



Overview of Mississippi P2: enHance and E3

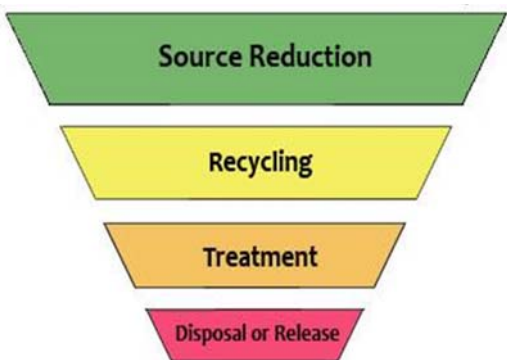
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College Sustainability Leaders Meeting
Mississippi Solid Waste and Recycling Conference
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What is Pollution Prevention?



- * Any practice that reduces, eliminates, or prevents pollution at its source
- * The “ounce of prevention” approach to waste management

Benefits of Pollution Prevention

- * Increased profits
- * Lower disposal cost
- * Lower water bills
- * Reduced wastewater treatment costs
- * Reduced liability
- * Employee and community safety
- * Positive social value

Mississippi Pollution Prevention (P2) Program

- * Created by the Multimedia P2 Act of 1990
- * Funded by a grant from EPA and P2 fees
- * Successful program for over 20 years
- * Non-regulatory in nature
- * MDEQ staff supplemented by MMA-MEP
- * Our program focuses on
 - * enHance recognition program
 - * On-site technical support (E3)
 - * Training and outreach (workshops, webinars, presentations)



Recognition Program: enHance



- * Voluntary initiative to recognize environmental leaders in Mississippi
- * Participating organizations make a commitment to address and achieve on-going environmental improvements (beyond compliance)
- * Open to industries, municipalities, non-regulated entities (e.g., institutions), and local governments
- * enHance encourages voluntary environmental stewardship by recognizing committed environmental leaders and nurturing the reduction of waste and conservation of resources, resulting in long term economic benefits and continuous environmental enhancement.

Application and Review Process



- * Applications for membership are accepted annually from July 1 through September 30.
- * Applications submitted during this period will be reviewed for eligibility.
- * Upon approval of the initial application, a site visit will be conducted to review environmental management practices and proposed environmental enhancement projects.
- * New members are accepted from applications submitted in the calendar year will be announced in January of the following year.
- * For details, visit <https://www.mdeq.ms.gov/land/waste-division/enhance/>

Membership Tiers



Regulated facilities:

- * Associate (Demonstrated history of compliance, signed environmental policy, Environmental Management Plan, self-audit, 1 environmental project)
- * Steward (Associate plus 1 additional environmental project)
- * Leader (Steward plus Environmental Management System, independent audit, 1 community service project)

Non-regulated facilities:

- * Environmental Star (50+ employees, 20,000+ ft² of building space, signed environmental policy, Environmental Management Plan, self-audit, 2 environmental projects) – added 2016

New: enHance for Local Governments



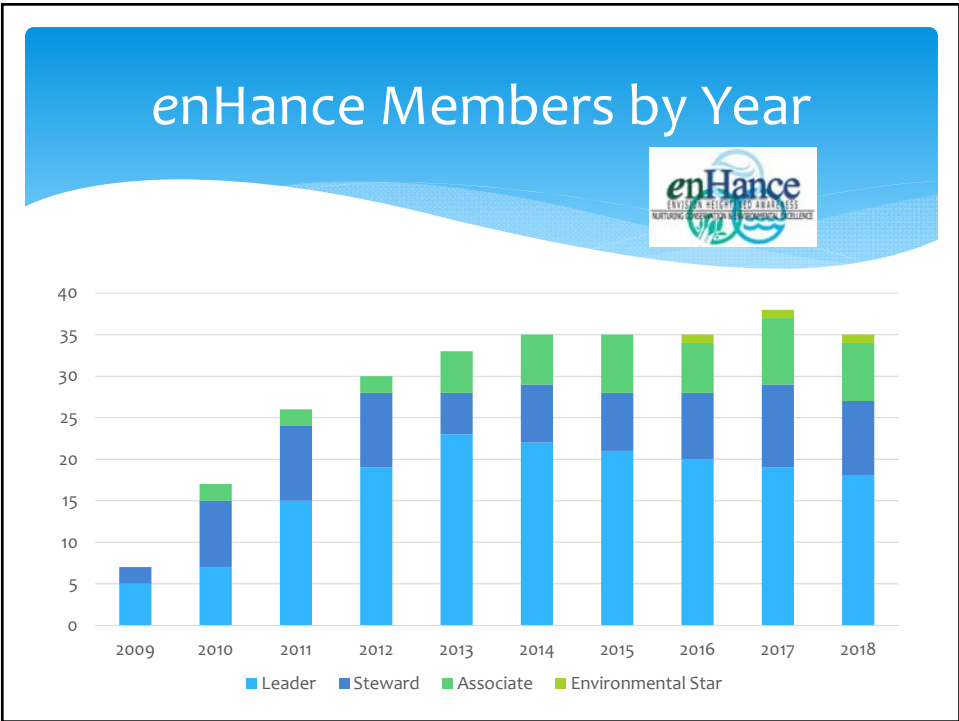
Tier requirements:

- * Associate: signed environmental policy, completed environmental management template (BMP) outlining current and continuing environmental improvement actions, one (1) completed or active voluntary projects with quantifiable results that enhances the environment, agrees to let MDEQ share project information, demonstrated commitment to environmental compliance, submits annual report
- * Steward: meets Associate requirements plus: one additional environmental project (total of two)
- * Leader: meets Steward requirements plus: demonstrated record of sustained environmental compliance, one (1) community outreach project or serve as Steward mentor, one (1) BMP in each category of template implemented

enHance Timeline



- * 2008 – program initiated and first class recruited
- * 2009 – first enHance Workshop, first class inducted
- * 2012 – first renewing members re-inducted
- * 2013 – membership reaches 35 organizations
- * 2016 – Mary Jean Gates retires, MMA-MEP becomes primary contractor, Environmental Star tier added
- * 2018 – enHance celebrates 10th year



Membership Summary



- * Total members (since inception): 52
 - * Does not include a handful that were accepted but never submitted an annual report
- * Currently active members: 35
 - * 18 Leaders
 - * 10 Stewards
 - * 6 Associates
 - * 1 Environmental Star

Current Members - Leaders

<u>enHance Leaders</u>	<u>Joined in</u>	
Advanced Distributor Products	Grenada	2017
Akzo Nobel Pulp and Performance Chemicals, Inc.	Columbus	2009
Anel Corporation	Winona	2013
Ark-Ell Springs – Leggett & Platt, Inc.	Houlka	2012
Baxter Healthcare Corporation	Cleveland	2009
Columbus Air Force Base	Columbus	2011
Cooper Tire Company	Tupelo	2011
Flexsteel Industries	Starkville	2011
Hol-Mac Corporation Plant 1	Bay Springs	2013
Hol-Mac Corporation Plant 2	Bay Springs	2013
Hol-Mac Corporation Plant 3	Bay Springs	2013
Hunter Douglas Tupelo Center, Inc.	Tupelo	2009
Nissan North America, Inc.	Canton	2011
Northrop Grumman Systems Corporation	Moss Point	2012
Nucor Steel Jackson, Inc. / General Recycling	Flowood	2009
Super Sagless – Leggett & Platt, Inc.	Tupelo	2012
Toyota Motor Manufacturing MS, Inc.	Blue Springs	2014
Tupelo Sleeper – Leggett & Platt, Inc.	Tupelo	2013

Current Members - Stewards

<u>enHance Stewards</u>	<u>Joined in</u>	
Cooper Tire Company	Clarksdale	2014
Eaton Corporation	Jackson	2017
Haworth, Inc.	Bruce	2010
Hernando, City of	Hernando	2012
Northrop Grumman Mission Systems	Ocean Springs	2010
Omega Motion - Leggett & Platt, Inc	Saltillo	2017
PACCAR Engine Company	Columbus	2016
Ridgeland, City of	Ridgeland	2011
Southwire Company	Starkville	2013
US Navy, Naval Construction Battalion Center	Gulfport	2010

Current Members – Associates and Environmental Star

<u>enHance Associates</u>	<u>Joined in</u>	
Airbus Helicopters, Inc.	Columbus	2013
Choctaw Generation LP-Red Hills Generation Facility	Ackerman	2010
Crest Foam - Leggett & Platt, Branch 1704	Houston	2017
Georgia Pacific - Wood Products, LLC	Taylorsville	2017
Keith Huber Corporation	Gulfport	2016
Natchez Water Works	Natchez	2013

<u>enHance Environmental Star</u>	<u>Joined in</u>	
Watkins & Eager PLLC	Jackson	2016

enHance Benefits



BENEFIT	ASSOCIATE	STEWARD	LEADER
RECOGNITION			
Trophy and certificate	Yes	Yes	Yes
Press release	Yes	Yes	No
Press release with pictures with MDEQ Executive Director/Governor	No	No	Yes
Annual award eligibility	Yes	Yes	Yes
Listed on MDEQ website	Yes	Yes	Yes
Authorized use of enHance logo	Yes	Yes	Yes
NETWORKING			
Annual meeting	Yes	Yes	Yes

enHance 10-year Impacts



- * Impact data taken from enHance annual reports
 - * 197 reports from 52 companies
- * To be included, companies had to have submitted at least one annual report
- * Only impacts that were easily captured from annual reports are included
- * Exercise caution in interpreting (1-off vs. annual ongoing)

enHance 10-year Reduction Totals

Hazardous Waste (lbs.)	274,226
Recycle (tons diverted from land fill)	42,789
Reuse (tons diverted from land fill)	25,998
Reduce (tons diverted from land fill)	17,177
Total solid waste (tons diverted)	85,964
Water usage reduction (gal.)	250,891,188
Electrical Power (KWH)	73,962,495
Electrical Power (MMBtu)	252,360
Other/Combined Energy (MMBTU)	17,983,732
Total Energy (MMBtu)	18,236,092
NO _x emissions (tons)	252
VOC emissions (tons emitted)	63,992
PM emissions (tons)	48
CO ₂ e emissions (tons)	112,422
Total air emissions (tons)	176,715
Reported cost savings	\$ 5,828,931

Manufacturing Extension Partnership (MEP)

- * Federal program administered at the federal level by the National Institute of Standards and Technology (NIST) within the U.S. Dept. of Commerce
 - * Started in 1988
 - * Public-private partnership: federal-state-private share costs
 - * Federal Budget: \$130 million
- * Centers in all 50 states and Puerto Rico
- * Primary mission is to strengthen and empower U.S. manufacturers
 - * Focus on small and medium-sized manufacturers
 - * Training, coaching, technical assistance, workforce development, advocacy
- * In 2017, MEP Centers interacted with 26,313 U.S. manufacturers, leading to:
 - * \$12.6 billion in increased or retained sales
 - * \$1.7 billion in cost savings
 - * \$3.5 billion in new client investments
 - * more than 100,000 jobs created or retained





MMA-MEP

- * Manufacturing Extension Partnership of Mississippi
- * Program hosted by Mississippi Manufacturers Association (MMA)
 - * MMA is the Voice of Manufacturing in Mississippi
- * Small headquarters staff in Jackson
- * Sub-recipient centers at:
 - * CAVS Extension (MSU)
 - * Gulf Coast Community College (MGCCC)
 - * Itawamba Community College (ICC)
 - * Mississippi Polymer Institute (USM)
 - * Mississippi Corridor Consortium (MCC)





MMA-MEP Services



- * **Growth services** – innovation , Innovation Jump Start, technology commercialization/ product development support, startup/expansion support
- * **Lean solutions** – assessments, on-site and public training, lean certificate program, workshops and Kaizen events, lean leadership, organizational transformation
- * **Polymer services** – material testing, mold and die design, prototyping, technical assistance, workforce training
- * **Quality systems** – Six Sigma training and certification, SPC training and consulting, quality systems audit, precision measurement services
- * **Industrial engineering solutions** – process design, plant layout, simulation modeling, ergonomic workplace, material handling
- * **Workforce solutions** – skills assessment, basic and specialty skills training, health & safety training, certifications, leadership, conflict resolution, business culture
- * **Strategic solutions** – strategic planning, risk assessment, business continuity planning
- * **Sustainability services**– E3 (Economy, Energy, Environment) assessments, P2 (Pollution Prevention) assistance, CHP

E3: Economy, Energy, Environment



E3: ECONOMY • ENERGY • ENVIRONMENT
A SUSTAINABLE GROWTH STRATEGY

- Multi-agency initiative focusing on sustainable manufacturing
- Collaborative effort of federal and state agencies, local communities, universities and community colleges, utilities, industry, other stakeholders
 - Six federal agencies: EPA, USDOL, USDOL, USDOE, SBA, USDA



- Cooperative framework for providing coordinated sustainability assessments and other services to small- to medium-sized manufacturers

Mississippi E3 (ME3)



E3: ECONOMY • ENERGY • ENVIRONMENT
A SUSTAINABLE GROWTH STRATEGY

- * Started in 2011 with stakeholder identification
- * First E3 assessment in 2012
 - * Help from Alabama ATN
- * Supported by a series of grants from MDEQ (P2 program)
- * Provide sustainability assessments for small- to medium-sized manufacturers
 - * Economy (economic sustainability), Energy, and Environment
 - * Can include safety assessment, sustainability training, leadership training and coaching
 - * Follow-on technical assistance, implementation
- * 11 assessments to date (4 in 2017)

E3 Assessment Model




E3: ECONOMY • ENERGY • ENVIRONMENT
A SUSTAINABLE GROWTH STRATEGY

- * Small team, one day in-plant assessment
 - * “Lean and Green” assessment
 - * ASHRAE Level 1 energy audit
 - * Environmental compliance check
 - * Safety audit (optional) - mock OSHA inspection
- * Identify low/no-cost opportunities for improvement plus potential opportunities for more substantial improvements
- * Follow-up meeting and final report 3-4 weeks after assessment
- * Potential follow-on workshops, training, or implementation projects



ME3 Impacts



E3: ECONOMY - ENERGY - ENVIRONMENT
A SUSTAINABLE GROWTH STRATEGY

From our first 11 assessments, the projected impacts have included:

- * Electrical power savings - 2.2 million kWh/yr
- * Natural gas savings - 16,341 MMBtu/yr
- * CO₂ footprint reduction: 1,773 tons/yr
- * Energy cost savings - \$338,194/year
- * Improvement opportunities identified - 324
- * Quantified economic impact - \$5.4 million*
- * Jobs retained: 74*