

Biofuels in the Transport Sector: Promoting Policy Neutrality

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Overview

- Policy neutrality.
- Magnitude of subsidies to biofuels.
- Principles of improved biofuels policy.

GHG Emissions and Energy Security in Transport: Biofuels Not the Only Solution

- Alternative transport pathways also have promise.
 - Efficiency, other fuels, plug-in hybrids.
 - Some are/may become cross-platform technologies.
- Biofuels have important limitations.
 - Environment: air, water, land conversion. Risks to tropical rainforests significant.
 - Labor: work conditions in some regions.
 - Dislocations: not all groups win, even in rural communities.
- Political selection of winners – higher cost, higher risk, burn lead time need to transition away from petroleum.
- Performance of biofuels themselves will be better if forced to compete for financial support.

Biofuels Policy in the US: Fractured and Poorly Coordinated

- October 2006: >220 state and federal incentives in place.
- Pending:
 - More than 25 at federal level.
 - Hundreds at state level.
- Policy Trends:
 - More subsidies to more production factors; larger fuel mandates.
 - Continuing supply-side bias.
 - Alternative supply solutions not forced to compete for subsidy dollars.

US Subsidies to Biofuels in 2006

	Ethanol	Biodiesel	Notes
Total			
Total subsidies (\$billions)	\$5.1 - \$6.8	\$0.4 - \$0.5	(1)
Normalized for differential heat rate			
Subsidies per equivalent gallon (\$/GGE or \$/DGE)	\$1.4 - \$1.9	\$1.7 - \$2.2	
Compared to pump prices			
Subsidies at % June06 Price (%)	42 - 45%	40 - 52%	
Cost to meet energy security goals			
Subsidies/net MMBTU fossil fuel displaced (\$/MMBtu)	\$31 - \$44	\$27 - \$35	
Subsidies/net MMBTU petroleum displaced (\$/MMBtu)	\$16 - \$17	\$15 - \$20	
Cost to meet GHG reduction goals			
Subsidies/net mtCO ₂ equiv. reduced (\$/mt)	\$520	Not available	(2)



Notes:

- (1) Actual biofuel consumption in 2006 was higher than projected in study. As a result, 2006 subsidies to ethanol were roughly 6-8% higher than shown above. Due to its small production base, the higher than projected consumption numbers boosted biodiesel numbers more than 30% higher than shown above.
- (2) Some life cycle assessments show CO₂ *increasing* from the corn-ethanol supply chain, rather than decreasing. For this reason, the carbon displacement value for ethanol is not a range. The value shown is the cost of displacement using the *most favorable* assessment in the literature. Displacement factors were not available for biodiesel at the time of the study.

Source: Doug Koplow, *Biofuels at What Cost?* (Geneva: IISD), 2006.

Subsidy Trends

- Linear relationship to production levels; import protection; no link to oil prices.
- Under current policy environment, subsidies by 2012 likely to reach:
 - \$8-11 billion/year for ethanol.
 - \$2-3 billion/year for biodiesel.
 - Higher targets (e.g., 25x'25; S. 23; Bush AFS) would have substantially higher taxpayer cost.

Principles of Good Policy: No Free Ride

- Plants: control emissions; pay for water.
- Feedstock producers: pay for water; internalize land stewardship costs.
- End special exemptions from siting or other regulatory requirements.
- Credit under mandates:
 - Heat rate conversion is not enough.
 - Environmental footprint must also be integrated, especially in the absence of carbon constraints.
- Stewardship issues must address foreign producers.

Principles of Good Policy: Competition

- Renewable fuel mandates as primary tool for fuel transition.
 - Reverse auctions on production targets used to minimize public cost for given fuel substitution target (similar to Renewable Portfolio Standard model in electricity).
 - Eligibility for all methods (including efficiency) to displace petroleum/vehicle mile.
 - Bid prices normalized to reflect carbon footprint.
 - Import neutrality.
- Remove subsidies to:
 - Other parts of the biofuels supply chain (possibly retaining basic R&D support).
 - Petroleum.