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Materials Management in a Sustainable Economy

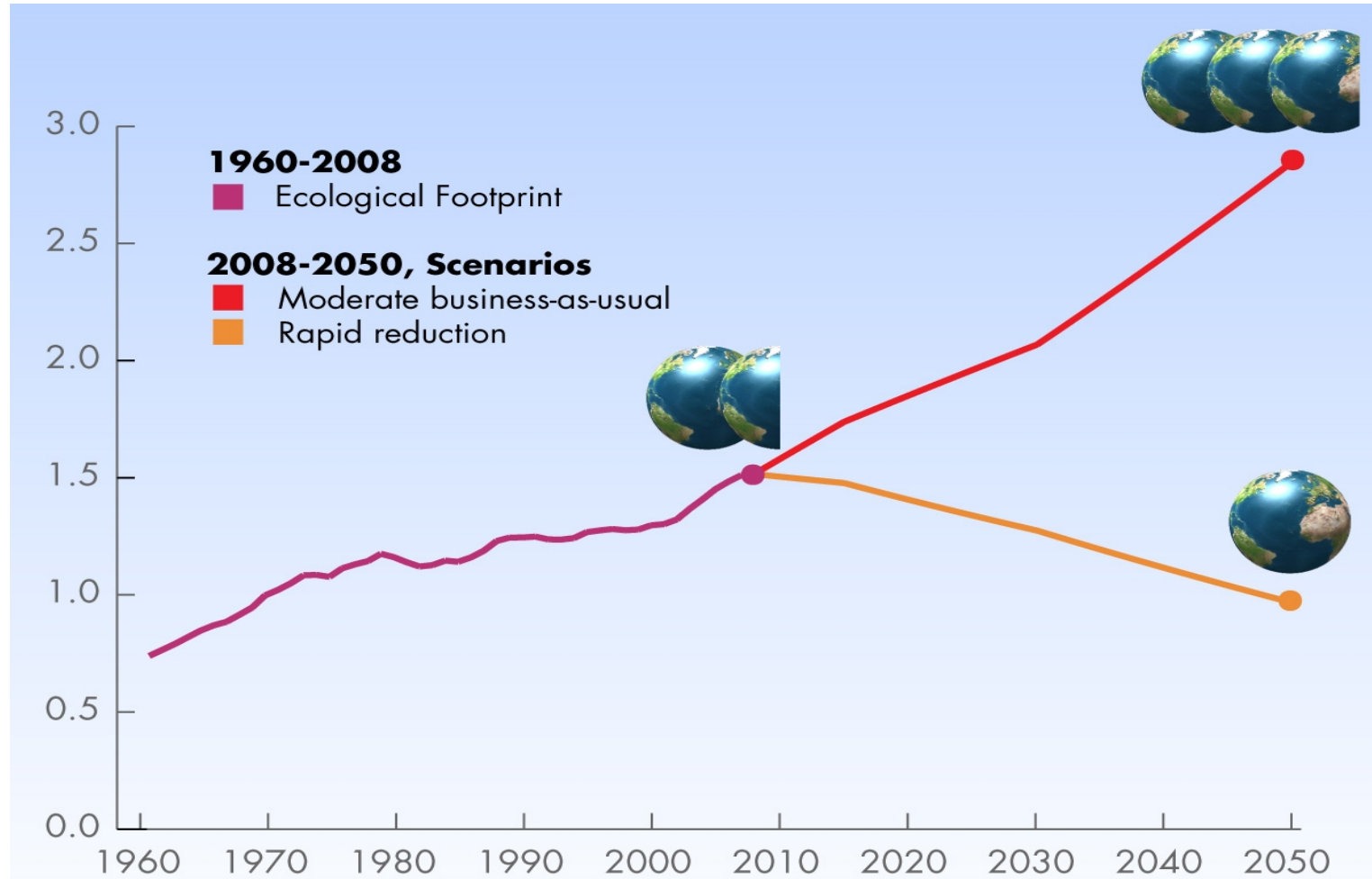
November 2017

David Levine, Co-founder & CEO, American Sustainable Business Council





World Ecological Footprint

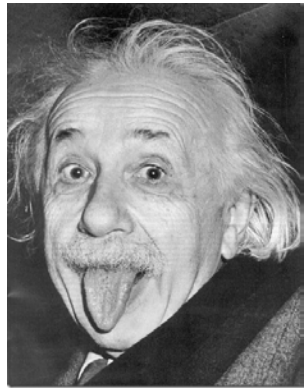


y-axis: number of planet earths, x-axis: years

Sustainability Provides a Path Forward



- A balance between financial, environmental, and social factors
- Shared prosperity
- Business as a force for good
- Doing well by doing good
- Measuring what matters



It all begins with a change in thinking



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Raising Our Business Voice



ASBC Business Members

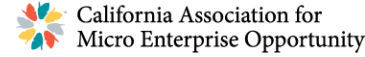


All Natural **BEN & JERRY'S** VERMONT'S FINEST
BADGER HEALTHY BODY CARE
MCS tabletop & wall decor by design
 THE HONEST CO. THE HONEST CO. THE HONEST CO.
patagonia
 seventh generation.
CLIF CLIF BAR & COMPANY
Etsy
HackensackUMC Where medicine meets innovation
AIL AMERICAN INCOME LIFE insurance company
sustain do what's natural.
MAPA GROUP
NEW BELGIUM BREWING
PAX Pax World Mutual Funds
method. Empowering our clients to change the world
Perلمان+Perلمان ATTORNEYS AT LAW LLP
naturepedic
better world club bw Roadside Assistance | Insurance | Travel Service
EARTH FRIENDLY PRODUCTS
EILEEN FISHER
DEAN'S 100% ORGANIC & FAIR TRADE
SEALASKA A NATIVE CORPORATION
GREEN DEPOT environmental living & building
ecovative We grow materials.
MARSTEL DAY
Domini SOCIAL INVESTMENTS
dansko
BLUE RIDGE PRODUCE
BETTER WORLD ALLIANCE
BetterWorld Telecom Delivering Voice and Data Solutions that Revolutionize Work
TRILLIUM ASSET MANAGEMENT
Liberty National Life Insurance Company Since 1900
underground*
Melwood Growing Opportunities
soundbite SERVICES The Sound of Social Responsibility
ORGANIC VALLEY Family of Farms
Melwood Growing Opportunities
UNION CAB of Madison
new resource bank planet-smart banking
sociallab
GO buy local
BUSBOYS AND POETS
PACIFIC COAST BANK
DOLPHIN BLUE
Singlebrook
PH PRESTWICK HOUSE INCORPORATED
Tech Networks of Boston
worldblu FREEDOM AT WORK
WE CONSUME TOO MUCH
we-care.com
MARKETING PARTNERS
GPM Evolving the Discipline of Project Management
Re-remarks
Ethical Electric
BOARDWALK CAPITAL MANAGEMENT
GreatGreenEditing
STOCKSMART
CSRwire The Corporate Social Responsibility Network
Clean + Currents Green Energy Solutions
ideal ENERGY
TripleEthos BOARD ADVISORY SERVICES
gtc omni-green-capital
thr ve consulting group
Creystone Bakery
T
82
gd
rhiza
Yobo Management Resources Taking Leaders to the Next Level
Sustainable Life Media
Ethical Markets Your gateway to the most premier 21st century economy



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ASBC Organizational Members



Drivers for Change

- Environmental, health, social and economic issues
- Greater conscious and demand for increased recycling and waste reduction measures
- Innovation opportunities
- Growing markets and new waste-related businesses
- Need for jobs
- Advocacy campaigns
- International markets are affecting U.S. recycling program

China CHINA CHINA China



Public Perception of Companies

- **79%** expect businesses to continue improving Corporate Social Responsibility efforts
- **63%** are hopeful business will take the lead to drive social and environmental change
- **86%** expect companies to do more than just make a profit



Consumers are Choosing



“Ethical” products has grown by nearly 10% per year, doubling every seven years.

Recent research by Unilever estimates the market for sustainable goods currently sits at \$2.65 trillion.

Interest in Investment in Growing

\$8.1 trillion in private sector investments in:

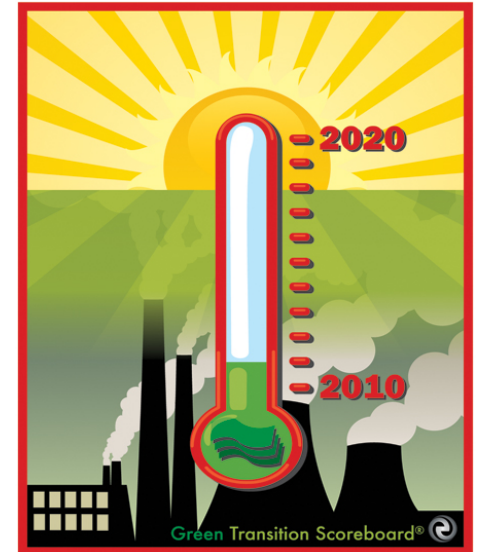
- Materials Management
- Green Chemistry
- Renewable Energy
- Smart Grid
- Clean Tech
- Efficiency
- Corporate R&D



**Green Transition
Scoreboard®**

Source: www.ethicalmarkets.com and

www.greentransitionscoreboard.com





Recycling in the U.S.

The EPA reports that after rapid growth in the 1990s & 2000s, the national average recycling rate has been holding at **just under 35 percent** for the past 5 years.

Recycling goes where? Why everyone's confused
By Angela Hill, aHill@businessinsider.com

The Washington Post
Recycling centers close across the Central Coast
Nearly 200 recycling centers have closed across the State of California, including several on the Central Coast.

Recycling gets expensive for businesses and consumers
By Lauren Maxwell, L.M@PRWeek 14, 2015

CITIES WEIGH IN ON THE COST OF CONTAMINATION
Tainted recycling in Little Rock-area grows to 40%
Food waste, diapers costly to remove
By Emily Wakenhorst, ewakenhorst@tribune.com
This article was published March 18, 2016 at 3:45 a.m.

American recycling is stalling, and the big blue bin is one reason why
D.C. Phillips

Peter Funt: The collapse of recycling is troublesome
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Why the recycling business is feeling so discarded
CNBC | Jeff Daniels, 3/12/2016
f SHARE t

Recycling: Americans Aren't Failing - The System Is
Rachel Ellis | Creation Cars, Recycling | July 3, 2015 | Leave a comment

Recycling fee approved in Sunbury
Jennifer Wakeman

My Turn: The story behind the death of recycling
By CARL HULTBERG
For the Monitor
Sunday, March 20, 2016

Shelbyville News
Counties soon may do away with their recycling efforts

THE WALL STREET JOURNAL
Unprofitable Recycling Weighs On Waste Management

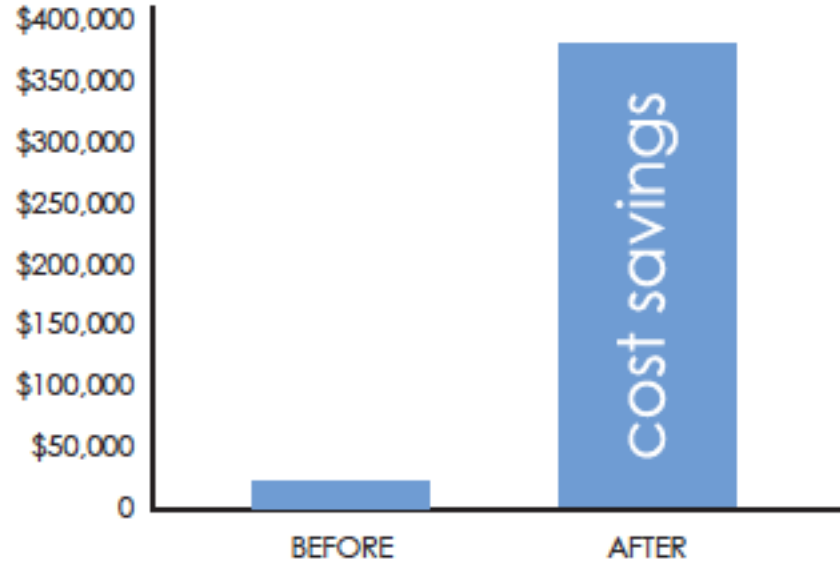
Montgomery's high-tech recycling center shuts down
Brad Hargis, Montgomery Advertiser | 11:11 a.m. EDT October 5, 2015

IP To Close Denver, Memphis Recycling Facilities
MyFoxMemphis.com | Need to Know

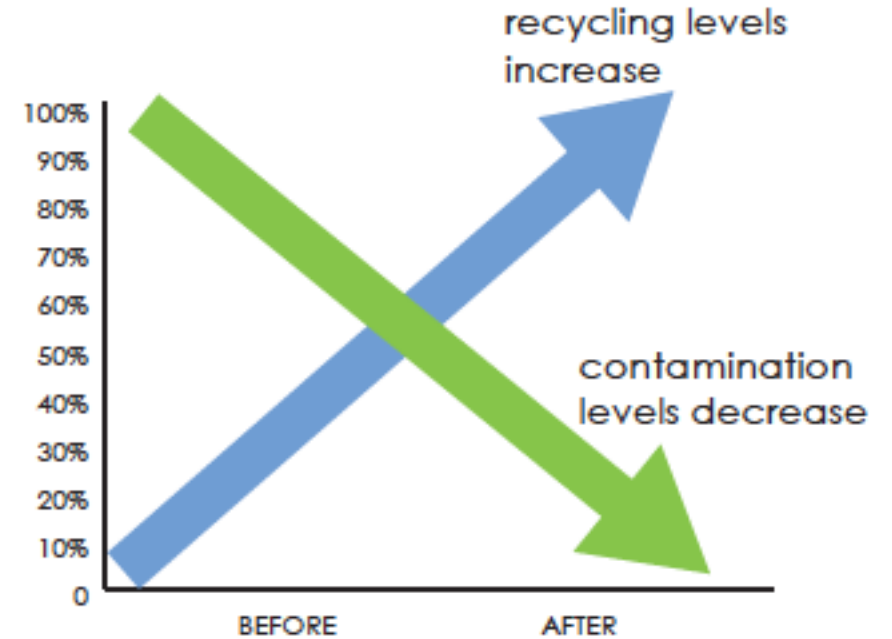
- At the same time, the recycling industry generates:
- 60,000 businesses
 - 1.5 million jobs
 - \$300 billion in sales of recycling services & recyclables
 - 40,000 government programs

Standardized Labeling

Contamination of the recycling stream is also a serious problem.



K-12 schools in Orlando saved \$369,000 in their first year, because their recycling levels increased 90% when they began using the standardized labels

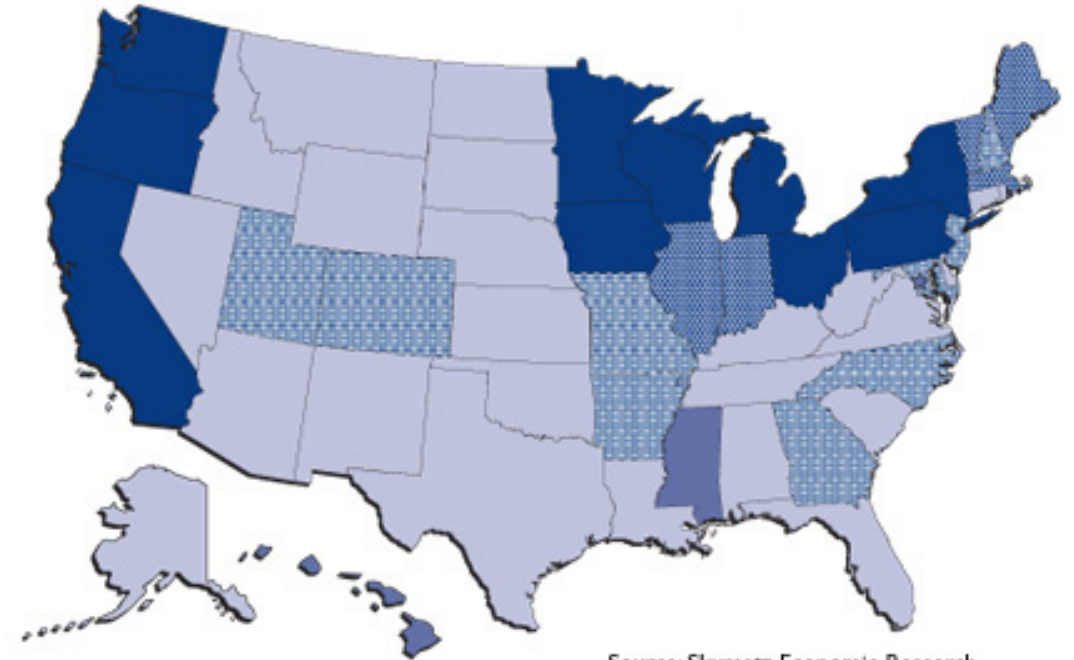


The University of Denver's recycling levels increased significantly and their contamination levels decreased 90% as a result of the standardized labels.

Pay-As-You-Throw (PAYT)

- 7,000 U.S. communities have PAYT programs
- The city of Waterville, Maine, saw its trash volume go down by **54 percent**
- Decatur, Ga., has cut trash by **42 percent**
- New England found a **49 percent** reduction in the amount of waste generated in 228 PAYT communities.
- Worcester, Mass., began its PAYT program in 1993; the recycling rate increased from 2 percent to **43 percent** (it rose to 38 % in the first week)

Pay-As-You-Throw at a Glance



Source: Skumatz Economic Research Associates, Inc. surveys 2005-2006.



Economic Benefits of Recycling & PAYT

Worcester, MA

The city instituted mandatory recycling, with PAYT. They were able to stop using an incinerator, **saving \$95 million in avoided costs.**



Baltimore, MD

The net cost to Baltimore for incineration is \$50/ton, as compared with \$18/ton for recycling. **For each ton recycled, the city saves \$32.**

U.S. could reach a 75% diversion rate for for municipal solid waste (MSW) and construction and demolition debris, **2.3 million jobs** would be generated by 2030.

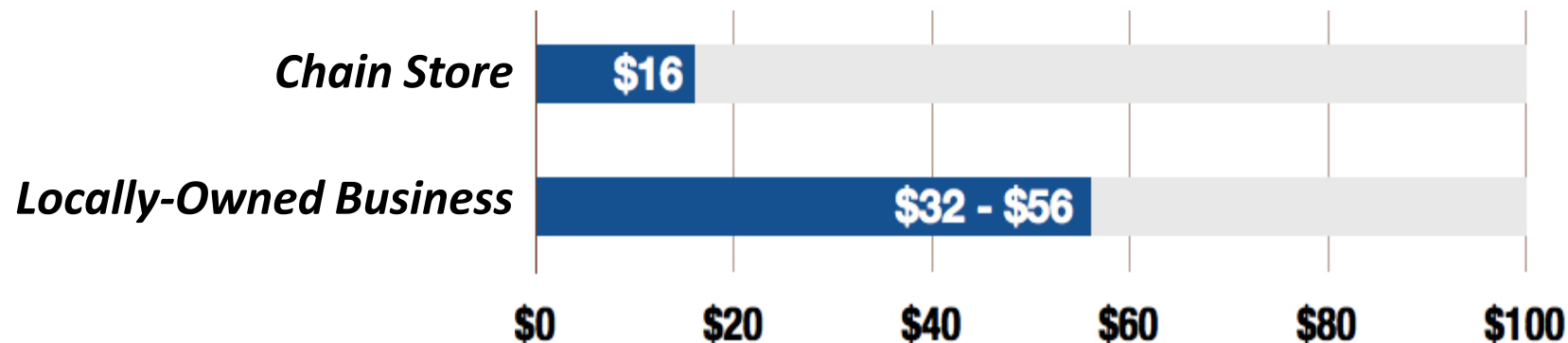


Building Local Economies

Local recycling jobs and other materials management jobs are part of building strong local economies.

Strong local economies translate into long-term prosperity and economic security. Dollars stay in the area and circulate locally, supporting more jobs in the community.

Local economic activity created per \$100 spent at a...



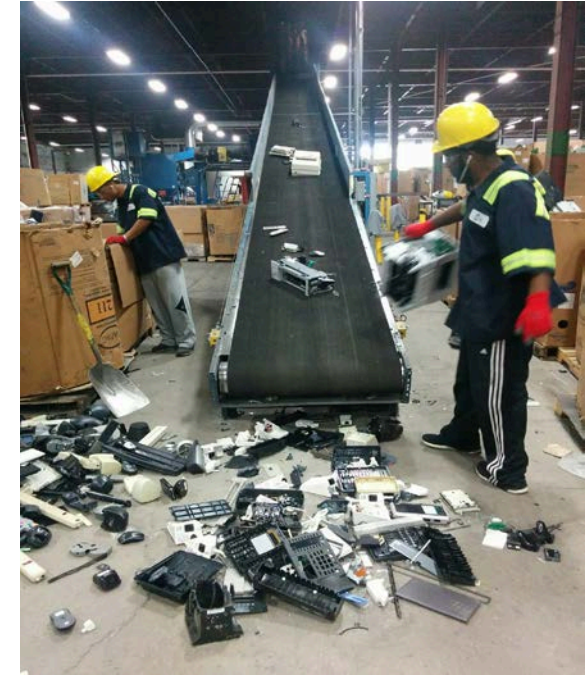


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ASBC Business: Impact Recyclers

Impact Recyclers, a national network of certified electronic waste recyclers, has a mission to employ people facing barriers to employment: formerly incarcerated people and disabled people

- 20 million Pounds of Electronics collected
- 347 transitional & full-time jobs created



COMPRENEW®
Recycle. Refurbish. Restart.

Grand Rapids, MI



Los Angeles, CA



Indianapolis, IN



Minneapolis, MN

RecycleForce

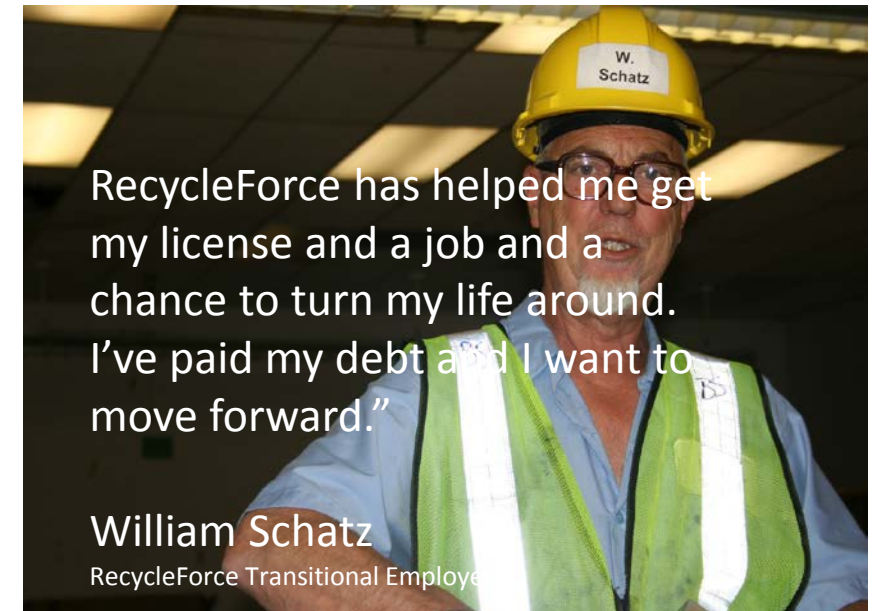


Electronics recycling business in Indianapolis that hires formerly incarcerated people.

RecycleForce had 958 transitional employees between 2006 and 2017:

- They earned \$6.6 million in wages
- They paid \$960,000 in taxes
- They paid \$382,000 in child support
- They recycled 70 million pounds of e-waste

- Crime recidivism in the U.S. is 64%
- Every 100 **RecycleForce** employees who do not return to prison yield an estimated **\$3.5 million annual cost-savings** for Marion County taxpayers.





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Reuse & Respect

Baltimore

The Loading Dock, which redistributes donations from contractors to organizations that serve low-income people.

Humanim, which trains disadvantaged workers in deconstructing city-owned public housing.

Second Chance, which deconstructs buildings and salvages materials, then sells them; they employ veterans, high school dropouts formerly incarcerated people.



IILSR
INSTITUTE FOR
Local Self-Reliance

San Diego

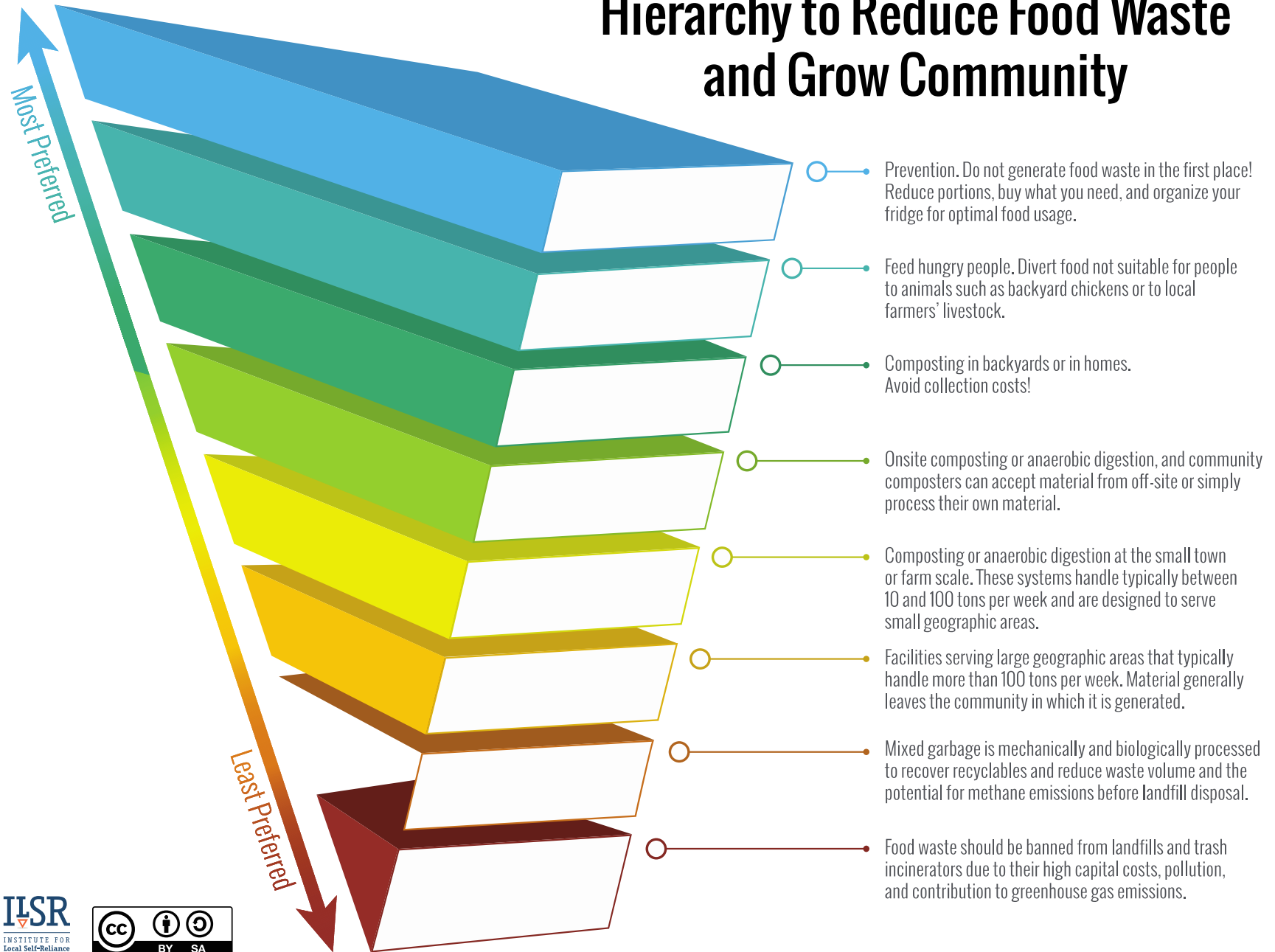
The ReUse People of America is a reuse store that employs 500 workers in 16 joint ventures with private companies and nonprofits in urban and rural areas.

Eugene, OR

St. Vincent De Paul is a reuse store that simultaneously saves useable materials from the waste stream and also trains people to work there.



Hierarchy to Reduce Food Waste and Grow Community





Composting

Composting:

1. Reduces Waste
2. Improves Soil
3. Reduce water use
4. Reduces Storm water Runoff & Soil Erosion
5. Protects the Climate
6. Creates Jobs & Supports Local Economies



What Can You Do?

Policies to Consider

- ✓ Encourage a decentralized composting infrastructure
- ✓ Establish a 75% food recovery goal by 2030
- ✓ Ensure small-scale operators can compete
- ✓ Support master composter train-the-trainer programs
- ✓ Require compost-amended soil for disturbed land
- ✓ Implement a moratorium on new trash burners
- ✓ Institute pay-as-you-throw trash fees
- ✓ Ban yard trimmings and food scraps from landfills and incinerators
- ✓ Implement a healthy soils and green infrastructure initiative
- ✓ Provide grants, loans, and technical assistance to compost projects
- ✓ Establish performance-based standards for compost sites
- ✓ Support small facilities
- ✓ Implement a per-ton surcharge on all disposal facilities to fund composting

Learn how to compost at home and amend your soil with compost. Install a raingarden or bioswale. Advocate for policies and programs to expand composting. Promote school, garden, farm, and other community-based composting. A diverse and distributed infrastructure is needed! Get involved. Get your local farmers and elected, public works, parks, agricultural, and economic development officials involved. Make or buy compost!

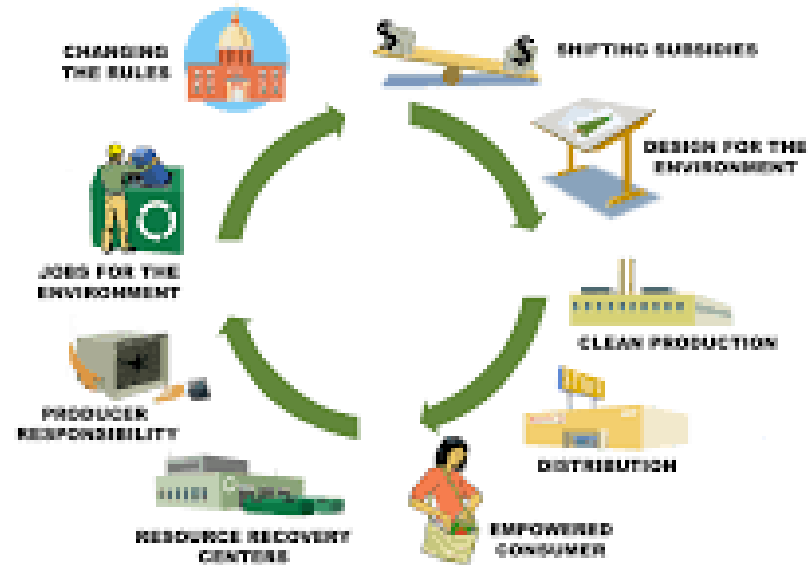
◀ Local and state policies are needed to grow composting.





Zero Waste

ZERO WASTE SYSTEM



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More and more cities are committing to zero waste plans

- New York City
- San Francisco
- Seattle
- Washington D.C
- Oakland
- Minneapolis
- Los Angeles
- San Diego
- Dallas
- Austin, Texas



Corporate Initiatives

U.S. Zero Waste Business Council certified projects:

- Yellowstone General Stores Warehouse, West Yellowstone, MN
- Tesla Factory, Fremont, CA
- Stirling Ultracold, Athens, OH
- Sierra Nevada Brewing Co., Mills River, NC & Chico, CA
- Que Pasa Mexican Foods Plant, Delta, BC, Canada
- Piazza Produce, LLC, Indianapolis, IN
- Nature's Path Foods, Blaine, WA & Sussex, WI
- Mountain Rose Herbs, Eugene, OR
- Maple Grove Farms of Vermont, St. Johnsbury, VT
- Lundberg Family Farms, Richvale, CA
- Kellogg's Chicago 31st, Chicago, IL
- Earth Friendly Products, Parsippany, NJ; Lacey, WA; Cypress, CA; & Addison, IL
- Cintas, Olyphant, PA; Montgomery, AL; Mason, OH; & Grayson, KY
- CalSTRS Headquarters, West Sacramento, CA
- Atlanta Journal-Constitution (AJC) Printing Plant, Norcross, GA
- American Licorice Company, La Porte, IN & Union City, CA

Zero Waste Success.

For the third consecutive year, the 2015 Waste Management Phoenix Open transformed the tournament into a Zero Waste event.

Greenest Show on Grass

7 days.
564,368 fans.

100% Waste Diverted from Landfills

49%	recycled
36%	composted
10%	waste-to-energy
5%	donated

Zero Waste

Raising the Bar for Sustainability in Sports

UL ENVIRONMENT

For the third year, the WMPO earned UL Environment's highest landfill diversion rate designation, "Zero Waste to Landfill Operations with 10% incineration with energy recovery."

COUNCIL FOR RESPONSIBLE SPORT

The WMPO elevated the Council for Responsible Sport certification from Gold to Evergreen status, making it the largest event and the first PGA TOUR tournament to achieve Evergreen certification.

For more information and the full 2015 WMPO Sustainability Report, visit ThinkGreen.com > WM Phoenix Open > 2015 WM Phoenix Open Sustainability Report.

Water Conservation

35 million gallons

of water restored to Colorado River Basin and Verde River through Change the Course

Reuse and Donations

25,000+ pounds

Mesh fencing, carpet, turf and used vinyl banners donated to Habitat for Humanity ReStore

More than 75% Signage stored for possible reuse in 2016

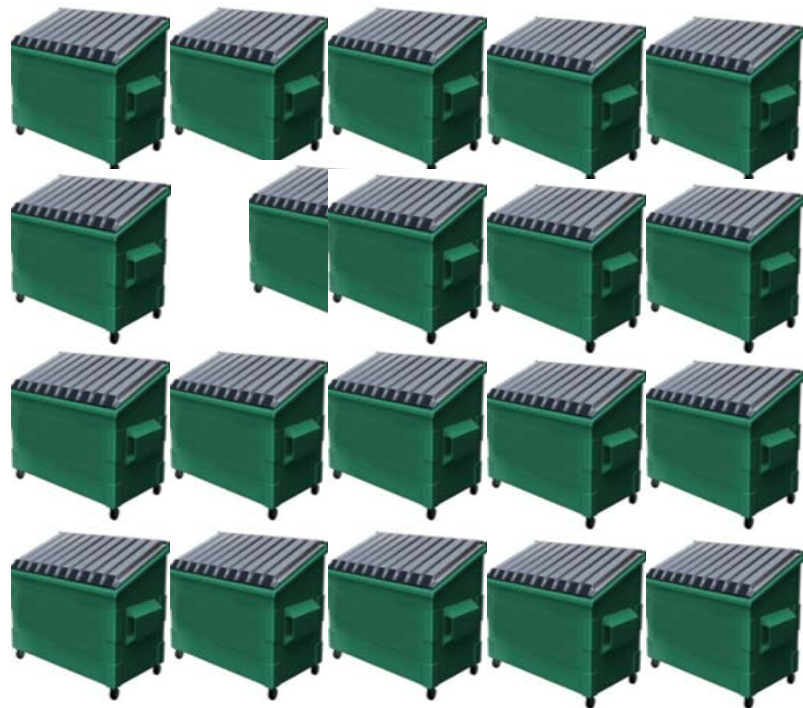
53,082 Square feet of signage reused from 2014

THINK GREEN!



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ZERO WASTE COST SAVINGS 2010-2017



2009



2013



2017

Waste Disposal: \$223,000
Recycling: \$115,000
DIRECT SAVINGS: \$388,000

Repair/Reuse: \$50,000



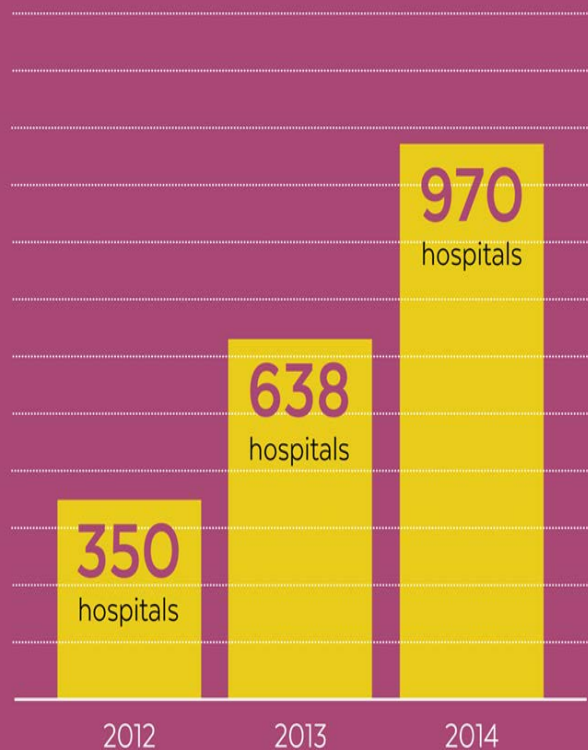
ECOS





Healthier Hospitals

Increased data from hospitals.



Energy: Using ENERGY STAR reported values, the hospitals reduced their energy use by an aggregate 2.5%, eliminating 73,600 metric tons in greenhouse gas emissions, the equivalent of removing 15,600 vehicles from U.S. roads annually.



CO₂ x 73,600



x 15,600

Recycling: Since 2010, 457 hospitals achieved an aggregate recycling rate of 24%, diverting 445,722.369 tons of materials from area landfills.



45,000
garbage trucks weight equivalent



Extended Producer Responsibility

- Benefit smart businesses via cost savings & reduced environmental liabilities
- Result in product innovation and vibrant product redesign
- Produce products with the greatest functionality and longest life
- Increase competitiveness in a global marketplace
- Benefit working people by encouraging jobs
- Enable producers to responsibly contribute to a more sustainable society
- Reduce public costs onto manufacturers rather than taxpayers
- Prevent disposal via landfills and incinerators, or export of used products to developing countries
- Reduce environmental impacts



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Products & Extended Producer Responsibility

- Computers
- Automobiles
- Batteries
- Paint
- Mattresses
- Pharmaceuticals
- Hazardous materials



- Soda bottle and cans
- Paper printed matter and packaging
(EPR for PPP)

Net-Works works. Now it's time to scale up.

By 2020 we will have:

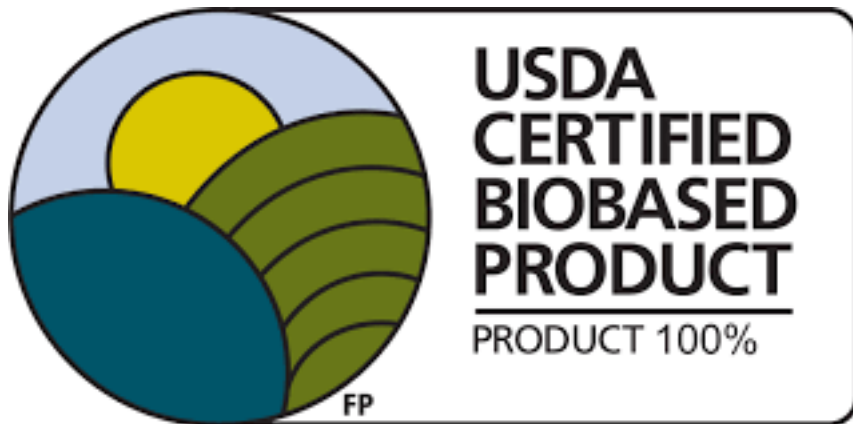
- Provided access to finance for over 10,000
- Created a healthier environment for 1 million people
- Protected 1 billion square meters of ocean



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New Materials & Products

- Bio-based industries
- Innovative technologies that turn biological residues and wastes into greener everyday products



Product Re-Design

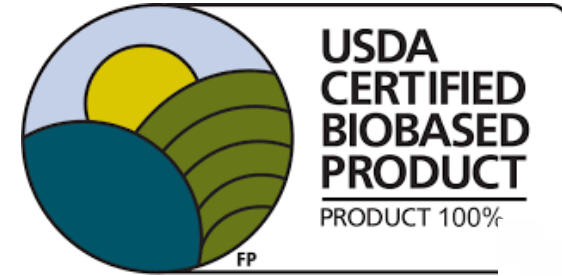


Mushroom mycelium is an alternative to plastics and foam and is biodegradable.



This is your new shampoo.
It's solid!
See, no plastic bottle.

Certification



Sustainable Procurement

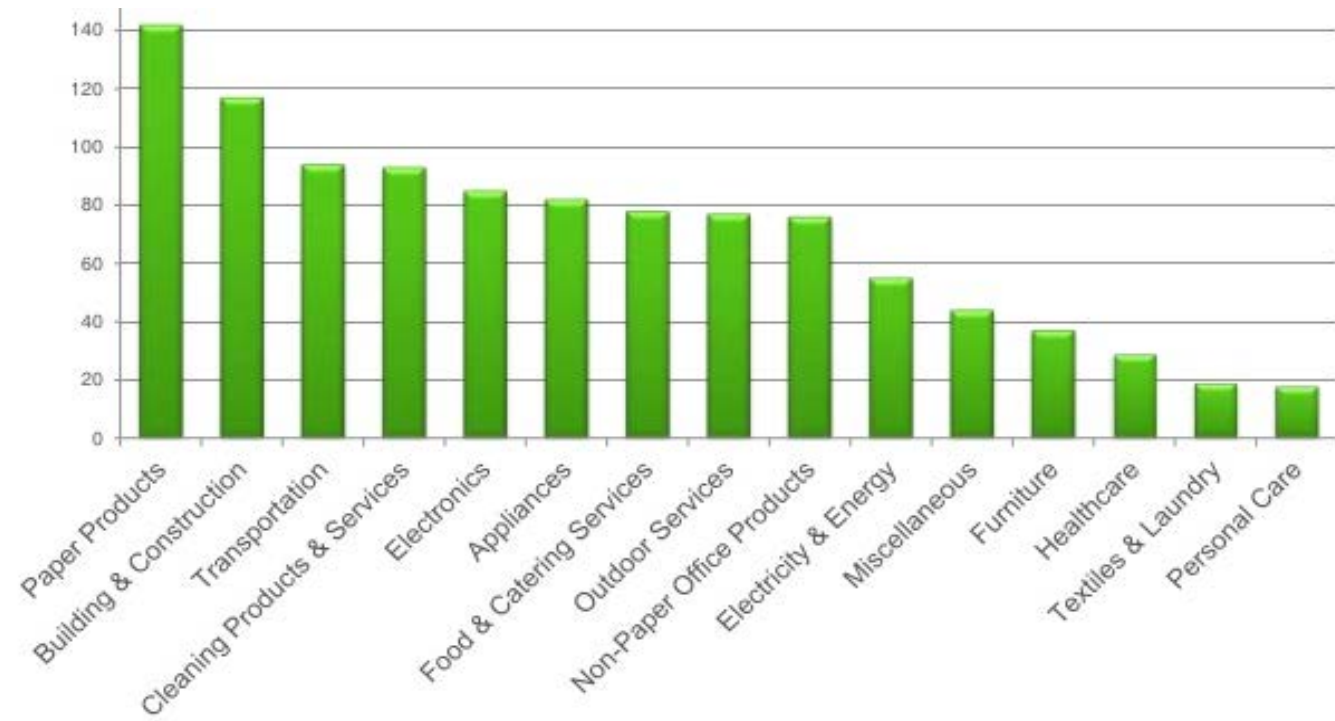
EPA's Sustainable Materials Management Criteria

Products designated for purchase by government agencies under this program must:

- Use materials found in solid waste streams
- Submit to EPA's Economic & Technological Feasibility & Performance verification
- Be a product in high demand by government
- Be made of available feedstocks so that there is no supply chain disruption, and is made from national, regional, or local sources.
- Use other waste-based feedstocks, when needed, to ensure steady supply
- Have competitive pricing that truly includes including the availability and costs of material feedstocks, energy, labor, transportation, & return on capital

Number of Sustainable Purchasing Guidelines by Product Category

Sample of U.S. Government Agencies



H.R.1034 *Zero Waste Development and Expansion Act of 2017*

- **This proposed federal grant program** would provide funds for local governments to invest in waste reduction initiatives.
- **Introduced by Representative Keith Ellison (D-MN)**
- **Supporting organizations:** The National Recycling Coalition, The American Sustainable Business Council, Institute for Local Self Reliance, Sierra Club, Zero Waste USA, Climate Justice Alliance, and the Global Alliance for Incineration Alternatives.



EMBODIED CARBON OF BUILDINGS AND INFRASTRUCTURE



Buy Clean California Act

- Require the Department of General Services to establish, and publish in the State Contracting Manual, a maximum acceptable global warming potential for each category of eligible material
- Require an awarding authority to require a successful bidder to submit a current Environmental Product Declaration

Strategies for Materials Management In a Sustainable Economy



- Policy
- Innovation
- Investments
- Procurement
- Regulations
- Metrics and Criteria
- Advocacy
- Educating the Public
- Consumer Demand
- **BUSINESS ENGAGEMENT**

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