



July 5, 2007

The Honorable Vernon A. Williams
Secretary
Surface Transportation Board
395 E Street, S.W.
Washington, DC 20423-0001

Re: STB Ex Parte No. 672,
Rail Transportation of Resources Critical to the Nation's Energy Supply

Dear Secretary Williams:

Pursuant to the order of the Board served on June 6, 2007, attached are the comments of
Ethanex Energy,
Inc. for filing in the above proceeding.

Respectfully Submitted,

Randall Rahm,
Chief Operating Officer

**BEFORE THE
SURFACE TRANSPORTATION BOARD**

STB EX PARTE NO. 672

**RAIL TRANSPORTATION OF RESOURCES
CRITICAL TO THE NATION'S ENERGY SUPPLY**

**WRITTEN COMMENTS
OF
RANDALL RAHM, CHIEF OPERATING OFFICER
ETHANEX ENERGY, INC**

BEFORE THE
SURFACE TRANSPORTATION BOARD

STB EX PARTE NO. 672

RAIL TRANSPORTATION OF RESOURCES
CRITICAL TO THE NATION'S ENERGY SUPPLY

My name is Randall Rahm and I am the Chief Operating Officer of Ethanex Energy, Inc. Ethanex commends the Board for this Ex Parte proceeding and is pleased to submit comments in response to the request for views regarding the rail transportation of resources critical to the nation's energy supply.

Ethanex is an ethanol producer that is bringing cutting edge technology to ethanol production while maximizing the use of each sub-product of the production process. As such our plants are hyper-efficient, producing more from less. For example, Ethanex Energy plants consume less energy and less water per gallon of ethanol. In addition, our plants utilize a biomass energy center to provide power for the plant, decreasing the cost of energy while removing reliance upon fossil fuel and reducing our carbon footprint.

My statement is divided into two parts. The first part will cover, in brief, ethanol, the industry, the multiplier effects, the production process for the industry, and how Ethanex's production process differs. The second part will cover the supply and demand factors for energy (oil) and transportation of ethanol by three different modes.

Part 1

Ethanol

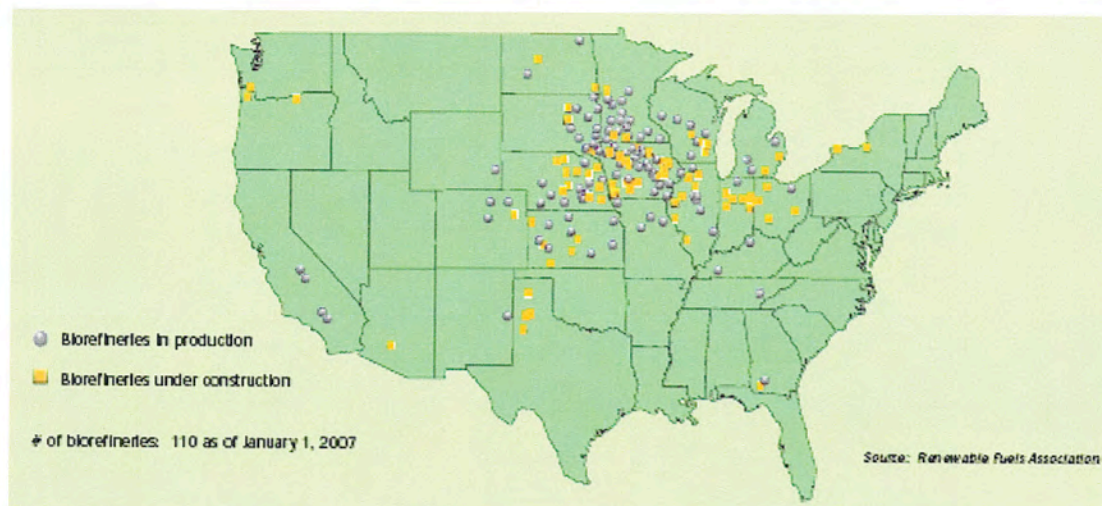
Ethanol is a water-free liquid alcohol made from a fermentation process. Feed stock for the production of ethanol can be corn, barley, sorghum, and wheat. Some producers of ethanol can use inputs such as corn stalks, trees, switch-grass, and sugarcane through the development of new yeasts. About 60 percent of world ethanol production is from sugar-based crops. The remaining 40 percent use grain-based crops. Of the current US production, nearly 97 percent uses corn as the main feedstock.

Ethanol as an alternative fuel provides many benefits. Ethanol is a eco-friendly and clean burning fuel. It is economical and renewable thereby reducing our dependence on foreign oil. The use of ethanol reduces the need for offshore drilling and reduces global warming. Essentially, ethanol is the way forward to energy independence, a cleaner environment, and a stronger self-sustaining economy.

The Industry

There are over 125 facilities currently producing ethanol in the US with nearly 6.0 billion gallons total annual capacity. The industry is spread out into more then twenty states with more facilities coming online every year. In fact, nearly 80 facilities are currently under construction. Chart 1 below shows the geographic distribution of bio-refineries throughout the US.

Chart 1 – Geographic Distribution of Ethanol Refineries



According to the American Coalition for Ethanol and Energy Information Agency ethanol production was nearly 4.89 billion gallons in 2006 up from 3.4 billion in 2004. The industry is comprised of farmer and locally owned plants which produce about 40 percent of total capacity, while larger firms control the remaining 60 percent.

Ethanol is currently blended (E-10) with 46 percent of total gasoline consumed in the US and comprises about 3.5 percent of total annual US gasoline consumption. As the market for flex-fuel vehicles grows (currently about 6 million cars), so will the demand for E-85 ethanol. Currently, nearly 50 million gallons of E-85 is consumed and is available at over 1,000 gas stations.

The Multiplier Effect

The explosive growth of the ethanol industry has many benefits to the economy as a whole. As the study by Northwestern University's School of Management¹ found, 370 construction and support jobs are created during the development of plant. Moreover, each new plant establishes nearly 4,000 permanent local jobs. The study also found that plant construction creates \$60 million to \$130 million in additional income for the locale while operations create between 47 million to \$100 million in economic benefits. Also, the addition of large production facilities, add to the tax base of the respective communities.

An increase in ethanol production benefits agricultural concerns. Increases in demand for corn and wheat and other grains stir economic activity and brings economic development to supplying areas. According the USDA, renewable fuels could generate and additional \$2 billion to \$4 billion in net farm income by 2012. Another indirect effect is the increase in the demand for rail transportation and rail car assets. These upstream and downstream effects are causing a real positive change in the general economy. For this proceeding, I will forego enumerating all of the non-pecuniary benefits to the environment and energy security.

¹ Evans, Michael K. "The Economic Impact of the Demand for Ethanol" Diane Publishing, Derby, PA, 1997.

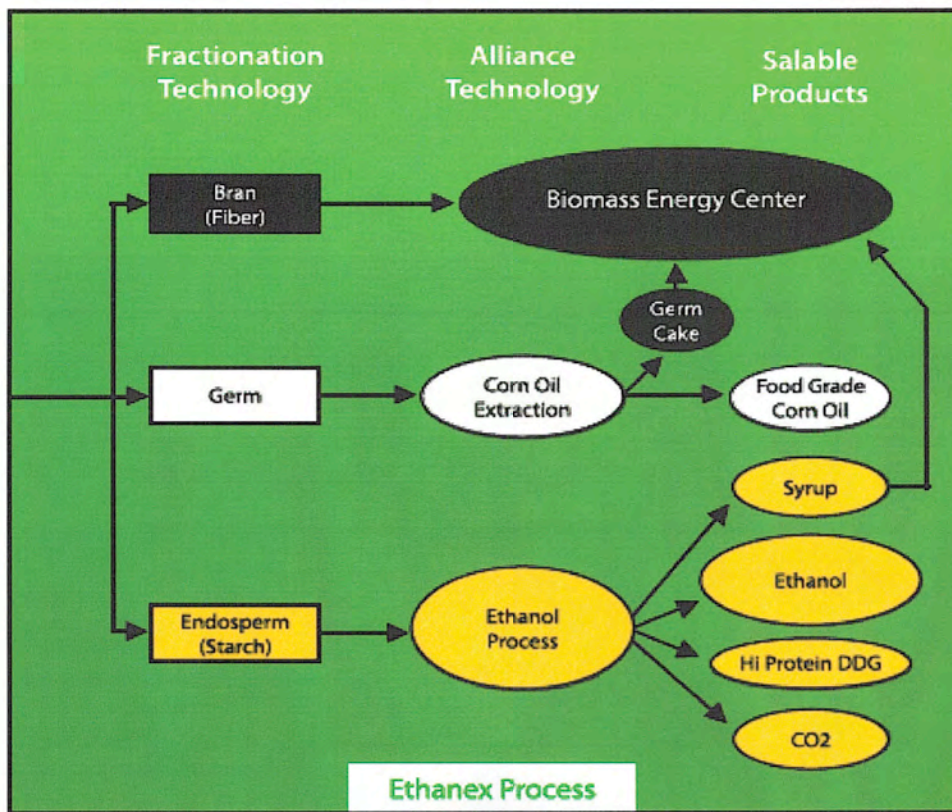
The Production Process

I will now cover the ethanol production process in short. The process begins when a feedstock, such as corn, is delivered to the plant via rail or truck. Like electric power generation plants stock coal, ethanol plants store feedstock in a holding cell. Most plants stock enough feedstock for 10 to 15 days operational consumption to ensure continuity of operations. The next few steps are similar to producing any alcohol; the grain is milled, mixed with water and enzymes into slurry, and then held in tank to allow the starches to be converted into fermentable sugar. After the creation of the sugar, yeast is added to the mash and allowed to ferment for about 50 hours – the resultant mixture is called “beer” – but not the kind to get excited about. The “beer” is then distilled separating the alcohol from the solids. The solids are removed for further processing into distiller grains processing. The alcohol is further refined to yield a 200 proof anhydrous ethanol – *sans* all water. The ethanol is then denatured and stored for transportation.

The Ethanex Fractionation Process

Ethanex generally use the methodology described above. However, Ethanex also employs a fractionation methodology. Fractionation is the key to unlocking the full potential of corn based ethanol production and is the core of our bio-refinery system. This process separates each kernel into its primary components: bran, germ, and starch. With the three discrete streams comes the ability to further refine and maximize the potential value from whole corn. Diagram 1 below shows the Ethanex Fractionation Process.

Diagram 1 – Fractionation



Ethanex is revolutionizing the ethanol industry by using a green process to produce a green product. In fact, Ethanex spends 25% less per gallon to produce ethanol versus the most common production method. We consume 20% less energy, 15% less water, increase ethanol production by 20% and generate a greater number of higher value co-products, including food-grade corn oil. All of this is powered by green bio-mass energy that costs 70% less than the traditionally employed fossil fuel.

Part 2

Supply and Demand

Oil prices have hovered over \$50 per barrel for quite sometime now. This is caused by myriad reasons. For example, Nigeria has been hit with civil unrest making production unreliable. Nearly four years into the Iraq war, oil production has yet to return to pre-war levels. Saudi Arabia is pumping oil at full capacity with new production years away. There is

uncertainty over the supplies of oil in Iran due to tensions over Iran's nuclear program. And lastly, the regime in Venezuela is increasingly hostile towards the US. Even if the given geopolitical tensions did not exist, supply would still be tight because of refining capacity. This is not a rosy supply side picture. On the other hand, demand for oil is climbing precipitously. Demand for oil in China is at record levels and the same is true for India. Concurrently, demand in the US has yet to slow down, even with record oil prices. In this economic environment, ethanol is perfectly positioned to provide the US economy a viable renewable fuel option.

Transportation – Pipeline

Pipelines are by far the most efficient way to transport large amounts of liquids. Pipelines cost about one-third of what it cost to use rail or barge transportation and transport nearly 70 percent of the gasoline/petroleum used in the US.

For ethanol, however, pipelines are problematic. While petroleum pipelines can “share” space with other petroleum products, ethanol cannot. Ethanol has high solvent properties which “pick-up” deposits left behind by petroleum products. Also pipelines are sometimes prone to water contaminations. This is not a problem for gasoline as it does not mix with water. Ethanol, however, is hyscopic and would require any amounts of water contamination to be re-refined out of the product. Even blends of gasoline with ethanol are problematic for pipelines because if a water contamination occurs, it “strips” out the ethanol from the blend and then the product must be re-refined before use.

Assuming that water-proof dedicated pipelines could be developed for ethanol, there would still be the problem of volume. There is insufficient volume to justify an expenditure of \$1 million to \$2 million per mile for such a pipeline. Thus, pipelines are not a feasible option for ethanol transportation.

Transportation – Barges

Barges move nearly 15 percent of the nation's total freight shipments. Barges can also move freight using intermodal service (any combination of rail, truck, and barge) to expand

access for shippers. However, each trans-load increases costs significantly. Even disregarding the trans-load costs and proximity to navigable water there are still other hindrances to barge transportation. The locks on the upper Mississippi are too small to move the volume of ethanol projected to be produced in the coming years. The availability of barges is severely limited and the freezing of waterways during the winter months on the Mississippi and Missouri rivers is also problematic.

Transportation – Rail

Railroads moved nearly 7.2 million tons of ethanol in 2006. Granted, in the grand scheme for railroads, this is less than one percent of the traffic that they carry, but at the rate at which ethanol production is expanding – cooperation and coordination is mandatory for everyone's future success. With nearly a 50 percent predicted increase in ethanol production capacity in the coming years, lack of planning has the potential of hurting feedstock suppliers, ethanol producers, blending terminal operators, and the railroads themselves. Everyone must gear up for the challenge.

Feedstock Suppliers – As the Board is well aware for years now, there have been railroad car shortages and delays in providing rail service to agriculture producers. Though this has changed, this problem is one of great concern to ethanol producers. Not unlike electric utilities require a stockpile of coal for continuous and smooth operations, ethanol producers require corn or wheat or sorghum or whatever feedstock the plant uses to be available when the production run is ready to begin. Hence, the delivery of grain shipments must be predictable and reliable, as should service to move the out-bound ethanol and co-products. We recognize the changes that have occurred in the agricultural sector with respect to rail transport, namely, the movement to unit-train shipments at larger grain elevators and this has vastly increased productivity of the hopper car fleets. However, our concern is that as demand increases, locations that once functioned without capacity constraints will become new bottlenecks. The time is now before the aggregate demand for grains grows, for the agricultural sector to begin planning hand-in-hand

with the railroads and ethanol producers to ensure an adequate supply of hopper cars and infrastructure for proper movement of feedstock.

Ethanol Producers – As new plants are being designed and aggregate demand for ethanol grows, rail transportation is becoming vital. New plants are being designed for unit-train service, not only to receive unit-train shipments of corn and other grains, but to ship using unit-trains. For example, turn around time for rail cars depends on the type of shipment - unit-train or *less-than-trainload*. Single or smaller groups of cars move less frequently and can take two to three times the amount of time a unit-train takes. To this end, ethanol producers that have smaller facilities may have to expand plant infrastructure or partner with other plants to provide homogenous unit-train shipments to promote a harmonized and cohesive industry-wide function. This is being facilitated by some railroads, i.e. BNSF, promotes unit-train shipments from smaller plants by gathering from multiple plants to build unit trains. At the same time, larger producers must make the requisite investments in industry track and loading facilities.

Railroads – Seventy-five percent of the total annual production of ethanol is shipped by rail. The remaining 25 percent is moved via truck. This is the case because of simple economics, a single gallon fuel can move one ton of ethanol about 60 miles via truck, while that same gallon of fuel can move the same ton of ethanol more than 385 miles via rail. The railroads for their part are to be commended for the attention and concern they have shown for ethanol transportation.

BNSF's Ethanol Express service was the industries first ethanol unit-train service and began in late 2003. This service from BNSF uses 95-car unit-trains and has reduced cycle time by nearly 50 percent for cars and lowered inventory costs. Union Pacific serves 43 ethanol plants and operates 75 to 100 car unit-trains. Norfolk Southern has experienced growth in the ethanol and ethanol related traffic. For example, NS provides benefits to shippers through its Mercury Service, a 75-car grain shuttle program and unit-train service to ethanol terminals in the east. CSX's EthX express ethanol delivery service, serves destinations east of the Mississippi. The

EthX service provides unit-trains with 65-cars or more and is flexible in that it provides intermodal service and storage for ethanol at its facilities.

Unit-train services at the Class I railroads have improved markedly. Still, this efficiency will be further improved as new methods and techniques are implemented. For example, unit-train coal shipments are offloaded and turned around in four to six hours at electric power generation plants, while unit-trains at ethanol plants can take 24 to 36 hours. The ethanol unit train market is evolving when compared the highly efficient coal and grain unit train markets. As supporting origination and destination infrastructure is developed, these metrics should improve markedly and thereby reduce costs.

The probability of new bottlenecks developing on the rail system is a real possibility, especially without a significant portion of traffic moving in unit-train service. Potential bottlenecks could develop in railroad yards and switch capacity and terminal space could be strained. These problems are foreseeable and can be addressed if railroads plan expansions of their systems proactively. I will add though, that the railroad industry is making sizable capital investments expanding capacity in key corridors to major consumptive areas, but I will leave that for the railroads to address.

Blending Terminals – There is great concern in the ethanol industry that the privately-owned blending/terminal facilities owned and operated by refiners, producers, or 3rd party operators are not up to par when it comes to handling unit-train shipment. Most terminals are limited to handling only three to five cars at a time and even a larger terminal can only spot 15 to 20 cars. Thus, even with unit-train operation for bringing in feedstock and moving out ethanol and co-products, the destination terminals which use the ethanol are the factor limiting productivity. This bottleneck will have to be addressed in the near future, especially as the use of E-85 expands and the increase in ethanol use due to the recent elimination of methyl tertiary-butyl ether (MTBE) from gasoline. Because of these changes, the fuel additive industry is

success it accomplishes as well as the success upstream and downstream linkage are going experience. There must be a cooperative and collaborative spirit between the feedstock providers to harmonize the service within the industry. Ethanol producers must build facilities with unit-train capabilities that are efficient and can respond to efficient railroad transportation needs. Railroads must anticipate proactively the future expansion of the ethanol industry and be ready provide fast and efficient service. The blending and refining terminals must expand and enhance their facilities to the realities of an expanding ethanol presence. Lastly, railroads must be responsive to transporting co-products such corn oil and DDGS in a timely and efficient manner and the receiver of these co-products must also harmonize their shipping system with ethanol producers. This symbiosis can only be created with careful planning and foresight – this proceeding is good step in that direction.