
calplant
20 years, 8 months and 17 days…
but who’s counting!

Why CalPlant Exists, What CalPlant Does

- 1991 passed legislation that restricted open field burning of rice fields
- The legislation phased out rice straw burning over a 10-year period, and increased costs materially to dispose of post-harvest rice straw
- With a long history in rice farming, CalAg, LLC was founded in 1996 to address the issues and costs to rice growers resulting from the ban on the burning of post-harvest rice straw
- 20+ years later, CalAg (CalPlant I, LLC) closed a $315 million project financing to construct and operate the **world's first rice straw-based Medium Density Fiberboard (MDF) manufacturing facility**
- The facility, located in Willows, CA (90 miles north of Sacramento) will consume annually approximately 280,000 tons of waste rice straw from approximately 100,000 acres of Sacramento Valley rice fields

The MDF Process, Product Performance, Cost to Produce

MDF is a composite panel product created by combining cellulosic fibers with a binder and wax and pressing the mixture into panels using high temperature (400° F) and pressure (350 psi)

The rice straw-based MDF process is very similar to the wood-based MDF process—other than handling bales of straw vs. wood residuals

Rice straw-based MDF exceeds the physical properties of wood-based MDF

Property	ANSI Standard for Wood	CalPlant MDF
Thickness Swell %	Max 8.0	3.0 – 5.0
Internal Bond (PSI)	80	140
Screw Holding (Face) lbs	300	395
Screw Holding (Edge) lbs	225	325
Hardness (lbf)	500	700 – 1,500
Density (Pcf)	40-50	40-50
Formaldehyde Emissions (ppm)	0.11	None
Modulus of Elasticity ("MOE") (PSI)	313,000	450,000
Modulus of Rupture ("MOR") (PSI)	3,130	4,500

It costs approximately 20% less to produce rice straw-based MDF than using wood because of the lower cost of raw materials (straw vs. wood)

Building the World's First Rice Straw-Based MDF Plant is Not For the Faint of Heart

A VERY brief summary of the journey to financial closing

- October 1996—first several rice straw board trials unsuccessful—converting the straw to a suitable fiber proved challenging
- Late 2007—project fully developed (all contracts in place) and then a worldwide recession
- 2008—equipment supplier sells divisions providing the equipment and contract is terminated
- 2009—new supplier, Siempelkamp, begins testing the CalPlant MDF process
- Q4 2015—contracts renewed, secured equity commitment from key anchor equity investor
  - Prospective investors remain skeptical because of the time it has taken to secure funding so due diligence / investigation of all moving parts gave new meaning to "extensive"
- Q3 2016—verbal agreement with institutional investors to purchase $225 million of TE bonds

….the journey (cont.)

- December 7, 2016—due to post-election liquidity issues, muni funds placed orders for only ½ the debt—challenge becomes how to keep the project alive in a troubled bond market
- February 2017—Citi Group joins Stifel Nicolaus in helping secure bond sale
- Citi is viewed by bond investors as a positive development and on May 24, 2017 bond sale opens and the project received orders for $834 million!
- Challenges during the long journey to financial close:
  - Very few debt and/or equity investors want to be part of a “first-of-its-kind”
  - Not having an investor from the “industry” fueled skepticism from most parties
  - The founders’ lack of a balance sheet, a “Project Financing” proved very expensive and time consuming, but it was the only funding option
  - After 20+ years, key people retire and/or loose interest (faith) and keeping relationships intact was challenging

A Special Thank You

…to all of you for your time and interest in CalPlant

Jerry Uhland, President and Founder
juhland@calplant1.com
www.eurekamdf.com
C: 530-521-0249