

**Comparison of Annual Local Economic Impacts: Jobs, Corn Prices, & Ownership
Structure for a Typical Ethanol Plant with 100 million gallon per year Capacity.
(7-9-2006)**

I. Local Economic Impact of Jobs created by a 100 mgy Ethanol Project

Assumptions:

1. Ethanol project would create about 45 ongoing jobs
2. Average wage is assumed to be \$35,000 / job

Added Annual Payroll from Jobs Directly Created \$1.575 million per year

Added Direct & Indirect Local Income (2.5 multiplier) \$3.938 million per year

II. Local Economic Impact on Farm Income from Ethanol Corn Purchases

Assumptions:

1. 100 mgy ethanol project creates demand for \$.25 per bushel rise in corn price
2. 37 million bushels of corn purchased by 100 mgy plant

Added Annual Direct Income for Farmers (pretax return) \$ 9.250 million per year

Added Direct & Indirect Local Income (2.5 multiplier) \$23.125 million per year

III. Local Impact for Private Placement Assuming 25% Local Ownership

Assumptions:

1. 100 mgy ethanol plant costs \$150 million
2. 25% local ownership
3. Project is 50% debt financed
4. ROI is 30 % **

Added Income from Local Ownership (annual pretax) \$ 5.625 million per year

Added Direct & Indirect Local Income (2.5 multiplier) \$14.063 million per year

IV. Local Impact if Public Offering Assuming 75% Local Ownership

Assumptions:

1. 100 mgy ethanol plant costs \$150 million
2. 75 % local ownership from public offering
3. Project is 50% debt financed
4. ROI is 30 % **

Annual Income from Local Ownership (annual pretax) \$16.875 million per year

Added Direct and Indirect Local Income (2.5 multiplier) \$42.188 million per year

V. Incremental Local Impacts from Ethanol Public Offering over Private Placement

Incremental Difference in Annual Income from Public Offering \$11.250 million/year

Incremental Difference in Direct & Indirect Income (2.5 multiplier) \$28.125 million/year

Prepared by Mark A. Edelman, Ph.D., Professor of Economics and Extension Economist, Iowa State University. This study represents a preliminary analysis that has been conducted in a relatively short time frame to respond to a particular inquiry and utilizes simplified methods to provide an approximation of results. Such analyses are developed to demonstrate economic principles and general impacts. This analysis is not designed to provide precise measurements comparable to those that would result from a more in-depth research study of a specific project or that would result from use of more sophisticated economic models. The author has 30 years of experience in analyzing federal, state, and local government finance, economic development, and agricultural policy topics. He has conducted research on selected renewable energy issues and is an ethanol industry observer, investor, and board member. This analysis was conducted in response to a private sector inquiry, however it is being distributed to the public for educational purposes since it contains no proprietary or confidential information.

Summary of Local Direct Economic Impacts *

Added Annual Payroll from Direct Jobs Created	\$ 1.575 million/year
Added Annual Direct Income for Farmers	\$ 9.250 million/year
Added Income from Private Placement Local Ownership	\$ 5.625 million/year
Subtotal potential with Private Placement	\$16.450 million/year

Public Offering Incremental Difference Impacts	\$11.250 million/year
Grand Total potential with Public Offering	\$27.700 million/year

Public Offering Incremental Difference ** 68.4 % more direct local economic impact

Summary of Local Direct and Indirect Economic Impacts *

Jobs Direct & Indirect Local Impact	\$ 3.938 million/year
Corn Price Direct & Indirect Local Impacts	\$23.125 million/year
Private Placement Local Direct & Indirect Income	\$14.063 million/year
Subtotal potential with Private Placement	\$41.126 million/year

Public Offering Incremental Difference Impact	\$28.125 million/year
Grand Total potential with Public Offering **	\$69.251 million/year

Public Offering Incremental Difference 68.4% more direct & indirect impact locally

* Note: Direct Economic Impacts include income and employment impacts directly attributable to the development project. Direct impacts include the project's payroll, returns to local ownership, and added income from local procurement of raw materials. The additional direct income and employment in turn induces additional spending that indirectly supports creation of additional jobs and income in the local region. The additional induced income and employment is referred to as indirect economic impacts and is often estimated by economists using employment multipliers. Employment multipliers typically vary from one sector to the next. While some sectors of the economy generate employment multipliers of 2.0 or less, most value-added agriculture sectors generate employment multipliers above this level. A multiplier of 2.5 is the assumed in this analysis.

** The analysis is sensitive to the ROI assumed. Under current market price relationships, 100 mgy plants in the ethanol industry are experiencing returns significantly above the 30% level, however many analysts expect current relationships to be a short term phenomenon as new structural equilibriums are achieved and as construction costs rise for new plants.