

Hiroshi Morihara, President  
HM3 Energy, Inc.  
500 SE Butler Road  
Gresham, OR 97080

March 8, 2010

Re: Test burn of biomass T-Wood at the Western Research Institute

Dear Dr. Morihara,

During the week of January 18<sup>th</sup> to 22<sup>nd</sup> HM3 Energy, Inc. and PGE conducted 2 test burns at Western Research Institute's (WRI) pilot scale coal combustion facility that simulates a pulverized coal-fired utility boiler. One test burn was done with 100% PRB (Powder River Basin) coal from the Eagle Butte mine (source of the coal used by PGE Boardman's power plant) and the other test burn was done with a blend of 10% T-Wood (torrefied wood) and 90% PRB coal.

On February 25 HM3 Energy, Inc. conducted another test burn at WRI's pilot scale coal combustion facility starting with 100% PRB coal, and then transitioned to a blend of 50% T-Wood (torrefied wood) and 50% PRB coal. After equilibrating and establishing a baseline with this blend (about 1.75 hours), 100% T-Wood (torrefied wood) was fed to the Combustion Test Facility (CTF) for 2.25 hours.

Before arrival at WRI, the coal and T-Wood had been pulverized to pass through a 200 mesh screen. The furnace temperatures and conditions were maintained at the same level with the coal, blend and 100% T-wood. No problems were encountered with feeding, combusting, or controlling the CFT with either the blend or the 100% T-Wood. The T-Wood performed just as coal.

The results of a proximate and ultimate analysis of the coal and T-Wood (torrefied wood) showed that the as received T-Wood had a higher heating value than the as received coal. This analysis also showed the sulfur content of the T- Wood was 0.03% versus 0.79% for coal on a dry basis. Visual observation of slag build-up near the burners after this test burn was in the normal range experienced with burns of 100% coal.

These first two tests indicate that T-Wood has the potential to be a direct replacement for coal or blended with coal at any desired percentage. Investigation of the long term effects in terms of slagging, corrosion and fouling of the heat transfer surfaces in coal fired utility boiler is required.

Sincerely,



Khalid Omar, Ph.D., PE  
Lead Engineer  
Western Research Institute