

DuPont Nevada Site Cellulosic Ethanol Facility Feedstock Collection Program



DUPONT INDUSTRIAL BIOSCIENCES

DuPont Industrial Biosciences is a leader in providing science-based solutions to customers in a range of industries which enables them to improve their performance, profitability and sustainability. A major focus of our work is driving the development of new sources of energy such as advanced biofuels. In 2015, we will open one of the world's first and largest cellulosic ethanol facilities in Nevada, Iowa -- delivering on the promise of advanced renewable fuels made from non-food feedstocks. This milestone marks years of investment, dedicated research and collaboration with government and academia to deliver an integrated feedstock-to-fuel solution for the global marketplace.



NEVADA SITE CELLULOSIC ETHANOL FACILITY

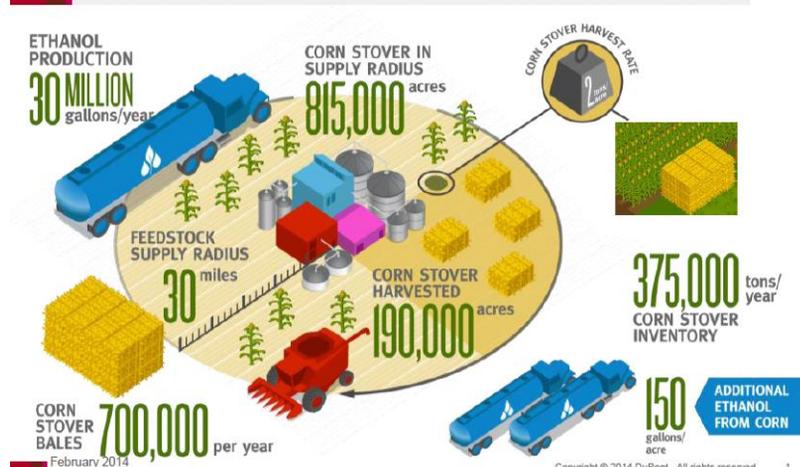
Opening in 2015, our Nevada facility will produce 30 million gallons of cellulosic ethanol annually. The biorefinery will require approximately 375,000 tons of corn stover each year, all of which will be collected from within a 35-mile radius of the facility. The Nevada biorefinery will prove-out DuPont's technology on a commercial scale and set the stage for national and global deployment of the cellulosic ethanol industry, providing jobs for America's rural economy and energy solutions to reduce our dependence on fossil fuels. Notably, this facility will have ZERO net carbon emissions when fully operational. Learn more about the Nevada facility at biofuels.dupont.com/nevada.

ETHANOL FROM CORN STOVER?

DuPont has been working for close to a decade to develop the technology to convert cellulosic materials like corn stover into ethanol. Though the cellulosic pathway is more complex than producing ethanol from sugarcane (sucrose) or grain (starch), all three processes share in common the fermentation of sugars to ethanol. In order to make ethanol from cellulosic materials, the cellulose itself must first be broken into sugars using mixtures of enzymes designed specifically for this purpose. Once sugars are liberated from biomass, they can be fermented much the same way as in other ethanol processes.

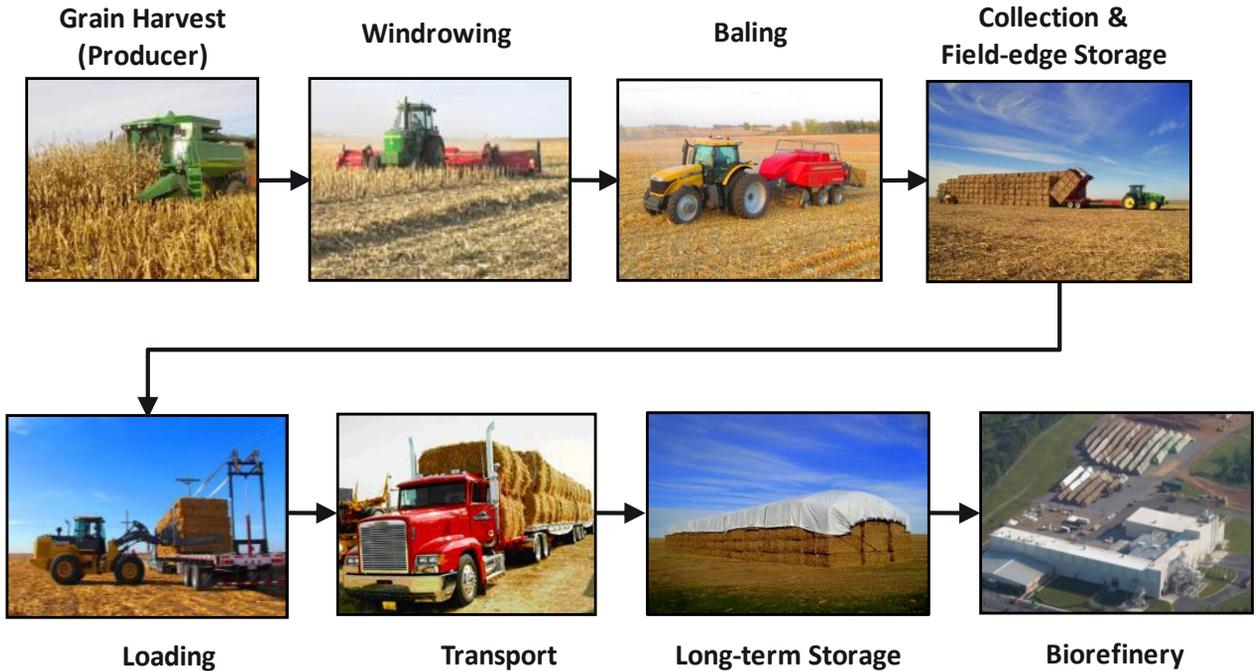


DUPONT CELLULOSIC ETHANOL Making Cellulosic Ethanol A Reality in Nevada, Iowa



SUSTAINABLE SUPPLY CHAIN

The sustainability of our corn stover supply chain is of paramount importance to DuPont. That is why for the past four years we have been working closely with local growers and partners like Iowa State and the USDA to understand the impacts and agronomic benefits of this new farming practice. Key features of DuPont's corn stover supply chain model include: (1) contracted access to corn fields following grain harvest; (2) custom stover harvest; (3) packaging of stover as high density, large square bales; (4) temporary field-edge feedstock storage; (5) long-term, covered feedstock storage at distributed satellite locations; and (6) "just-in-time" delivery of feedstock to the biorefinery. Stover harvest is currently achieved using two field passes (shredder-windrower followed by baler), but the supply chain is actively evaluating other grain and stover harvest technologies.



DUPONT CORN STOVER HARVEST PROGRAM

Beginning in 2010, the feedstock program focused on comprehensive research to analyze and improve stover collection, transport and storage, as well as to investigate the agronomic benefits of partial stover harvest. In 2013, DuPont began transitioning to a commercial-scale feedstock program. The commercial scale of the program creates the opportunity for many producers to participate. Producers already engaged with the program will also have the opportunity to increase their acreage enrollment as the benefits of partial stover harvest are realized.

For more information on DuPont's feedstock collection program, send inquires to CornStover@pioneer.com or call Contracting Specialists, Nicky Smith at 515-203-1945 or Brock Donelson at 515-229-8411. For additional information visit biofuels.dupont.com/cornstover

PARTNERING FOR IMPROVED CROP PRODUCTION

Removing a portion of corn stover from high productivity fields can improve establishment, growth and yield of a subsequent corn crop. On-farm research in Iowa showed an average yield gain of 4.9 bushels per acre for corn-on-corn with partial stover harvest the preceding fall. Producers participating in the DuPont stover harvest program also have opportunities to reduce tillage and eliminate stalk chopping and other residue management practices that are not required when a portion of stover is removed from the field.

