

# 2018 BIR Spring Convention: Shredding for profits (but safely)

Ecuadorean EAF steelmaker offers positive data points for its use of shredded scrap.



June 12, 2018

Brian Taylor

Speakers at the Shredder Committee meeting of the Brussels-based **Bureau of International Recycling (BIR)** which met in late May at the BIR's World Recycling Convention & Exhibition in Barcelona, addressed both the cost-effectiveness of shredding and how it could be accomplished safely.

Guest speaker Marion Andres Albuja Rivadeneira of Ecuador-based steelmaker **Adelca** said the electric arc furnace (EAF) melting operations of the company have profited greatly since committing to the wider use of shredded scrap as feedstock.

The company worked with The Shredder Company (subsequently reorganized as **Newell Recycling Equipment**) in 2010 and 2011 to install a 4,000-horsepower shredder to process the mix of baled and cut scrap it had been melting in prior years.

By committing to using 80 to 90 percent ferrous shred as feedstock, Albuja says the company can now use two charge buckets for every five it formerly used, and its tap-to-tap time from scrap charging to hot metal has gone from 67.7 minutes on average to just 40 minutes.

"Productivity almost doubled," stated Albuja, who also noted that the company has saved on energy costs and is replacing fewer electrodes thanks to using shredded scrap instead of solid bales.

“The shredding process has a strong impact in the steelmaking industry,” said Albuja. He said his company has found it does this by “reducing the direct cost [of steelmaking] up to \$60 per ton, and by increasing the productivity of the EAF.”

The \$60 per ton figure, he added, does not include electrode savings, which have become significant as the cost of electrodes has risen this decade, sometimes equating to savings of another “\$20 to \$25 per ton of liquid steel.”

Guest speaker Chris Bedell of United States-based **David J. Joseph Company** presented the results of a safety study conducted by his company, which operates 17 shredding plants in the U.S. Bedell said in 2017 the company experienced just seven injury accidents at its shredder yards, roughly one-fifth of the 34 accidents it experienced in its overall facility network.

In studying injury accidents, the company has experienced at its shredder yards since 2008, Bedell said DJJ found that some 75 percent involved maintenance tasks and just 25 percent were related directly to production.

Many of the maintenance tasks that caused injuries involved conveyor repair and cleaning while production mishaps were most likely to occur during the picking process. Minor injuries frequently occurred among newer employees, but Bedell cautioned that when veterans with 10 or more years of experience got injured, “it was more likely to be serious.”

Bedell said DJJ would work through BIR and the Washington-based **Institute of Scrap Recycling Industries (ISRI)** to obtain data from other shredder operators with the goal of formulating and implementing new safety policy recommendations.

Shredder Committee Chair Scott Newell III of U.S.-based Newell Recycling Equipment provided an update of the BIR’s World Shredder List. The BIR says there are currently 322 shredding plants operating in the United States, 307 in Western Europe and 110 in Japan.

China is the world’s fast-emerging shredder market. According to Newell, in 2017 the BIR knew of just 70 shredding plants in China, but now there are 200 either operating or being installed. Newell said part of this is a function of the Chinese government incentivizing the nation’s steel industry “to use more scrap.”

The **2018 BIR World Recycling Convention & Exhibition** was at the Sofia Hotel in Barcelona May 27-30.