Sorting the wheat from the chaff: the economic gains and offsets of emerging energy developments

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Economic Impacts

With the evolution of energy generating initiatives, projects, and opportunities has come an evolution of strategies for eliciting public support.

One of the most frequent tactics is to come up with an "economic impact" declaration for the activity.

Many economic impact analyses are either done incorrectly or interpreted incorrectly – limits to the findings are often obscured or ignored.

There is a tendency by people to minimize or maximize economic outcomes depending on your side of an issue.
Impacts Continued

There are temporal and spatial aspects to economic change.
- Timing of the changes
- Winners and losers
- Short run versus long run

There are structural and consumption adjustments as well
- A change in one sector of the economy will have an effect on others
- Consumer behavior is unpredictable
Procedural Issues

Cavalier if not misleading use of the term economic impact

A variety of methods for producing results all of which can (and should) be criticized roundly

A variety of practitioners producing results all of whom probably ought to be criticized roundly

An absence of oversight and review – truth squads

Confusing a statistical relationship with causation
Benefits and Costs

In public finance and in public policy, benefits and costs have very specific meanings.

Benefits are the cumulative welfare gains to consumers (or producers) that result from a government policy or project.

Costs are the public costs that must be borne in producing the benefit.

Economic efficiency means the benefits exceed the costs.
Comparing the Two

Economic impacts of the kind typically measured for biofuels or other alternative energy strategies are not benefits in a public policy sense.

They are either enhancements or reductions in the net productive capacity of an industry or a region – they are not welfare enhancements.

They should be calculated net of all other effects, but they rarely are.

In general, they are highly localized and may not be realized on a national basis.
Categories

Wind power and other very clean energy alternatives

Uses of biomass and waste

Liquid biofuels

Energy reductions – conservation, consolidation, and efficiencies

Community / regional structural realignments and investments
Categories of Impact

Construction and the nature of capital investment

Direct and indirect activities plus spin-off manufacturing or services

Household effects

Other important non-economic categories:

Environment
Households
Society
Additional Considerations

- Offsets and disruptions
- Subsidies and credits
- Local and state fiscal consequences
  - Local financing
  - Local ownership
- Scale economies
Basic Economic Outcomes

Existing and clearly emerging industries
- Dry mill ethanol production -- integrations
- Biodiesel
- Wind energy
- Other passive and active systems

Anticipated (promised) advances
- Few if any to-scale production systems to evaluate
- Can’t project from the existing economic structure
Expected Job Impacts of a 50 MGY Ethanol Plant in Rural Iowa

- Extra induced for 50% locally owned: 19
- Induced (household spending): 23
- Indirect (suppliers): 75
- Direct (ethanol plant): 36
Positive Local Economic Consequences of Ethanol Production

Add new economic product – *value added* – to a crop that had been exported
Boost area returns to corn farmers
Dividends to local investors (provided profitable)
Well paying manufacturing jobs
Expected to have strong technical linkages with the area economy
Main-street spending boosts
Negative Local Consequences

Higher localized grain prices for animal feeders

Disruptions in the use of existing grain handling, storage, and transportation investments

Infrastructure capacity and deterioration

Water and air quality

Community clamor
Regional Job Impacts in a 50 MGY and a 100 MGY Ethanol Plant

- **50 MGY**
  - Direct (ethanol plant): 36
  - Indirect (suppliers): 75
  - Induced (household spending): 23

- **100 MGY**
  - Direct (ethanol plant): 46
  - Indirect (suppliers): 95
  - Induced (household spending): 29

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Upper Bounds are Knowable

- 2 billion bu corn X 2.8 gallons per bushel = 5.6 BGY
- Average plant size is 90 MGY operating at 110% of capacity = 99 MGY per plant
- 5.6 BGY / 99 MGY = 57 plants
- If 47 jobs per plant
- 57 X 47 = 2,679 jobs
- Times an appropriate multiplier ≈ 10,500 jobs
Iowa Biofuels Jobs Economic Impacts: 2006

IRFA Original: 46,937
IRFA Adjusted: 5,431
ISU Estimate: 4,500
Direct U.S. Ethyl Alcohol Production Jobs

- 2002 (Census): 2,265
- 2005: 4,104
- Current (2007): 6,231
Direct job growth

Organic Chemical Manufacturing Job Change Compared to Expected Ethanol Job Growth

- Organic chemicals, -99,717
  - 2000 to 2005

- Ethanol (Corn), 4,806
  - 2005 to 2010
Moving Forward

Mustn’t confuse sets of economic outcomes with benefits

All costs must be acknowledged because there are substantial amounts of public funds involved

Economy-wide outcomes must be considered in light of local or regional gains

USDA: Consumers to pay for rising crop prices
By PHILIP BRASHER • Register Washington Bureau • February 21, 2008

Noneconomic consequences should be quantified and described as part of the policy making processes
My observation

The poorer the prospect, the shakier the position, the more questionable the merits of an enterprise, the more likely it is that proponents and politicians will use “economic impact” arguments to make their case in seeking public funds.