



Air Management Technologies, Inc.
Building Energy & Environmental Services



Cooking Thermal Process Systems Heating & Cooling Optimization

Sustainable Solution That Pays

Food process facilities that use cookers and kettles are many times referred to as “Thermal Plants”. As the name implies, large amounts of thermal energy are present and expended through the process that normally involves a steam interface for cooking and then a cooling cycle is provided by several means that may include cooling towers, mechanical refrigeration, and even once through water systems. Industrial Heat Pump technology harnesses the waste stream and provides a wealth of benefits in these applications that extend well beyond *Sustainability*. In many cases, production can be increased with shorter cooling times & variability removed by having consistent water temperatures not impacted by seasonal fluctuations. Waste water discharge may also be decreased by using a closed loop heat exchanger interface or by recycling of the wasted water stream when conditions allow. Below are just a few benefits:



- Greenhouse Gas Reductions
- Financial Return
- Substantial Energy Saving
- Shorter Cooling Times
- Potable Water Reductions
- Waste Water Reductions
- Capital Cost Avoidance

Greenhouse Gas reductions may actually be net negative as it offsets emissions from inefficient utility systems and allows, in many cases, aging boilers to be decommissioned in plants with multiple boilers. Waste heat that was once lost is now converted to provide useful plant utilities such as hot water for sanitation, boiler feedwater preheat, space heating, etc. It is a mistake to underestimate the waste energy potential and technologies that exist with Industrial Heat Pumps and balancing techniques to provide efficiencies many times that of traditional boilers.

Capital Investment



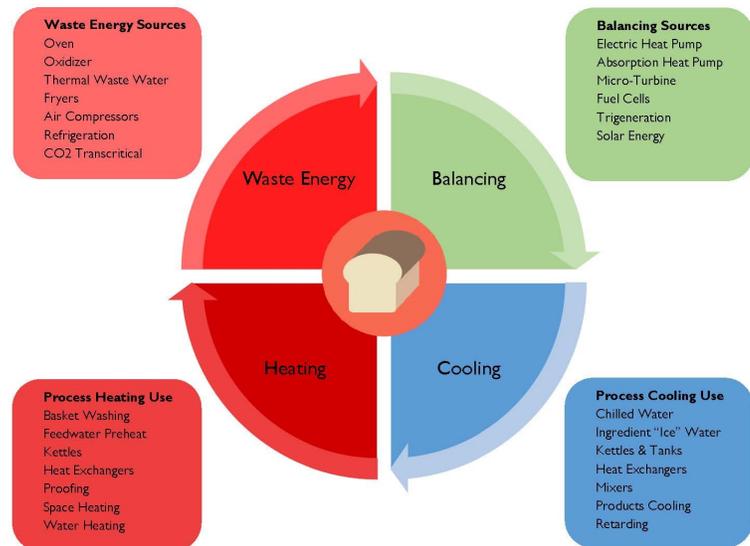
Capital investment, when designed as part of a new facility, normally provides immediate or less than two year return on investment when capital cost avoidance is considered with savings that will last for a lifetime. Existing facilities have a return that is about 20% but may increase when capital cost avoidance can be considered. In almost all cases, a positive cash flow can be achieved from day one.

System Operation

Numerous options exist depending on the application but the basis of design is the same. First, examine what end uses exist and simply balance with generation from waste energy and balancing sources. It does not make sense to generate more energy than can be used. Once this is defined, the most cost effective method to harness the energy potential is determined and utility created to meet process demands. System distribution is normally through piping from the generation source to end uses and “peaking” systems are integrated into the design to facilitate cold starts with complete backup in the event the “free” energy source is not available. Systems can be monitored locally and remotely to facilitate efficient operation with viewing through a graphic interface and meter to document savings.

Food Production & Environmental Stewardship

Thermal Processing Facilities Closed-Loop Waste Energy Systems



Sustainability & Cost Saving Benefits



It is not uncommon to see Greenhouse Gas emissions become Net Negative and energy savings will vary depending on various factors. In many cases, this can be several hundred thousand dollars per year. In addition, water usage may be reduced where quality can be managed. For example, in the case of non-food contact recycling and or gray water when sources are available. Operation and maintenance cost are normally about the same since load is offset from traditional systems and refrigerant management benefits are many times realized as well.

About Us

Air Management Technologies has delivered energy, thermal process conditioning, and environmental solutions for over twenty years. Our written performance guarantee places the responsibility in our hands and the life cycle benefits in yours. Cost conscious decisions are made with the customer in mind and every project is guaranteed to operate as specified.

