

Institute for Industrial Productivity – Addressing Energy Efficiency in U.S. Industry

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Institute for
**Industrial
Productivity**

What is IIP?

OUR MISSION: Reduce GHG emissions by giving business leaders and policymakers access to effective practices, technologies and tools to advance industrial productivity.

WHO WE ARE:

- A non-profit established by the ClimateWorks Foundation in 2010
- Strategically linked to a global network of groups addressing climate change
- Work in partnership with industries, governments, financial institutions etc.

WHAT WE DO:

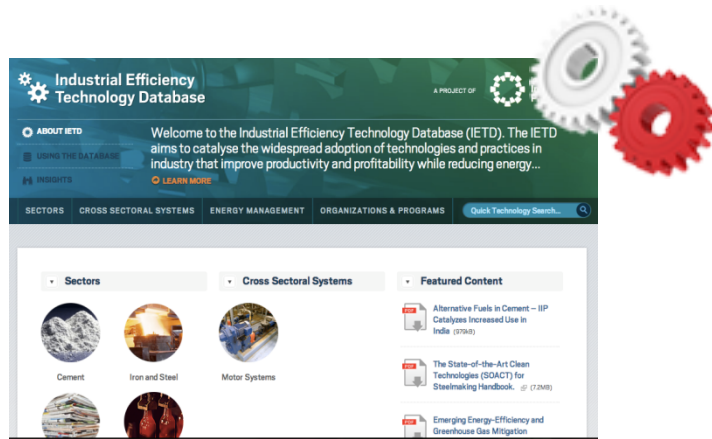
- Sharing and disseminating best practices
- Bridging the gap between government policy and industry implementation
- Piloting scalable projects for GHG mitigation
- Facilitating the creation of innovative financial mechanisms



IIP's Strategic Focus



IIP's Best Practice Databases



Industrial Efficiency Technology Database

www.ietd.iipnetwork.org

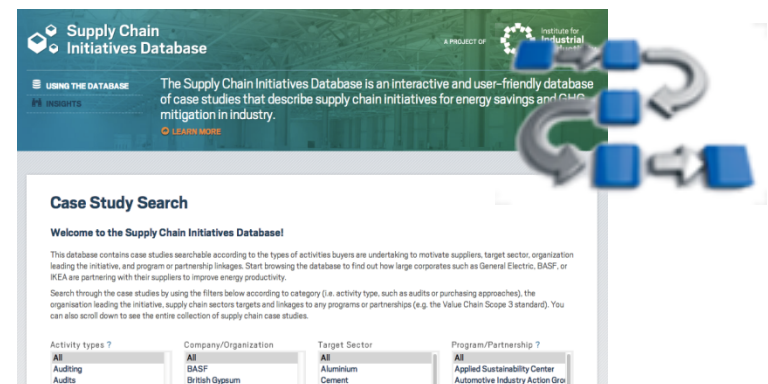
Industrial Efficiency Policy Database

www.iepd.iipnetwork.org



Industrial Efficiency Finance Database

www.iipnetwork.org/databases/finance



Supply Chain Initiatives Database

www.iipnetwork.org/databases/supply-chain

IIP's Program Focus

China

- Develop best practice, case studies, database and tools in support of EnMS implementation in Top10,000 Enterprises Program
 - ✓ Support Dezhou City pilot program to implement Energy Management Programs with 52 key industrials

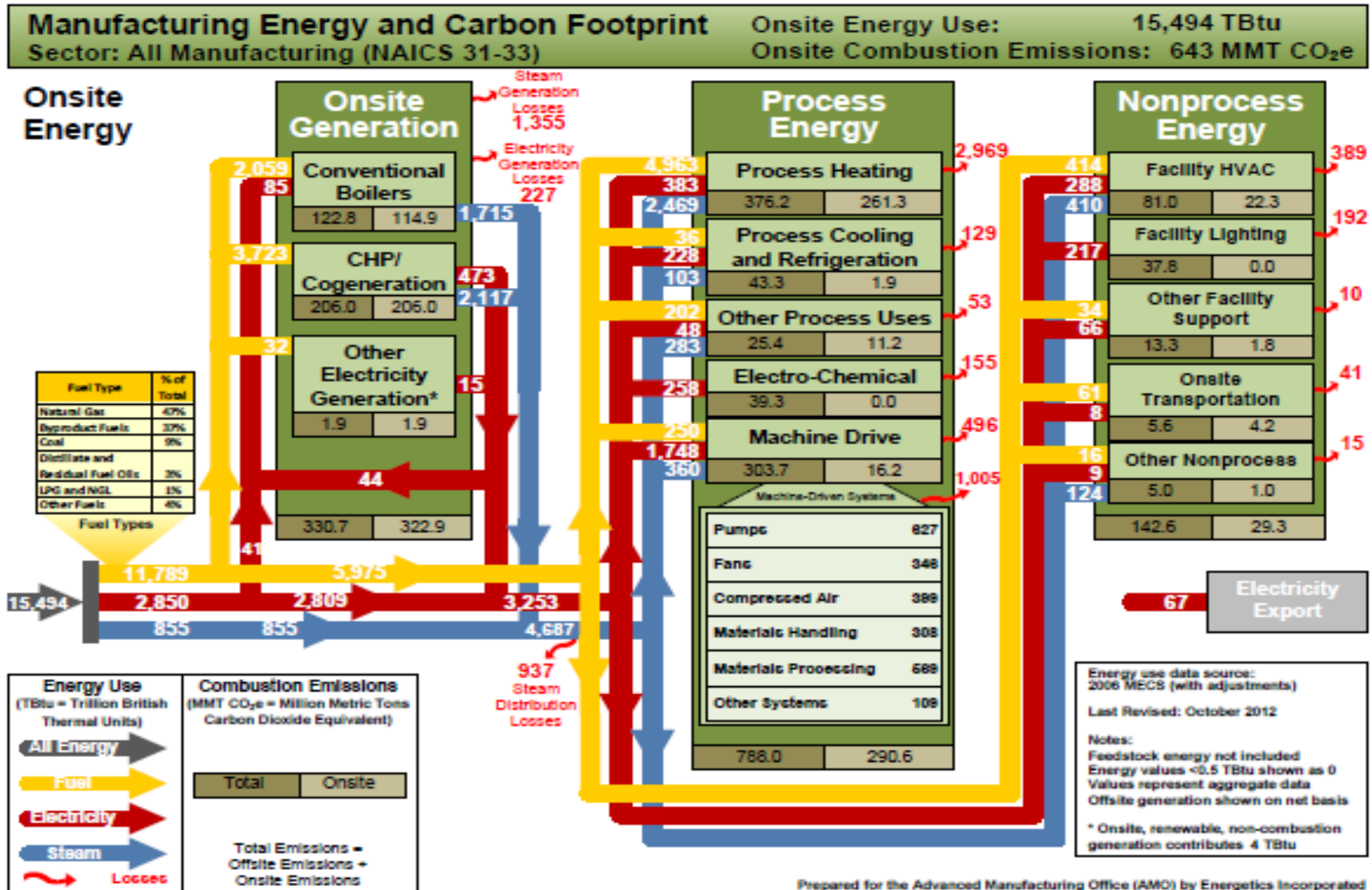
India

- Increasing the use of Alternate Fuels and Raw Materials (AFRs) in the Indian Cement Industry
 - ✓ Techno Economic Feasibility Studies and developing and implementing an action plan for specific AFRs
 - ✓ Targeting wastes that are difficult or costly to properly process/dispose

IIP's U.S. Program Focus

- Develop consortium for managing/updating industrial energy efficiency decision tools
- Partner with gas and electric utilities to promote recognition of Energy Management System programs as valid energy efficiency measures under utility requirements
- Promote combined heat and power and the most efficient natural gas technologies in existing and new industrial facilities

Software Decision Tools for Energy Systems



Background - Industrial Energy Efficiency Software Decision Tools

- Over the last 10-15 years the suite of energy efficiency software tools developed by the U.S. Department of Energy (DOE) has assisted U.S. industrial plants in significantly reducing energy intensity.
- DOE sponsored plant assessments from 2006-2009 utilized these tools:
 - Results from 804 plant assessments identified energy cost saving opportunities of \$1.13 billion/year, with total identified source energy savings of 153.3 TBtu/year. (85% of cost and energy savings opportunities were for steam and process heating systems)
- DOE also sponsored multiple levels of training for using many of these tools.
- **DOE has reduced support for most tools and training over past several years**
- DOE is looking at transitioning tools to “private sector”

A Consortium for Industrial Energy Efficiency Decision Tools

Goals

- Develop a partnership consortium to guide the maintenance, enhancement, and update of the industrial energy efficiency tools and related training on a continuing basis.
- Establish organizational structure, strategic approach, and sources of self-sustained funding for providing intuitive, cutting-edge tools and training.
- Expand the customer base of industrial tool users to increase the usage to cover the majority of large plants and many small and medium enterprises (SMEs) in the U.S.

Current DOE Industrial Energy Efficiency Software Tools

ePEP Buildings

ePEP Scorecards

DOE eGuide for ISO 50001

DOE eGuide Lite

Industrial Facilities Scorecard

Plant Energy Profiler (PEP)

Project Opportunities Tracker

EnPI V3.0

3E Plus

Boiler Tune-up

Steam Generation Equipment Scorecard

Steam System Modeler

Steam System Tool Suite (SSTS)

Steam System Assessment Tool (SSAT) Process

Heating Energy Opportunity Estimator for Chemical
Plants & Refineries

NOx and Energy Assessment Tool (NxEAT)

Process Heating Assessment & Survey Tool (PHAST)

Process Heating Scorecard

CHP Application Tool

CHP Scorecard

CHP Screening Tools

Air Compressor Optimization

AIRMaster+

Compressed Air Scorecard

LogTool Version 2

MotorMaster+ 4.01.01

MotorMaster+ International 1.1.4

Notched V-Belts

Pump System Assessment Tool (PSAT)

Pumps Scorecard

VSD Calculator for Pumps

Plant Energy Profiler for the Chemical Industry (ChemPEP)

Data Center Profiler (DC Pro)

Solar Power

CO2 Calculator

Mechanical Insulation Assessment and Design Calculators

Process Cooling and Refrigeration Scorecard

Daylighting Tool

Fan System Assessment Tool (FSAT)

VSD Calculator for Fans

Flat Plate Water Heater

Implementation Portfolio

Parabolic Trough

Photovoltaic

Refrigeration Suction Pressure



Initial Tasks of the Tools Consortium

- Review and analyze the current situation and state of tools and training, including non-DOE tools
- Establish advisory/technical working group(s) of key stakeholders
- Conduct a requirements analysis for key tools
- Identify an enhanced tool suite to meet user needs and design a portfolio of potential updates and enhancements.
- Develop a business plan and identify an organization structure for the longer term to manage the tools and training.
- Conduct an initial streamlining and critical updates for a tool suite.
- Establish the organization structure to move forward with tools and training

Potential Partners in the Consortium

U.S. Council for Energy-Efficient Manufacturing (CEEM)

Industrial Energy Efficiency Council (IEEC)

Alliance to Save Energy (ASE)

Industry Associations and Trade Groups

Industrial companies

Federal Government and National Laboratories

Tool and Training Developers

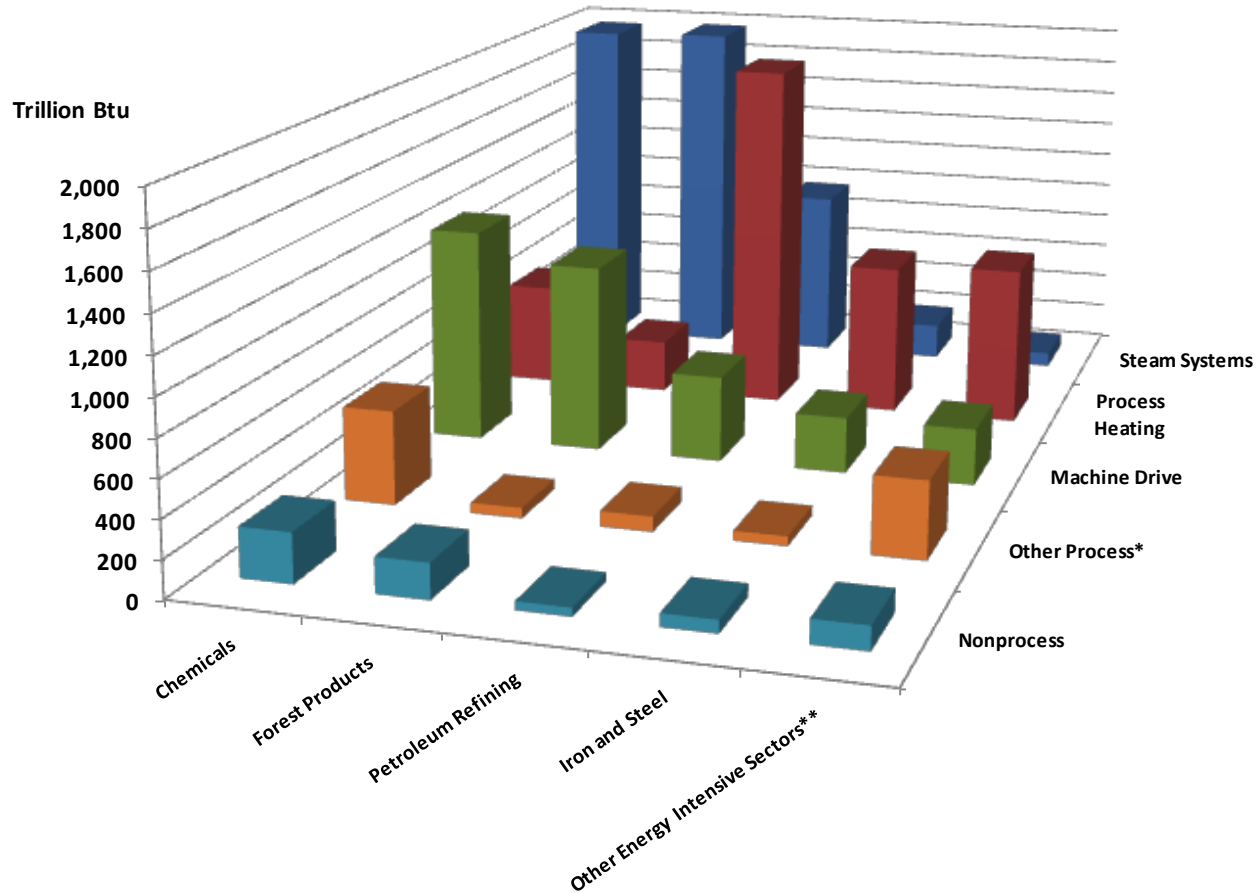
Tool and Training Providers

Other Non-Government Organizations

Possible Improvements to the Tool Suite

- A streamlined set of tools
- Updated data and information
- New features and tools for additional energy systems
- Integrated to facilitate comparisons and decisions on multiple energy systems and plants
- A common look and feel for ease of navigation and use
- Clear presentation of results with good visuals
- Utilization of an open-source platform
- Applications for hand held computer devices
- Ability to test “what if” scenarios
- Continued availability of useful tools for plant engineers and energy managers
 - ✓ Wide spread availability at minimal cost

Markets for Energy Efficiency Decision Tools



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