

Petroleum Industry Research Foundation, Inc.**122 EAST 42nd STREET****New York, N. Y. 10017****WHITHER U.S. REFINERIES?**

by

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Seven months ago when your President Don O'Hara invited me to address your 1978 convention we agreed that this would be a good time for a first assessment of how the refining industry is faring under the Administration's broad new energy policy which would surely be operative in some form by the time of the meeting.

Well, as we all know, a funny thing happened to the President's energy policy on the way to the Senate Forum. As a result, the eventual shape of much of his energy policy remains as speculative as it was last September. This applies particularly to those aspects of primary interest to U.S. oil refiners. With this major caveat let us try to take a look at what lies ahead for the U.S. oil refining industry over the next few years.

A logical starting point is of course the present. Obviously, it is not the best of times for U.S. refiners. But one quick look at the refining situation abroad will convince you that it is far from the worst of times. On the negative side there is the continued over-regulation of the industry, particularly the maintenance of price controls on gasoline four years after the only justification for it, the Arab oil embargo, has ended. With a world wide surplus in crude oil, with U.S. refineries running about 10% below sustained operable capacity and with gasoline prices generally below the permissible ceiling due to competitive pressures, the continuation of these controls is a classic example of how special interests can completely pervert the original intent of an emergency legislation. It is heartening that the Administration seems to agree that gasoline price

controls are no longer justifiable. Regrettably, it has, so far, failed to translate its view into action.

An unintended by-product of this delay has been the reluctance of U.S. refiners to convert their plants from sweet to sour crude feedstock, since at least half the ensuing savings in crude oil costs would have to be passed on directly to consumers under existing regulations. Yet, the government probably agrees that there is an urgent need for such conversion to give U.S. refiners more flexibility in crude selection, both domestically and internationally. The current difficulty to find a home for Alaskan and California heavy crude, and Saudi Arabia's recent decision to increase the share of heavy crudes in its exports are cases in point.

On the positive side, the industry has a number of things going for it at present. Refineries are operating near 85% of crude capacity and can be expected to move towards 90% over the next twelve months; demand is likely to rise by about three percent both this year and next; and crude oil costs to domestic refiners will continue to be substantially below those of their foreign competitors for the next two or three years under almost any realistic scenario.

For a gloomy contrast to the prevailing domestic situation let us take a quick look at what is happening in Europe. There, refinery runs are currently at 66-68% of existing capacity and are expected to be still well below 80% even five years from now. Refinery operating margins range from nominal profits to substantial losses, with profitability often inversely related to government price control, i.e. the

freer the market the bigger the losses. Total European demand rose by 1.0-1.5% last year and is unlikely to do better this year. Imports from the Soviet Bloc have increased substantially and are now about 400,000 b/d, while the two OPEC members geographically closest to Europe, Libya and Algeria, are requesting market access for their new export refineries. Europe's problem is therefore not how much new refining capacity is needed but how much existing capacity can be shut down.

There is little likelihood that the U.S. refining industry will ever experience the traumas of their European counterpart. But its splendid isolation from its struggling overseas competitors may be in for some changes. For there are a number of potential problems ahead for domestic refiners, some of them structural and some legislative or administrative. Among the first is the expectation that U.S. oil demand will grow at a substantially slower rate after 1980 than it is presently. For the entire decade of the 80's our organization foresees an average annual growth rate of just under 1%. Another factor is that gasoline, historically the industry's prime money maker, will actually register a declining demand rate throughout most of the 1980's. Gasoline producing and distribution facilities are therefore likely to be underutilized throughout the next decade. This could put downward pressure on gasoline profit margins, depending on how quickly the excess capacity is inactivated or converted.

But far more important than these structural developments will be future cost of domestic crude oil to U.S. refiners which depends of course entirely on government policy. As you are all well aware, at

present the average cost of all crude oil to a domestic refiner is about \$2.40/bbl, or 20%, below what it would be in the absence of domestic crude oil price controls and entitlements. The law controlling domestic crude oil prices expires in May 1979 but the President has the option to continue it for 2½ more years. As we know, the Administration wants to replace the entitlement system with a Crude Oil Equalization Tax (COET) which would raise all domestic crude prices to approximately the world price level by 1980. Failing to gain support for the required legislation, the President has indicated he may want to impose a substantial fee on all imported crude oil and distribute the cost of this fee equally among all U.S. refiners through the existing entitlements system.

It is of course impossible to predict at this moment which of these programs or what combination of them with what time horizons will emerge out of the present debate. Personally, I think the recent announcements of the death of COET have been somewhat premature. At any rate, it seems reasonable that in the absence of sharp OPEC price increases the differential between domestic prices and foreign prices, through one method or another, will narrow and will more or less disappear sometime between 1980 and 1985.

If and when this happens, it is bound to lead to a sharp increase in competition in the U.S. from the under-utilized market-hungry refiners of Western Europe and the Caribbean. In the absence of offsetting import protection measures, this would of course affect both the construction of new domestic refining capacity and the utilization

of existing capacity. Let us look at both. Given our declining future growth rate, not much additional refining capacity will be required in the U.S. Still, by 1985 capacity additions of 1.5-2.0 million B/D to the end-1977 level of 16.9 million B/D will be needed if product imports are not to rise significantly. Considering that new refining capacity costs 2.5-3.0 times as much as most existing capacity and that most Caribbean and European export refiners are quite willing to consider only actual operating costs in setting their minimum profit margins, new domestic refining capacity could not possibly compete with existing foreign capacity in supplying incremental U.S. oil products supplies. Thus, without a government policy to substantially increase the existing protection for new refining capacity against import competition, either through a higher products import fee or through tax or other direct incentives, little or no new refining capacity is likely to be built in the U.S. from about 1980 on.

From the lofty and rather academic point of view of optimizing international economic efficiency, such a development would probably make sense. Why should the U.S. expand effort and resources to increase its refining capacity when more than adequate capacity is available abroad to meet our modest incremental oil products requirements of the next decade?

From the more practical viewpoint of the U.S. balance of payments, a switch from crude oil to products for much of our incremental import requirements would have some negative impact, but it would be limited.

A switch from crude to heavy fuel oil would have virtually no impact on the cost of oil imports; a switch to middle distillates could increase import costs by \$2/bbl or more in the 1980's which could be substantial since middle distillates will be the fastest growing major oil product in the next decade; a switch to gasoline would be still costlier but, as pointed out, there should be no need for incremental gasoline supplies in the next decade.

From the point of view of U.S. national security, the case for new domestic refining capacity as against additional products imports has some merits but they are quite limited. The big security problem for the foreseeable future will be the global availability of crude oil. As long as that availability exists foreign refineries with excess capacity will be ready to sell products to the U.S. If foreign crude oil supplies become interrupted, additional domestic refining capacity would of course be of little use to the U.S. However, our Strategic Petroleum Reserve would still be useful in that it would enable us to exchange crude for products with foreign refiners during an emergency.

From the point of view of domestic investment and employment, particularly in the construction stage, the location of additional refining capacity in the U.S. would obviously be preferable to the importation of additional foreign products. In a slowly growing economy this could become an important consideration.

The Administration, and probably also the Congress, will have to weigh all these factors, as well as the claims of the environmentalists for absolute priority for their clean air and water targets, in deciding on where it wants the 1-1.5 million B/D increase in U.S. products demand

between 1980 and 1985 to come from. Failure to take action during the current year could be tantamount to deciding in favor of the import option, given the lead time required to build new facilities.

The other question is what would happen to the output from existing domestic refineries if and when the price differential between foreign and domestic crude oil disappears. While foreign competition with existing domestic plants would be more limited than with new ones, most foreign export refineries have relatively lower crude oil costs because they process lower quality crude and have direct access to supertankers, while U.S. refiners must incur transshipping or lightering costs for much of their foreign oil.

Altogether, I doubt whether foreign refiners could successfully compete on a significant scale in the Gulf Coast or the West Coast market with existing refineries. But they could be expected to do so on the East Coast with domestic products shipped by tanker from the Gulf Coast. About 1.2 million B/D of products are delivered in this manner, well over half of it to the northern parts of the East Coast where the competitiveness of foreign refiners would be at a maximum due to the high cost of domestic tanker transportation.

The product most affected would be residual fuel oil, a large part of whose 130,000 B/D brought up from the Gulf Coast could be expected to be displaced by imports. This reflects the fact that heavy fuel oil is the principal surplus product outside the U.S., because in the Eastern Hemisphere most of the recent and expected shifts from oil to other energy sources and most oil conservation measures have been concentrated on this one product, causing a decline in its demand unmatched by that

for the other parts of the barrel.

For the East Coast this would mean a return to the pre-1973 situation when virtually all residual fuel oil was supplied from abroad. But there would be imports of lighter products as well, some gasoline but mostly the various middle distillate fuels of which the Gulf Coast ships about 400,000 B/D by tanker to the northern East Coast. It is important to keep in mind that these imports would not come in because of insufficient domestic supplies but because if U.S. crude oil costs moved to world levels, Gulf Coast refiners would either have to reduce their profit margins or lose part of their East Coast market to foreign competitors, notwithstanding the existing 42¢/bbl net products import fee. Probably a combination of both developments would occur, with the lower prices also affecting East Coast refiners, Gulf Coast refiners not marketing at the East Coast and so on.

It will not be easy for the government to find a solution for these problems. Its basic premise that domestic crude prices must be raised all the way to replacement cost, that is import prices, is essentially correct. But so would be the refining industry's contention that the resulting reduction in its profit margin will not permit it to expand, upgrade or even maintain its capacity. At the same time, East Coast consumers would certainly object to any measure that would raise their products prices above the world market level.

So, whatever solution the Administration comes up with will be criticized by some. Perhaps if the criticism is equally strong from all sides it may be taken as a sign that the best possible solution has been found.