EMFACT™ Introduction

Terri Goldberg

Northeast Waste Management Officials'
Association (NEWMOA)

May 2010

Agenda

➢ What is EMFACT™?

➢ What reports can EMFACT™ produce?

➢ EMFACT™ features

➢ How to get started?

2

EMFACT™

EMFACT
Energy & Materials Flow and Cost Tracker

➢ EMFACT™ is an acronym for **Energy & Materials Flow & Cost Tracker**

➢ Collaboration between :
  ➢ Northeast Waste Management Officials' Association (NEWMOA)
  ➢ Massachusetts Office of Technical Assistance & Technology (MA OTA)

➢ **Free** software tool
  o **www.newmoa.org/prevention/emfact/register.cfm**

3

EMFACT™ Developers

EMFACT
Energy & Materials Flow and Cost Tracker

EMFACT™ Team

Sponsors:
➢ NEWMOA
➢ MA OTA

Consultants:
➢ Sullivan International
➢ EMARIC

Funder:
➢ U.S. EPA ORD Collaborative Science & Technology for Sustainability Network

4

Why EMFACT? Materials Accounting

EMFACT
Energy & Materials Flow and Cost Tracker

Environmental Management Accounting or Materials Accounting enhances the ability of manufacturers & others to:

➢ **make decisions**

➢ **set priorities**

related to consumption of resources through tracking & analyzing their flow & associated costs

5

Why EMFACT? Materials Accounting

EMFACT
Energy & Materials Flow and Cost Tracker

➢Assist with implementing **LEAN & green** - reducing waste & associated costs

➢Addresses demands for greater **transparency** in supply chains

➢Help implement **pollution prevention**

➢Small & medium-sized firms have not had software tool for materials accounting

6

Objectives

EMFACT
Energy & Materials Flow and Cost Tracker

➢A fully developed, **easy-to-use, & well-documented** energy, materials, chemicals, releases, & associated costs tracking & data analysis software tool

➢Well-developed **training support materials** & a **user's guide**

➢Online **downloadable free access**

➢**Training**

7

EMFACT™ Development – Phase 1

EMFACT
Energy & Materials Flow and Cost Tracker

➢In Phase 1 - designed to help users understand & analyze their materials (including water & fuels) & chemical use in one or more facilities

➢Designed to help track fuels, (i.e., oil, natural gas, coal, or bio-based fuels); treats these material inputs the same as others
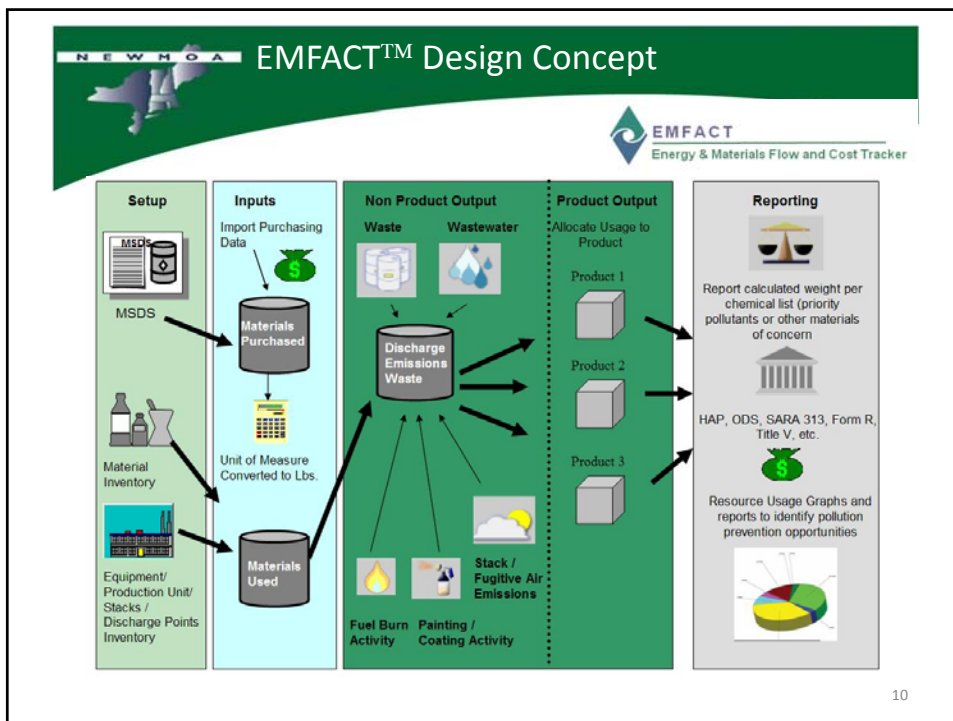
8

EMFACT™ Development – Phase 2

EMFACT
Energy & Materials Flow and Cost Tracker

Phase 2:

➤ Enhance to enable users to track & evaluate use & purchasing of electricity

➤ Seeking support for upgrades

9

EMFACT™ Design Concept

EMFACT
Energy & Materials Flow and Cost Tracker

10

EMFACT™ Procedure Flow

EMFACT
Energy & Materials Flow and Cost Tracker

EMFACT - Procedure Flow

The Energy & Materials Flow and Cost Tracker (EMFACT) is an easy-to-use, well-documented tool to assist the small and medium size enterprise manage their fuel, water and materials usage. Using EMFACT, companies can track air emissions, wastewater, solid/hazardous waste, and related costs associated with the day-to-day operations of their business. Several reports are available to assist, along with a calendar to set up due dates and reminders.

The purpose of this document is to provide a high-level overview of the entire EMFACT process. Refer to specific training and documentation for additional details.

1 Install/Set Up EMFACT
- Download EMFACT
- Install
- Initial Setup

2 Set Up Admin
- User List
- Drop Down Lists
- Facility Location List
- Building List
- Department List

3 Define Materials
- Material List
- Material Detail
- CAS Number List

4 Define Equipment
- Equipment List
- Equipment Detail
- Production Unit List
- Production Unit Detail

5 Define Outputs
- Products List
- Intermediate Products List
- Air Source List
- Air Source Detail
- Water Discharge Point List
- Waste Type List
- EPA Codes per Waste Type

6 Define Regulations
- Permits List
- Permit Details
- Chemicals of Concern

7 Link Equipment, Prod Units, & Products
- Link Equipment
- Link Production Unit
- Link Product

8 Enter Inputs

Materials Purchased
- Prepare Electronic Data File
- Import Purchases (electronically)
- View Data List
- Manage List
- Enter Purchases (manually)

Material Usage
- Enter Water Use
- Enter Fuel/Paint/Other Air Use
- Enter Other Materials Use
- View List
- Manage List

9 Compute/Determine Outputs

Product Output
- Enter Product Volume

Non Product Output
- Compute Air Emissions
- Enter Wastewater Discharge
- Wastewater Discharge with Pollutants
- Waste Management List
- Waste Management Detail

10 Run Reports

Materials
- Materials Defined List
- Materials Purchased or Materials Used (by Dept, Weight per Material, or Weight per CAS Number)

Product
- Product: Weight per CAS Number

Air
- Usage (Weight per Material, Weight per Material with 12 Month Rolling)
- Emissions (Weight per Pollutant with 12 Month Rolling, by MSDS VOC%)

Water
- Usage (Weight per Material)
- Discharge (Weight per Material, Weight per Pollutant)

Waste Management
- Activity Costs
- Chargeback Costs

Mass Balance
- Mass Balance Purchased

11 Set Up / View Reminders

Materials
- Calendar Reminder List
- Calendar Reminder Details
- View Calendar Events Coming Due

Revised: 2/1/09   Copyright 2009 Sullivan International Group, Inc.   11

EMFACT™ Dashboard

EMFACT
Energy & Materials Flow and Cost Tracker

The EMFACT™ **Dashboard** displays seven distinct areas of functionality accessed via **icons** or **Toolbar** menus:

1. **Setup**
2. **Define**
3. **Link**
4. **Input**
5. **Output**
   - **Product**
   - **Non-product**
6. **Reports**
7. **Reminders**

EMFACT™ Toolbar

12

EMFACT™ Reports

EMFACT
Energy & Materials Flow and Cost Tracker

➢ Designed to enable data input & data analysis & reports based on equipment, production unit, or entire facility – maximizes **flexibility** depending on user interests & needs

➢ **Manages lists** of equipment, materials, & chemicals

➢ **Pre-populated** with numerous lists – focusing on federal regulatory lists & thousands of CAS numbers

13

EMFACT™ Reports

EMFACT
Energy & Materials Flow and Cost Tracker

➢ Includes **21 boiler plate reports** to help users track products, air, water, & waste

➢ Filters enable user to define report parameters

➢ **SEARCH** window enables searching by a variety of fields - output can be saved to Excel

➢ **Reports Procedure Guide:**
www.newmoa.org/prevention/emfact/ReportGuide.pdf

14

EMFACT™ Reports

EMFACT
Energy & Materials Flow and Cost Tracker

➢ Materials & chemicals **purchased & used** *per equipment, production unit, facility;* costs

➢ Materials & chemicals **purchased & used** *incorporated into **product vs. non-product** output;* costs

➢ Non-product output reports for air emissions, including 12- month rolling averages

➢ Water pollutant outputs as well as water usage

➢ Waste activity reports; grouped by waste type

15

EMFACT™ Resource Efficiency Reports

EMFACT
Energy & Materials Flow and Cost Tracker

➢ Mass Balance Reports available at many levels

➢ **Complex reports to generate** – need all inputs & outputs in same units (generally pounds)

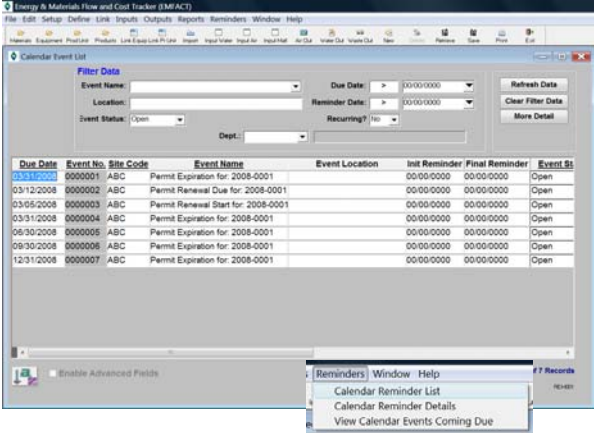➢ Helps user to ensure units are consistent & appropriate conversions are made

16

Compliance Reporting & Reminders

EMFACT
Energy & Materials Flow and Cost Tracker
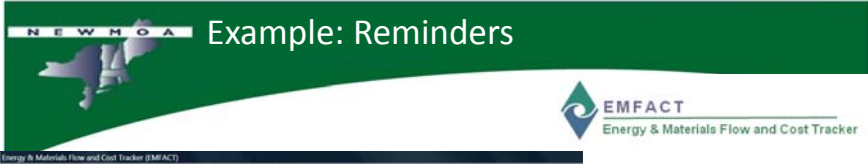
Lists of regulated chemicals:
➤ SARA 313
➤ Hazardous Air Pollutants (HAPs)
➤ Ozone Depleting Substances – Classes I & II
➤ Ability for users to add chemical lists

Reminders:
➤ Screens to list & describe **permits**
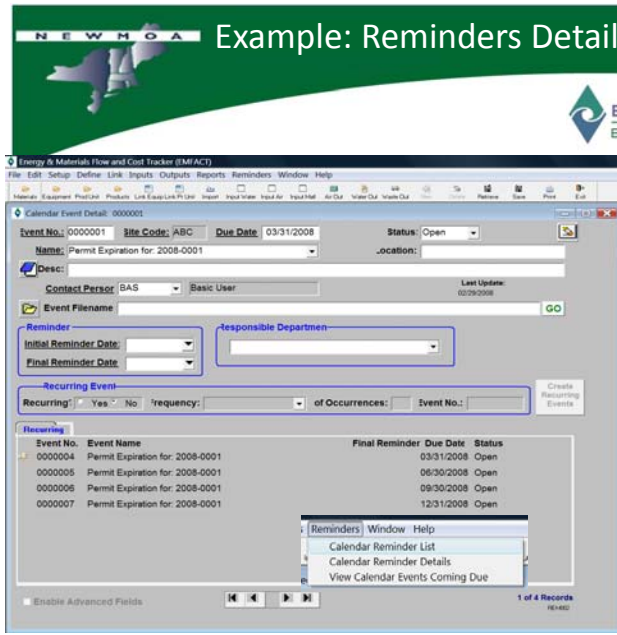➤ **Calendar with event reminders** (e.g., permit renewal)

17

Example: Reminders

EMFACT
Energy & Materials Flow and Cost Tracker

Reminders

The **Reminders** feature enables users to track the renewal and expiration dates of permits, regulations, etc.

When permits and regulations are first set up, users have the option of entering the Issue, **Expiration**, **Renewal Due** and **Renewal Start Date**s

When this is done, EMFACT automatically creates calendar events and reminders

Users can also set up independent calendar events for other reasons (e.g., audit reminders, etc.)

18

Example: Reminders Detail
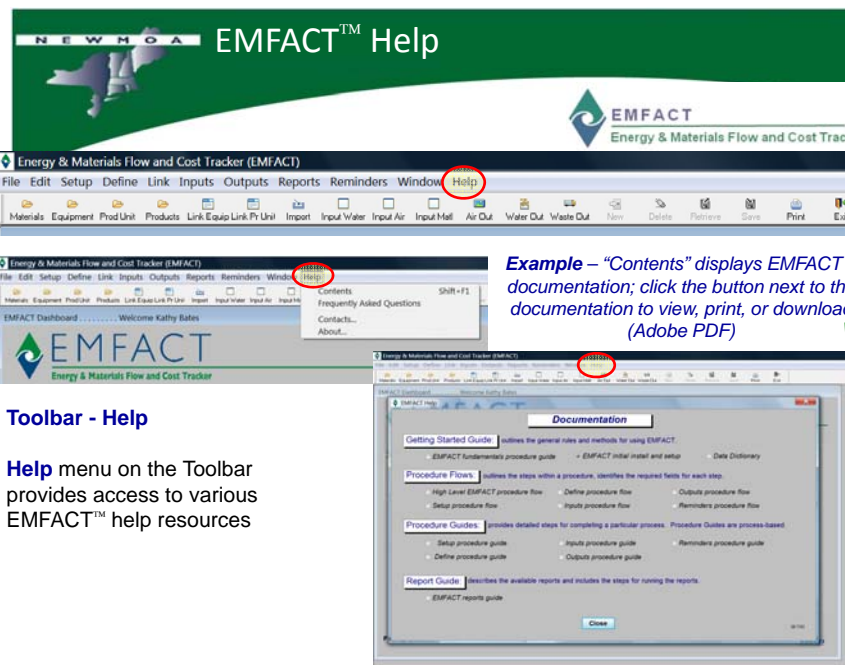
Reminders

The **Event Details** window provides a full screen view of all fields available to manage events

19

EMFACT™ Help

Example – *"Contents" displays EMFACT™ documentation; click the button next to the documentation to view, print, or download (Adobe PDF)*
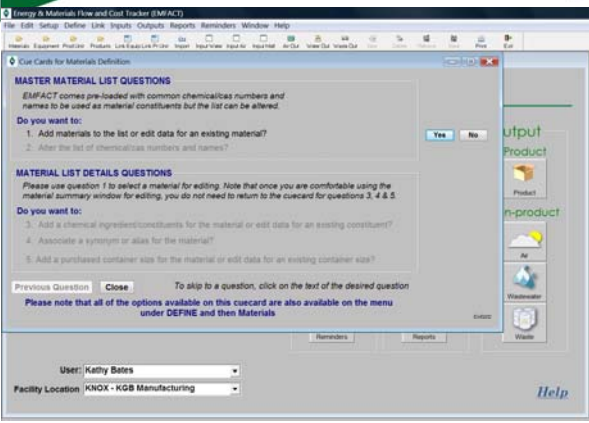
Toolbar - Help

Help menu on the Toolbar provides access to various EMFACT™ help resources

20

EMFACT™ Binoculars

Yellow Binoculars Button

Fields that are "searchable" will have the **Yellow Binoculars** icon next to them

Click the **Yellow Binoculars** icon. The appropriate Search window will open

In this example, the Search For Materials window is launched

23

EMFACT ™ Training

➤Paint line example –
www.newmoa.org/prevention/emfact/PaintLineProdUnitExample_Sep08.pdf

➤Training slides –
www.newmoa.org/prevention/emfact/EMFACTWorkshopIntrotoEMFACT.pdf

➤All support materials –
www.newmoa.org/prevention/emfact/register.cfm

24

EMFACT ™ - Next Steps

EMFACT
Energy & Materials Flow and Cost Tracker

➢ Upgrading EMFACT – addressing issues identified to date

➢ Developing case studies

➢ Developing online e-learning

➢ Seeking funding for Phase 2 expansions & upgrades

25

More information

EMFACT
Energy & Materials Flow and Cost Tracker

➢ More on what is EMFACT™ –
newmoa.org/prevention/emfact/about.cfm

➢ Downloading (including registration) –
newmoa.org/prevention/emfact/register.cfm

26

More information

EMFACT
Energy & Materials Flow and Cost Tracker

Terri Goldberg

NEWMOA

(617) 367-8558 x302

tgoldberg@newmoa.org

www.newmoa.org

newmoa.org/prevention/emfact/

27

EMFACT ™ Example – Spray Booth

EMFACT
Energy & Materials Flow and Cost Tracker

28