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USS-POSCO Industries' Strategy in Freight Transportation Mode, Vehicle Design, and Product Storage, to Improve Efficiency

Remarks by Michael Obermire

Director of Business Planning

USS -POSCO

Good Afternoon. Thank you for allowing me the honor of addressing this very distinguished gathering of government and business leaders. The 750 men and women working at USS-POSCO Industries welcome you to Northern California and to the United States of America.

USS–POSCO Industries is a 25 year old joint venture joining United States Steel of Pittsburgh, PA, and POSCO of Korea. We are located 30 miles east of San Francisco adjacent the Sacramento delta waterway. Steel has been produced on our property for over 100 years, but it wasn't until 1986 that POSCO and USS joined forces. And, I proudly add that steel is the most recycled product on the planet!

We are a Steel Finishing Corporation, receiving Hot Rolled Coil as our raw material and converting it into Cold Rolled Annealed, Hot Dipped Galvanized, or Tin Coated Steel at one of our 10 different manufacturing units located at our 500 acre facility.

We typically receive 1.5 million tons of raw material each year; one half from POSCO, on one of four, 30,000 MT capacity vessels designed specifically for UPI. When built, these four ships were the only Selective Catalytic Reduced equipped ships in the world, allowing them to enter the San Francisco Bay and travel the 45 miles to our mill virtually pollution free. The remaining 750,000 tons of hot rolled coil comes to us by rail on 70 car unit trains from USS facilities in Indiana, Illinois and Alabama. In total we receive over 7,500 rail cars and 24 vessels each year.

Today though, I will concentrate on **simple yet innovative changes** in our methods of shipping finished products that allow us to increase freight efficiency, reduce our carbon footprint and reduce freight cost, by

(1) Changes in the Mode of transportation,

(2) Modifications of the Vehicle Design, and

(3) Changes to the factory environment.

Like the raw material, all finished products ship to our customers in coil form, with each 70 inch in diameter (1.8 meter) coil, weighing 16,000 to 30,000 pounds, or roughly 7 to 14 metric tons. So, two coils typically will be the maximum weight that a truck can carry, although there is still plenty of space left over.

Not long ago UPI shipped 1,100 trucks per week from our mill, and of those, 380 trucks were headed for Southern California. We saw an opportunity to improve our supply chain into Southern California, provide better service, reduce cost, and reduce our environmental impact by changing the mode of transportation. We partnered with the BNSF railroad to establish a unit train rail delivery system to southern California, and with Budway Enterprises to build and operate a transloading and delivery company. Rather than shipping by truck, now we send two, 50 car unit trains each week from our Steel Mill in northern California to the Budway warehouse in Los Angeles. At the Budway facility, the rail cars are unloaded and the steel coils are stored in a specially designed coil warehouse, where they are loaded on trucks for the short trip to our customer. The environmental and economic results of the partnership are significant:

- 20,000 trucks have been removed from the busy central valley highways each year
- Those trucks represent the annual elimination of 16 million truck miles
- The change in Transportation Mode from truck to rail removed 26,000 MT of CO2 equivalent every year from the atmosphere, a 77% reduction
- Our Delivery Cost has been reduced by 15%, saving several million dollars

Budway then contacted the Kenworth Truck Company and Wilson Trailer to discuss changes in the vehicle and trailer design to remove all unnecessary weight. The goal was to allow the shipment of three coils at a time, which meant increasing the standard payload of 48,000 pounds to 60,000 pounds (About 27 MT) without special permitting. Remember, most of the deliveries are within 60 miles of Budway's transloading facility. Some of the changes were:

- The removal of the passenger seat and all bracketing from the truck
- Two large fuel tanks were replaced by one smaller tank because the trucks are designed for short hauls
- The engine size was reduced, and
- The design of the trailer was modified to use an Aluminum deck and frame (this was hard for a steel guy like me to accept!)

The effort was successful. Now, for most shipments, three coils can be transported on one truck, where only two were possible before, a 50% increase in transportation efficiency. Fuel economy per ton shipped was also significantly increased and obviously, the carbon footprint of every ton of steel delivered was decreased. The cost of delivery went down too.

Finally, three relatively easy, but creative changes to the interior of our buildings here in northern California resulted in significant energy savings. The steel mill and associated warehouses occupy 3 million square feet of enclosed factory space, and in that area we changed the light fixtures, added some big fans, and installed motion detectors in the warehouses.

We replaced 1500 high pressure sodium light fixtures with induction light fixtures. Sodium lights burn hot, are slow to produce light, and consume a lot of energy – induction lights burn cool, turn on and off instantaneously, and are energy efficient. In areas where activity is limited, we installed motion detectors, so the lights are only on when people are present.

We heat our warehouses with natural gas heaters during the winter months to a constant 68 degrees, to conserve the quality of our finished products. Given the size of our warehouses, and constant opening of roll up doors, this can be an

energy intensive process. So, we installed twelve, 20 foot diameter high bay fans to increase air circulation, and thus increase the efficiency of the heating process.

The changes in lights, addition of motion detectors, and adding fans, combined to:

- Reduced annual electrical consumption by 4 million KWH
- Reduced annual gas consumption by 13,500 MBTU's
- Reduced our Carbon footprint by over 1,000 CO2 equivalents per year
- And, saved our company $400,000 per year.

There are many cost effective and environmentally positive changes we all can make to improve our business. It is not a coincidence that all of the examples I shared today resulted in a positive environmental **and** financial outcome; as the two are not mutually exclusive. In fact, each project I discussed started with a financial motive and ended with a significant environmental gain.

I would like to end with this thought. It is the responsibility of business to minimize, or eliminate all waste from the product cycle. It is especially important for those companies that manufacture and transport their products (like USS-POSCO). Waste increases product cost and hinders competiveness. Any part of our production process that ends up in the air, water or landfill, and not on our customer's dock must be minimized. Attacking the problem of waste requires creativity, and creativity needs capital. Projects and programs designed to protect our environment in the logistics realm should also be financially self-supporting.

These projects I presented today are straight forward in design and implementation. We believe it will take thousands of small projects like these, implemented by small and medium businesses, to make a significant change in transportation efficiency throughout the APEC community.

Thank you.