

AFRL – Advanced Power Technology Office (APTO), tasked CTC, NCDMM, and the MRSI consortium to develop an Assessment Plan to define a method for gathering appropriate data in relation to specific industrial processes.

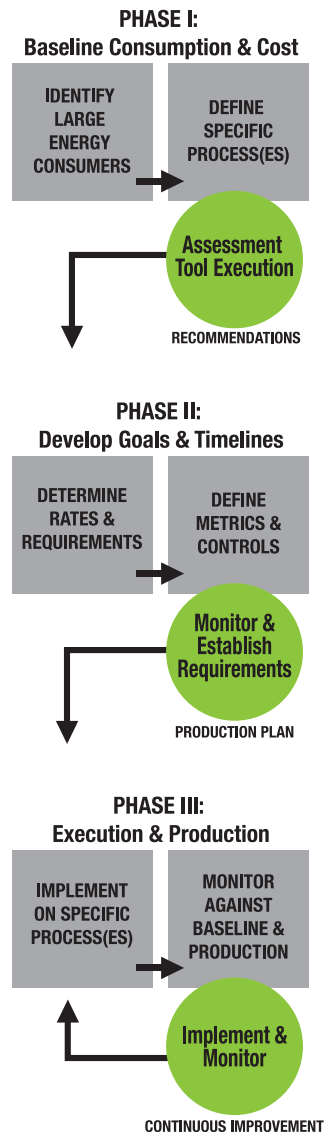
This initial effort supports Phase I of AFRL's overall three-phase approach:

Phase I
Baseline Process Energy Consumption and Associated Costs

Phase II
Develop Specific Goals, Metrics, and Time Lines for Reducing Quantities and Cost Associated with Process Energy

Phase III
Reduce Process Energy Consumption & Cost

This effort focuses solely on Phase I in developing a methodology for energy baselining activities.



This pilot project demonstrates that effective methods for identifying and then addressing opportunities to reduce energy consumption and carbon emissions can be achieved.

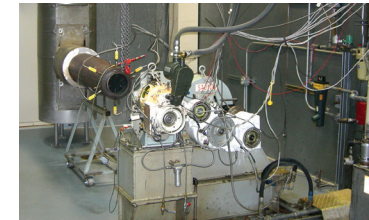
The assessment plan and energy saving recommendations drew on the guidance from the AFSC Industrial Energy Plan and were designed to align consistently with the USAF Energy Strategic Plan.

This pilot project approach can also be expanded to other strategically important issues and opportunities, such as water, and can potentially save the Air Force not only millions of dollars but also reduce carbon emissions and reduce risks to Air Force personnel, civilians that support the Air Force's mission ready capability.



For more information, contact:

Task Order #0006:
Advanced Power & Environmental Energy Technologies



Subtask #16:
Process Energy Benchmarking

Ogden ALC Process Energy Improvement Report

Distribution A. Approved for public release; distribution unlimited. (88ABW-2015-3659)

The Air Force Sustainment Center (AFSC) has opportunities to reduce the expense of energy in their facilities. The Air Force Research Laboratory (AFRL) led a team to provide recommendations on reducing consumption, while maintaining or increasing productivity and reducing the AFSC energy budget which is now \$250,000,000.

A private-public Project Team was created to assist AFSC in addressing these opportunities. The team included representatives from: Concurrent Technologies Corporation (CTC), the National Center for Defense Manufacturing and Machining NCDMM, Navista, Inc. and the Mission Ready Sustainability Initiative (MRSI).



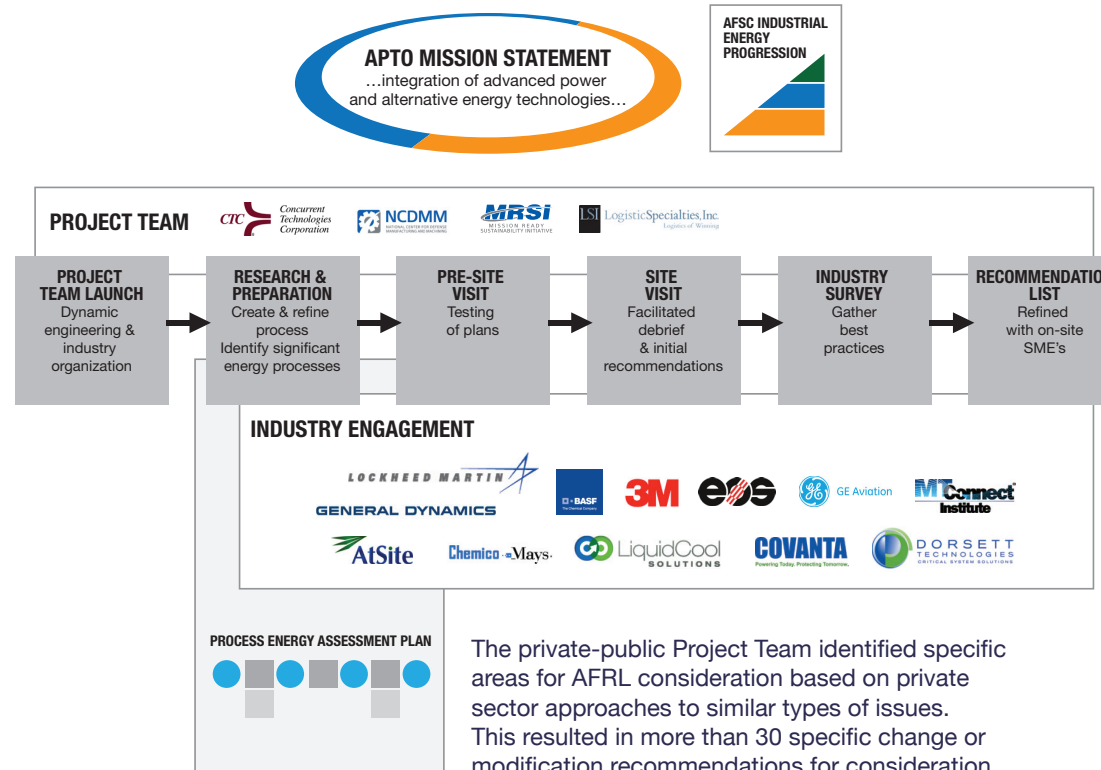
The goal was to leverage the experience and innovation of MRSI membership to identify best practices that are effective in the private-sector and apply them to AFSC.

AFRL leadership identified three Significant Energy Users (SEU) within the AFSC and organized a public-private collaboration to address them at Ogden Air Logistics Complex (OO-ALC). The three SEUs were: Engine Test Cells; Plating/Dip Tanks and Paint/Depaint Booths.

The Project Team gathered process specific information for these areas through an assessment plan questionnaire and provided information to MRSI participants.

The unique collaborative approach of this pilot project resulted in a detailed set of efficiency recommendations. This approach was effective and can be applied to additional AFSC sites.

AFRL APTO INDUSTRY ENGAGEMENT PROCESS



PHASE I RECOMMENDATIONS

Engine Test Cells

Analyze Close Loop Water Systems

Automatic Control Process to Shutdown System

Cold Start vs. Hot Start

Exhaust Air to Generate and Capture Energy

Plating/Dip Tanks

Document Key Performance Indicators

Tank Size Optimization

Batch Processing

Alternative Plating & Masking Techniques

Paint/Depaint

Meter & Monitor Operations

Compressor Loops

Paint Adhesion Properties

Part Movement Techniques

AFSC industrial energy progression

AFSC Complex of the Future

- Energy management attribute
- Aligns with AFSC goals

Continuous improvement includes energy management

ISO 50001

Standard Energy Management System (EnMS) framework for global industrial operations

Foundation Energy Management

(e.g. ENERGY STAR for Buildings & Plants)

Fundamental approach to developing a systematic energy management program based on industry best practices and benchmarking tools

SEP

Superior Energy Performance

Phase I begins down an aspirational path for the Air Force providing major efficiencies, reducing environmental impacts and risks and saving the Air Force millions of dollars as AFSC Industrial Energy Progression is refined and expanded.