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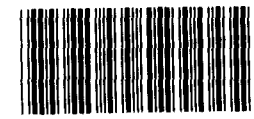

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FUEL ETHANOL: Imports from Caribbean Basin Initiative Countries

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Before the
Subcommittee on Trade
Committee on Ways and Means
House of Representatives

Mr. Chairman and Members of the Subcommittee:

I am happy to be here today to discuss with you our review of fuel ethanol imports from Caribbean Basin Initiative countries which was made in response to a requirement in the Omnibus Trade and Competitiveness Act of 1988. We issued a report on February 21, 1989,[1] and today I will highlight the major results of our review.

BACKGROUND

The 1983 Caribbean Basin Economic Recovery Act (CBERA) permits eligible products from designated countries and U.S. insular possessions in Central America and the Caribbean (referred to as CBI countries) to be imported into the United States duty free if at least 35 percent of their value was added in these countries.

Subsequent to the 1983 CBI legislation, several companies built dehydration facilities in CBI countries to produce ethanol for export to the United States. Rather than make the product by a process of full fermentation of local feedstock, such as sugarcane, the companies imported and dehydrated low-cost, European wine alcohol. This activity has been described as a pass-through operation. Local processing costs accounted for most of the value-

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[1] Fuel Ethanol: Imports From Caribbean Basin Initiative Countries (GAO/NSIAD-89-106).

added requirement and the companies added local feedstock, as necessary, to meet the 35-percent requirement.

The U.S. ethanol industry objected to pass-through operations because it believed the heavily subsidized European wine alcohol gave the Caribbean ethanol producers an unfair cost advantage in U.S. markets and that the distillation process did not meet the requirement for substantial transformation under the CBERA.

To discourage pass-through operations, the Tax Reform Act of 1986 provided that ethanol qualified for duty-free entry only if raw materials (feedstock) from the region accounted for at least 30 percent of the value of the ethanol when it entered the United States in 1987, 60 percent in 1988, and 75 percent in 1989 and thereafter. The Act provided a limited exemption for several facilities already completed or under construction.

The Omnibus Trade and Competitiveness Act of 1988 required GAO to study whether the 75-percent local feedstock requirement would contribute to the economic development of the CBI countries by making maximum use of their natural resources. The Act specified that the study should assess whether the local feedstock requirement is economically feasible for ethanol producers, and if not, to recommend modifications to the requirement that (1) will insure meaningful production and employment in the region, (2) discourage the processing of feedstock obtained outside the region,

and (3) not result in harm to ethanol producers in the United States. The Act also required GAO to assess the effects of CBI ethanol imports on U.S. producers.

RESULTS IN BRIEF

In summary, our review showed that given current sugar and gasoline prices, it is not economically feasible for CBI ethanol producers to meet the 75-percent local feedstock requirement. At current prices, CBI companies can be competitive with no more than a 10- to 30-percent local feedstock requirement.[2] Therefore, the 75-percent requirement will not permit CBI producers to be competitive and will not contribute to the economic development of CBI countries.

To date, ethanol imports from CBI countries have been small and have had little impact on the U.S. market. However, eliminating the requirement for local feedstock would give CBI ethanol producers an advantage in the U.S. market if they can readily obtain subsidized European wine alcohol supplies at low prices.

The policy objectives of the 1988 legislation--i.e., that the local feedstock requirement will (1) increase meaningful production and employment in the region, (2) discourage pass-through operations,

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[2]Companies which were required by the Tax Reform Act to meet a 60-percent local feedstock requirement in 1988 did not export ethanol to the United States.

and (3) not harm U.S. ethanol producers--are thus in conflict and involve tradeoffs.

STATUS OF THE CBI ETHANOL INDUSTRY

The Caribbean area has two kinds of fuel ethanol production: (1) full fermentation and (2) dehydration. The former includes a fermentation, distillation, and dehydration facility. The ethanol is produced from either sugarcane juice or molasses. The primary factor affecting the cost of full fermentation ethanol is the cost of the feedstock.

Currently, Costa Rica, El Salvador, and Guatemala have full fermentation facilities. Their combined design capacity is 41 million gallons a year (MGY); however, the most that any of these countries ever shipped to the United States was 4.6 million gallons in 1985. Since February 1988, none of these countries has shipped any fuel ethanol to the United States.

CBI dehydration plants produce dry ethanol from wet ethanol[3] through an azeotropic distillation process. Wet ethanol containing less than 95 percent alcohol must be rectified or distilled before dehydration or run through the dehydration system twice to reach the dry level.

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[3]To be suitable for blending with gasoline, ethanol must be virtually anhydrous (i.e., the water content cannot exceed 0.5 %). We refer to this as fuel or dry ethanol.

Since 1984, four companies have built dehydration plants in the CBI region and have operated and exported ethanol to the United States. These include Tropicana and Petrojam in Jamaica, LAICA in Costa Rica, and U.S. Resources, now owned by VIAG, in the U.S. Virgin Islands. We estimate their current effective combined production capacity at about 88 MGY. Two other plants are under construction but may never be completed. These are Allied Ethanol on Grand Bahama Island and BioCom in the U.S. Virgin Islands. If they are finished and certain improvements are made to all plants, maximum ethanol production capacity of these six plants might reach 212 million gallons a year.

Feasibility of local feedstock requirements

To assess the economic feasibility of the local feedstock requirement, we estimated what it would cost CBI companies to produce ethanol and deliver it to the United States based on a mixture of CBI wet ethanol (enough to meet the 75-percent local feedstock requirement) and European wine alcohol. We then compared the estimated cost to the market price of ethanol in the United States. We focused on European wine alcohol for the non-CBI feedstock because that is what CBI companies have largely used and because these stocks are the source of concern to U.S. ethanol producers. We also analyzed CBI costs under alternative local feedstock requirements and various CBI feedstock costs.

Table 1 shows the results of simulated CBI ethanol costs under alternative local feedstock requirements, ranging from 10 to 75 percent. In addition, we simulated how alternative world sugar prices (5 to 15 cents a pound) could affect CBI feedstock costs and, in turn, overall production costs.

As table 1 shows, with a 75-percent local feedstock requirement and based on the recent cost structure, including a sugar price of 9 to 10 cents a pound, it would cost about $1.30 to $1.41 a gallon to make the ethanol and ship it to the United States. The average annual price of ethanol in the United States during 1987 and 1988 was $1.06 to $1.08 a gallon. At that price, the 75-percent local feedstock requirement would result in costs well above the price at which the ethanol could be sold.

Under the current cost structure and a 30-percent feedstock requirement, it would cost CBI companies about $1.03 to $1.17 a gallon to produce and ship fuel ethanol to the U.S. east coast. Thus, based on these prices, some companies would be competitive and others would not. If sugar prices increase to 15 cents a pound (corresponding to $1.80 to $2.10 a gallon CBI wet ethanol cost), the situation would worsen for the CBI firms. If sugar prices decline to about 5 cents a pound (60 to 70 cents a gallon wet ethanol cost), CBI companies could compete using only CBI feedstock. However, a recent World Bank study projected that world

sugar prices are likely to increase by about a few cents a pound over the next several years.

With a CBI feedstock requirement ranging between 10 and 25 percent and under the current cost structure, it would cost from 91 cents to $1.14 a gallon to make the ethanol and ship it to the United States. If sugar increases to 15 cents a pound, company costs would range from 93 cents to $1.18 a gallon. If sugar prices drop to 5 cents a pound, all the companies that fall within the representative cost structure could compete.

Table 1: Simulated CBI Ethanol Production Costs Under Alternative Feedstock Requirements[a]

CBI feedstock Percentage[c]	Cost of CBI Wet Ethanol[b]		
	$.60-.70[d]	$1.20-1.40 (current cost)	$1.80-2.10
10	.86 - 1.00	.91 - 1.06	.93 - 1.07
15	.86 - 1.00	.94 - 1.08	.96 - 1.11
20	.87 - 1.00	.97 - 1.11	1.00 - 1.15
25	.87 - 1.00	1.00 - 1.14	1.04 - 1.18
30	.88 - 1.00	1.03 - 1.17	1.08 - 1.22
60	(e) - 1.00	1.21 - 1.33	1.31 - 1.44
75	(e) - (e)	1.30 - 1.41	1.42 - 1.55

[a]Includes shipping to the east coast and customs charges. We assume CBI feedstock is mixed with European feedstock priced at 55 to 70 cents a gallon (190 proof) and processing and shipping costs are 30 cents a gallon.

[b]The recent world free-market sugar price was about 9 to 10 cents a pound. Assuming a proportional relation between this sugar price and CBI wet ethanol cost, the lower cost wet ethanol should be available when the sugar price is about 5 cents a pound and the higher cost wet ethanol should be available when the sugar price is about 15 cents a pound.

[c]Consistent with the Tax Reform Act, the simulation assumes the feedstock requirement is based on the value of the local feedstock relative to the value of the product. In estimating the required volume of CBI feedstock, an ethanol value of $1.10 a gallon was assumed.

[d]When CBI and European wet ethanol both sell for 70 cents a gallon, production costs do not vary.

[e]In these cases, it is cheaper for a company to use 100 percent CBI feedstock, which also qualifies for duty-free entry into the United States.

Production and employment from fuel ethanol in the Caribbean

According to one estimate, a 20-MGY dehydration facility should have a work force of up to 20 to 25 employees. On the other hand, a 20-MGY full fermentation plant annexed to a sugar mill would use enough sugarcane to employ 980 full-time and seasonal workers and 30 employees who operate the fermentation distillation plant.

One company in Costa Rica and one in Jamaica which operate dehydration-only facilities have also invested in sugarcane and full fermentation facilities. Another company in Jamaica has invested in sugar production and could build a full fermentation facility if the economics warrant it. However, the existing facilities can supply only a limited amount of the total feedstock required to operate the dehydration facilities. These facilities are seen as a way for the host countries to decrease their dependence on the sugar market by diversifying their use of sugarcane. Host-country governments believe this to be important, especially in light of declining U.S. sugar import quotas. CBI countries have been seriously affected by substantial reductions in their allocations under the U.S. sugar quota system which, in aggregate, declined 83 percent between 1981 and 1986. Ethanol is seen as a way of maintaining existing employment in the sugar industries of these countries. The U.S. Virgin Islands sees it as a way of reducing dependence on the tourist industry.

New investment in sugar and full fermentation facilities is unlikely without greater assurance of a long-run rate of return and a more favorable price structure than currently exists.

Although dehydration of imported wine alcohol provides significantly less employment and local production than full fermentation of local feedstock, it does provide CBI countries with economic benefits through employment and foreign exchange. The companies and government officials informed us that

-- all dehydration plants are capital investments in CBI countries;
-- the companies pay for local goods and services, most pay taxes on local purchases, and all pay salaries to host-country employees;
-- the dehydration plants directly employ about 25 to 40 persons, many of whom are college-educated, as well as maintenance, security, seaport, and other contract personnel; and
-- the companies provide revenue for the local port authorities.

STATUS OF THE U.S. ETHANOL INDUSTRY

To decrease U.S. dependence on imported oil, federal and state tax incentives have been provided since 1978 that made gasoline-ethanol blends, known as gasohol, competitive with gasoline. The federal gasoline tax exemption and the blender's tax credit, an alternative

to the tax exemption, currently are 6 cents a gallon for gasohol and 60 cents a gallon for ethanol. These incentives are scheduled to expire September 30, 1993 and December 31, 1992, respectively. At existing gasoline prices, ethanol is not competitive without the federal subsidy.

Early on, Congress decided against subsidizing ethanol imported from another nation. In 1980 it instituted tariffs on imports of foreign ethanol to offset the federal subsidy which ethanol enjoys. The tariff began lower but has been equal to the federal subsidy for domestic ethanol since 1982. Qualifying imports from CBI countries are exempt from this tariff and thus fully benefit from the federal ethanol subsidy.

Total U.S. fuel ethanol production capacity is estimated at 1.36 billion gallons a year, almost 74 percent of which is concentrated in the Midwest. Current operating capacity is about one billion gallons. One large Midwestern producer accounts for over 66 percent of the operational capacity and three smaller Midwestern producers account for almost 20 percent. As of the fourth quarter of 1987, there were 61 operating companies and a total of 77 companies had been shut down.[4]

Some states provide excise tax exemptions, sales tax exemptions, or producer tax credits for ethanol, ranging in value from 10 cents

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[4]Source: Information Resources, Inc., Washington, D.C.

to $1.40 per gallon of ethanol. Certain states impose restrictions on the applicability of ethanol incentives, such as "in-state" or "home-grown" clauses that are intended to encourage local production.

There is a strong correlation between the availability and generosity of state subsidies and fuel ethanol production and market penetration. CBI ethanol is not eligible for tax incentives in most states. This gives domestic producers an important advantage. However, during the past few years a number of states have reduced or eliminated their subsidies and more are expected to do so in the next few years. In January 1987, 28 states provided tax incentives whereas in January 1989 only 23 states did so.

Impact of CBI ethanol imports

Between 1979 and 1985, U.S. ethanol sales grew rapidly. Since then, however, they have stagnated. Annual sales are currently about 850 million gallons. Past imports from CBI countries peaked at about 29 million gallons, or 3 percent of the U.S. market in 1987. Questionnaire responses from several ethanol producers to the International Trade Commission in the fall of 1988 indicated little impact to date from CBI imports. Only a few examples of price suppression or lost sales over the past several years were provided.

The future impact of CBI ethanol imports will depend importantly on U.S. restrictions, CBI production capacity, availability of low-cost European alcohol feedstock, and growth of the U.S. market. The strength of the market depends on the continued availability of government subsidies, future corn and oil prices, and expanded use of ethanol to enhance gasoline octane ratings and reduce pollution.

SURPLUS EUROPEAN WINE ALCOHOL

In December 1988, the European Community (EC) approved a proposal for disposing of surplus alcohol stocks. The EC Commission advised us that the stocks on hand equaled about 264 million gallons of alcohol at the end of 1988. The Commission has estimated that another 291 million gallons of wine alcohol will be acquired during 1989-92. The Commission plans to sell a sizeable portion of these stocks in 1989 and additional stocks that it acquires over the next several years. It is estimated that by the end of 1992 the only surplus stocks would be those purchased that year (estimated at 58 million gallons).

It is questionable whether Caribbean producers can currently secure sufficient quantities of surplus European alcohol stocks to supply 88 to 120 MGY of capacity. Most CBI companies told us that it is difficult to purchase European wine alcohol stocks of adequate quality and at prices which would allow them to produce fuel ethanol at a price competitive in the U.S. market. If the EC

succeeds in its objective of substantially reducing the structural surplus in wine production over the next several years, CBI producers may no longer be able to secure low-cost European wine alcohol.

POLICY OPTIONS

Setting or modifying a local feedstock requirement tailored to today's market conditions is difficult because its impact can vary significantly as sugar, corn, and/or oil prices change. Prices for these commodities have varied substantially in the past. In addition, individual company cost structures differ. The risk involved in setting a specific requirement is that, at any given time, it may either be so low as to promote pass-through operations or so high as to make CBI companies uncompetitive.

An added difficulty in modifying the 75-percent local feedstock requirement as contemplated by the 1988 Trade Act is that the several policy objectives of that legislation are in conflict. Thus, our report discusses three options which were presented to show a possible range of options available, depending on the priorities of the Congress.

In the first option, in addition to the 35-percent, value-added requirement, Congress could set a local feedstock requirement ranging between 10 to 25 percent. Currently, most companies could

probably meet a 10-percent requirement and some might meet a higher one. Under the assumption that oil prices will increase in future years, Congress could initially require that companies meet a 10-percent requirement, with increases to 20 or 30 percent in future years. If the price structure improves, the companies might be able to meet a higher requirement; however, if the cost or price structure becomes less favorable in the future, it could make companies noncompetitive.

Option two would eliminate any local feedstock requirement while maintaining the 35-percent, value-added requirement of the original CBI law. One reason for considering this option is that the local feedstock requirement for ethanol changed the rules for a CBI product after investments had already been made. CBI government officials believe this change has adversely affected investor interest in the CBI program more generally. Option two would enable all currently exempt plants to operate as long as they can meet the original 35-percent, value-added standard. Plants have used some local feedstock to meet this requirement and some plan to maximize the use of local feedstock as long as their ethanol is still competitive. However, option two would not encourage companies to maximize the use of local feedstock.

Option three stems from the 1988 Trade Act provision. The Act provided a limited exemption from the local feedstock requirements for 1988 and 1989 for a number of CBI dehydration facilities

already completed or under construction. Each can import into the United States up to 20 million gallons of ethanol duty free without meeting the 75-percent local feedstock requirement. Option three would provide permanent exemptions from any local feedstock requirement, up to a 20-MGY cap, for each of the currently exempt plants. A local feedstock requirement, say 30 percent or higher, could be established for exports above the cap or for all production of any new plants. This option would enable the exempted plants to operate as long as they meet the 35-percent, value-added requirement. It would also provide an incentive to use additional local feedstock to increase exports above the cap. It would cap CBI exports based on low-cost, imported feedstock at a maximum of 120 MGY and ensure U.S. industry that exports over that amount would include at least 30 percent local feedstock.

Mr. Chairman, this concludes my prepared statement. I will be happy to respond to any questions you may have.