



Air Management Technologies, Inc.  
Building Energy & Environmental Services



## Guaranteed Solutions:

### Process Cooling

- ◆ Mixer & Sponge Systems
- ◆ Chilled Ingredient Water
- ◆ Finished Product Cooling
- ◆ Blast Freezing
- ◆ Refrigeration

### Process Heating

- ◆ Water Heating
- ◆ Steam & Hot Water Systems

### Environment Conditioning

- ◆ Proofing/Retarding
- ◆ Spiral (Finished) Products
- ◆ Oven Steam
- ◆ Mold & Particulate Control

### Industrial HVAC

- ◆ Makeup Air Systems
- ◆ Spot Cooling
- ◆ Space Pressurization
- ◆ Filtration
- ◆ Mechanical Cooling
- ◆ Ventilation

### Waste Heat Recovery

- ◆ Ovens & Oxidizers
- ◆ Solar/Fuel Cells
- ◆ Compressed Air
- ◆ Industrial Fryers

### Specialized Technologies

- ◆ Absorption Refrigeration
- ◆ Cascade Refrigeration
- ◆ Industrial Heat Pumps
- ◆ Solar/Fuel Cells
- ◆ Organic Rankine Cycle

## Closed-Loop Energy Systems French Fry Production

**Closed-Loop Energy Systems** are designed to manage energy usage by harnessing energy from a waste stream and reintroducing it back into the process and offsetting normal utility requirements with the ultimate goal of “0” net energy usage. French Fry Facilities expend large amounts of energy through essential processes including product washing, cleaning, sanitation, blanching, frying, and freezing. Several common energy streams that can be managed include waste water, thermal heating and cooling, ventilation systems, and electric usage. Waste water in potato processing is many times discharged from different locations and may vary in regards to temperature and quality. In some cases, this waste stream is harnessed to provide thermal benefits when cooling of the waste stream is desired, and or of no consequence. This energy can be used to preheat potable water loads including boiler feedwater, sanitation water heating, blanching and other loads.

Other areas exist that allow energy exchange to support chilled water when required in blanching operations as well as refrigeration and dehumidification requirements. 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. Fryers also provide a source of low temperature waste heat and have the potential to provide sufficient makeup air heating to replace air that is lost and in cold climatic areas results in a fast return on investment.

### Capital Investment

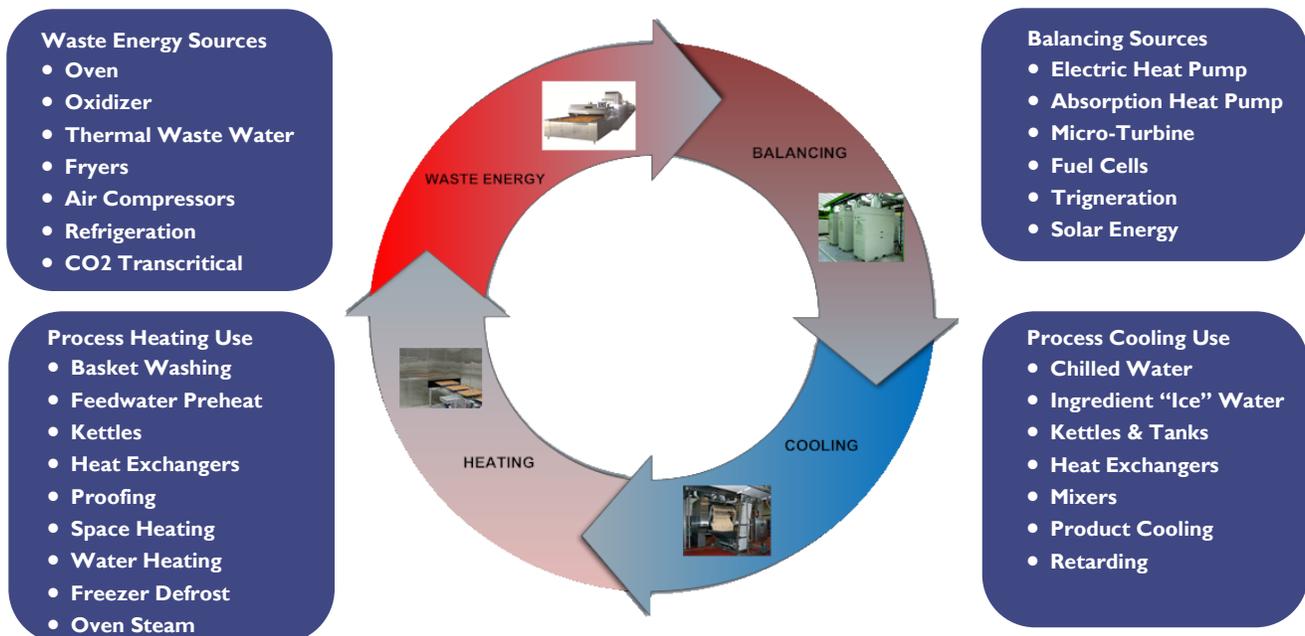
Capital investment when designed as part of a new facility design provides a return on investment of 50% or greater when capital cost avoidance is considered, with savings that will last for a lifetime. Existing facilities have a return is usually about 20% but may increase when capital cost avoidance can be considered.



## Food Production & Environmental Stewardship

### Thermal Processing Facilities

### Closed-Loop Waste Energy Systems



### System Operation

Numerous options exist depending on the application but the basis of design is the same. The first step is to 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 isn’t available. Systems can be monitored locally and remotely to facilitate efficient operation with viewing through a graphic interface and meter to document savings.

### Sustainability & Cost Saving Benefits

It is not uncommon to see Greenhouse Gas emissions reduced by a 1,000 tons or more per year. Energy savings will vary depending on various factors but in many cases this can exceed \$100,000. In addition, water usage may be reduced where quality can be managed for “non-food contact recycling and or gray water sources are available. Operation and maintenance costs 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.

