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April 26, 2011

MEMORANDUM

TO: Mr. Ken Bruno
Campaign Coordinator
Corporate Ethics International

FROM: Terry Higgins
Executive Director, Refining
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SUBJECT: Feasibility of Hyperion Refinery Project in South Dakota

This memorandum summarizes Hart Energy's opinion on the viability of the proposed Hyperion refinery project, focusing on the supply, demand and economics of a major U.S. Midcontinent refinery expansion.

The Hyperion project consists of a state of the art 400,000 barrel per day new refinery located in South Dakota. The refinery would be designed to process heavy Canadian crude oil (primarily oil sands derived) and produce a high yield of clean ultra low sulfur refined fuels (i.e., gasoline, diesel fuel and jet fuel). The reported project investment is \$10 billion with construction to begin in 2011 and project completion targeted for 2015.

Project information and promotions have pointed to a number of market trends calling for expanded high complexity Midcontinent refining capacity:

- the increasing production of heavy crude oil from Canadian oil sands will require additional North American heavy crude oil processing capability,
- enhancement of U.S. refined product supply would be beneficial in view of the fact that U.S. refining has not kept up with growth in demand and an increasing deficit of gasoline, diesel and jet fuel has developed,
- expanded capacity would reduce foreign imports of refined products,
- the U.S. Midwest imports over 1 million barrels per day of product from the U.S. Gulf coast,
- the 400,000 barrel per day refinery would benefit from economies of scale and efficiencies over existing smaller and older U.S. refining capacity.

The reported refined product production from the Hyperion refinery would include 255,000 barrels per day of gasoline, 169,000 barrels per day ultra low sulfur diesel and 40 thousand barrels per day jet fuel.

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In Hart Energy's opinion, the Hyperion refinery project may not represent a viable refinery expansion project based on projected market economics and supply/demand requirements. The U.S. refining industry cannot support the additional capacity and is not likely to provide the required return for the investment. The incremental product supplied by the Hyperion refinery is not required to meet demands of the U.S. or of the Midcontinent markets. Some rationalization of smaller U.S. refinery capacity is anticipated, but surplus U.S. Gulf refineries will retain a strong competitive position in local markets and incrementally in the Midcontinent market.

U.S. refineries currently operate at around 86% utilization, down from close to 90% (near maximum for refining) prior to the recent economic crisis. Globally, refinery utilization has declined as well. U.S. refinery throughput is expected to increase some through 2015 (a little less than 200,000 barrels per day) and then decline by about 300,000 barrels per day by 2020 and another million barrels per day over the following decade, driven by declining U.S. refined product demand. Meanwhile, scheduled refinery expansions currently underway will add 350,000 barrels per day of capacity over the next few years.

Without additional shuttered U.S. refinery capacity, percent utilization will decline. Some shutdowns are anticipated, but utilization is expected to remain low. Addition of the 400,000 barrels per day Hyperion capacity would further reduce U.S. capacity utilization by more than 2%. Surplus capacity and forced capacity rationalization will continue to place downward pressure on refinery margins. Market conditions will not be adequate to justify return on investment for new capacity.

A new and state of the art 400,000 barrel per day will benefit from economies of scale and other efficiencies, but will compete with existing facilities with sunk capital costs. Many of the Gulf refineries also have the advantage of access to export and petrochemical markets for a portion of their production.

Prior to the economic recession, U.S. refined product demand grew at a greater pace than refinery production capability and product imports increased to meet demand. Since 2007, the trend has dramatically reversed. Demand has declined and refinery product production capability has increased. Net imports (imports less exports) of gasoline, diesel and jet fuel have declined by more than one million barrels per day. Net gasoline imports were reduced by 50% and the U.S. is currently an exporter of more than 400,000 thousand barrels per day of diesel. There is little requirement for additional domestic production refining capacity to balance demand. Most remaining product imports consist of gasoline imports to the U.S. East coast where refiners compete with surplus product from Europe. The aggregate Gulf and Midcontinent regions have surplus gasoline, diesel and jet fuel product which is exported.

U.S. demand is expected to increase between now and 2015, but the increase for the entire U.S. will be less than the reported planned production from the Hyperion refinery. Furthermore,

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scheduled increases in output from other refinery expansions currently under construction (Motiva in Texas, Cenovus in Illinois and BP in Indiana), along with additional product supply resulting from renewable fuel requirements under current law will produce more than twice the anticipated U.S. product growth between now and 2015.

Beyond 2015, gasoline demand in the U.S. is projected to decline due to the implementation of fuel economy standards specified under Energy Independence and Security Act of 2007(EISA). Demand for gasoline plus diesel and jet fuel will decline 2% to 3% between 2015 and 2020 and an additional 8% to 9% over the following decade. There is no market need for the additional refined product production planned for the Hyperion project. Any production generated by the project would result in additional exports from the U.S. and/or shut down of additional U.S. refining capacity. Major capacity expansion projects planned in Brazil will make it difficult to expand into the Atlantic export market in the long term.

Similar to the changing trends in U.S. refined product supply and demand since the onset of the economic recession, product shipments from the Gulf coast to the Midcontinent have declined significantly since 2007, by more than 50%. The Midcontinent is far less dependent on supply from the Gulf coast. Many of the Midcontinent markets still being supplied by the Gulf can be supplied more efficiently by these Gulf refineries than capacity in South Dakota.

The growing output of oil sands derived crude oil has led to tightness of refining capability to process heavy crude in the Midcontinent and depression of heavy crude oil prices. The Hyperion project would add heavy crude oil processing capacity in the Midcontinent, and would be able to take advantage of any heavy crude oil discount in the local market. However, there are a number of refinery (Cenovus and BP) and pipeline projects that will mitigate the heavy crude processing logistic constraints by 2015, diminishing the prospects for large, sustained heavy crude discounts. Again, product demand will not support the additional refinery capacity in the region so Hyperion capacity would need to replace existing refinery capacity (without major new capital costs). There is also a growing supply of light high quality Midcontinent crude (i.e., Bakken production) available to existing facilities not capable of processing the heavy Canadian crude.

In summary, given that U.S. refining capacity will remain long and utilizations will be well below maximum, that near term product demand growth can be more than covered by ongoing capacity expansions and that the longer term need for refining capacity and U.S. refined product production will decline, the outlook for U.S. markets and refining economics will not support a major investment in new grass roots refining capacity.

Prior to the increases in oil prices experienced over the past few years, the economic recession and the fuel economy and renewable fuel requirements established under EISA, the outlook for growth in refined product demand was much higher than it is today, as was the anticipated need for additional U.S. refining capacity. Refinery expansion projects recently completed or currently

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under construction were based on this earlier outlook. Some other planned expansions were cancelled when market trends reversed. The current economic and market environment no longer support this favorable refinery investment outlook.

Heavy Canadian crude oil has been discounted in Midcontinent markets due to tightness in heavy crude refinery processing capacity. There also is currently an overall surplus of crude oil (heavy crude as well as light crude in the Midcontinent and all local refiners are profiting on discounted crude oil prices. Hart Energy believes that by 2015 the Midcontinent crude logistic constraints will be addressed, the Midcontinent crude oil surplus will be eliminated and prices will equilibrate to other U.S. and foreign markets. Once the logistics provide for additional heavy crude access to Gulf refineries, heavy crude oil differentials will decline. Additional heavy crude processing capacity in the Midcontinent would further eliminate any regional processing constraint and diminish the prospect for any significant Midcontinent heavy crude discount.

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