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## First in Australia, a Biomass-fuelled BONO Thermal Plant for Tartrates and Ethanol Takes Shape

**Hectic days at ATP (Australian Tartaric Products) near Mildura, Victoria, Australia: the new biomass-fuelled thermal plant supplied by BONO is quickly taking shape. Start-up is foreseen in July, 2013: burning spent wet marc, it will produce saturated steam used to distil Ethanol and produce Tartaric Acid from the same grape's by-products supplied by the local wineries.**

Founded in 1991 by Giovanni Randi, an Italian producer of Tartaric Acid and its salts, **Australian Tartaric Products** ([www.australiantartaric.com.au](http://www.australiantartaric.com.au)) quickly grew to establish itself as **Australia's largest manufacturer and supplier of Tartaric Acid**. At its plant in Colignan, near Mildura in Victoria state, ATP also manufactures food grade Ethanol, producing and selling natural products only. ATP is part of the **Randi Group** ([www.randi-group.com](http://www.randi-group.com)), which has a number of similar operations both in Italy and America.

A major ingredient in wine-making, the **Tartaric Acid** produced in the Mildura region is sold mainly to Australian wineries, with smaller quantities taken up by pharmaceutical companies and food manufacturers. **Food grade spirit** is also sold both to Australian wineries and internationally to be used in wine fortification and brandy production. Located near the desert, not far from splendid vineyards and fruit orchards, the facility processes **considerable volumes of grape marc, grape lees, centrifuged by-products created from the wine making process**, producing a completely natural product from material which would otherwise go into landfill.

The company collects nearly **50,000 T/year** of these waste from the Sunraysia, Riverland, Riverina and Barossa Valley wine growing regions and processes them during the whole year also when wine-making activities end. A major cost in their industrial process is represented by the fuel required to produce the steam demanded by the distillation process. Due to their distance from gas networks, ATP is forced to buy liquid Propane in tank trucks to feed their steam-producing boilers. This cost is rising every year, and a proper solution had to be found.

Taking advantage of the vast experience capitalised by the Randi Group in their Italian Villapana factory in Faenza – where a **BONO Sistemi thermal plant generates electricity and steam from the same type of waste** – ATP commissioned again a similar solution to the Cannon Group company specialising in biomass-fuelled energy plants.

## Press Release

[www.cannon.com](http://www.cannon.com)

The solution designed for ATP **produces 12 T/Hour of saturated steam** at 10 bar and 184 °C, used to distil Ethanol and produce Tartaric Acid: in those periods of the year when demand for process is lower, the produced steam drives an ORC (Organic Rankine Cycle) able to generate up to 400 kW of electricity, for factory internal consumption.

The system supplied by **BONO Sistemi** ([www.bono.it](http://www.bono.it)) includes:

- A network of conveyors to transport the wet biomass,
- An automatic batch dosing system to feed the marcs to the combustion grid,
- A double-stage preheater, to increase the combustion air temperature up to 220°,
- A step-moving grate combustion system, specially designed for wet solid fuel,
- Two radiant chambers (post-combustion and inversion) for the flue gas,
- A two-drum evaporator to heat up water and produce saturated steam at 184°C,
- Three dedicated economisers, to reduce flue gas temperature and maximise heat recovery,
- A deaerator, to remove gas from recycled hot water and fresh water refills,
- Flue gas treatment cyclon and baghouse filter, to avoid emissions of particulate,
- A centralised ash recovery system, collecting them from several points of the thermal plant,
- A 25-meter high chimney for the spent fumes,
- A complete electronic control for the whole combustion process,
- Design and engineering of steam and water piping network for the whole factory.

Completely designed and built in Italy, the complex plant was shipped in October 2012 (in forty 40-foot containers and four huge pre-built elements) from the harbour of Genoa. When it arrived on site in Australia, a 10-specialists staff flew in for the assembly work. The installation started on January 14, 2013.

Now, two months later, the mechanical part of the project is completed for more than 70%, and it will be followed by the installation of refractory elements around the combustion chamber and thermal insulation material around all the heated parts. The plant takes a 30 by 20 meter area, with a max height of 25 m.

Federico Volpe, the Project Manager of BONO Sistemi who has led the installation team, says:

*"We have built a splendid relationship with the staff of ATP and with numerous locals: they were supporting us with invaluable help since the very beginning of our activity here. We now even spend our free time with them, visiting the beautiful natural parks of the region, organising barbeques and boat tours during the week end. They appreciate our hard-working style, and we enjoy their hospitality, the wines and the special fruits of this area. It will be a pity to quit them at the end of commissioning!"*

Commissioning is scheduled for mid June, and official start-up will take place in July 2013: stay tuned!

*Pictures:*



*Stack assembly, up to 25 meter*



*Fitting in place the post-combustion and inversion chamber*



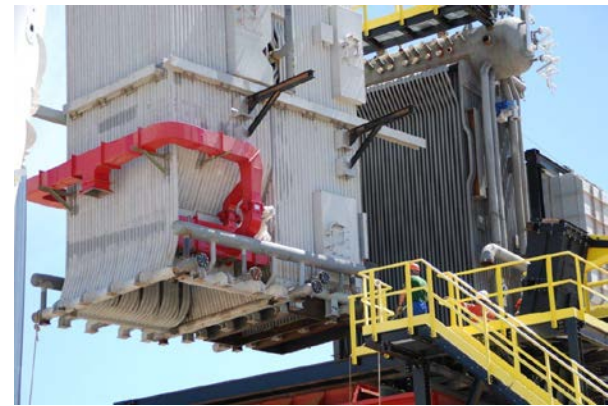
*The 35-ton two-drums evaporator is lifted by a 400-tons crane*







*Positioning of the post-combustion and inversion chamber, with the two-drums evaporator already installed.*



*A close-up detail of the above operation.*