

## **ND PETROLEUM COUNCIL**

PO Box 1395  
Bismarck, ND 58502-1395  
701-223-6380 / 701-222-0006 (fax)

August 31, 2005

Ms. Karlene Fine  
North Dakota Industrial Commission  
600 E. Boulevard Avenue  
Bismarck, ND 58505

Subject: Grant Application for the Study of the Contribution of the Petroleum Industry to the North Dakota Economy

Dear Ms. Fine:

Enclosed is a grant application requesting the North Dakota Industrial Commission to approve funding from the Oil and Gas Research Council to participate in an economic impact study of the contribution of the petroleum industry to the North Dakota economy. A \$100 check is enclosed to cover the application fee.

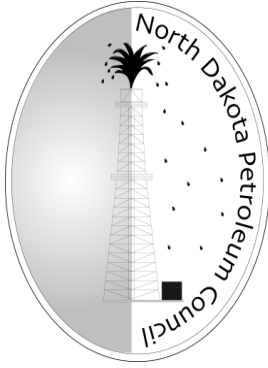
As the Research Council members have discussed at the last several meetings, there is a significant need to develop baseline information relating to the petroleum industry's economic impact in our state. The North Dakota Petroleum Council is committed to providing matching funds to complete the study and to be the distribution center for dissemination of the data.

Please contact me if you have any questions or need additional information for the enclosed grant application.

Sincerely,

Jeff Herman, Past President  
North Dakota Petroleum Council

mr  
enclosures



Applicant: **North Dakota Petroleum Council**  
PO Box 1395, Bismarck, ND 58502  
701-223-6380 / 701-226-0006 (fax)  
Principal Investigator: Jeff Herman,  
Past-President  
Date of Application: August 30, 2005

## **Contribution of the Petroleum Industry to the North Dakota Economy**

Grant Requested from the  
North Dakota Oil and Gas Research Council

Submitted by  
North Dakota Petroleum Council and F. Larry Leistritz,  
Professor Department of Agribusiness & Applied Economics

Amount Requested: \$20,000

Grant Deadline: September 1, 2005

## TABLE OF CONTENTS

1.0 Abstract.....	Page 3
2.0 Project Summary.....	Page 3
3.0 Project Description.....	Page 4
4.0 Standards of Success.....	Page 8
5.0 Background.....	Page 9
6.0 Qualifications.....	Page 9
7.0 Value to North Dakota.....	Page 10
8.0 Management.....	Page 10
9.0 Timetable .....	Page 11
10.0 Project Budget.....	Page 12
11.0 Matching Funds .....	Page 13
12.0 Tax Liability.....	Page 13
13.0 Confidential Information .....	Page 13
14.0 Patents and Rights to Technical Data .....	Page 13
15.0 Appendices.....	Page 14

## **1.0 Abstract**

The objective of this project is to estimate the contribution of the petroleum industry to the North Dakota economy, measured by indicators such as employment, income, additional gross receipts in various sectors of the state economy, and revenues from selected state taxes. The duration of the project is two years with a project cost of \$40,000. The participants are the North Dakota Petroleum Council, Ron Ness, President, and the North Dakota State University Department of Agribusiness & Applied Economics, F. Larry Leistritz, Professor.

## **2.0 Project Summary**

The objective of this project is to estimate the contribution of the petroleum industry to the North Dakota economy. A survey of oil industry firms will be conducted to determine the industry's direct employment and expenditures to in-state entities. The North Dakota Input-Output Model will then be used to estimate the secondary and total economic contribution of the petroleum industry to the North Dakota economy. The industry's contribution to the state economy will be summarized using indicators such as employment, income, and additional gross receipts in various sectors of the state economy, and revenues from selected state taxes (sales and use and personal income taxes, as well as sector-specific extraction and production taxes). The assessment will include both the economic contribution of petroleum exploration and extraction and the economic contribution of petroleum refining.

The project will be completed within one year of initiation at a cost not to exceed \$40,000, \$26,000 for the study and \$14,000 for the communications plan. The effective distribution of the study results is a critical element of the process. The North Dakota Petroleum Council (NDPC) will develop a communications plan over the next year to determine the best use and distribution of the results to a targeted audience of North Dakota policy makers and/or the general public. The plan is likely to include a quarterly newsletter highlighting the

significant impact of the state's petroleum industry, printed brochures, a section on the NDPC's web page devoted to the petroleum industry's economic impact, and some educational materials for the Energy Career Awareness Partnership and the Teacher Education Seminar. In addition, the NDPC will add select data to its annual *Facts and Figures* publication and purchase paid advertisements in newspapers and other publications.

### **3.0 Project Description**

The overall objective of the study is to estimate the contribution of the petroleum industry to the North Dakota economy, measured by indicators such as employment, income, additional gross receipts in various sectors of the state economy, and revenues from selected state taxes (sales and use and personal income taxes, as well as sector-specific extraction and production taxes). Specific objectives will include:

- Estimate the economic contribution of the petroleum exploration and extraction sector.
- Estimate the economic contribution of the petroleum-refining sector.
- Provide measures of the relative importance of the petroleum industry and of the energy industry (i.e., petroleum plus lignite extraction and conversion) to the North Dakota economy.

#### **Approach/Methods:**

Economic effects associated with a project, program, policy, or activity can be categorized into direct and secondary impacts. Direct impacts are those changes in output, employment, or income that represent the initial or first-round effects of the project, program, policy, or activity. Secondary impacts (sometimes further categorized into indirect and induced effects) result from subsequent rounds of spending and re-spending within the economy.

Estimating the direct economic contribution of the North Dakota petroleum industry will require

obtaining current estimates of the production, revenues, employment, and expenditures by oil and gas industry firms to in-state entities. The data will be collected from a sample of oil and gas industry firms and used as input to the North Dakota Input/Output Model, to estimate the secondary and total economic contribution resulting from the industry's operations in the state.

Input-output (I-O) analysis is a mathematical tool that traces linkages among sectors of an economy and calculates the total business activity resulting from a direct impact in a basic sector. The North Dakota I-O Model has 17 economic sectors, is closed with respect to households (i.e., personal income is included in the model), and was developed from primary (survey) data from firms and households in North Dakota. Contributions to state economic activity will be summarized using key economic indicators such as personal income, tax revenue, gross business volume (gross receipts), and secondary employment.

#### Anticipated Results:

The project will result in a current, well-documented summary of the economic contribution of petroleum exploration, extraction, and refining activities to the North Dakota economy. This information should be useful to policy makers dealing with various issues affecting the industry.

#### Facilities:

The project will be conducted using the facilities of the North Dakota Petroleum Council and the North Dakota State University (NDSU) Department of Agribusiness & Applied Economics. These two organizations are uniquely qualified to undertake this effort. The NDPC has extensive contacts with the industry, which should facilitate data collection. The NDSU Department of Agribusiness & Applied Economics has the computer resources, models, and supporting databases necessary to perform the economic impact analysis.

#### Justification:

For more than 50 years, the petroleum industry has been one of the pillars of the North Dakota economy. However, because the industry's major activity is concentrated in areas remote from the state's major population centers, policy makers and citizens may not fully appreciate the magnitude of the oil and gas industry's economic contribution. Like the lignite energy industry, the petroleum sector is characterized by extremely capital-intensive production and processing activities, so the number of persons directly employed by oil and gas firms is not a good indicator of the industry's importance to the state economy. This study will provide a comprehensive assessment of the economic contribution of the North Dakota petroleum industry, which should enhance understanding of its importance to the state. This information should be particularly useful as state policy-makers deal with issues affecting the industry's future (for example, tax policy or land use issues).

#### Communications Plan:

The goals of this task are to provide outreach and education mechanisms that raise the public awareness of the economic impacts of the oil and gas industry to the state and to provide outreach to policy-makers and the public about the existing economic trends and future impacts of our industry and state.

In order to meet these goals, the communications plan will be designed to develop and distribute a comprehensive set of outreach materials for the general public, develop and distribute a set of outreach materials that will be useful for our industry partners, and develop a long-range outreach plan that will support economic impact outreach for the oil and gas industry in the future. Some specific features include:

##### Web site

Update the Petroleum Council's Web site to include relevant developments in the oil

and gas industry, a regular news update on Williston Basin activities, and include economic impact data throughout the newsletter as appropriate. In addition, a “frequently asked questions” page that uses the economic data in an educational manner will also be added. The data can also be integrated into the North Dakota Oil and Gas Trivia Game that can be added to the Web site.

#### Outreach Booth

A booth display in coordination with the NDPC’s education programs will be developed that gives information on the economic impacts of the oil and gas industry. The booth will be designed to provide an outreach tool to be used at trade shows, fairs, home shows, and other public venues. The booth materials will be updated as appropriate.

#### Outreach Power Point

A Power Point presentation will be developed that provides information on the economic impacts of the oil and gas industry for use at conferences and trade shows. The presentation will be updated as appropriate and be available for use by industry partners and NDPC members.

#### Fact Sheet

A one-page fact sheet will be developed that provides general background information on the economic impacts of the oil and gas industry. This fact sheet can be used as a handout at presentations and when the outreach booth is deployed, included in the Energy Education Kits, used for legislative and media briefings, and handed out to tour groups. The fact sheet will be posted on the Web site and made available at other locations such as the Long X Visitor Center oil display in Watford City, North Dakota. Additional fact sheets will be developed as appropriate.



#### 4.0 Standards of Success

The following criteria will be used to evaluate success:

The completion of a statistically representative survey of oil industry firms to determine the industry's direct employment and expenditures to in-state entities.

Population of the supporting data bases necessary to perform the economic impact.

Successfully complete the necessary runs on the North Dakota Input/Output Model, to estimate and compile the secondary and total economic contribution resulting from the industry's operations in the state.

Development of a communications plan that will effectively communicate study results to targeted audiences of North Dakota policy makers and to the general public.

Project completed according to established time-line.

#### References:

Bangsund, Dean A., and F. Larry Leistritz. 2005. *Economic Contribution of the Wheat Industry to North Dakota*. Agribusiness and Applied Economics Report No.554. Fargo: NDSU, Dept. of Agribusiness & Applied Economics.

Bangsund, Dean A., and F. Larry Leistritz. 2004. *Economic Contribution of the Sugarbeet Industry in Minnesota, North Dakota, and Eastern Montana*. Agr. & Applied Econ. Rpt. No.532. Fargo: NDSU, Dept. of Agr. & Applied Economics.

Chase, Robert A., and F. Larry Leistritz. 1983. *Profile of North Dakota's Petroleum Work Force, 1981-82*. Agricultural Economics Report No. 174, North Dakota Agricultural Experiment Station.

Coon, Randal C., and F. Larry Leistritz. 2005. *North Dakota Lignite Energy Industry's Contribution to the State Economy for 2004 and Projected for 2005*. AAE 05002. Fargo: NDSU, Dept. of Agr. & Applied Economics.

Coon, Randal C., and F. Larry Leistritz. 2005. *North Dakota Input-Output Model Data Base*. Fargo: NDSU, Dept. of Agribusiness & Applied Economics.

Coon, Randal C., F. Larry Leistritz, Thor A. Hertsgaard, and Arlen G. Leholm. 1985. *The North Dakota Input-Output Model: A Tool for Analyzing Economic Linkages*. Agricultural Economics Report No. 187, North Dakota Agricultural Experiment Station.

Coon, Randal C., John F. Mittleider, and F. Larry Leistritz. 1983. *Economic Analysis of the North Dakota Lignite Industry*. Agricultural Economics Miscellaneous Report No. 67, North Dakota Agricultural Experiment Station.

Leistritz, F. Larry, Steve H. Murdock, and Randal C. Coon. 1990. "Developing Economic-

Demographic Assessment Models for Substate Areas." *Impact Assessment Bulletin* 8(4):49-65. Leistriz, F. Larry, and Steve H. Murdock. 1981. *Socioeconomic Impact of Resource Development: Methods for Assessment*. Westview Press, Boulder, Colorado.

Murdock, Steve H., and F. Larry Leistriz. 1979. *Energy Development in the Western United States: Impacts on Rural Areas*. Praeger Publishers, New York.

## **5.0 Background**

North Dakota State University researchers have been addressing economic aspects of the state's energy sectors for many years (for example, see Murdock and Leistriz 1979, Leistriz and Murdock 1981, Chase and Leistriz 1983, Coon et al. 1983, Coon and Leistriz 2005). This research has included estimating the economic contribution of the lignite energy industry annually since 1985 (Coon and Leistriz 2005). Much of this research has utilized the North Dakota Input-Output Model (Coon et al. 1985, Leistriz et al. 1990) and its supporting databases (Coon and Leistriz 2005). Similar methods have been used in assessing the economic contribution of other industries, such as the sugar-beet industry of the Upper Midwest (Bangsund and Leistriz 2004) and the North Dakota wheat industry (Bangsund and Leistriz 2005).

## **6.0 Qualifications**

Dr. F. Larry Leistriz will serve as principal investigator for this research effort. Dr. Leistriz is a Distinguished Professor of Agribusiness & Applied Economics at North Dakota State University, Fargo, North Dakota. For more than 30 years, he has been actively involved in research on regional economic and resource development issues and on the economic impacts of resource development projects, programs, and policies. In this context, he has authored or coauthored 12 books, more than 100 journal articles, and numerous research reports. He also has extensive experience in managing research projects. He has served as principal investigator of more than 100 separate grants and contracts totaling more than \$5.5 million. A brief resume for Dr. Leistriz is provided in Appendices section 15.

## **7.0 Value to North Dakota**

This study will provide a comprehensive assessment of the economic contribution of the North Dakota petroleum industry, which should enhance understanding of the importance of the industry to the state. This information should be particularly useful as state policy makers deal with issues affecting the industry's future such as the state budget, tax policy, access to public lands, regulatory issues, economic development, and education funding. The study can also provide data indicating the significant impact on the state's economy and the employment impact on the state of North Dakota. This data will be utilized to develop a communications plan highlighting the benefits of North Dakota's petroleum industry to policy makers and the public.

## **8.0 Management**

The NDPC will manage and oversee the project. The North Dakota Petroleum Council Board of Directors will establish the guidelines for the program, budget, and communications plan. Ron Ness, President of the NDPC, will manager the project for the association.

## 9.0 Timetable

The data analysis will be conducted over a period of one year and the communications plan will be initiated in the second year. The timing of major project activities and completion date is outlined below.

Selection of sample firms	----->				
Design of data collection form	----->				
Data collection				----->	
Data analysis and Report preparation				----->	
Draft report					X
Final Report					X
Month	1	3	6	9	12

The North Dakota Petroleum Council will prepare a communications plan over the next year in preparation for immediate distribution of the study results. The communications plan will detail how the information can best be used and may include a quarterly newsletter highlighting the significant impact of the state’s petroleum industry, printed brochures, a section on the North Dakota Petroleum Council ’s web page devoted to the petroleum industry’s economic impact, and some educational materials for the Energy Career Awareness Partnership and the Teacher Education Seminar. In addition, the NDPC will add select data to the annual *Facts and Figures* publication and purchase paid advertisements in newspapers and other publications.

## 10.0 Project Budget

The proposed direct cost for completing this analysis is \$26,000. A Cost Basis Summary is shown below. The Department of Agribusiness & Applied Economics proposes a fixed-price agreement with one-half payable at the time the project is initiated, one-fourth upon delivery of the draft report, and one-fourth payable upon completion of the final report. The communications plan will be executed in the second year of the project.

### Cost Basis

<u>Item</u>	<u>Expense</u>	
Salaries and Wages:		
Research scientist(s) (3.5 months)	\$ 15,300	
Research scientist overload pay (6 mo. @ 17.27%)	\$ <u>4,523</u>	
Salaries and wages Subtotal		\$19,823
Employee Benefits:		
Research scientist, regular salary (30%)	\$ 4,590	
Research scientist, overload pay (10%)	\$ <u>452</u>	
Employee benefits Subtotal		\$ 5,042
Researcher Expenses		
Travel, in-state	\$ 735	
Printing and office supplies	\$ <u>400</u>	
Research Expenses Subtotal		\$ 1,000
Communications Plan		
Design/Printing/Publication/Distribution	\$12,000	
Brochures		
Booth Displays		
Web Site Software Upgrade/Design		
Quarterly Newsletter		
Paid Advertising		
Administrative Costs (NDPC salaries – 80 hrs @ \$25 hr)	\$ <u>2,000</u>	
Total Communications Plan		<u>\$14,000</u>
Total direct costs		<u>\$40,000</u>

### 11.0 Matching Funds

The North Dakota Petroleum Council request is based on a match for this project.

North Dakota Petroleum Council	(50%)	\$ 20,000.00
Oil and Gas Research Council	(50%)	<u>\$ 20,000.00</u>
Total Project Expenses		<u>\$ 40,000.00</u>

### 12.0 Tax Liability

I, Craig Smith, certify that the North Dakota Petroleum Council does not have any outstanding tax liability owed to the State of North Dakota or any of its political subdivisions.

\_\_\_\_\_  
Craig Smith  
Treasurer, NDPC

\_\_\_\_\_  
Date

### 13.0 Confidential Information

The North Dakota Petroleum Council does not request that any of the information related to this application be confidential.

### 14.0 Patents Rights to Technical Data

The North Dakota Petroleum Council does not request to reserve any patent rights to technical data.

## 15.0 Appendices

F. (Fredrick) Larry Leistritz

**BUSINESS ADDRESS:** Dept. of Agribusiness & Applied Economics  
North Dakota State University  
Fargo, North Dakota 58105  
(701) 231-7455 Phone  
(701) 231-7400 FAX  
E-mail: [lleistri@ndsuxt.nodak.edu](mailto:lleistri@ndsuxt.nodak.edu)

**HOME ADDRESS:** 138 49<sup>th</sup> Avenue E.  
West Fargo, ND 58078  
(701) 282-9129

**PRESENT POSITION:** Distinguished Professor of Agricultural Economics, North Dakota State University

**EDUCATION:** *Doctor of Philosophy:* University of Nebraska, Lincoln, major in Agricultural Economics--August 1970

*Master of Science:* University of Nebraska, Lincoln, major in Agricultural Economics--1968.

*Bachelor of Science:* University of Nebraska, Lincoln, major in Agricultural Economics, degree with high distinction--1967.

**SELECTED PROFESSIONAL ACTIVITIES:** International Association for Impact Assessment--President, 1993-94; Program Chair, 1991 Annual Conference; Director, 1985-88

Western Agricultural Economics Association--President, 1985-86; Director, WAEA Executive Council, 1981-83; Member of Editorial Council of *Western Journal of Agricultural Economics*, 1976-78 and 1982-85

**HONORS AND AWARDS** Western Agricultural Economics Association, Distinguished Scholar of the WAEA, 2005  
Business and Industrial Development Award, Greater North Dakota Association, 1998  
NDSU Faculty Economic Development Award, 1995  
Fargo Chamber of Commerce, NDSU Distinguished Professorship, 1994  
Excellence in Research Award, Senior Faculty, North Dakota Agricultural Experiment Station, North Dakota State University, 1993

**RESEARCH** Dr. Leistritz has authored more than 400 research publications, including more than 100 refereed journal articles. He has directed grant and contract-funded research projects totaling more than \$5.5 million.