Manufacturing Extension Partnership

- An initiative of the Department of Commerce (DOC), National Institute of Standards and Technology (NIST)
- Technical specialists help small businesses grow and profit
- In FY 2007 alone, MEP helped create over $5 billion in new sales for partner businesses
- 59 Centers, 1,600 Field staff in 440 service locations
- MEP brings years of experience in cost reduction, business growth, lean manufacturing, and innovation.
TMAC GREEN TRAINING OFFERINGS:

Green Generalist Training 301
One-Day Workshop-7 hrs / Appropriate for the entire workforce
Learn green concepts, key environmental issues facing manufacturers, and the components of sustainability during a one-day interactive workshop.

Green Waste Stream Mapping 302
One-Day Workshop-7 hrs / Appropriate for engineers, green team participants and environmental managers
Learn how to enable visualization of how processes create waste and where opportunities exist to reduce or eliminate waste, thereby helping the environment.

Green Specialist Certificate Series 305
One-Day Workshop-7 hrs / Appropriate for engineers, green team participants and environmental managers
Dumpster Dive, Sustainability into Practice, Energy Management & H20 Conserve, Green Chemistry, Pollution Solutions, Green Building Best Practices
Green Suppliers Network

A joint program between EPA and MEP that

• Provides *Lean and Clean* assessments to small- and medium-sized enterprises

• Has helped over 100 small businesses identify more than **$60 million** in *Lean and Clean* opportunities

• Works with the automobile, aerospace, healthcare, office furniture, and utility industries, among others
<table>
<thead>
<tr>
<th>Annual kWh Electricity Reductions</th>
<th>% Non Value Operations</th>
<th>Water Saved (gallons)</th>
<th>Dollars Saved</th>
<th>Tons of Solid Waste Reduced</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,424,394</td>
<td>99.9%</td>
<td>250,000</td>
<td>$200,110</td>
<td>31</td>
</tr>
</tbody>
</table>
Manufacturing Extension Partnership

Latex Balloon Manufacturing
- Reducing water consumption by 8,374,400 gallons/year
- Reducing % of heavy metals with reformulation
- Fish bone filtration
Supporting Manufacturing Leadership Through Sustainability

E3: Economy, Energy, and Environment
Benefits for Manufacturers

Cost Savings
• Significant cost savings result from increased process efficiencies and reduced waste
• Profitable sustainability practices

Increased Competitiveness
• State-of-the-art sustainable business practices
• Technical support to drive entry into new markets
• Job creation and retention

Access to Technical and Financial Resources
• Additional funding through federal and state programs
• Enhanced skills and capabilities for workers
E3 MODEL: Federal Programs Working Together with Local Communities

**ECONOMY:**
- **DOC's NIST** Manufacturing Extension Partnership (MEP), SBA financing, and DOL skills training

**ENERGY:**
- **DOE's** Save Energy Now (SEN) program

**ENVIRONMENT:**
- **EPA's Green Suppliers Network (GSN)** and Climate Leaders (CL) program

**COMMUNITIES:**
- Large and small manufacturers, utilities, local government, and other municipal authorities
Who is involved in E3?

- MEP brings years of experience in cost reduction, business growth, lean manufacturing, and innovation to the E3 team
- SBA can provide implementation financing through loans and Small Business Development Centers (SBDCs)
- DOL provides green job training grants and energy-focused workforce development grants
- DOE’s Save Energy Now program provides energy audits and other energy efficiency assistance
- EPA’s Green Supplier’s Network provides Lean and Clean assessments to small- and medium-sized manufacturers
- EPA’s Climate Leaders program provides greenhouse gas (GHG) assessments and sets aggressive GHG reduction goals
Technical Assessment

**A Lean Review** which leads to increased productivity and reduced costs

**An Energy Audit** which provides tools and insight to reduce energy demand and costs

**A Greenhouse Gas (GHG) Evaluation** that teaches manufacturers how to calculate GHG emissions and evaluate reduction strategies

**A Clean Review** which results in water and energy conservation, reduced emissions, and additional cost savings

**Post-Assessment Recommendations** that guide each facility toward improvements in overall efficiency, reduced waste, more efficient use of resources including energy and water, and cost savings
## E3 Metrics

<table>
<thead>
<tr>
<th>Economic Metrics:</th>
<th>Energy Metrics:</th>
<th>Environment Metrics:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Environmental savings identified</td>
<td>• Energy conserved (MM BTU/kWh)</td>
<td>• Air emissions reduced (lbs)</td>
</tr>
<tr>
<td>• Lean savings identified</td>
<td>• Energy intensity per unit of production</td>
<td>• Solid waste reduced (lbs)</td>
</tr>
<tr>
<td>• Other cost savings</td>
<td>• Carbon reductions (tons)</td>
<td>• Material intensity per unit of production</td>
</tr>
<tr>
<td>• One time potential cost savings identified</td>
<td>• Carbon intensity per unit of production</td>
<td>• Hazardous waste reduced (lbs)</td>
</tr>
<tr>
<td>• Individuals trained</td>
<td></td>
<td>• Hazardous materials reduced (lbs)</td>
</tr>
<tr>
<td>• Jobs created</td>
<td></td>
<td>• Water pollution reduced (lbs)</td>
</tr>
<tr>
<td>• Jobs retained</td>
<td></td>
<td>• Water used/conserved (gal)</td>
</tr>
<tr>
<td>• Total annual potential impact identified</td>
<td></td>
<td>• Water intensity per unit of production</td>
</tr>
<tr>
<td>• Number of small businesses engaged</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Percentage of small businesses engaged</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Number and value of SBA loans granted</td>
<td></td>
<td></td>
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<tr>
<td>• Capital infusion dollars invested</td>
<td></td>
<td></td>
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<tr>
<td>• Hours of counseling provided</td>
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What is TIP?

TIP is a cost-shared, federal funding program that focuses on high-risk, high-reward research that is expected to transform the nation’s capacity to deal with major societal challenges that are not being addressed.

**Funding**

- $69.9 million for FY 2010, including management of ongoing TIP and Advanced Technology Program awards
TIP is Part of NIST

**TIP benefits from NIST scientific and technical expertise**

- Help identify and select areas of critical national need and societal challenge for TIP funding
- Evaluate proposals

**NIST benefits from collaborating with TIP**

- Apply understandings of critical national needs to NIST research programs
- Enhance knowledge, skills, abilities through TIP program development and proposal review
TIP’s Purpose

- Assist United States businesses and institutions of higher education or other organizations, such as national laboratories and nonprofit research institutions
- Support, promote, and accelerate innovation in the United States through high-risk, high-reward research
- In areas of critical national need

America COMPETES Act, (PL 110-69)
August 9, 2007
Expectations for 2010

■ TIP is seeking white papers
  – Upcoming due dates: May 10, and July 12.

■ Stakeholder comments on TIP developed white papers
  – 4 papers: civil infrastructure, manufacturing, healthcare, energy

■ Upcoming Competition
  – Announcements expected 1st half of 2010
  – Proposers’ Conferences - Gaithersburg plus targeted groups/settings TBD
  – Webinars
  – Topic(s) – stay tuned to www.nist.gov/tip
    o Based on critical national needs
    o May build upon past topics
    o May include new topics
For further information…

- **TIP website:** [www.nist.gov/tip](http://www.nist.gov/tip)

- **Toll-free:** 1-888-TIP-NIST (1-888-847-6478)

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