damage increases by about \$106–114 million each year.<sup>5</sup> If the oil/gas-extraction industry is responsible for about 30–59 percent of these damages, then it is currently responsible for about \$2–4 billion of damage per year, and the annual loss of wetlands attributable to these industries increases this amount by \$32–67 million per year. These damages accrue to private property owners, taxpayers, and other industries.

The oil/gas and petrochemical industries impose further costs insofar as they impede the wetlands' ability to provide wastewater-treatment services that enable industries and municipalities to release wastewater that has received initial treatment into the wetlands rather than incur the costs of constructing and managing tertiary treatment facilities. The annual value per wetland acre of these services ranges from \$82 to \$157 for municipalities and from \$681 to \$4,626 for industry.<sup>6</sup>

Damage to the wetlands affects revenues for businesses and jobs and incomes for Louisianians. One recent study found that industries relying on the BTES sold goods and services worth more than \$1.2 billion in 1994.<sup>7</sup> BTES also supported recreational activities with a net economic value of \$300–1,000 million.

**Fiscal Costs.** Louisiana has a long history of providing large tax exemptions and regulatory relief to firms in the oil/gas and petrochemical industries. These provisions can be considered subsidies that are functionally equivalent to a tax on each person living in the state, with the proceeds delivered to the managers and shareholders of these firms. Three notable subsidies to the oil/gas and petrochemical industries are:

- The Ten Year Industrial Property Tax Exemption program grants firms promising to make job-creating investments in the state an exemption from ad valorem property taxes for five years, renewable for another five years. According to one estimate, in the 1980s the oil/gas and petrochemical industry received \$130 million a year (\$1.3 billion total) with small, if any, gains in permanent employment.<sup>8</sup>
- On average in the U.S., residential consumers pay about twice what industry pays for an equal amount of energy, but in Louisiana, this ratio is 4:1. By one estimate, the annual energy-price subsidy to industry, more than \$200 per person, is higher in Louisiana than in all other states but Alaska. The oil/gas and petrochemical industry account for the bulk of the subsidy, which exceed \$800 million a year.<sup>9</sup>
- In 1989 the state estimated that the cost of assessing and cleaning up hazardous sites would exceed \$1 billion. The majority of the costs attributable to oil/gas and petrochemical industries will ultimately be paid by state and federal taxpayers.<sup>10</sup>

**Oil/Gas and Petrochemical Plants Emit Millions of Pounds of Toxic Chemicals into the Mississippi River Each Year**

Industrial plants in Louisiana have been discharging about 150–200 million pounds of toxic chemicals into the Mississippi River per year, but a 75 percent reduction is expected as discharges from gypsum stacks at fertilizer plants are controlled.<sup>12</sup> The remaining types of chemicals discharged in greatest quantity include:

	<u>Thousand lbs. (1987)</u>
Ammonia	1,830
Benzene	1
CLHC	112
Chlorinated hydrocarbons	20
Formaldehyde	3
Metals	22
Lead compounds	8
Methanol	453
Naphthalene	10
Phenol	16
Toluene	17
Xylene	1

The bulk of these toxic contaminants come from the oil/gas and petrochemical industries. Although discharges appear to be declining, they are still among the highest in the U.S.

**Quality-of-Life Costs.**

Perhaps the greatest overall negative economic impact of the oil/gas and petrochemical industries occurs not through the direct effects on human health and on jobs and incomes associated with recreational and other resource-related industries but through the effects on the public's perceptions about the state's quality of life. Whenever these industries' environmental abuses generate perceptions that Louisiana is not a healthy, enjoyable place to live, work, and play, some households that otherwise would choose to locate here, choose to locate elsewhere. Hence, quality-of-life impacts can affect the size and skills of the state's workforce, the size and spending power of its

consumer markets, and, ultimately, the overall structure of the state's economy. The impacts of natural resources on perceptions of quality of life already are recognized for the power to pull workers and families to regions that are widely perceived to have a healthy environment. The flip side of this coin is that some areas can become stigmatized, with the result that the local economy functions poorly.

The economic risks for a place called "Cancer Alley" are obvious. As long as Louisianians tolerate—or worse, encourage—environmental degradation, they must anticipate that those who are mobile and concerned about their natural environment will prefer to live elsewhere. Thus, the oil/gas and petrochemical industries deprive Louisiana, not only of jobs in fishing and other industries that directly rely on the state's wetlands, rivers, and other natural resources, but also of strong, broad-based growth in sectors that have no immediate linkage to these resources.

These facts yield some hard economic realities. Most of the economic benefits generated by the oil/gas and petrochemical industries accrue to residents of other states and countries. Because most of the output of these industries is shipped outside the state, consumers elsewhere, not Louisianians, realize the bulk of the benefits that materialize because the prices of the energy and chemicals produced by the oil/gas and petrochemical industries do not reflect the full value of all the resources needed to produce them. Similarly, most of the profits derived from these industries' use of the state's natural resources flow outside the state because most of the shareholders of firms in the oil/gas and petrochemical industries live outside Louisiana. Most Louisianians are left with the costs of a degraded environment, weak public services, and an economy that generates fewer jobs and produces lower incomes than it would if the oil/gas and petrochemical industries internalized their impacts on the environment and received smaller fiscal subsidies.

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We use the term, "petrochemical" to refer to manufacturing activities that fall under the Standard Industry Classification (SIC) categories 28 and 29. We use the term, "oil/gas and petrochemical industries" to refer to the combination of oil and gas extraction (SIC 13) and petrochemical manufacturing.

<sup>1</sup> U.S. Department of Commerce, Bureau of Economic Analysis. 1995. Regional Economic Information System (CD-ROM). August.

<sup>2</sup> For more information, see ECONorthwest. 1996. *Facing the Tradeoffs: Economic Development and Resource Conservation in Louisiana*. This report is available from Building Sustainable Louisiana Communities.

<sup>3</sup> Boesch, D.F. et al. 1994. *Scientific Assessment of Coastal Wetland Loss, Restoration and Management in Louisiana*. Special Issue No. 20. Journal of Coastal Research.

<sup>4</sup> Industrial Economics, Inc. 1996. *Economic Value Assessment for the Barataria-Terrebonne Estuarine System*. Barataria-Terrebonne National Estuary Program, Thibodoux, LA. March.

<sup>5</sup> Boesch, D.F. et al. 1994. *Scientific Assessment of Coastal Wetland Loss, Restoration and Management in Louisiana*. Special Issue No. 20. Journal of Coastal Research. Industrial Economics, Inc. 1996. *Economic Value Assessment for the Barataria-Terrebonne Estuarine System*. Barataria-Terrebonne National Estuary Program, Thibodoux, LA. March.

<sup>6</sup> Industrial Economics, Inc. 1996. *Economic Value Assessment for the Barataria-Terrebonne Estuarine System*. Barataria-Terrebonne National Estuary Program, Thibodoux, LA. March.

<sup>7</sup> Industrial Economics, Inc. 1996. *Economic Value Assessment for the Barataria-Terrebonne Estuarine System*. Barataria-Terrebonne National Estuary Program, Thibodoux, LA. March.

<sup>8</sup> Nauth, Z. 1992. *The Great Louisiana Tax Giveaway*. Louisiana Coalition for Tax Justice.

<sup>9</sup> Templet, P.H. 1995. "Grazing the Commons: An Empirical Analysis of Externalities, Subsidies, and Sustainability." *Ecological Economics* 12: 141-159.

<sup>10</sup> Louisiana Department of Environmental Quality. 1989. *Inactive and Abandoned Hazardous Waste Sites in Louisiana*.

<sup>12</sup> Rabalais, N.N., et al. 1995. *Status and Trends of Eutrophication, Pathogen Contamination, and Toxic Substances in the Barataria and Terrebonne Estuarine System*. Barataria-Terrebonne National Estuary Program. BTNEP Publ. No. 22.

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