Sustainability: The Path to Wealth Creation

Frank O'Brien-Bernini

VP, Chief Sustainability Officer, Owens Corning

Owens Corning 2014 Green Cross Award Recipient

pink is green – Save Energy. Save Money. Help Save The Planet.

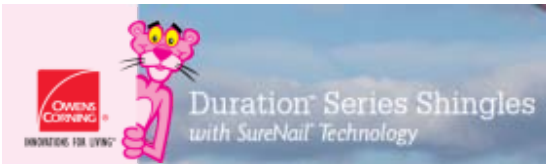
MEMBER OF Dow Jones Sustainability Indices In Collaboration with RobecoSAM

Owens Corning at a Glance

WindStrand® High-Performance Reinforcements

sustaina

ultra pipe



EcoTouch® PureFiber® Technology

OWENS CORNING® FOAMULAR®
Energy-Saving, Moisture-Resistant XPS Insulation

- Founded in 1938, an industry leader in glass fiber insulation, roofing and glass fiber reinforcements
- 2013 sales: $5.3 billion
- 15,000 employees in 27 countries
- Fortune® 500 company for 59 consecutive years
- 2014 NSC Green Cross Awardee; Component of Dow Jones Sustainability World Index; HRC 100
- Three powerful businesses, three valuable franchises
  - Insulation; Roofing; Composites

A Heritage of Innovation

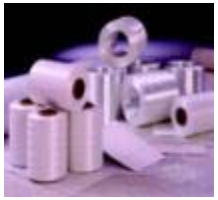
2010s, EcoTouch® insulation, EnergyComplete® sealant

1930s, commercial glass fibers

2000s, long/light wind blade solutions

1940s, bomber & ship insulation

1990s, Advantex® platform



1950s, fiberglass apps, e.g. Corvette

1980s, fiberglass mat for shingles

1970s, cold-top electric melter

1960s, beta yarn for space suits

Macro Trends

Population Growth
and Consumption

Climate / Green
Consciousness

Energy / Water Use
and Availability

Presenting a massive opportunity in our markets

- Soaring interest in Energy Efficiency …public and private
- Personal desire to achieve sustainability
- Green product, application, building and renewables demand

Winning with green…today!

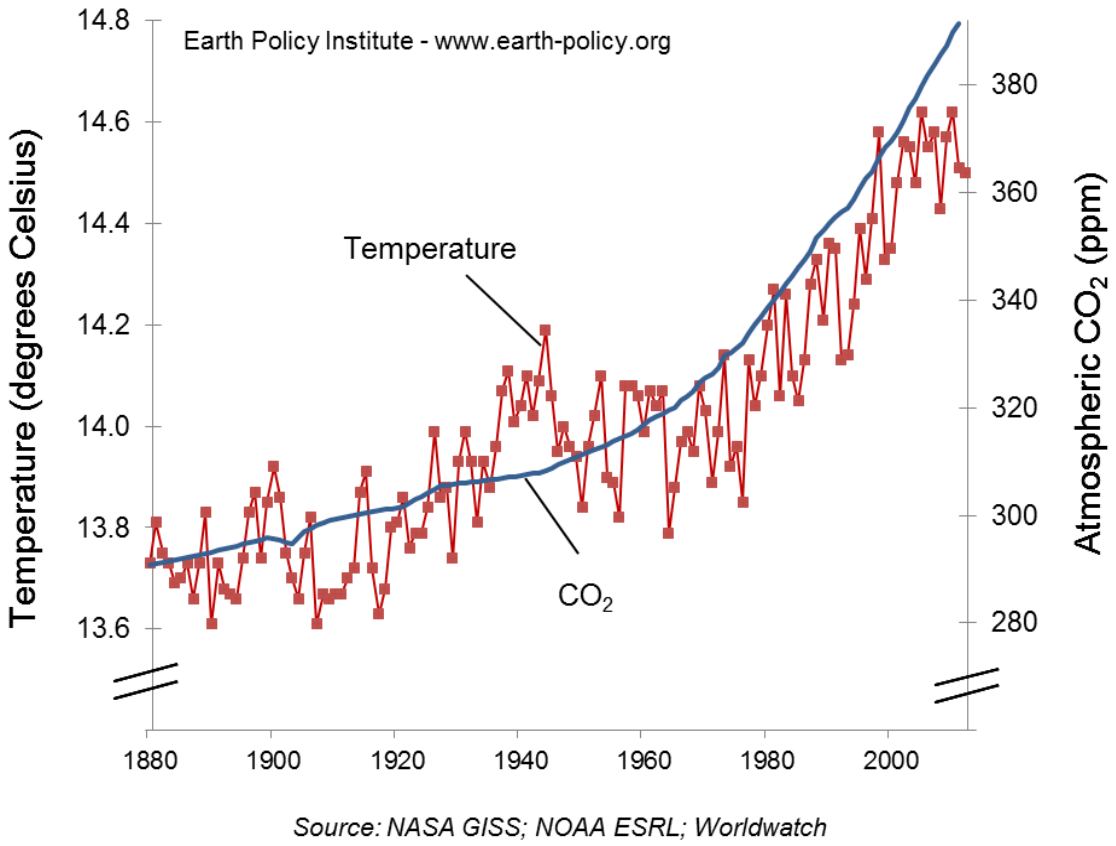
- Pink-is-Green™…our business and communication strategy

Need: Scalable solutions that address the global challenges

Climate Disruption

The massive burning of fossil fuels is increasing the level of carbon dioxide (CO_2) in the atmosphere, raising the earth's temperature and disrupting climate

Average Global Temperature and Atmospheric Carbon Dioxide Concentrations, 1880-2012



Source: NASA GISS; NOAA ESRL; Worldwatch

Source: Earth Policy Institute

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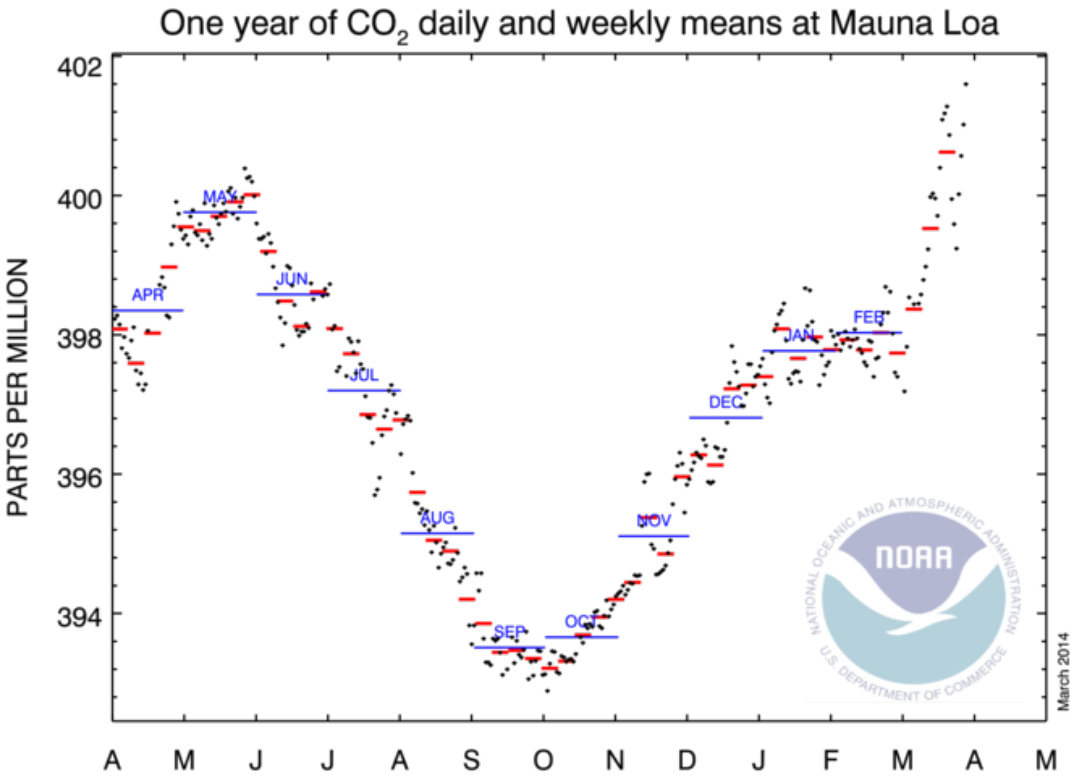
Week beginning on March 16, 2014: 400.62 ppm
Weekly value from 1 year ago: 397.37 ppm
Weekly value from 10 years ago: 379.13 ppm



Source: U.S. Department of Commerce/ National Oceanic & Atmospheric Administration/ NOAA Research

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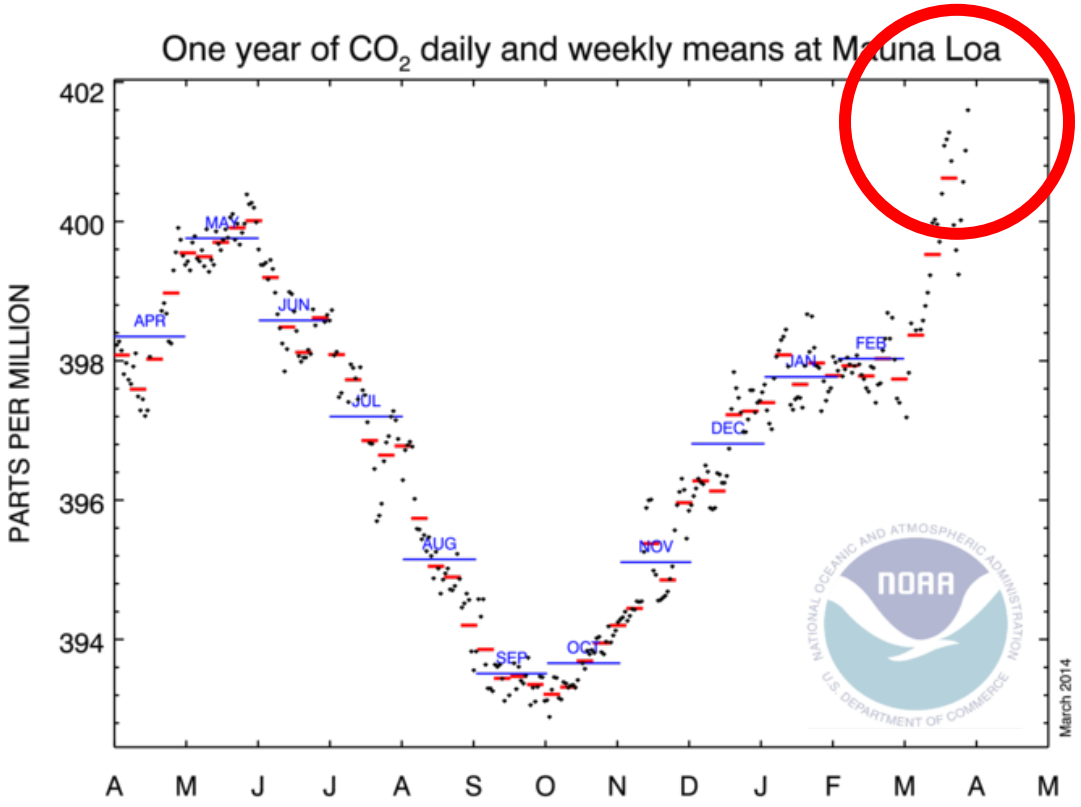


Source: U.S. Department of Commerce/ National Oceanic & Atmospheric Administration/ NOAA Research

Sustainability – Our Definition

Meeting the needs of the present without compromising the world that we leave to the future

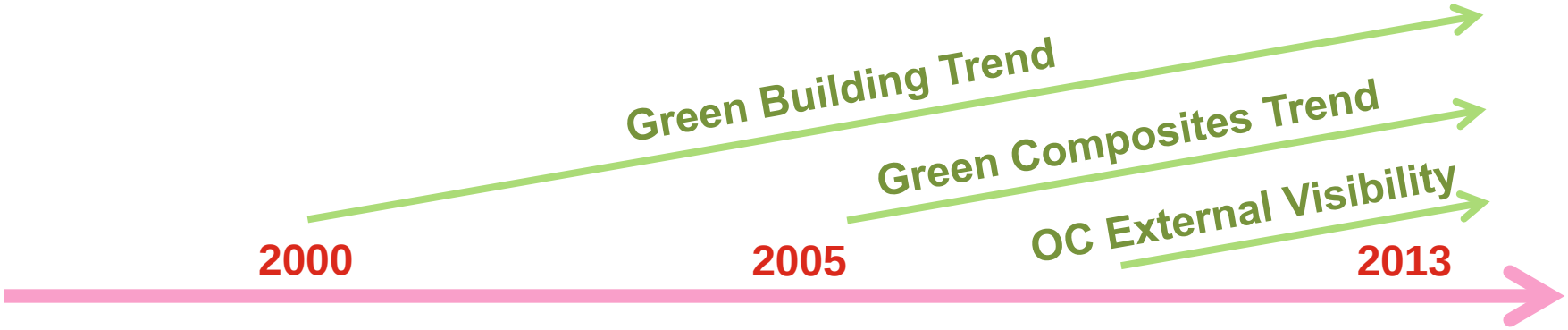
Sustainability: Our (evolving) Strategy

Driving to be a net-positive Company…

1. Operations Sustainability
2. Product and Supply Chain Sustainability
3. Innovation and collaboration to deliver energy efficiency and durable material solutions at scale
4. Employee safety, health and engagement and community vitality

Continuously Shrinking our Environmental Footprint and…
Exponentially Growing our Positive Handprint

Sustainability Timeline



Ice core CO2/temp correlation

IPCC links warming to human activity

First LEED buildings

IARC clears fiberglass

Blowing agent and formaldehyde 1st come under pressure

Nike called out for human rights violations

OC refines Advantex & begins extensive conversions – later adds AGM

ISB forms Green Team

OC footprint baseline

GreenGuard & SCS certifications

OC safety stand

OC launches sustainability

Risk/Gap analysis completed

WHQ LEED Silver

Sustainability metric in LTIP

3 leg sustainability focus …operations/products/EE

1st Sustainability Report

1st External Recognitions: DJSI, Newsweek, CRM, THD

UN Global Compact

Convert NA Foam BA

Gresham and WHQ LEED Gold

Integrate Sustainability and EH&S Orgs

EcoTouch launch

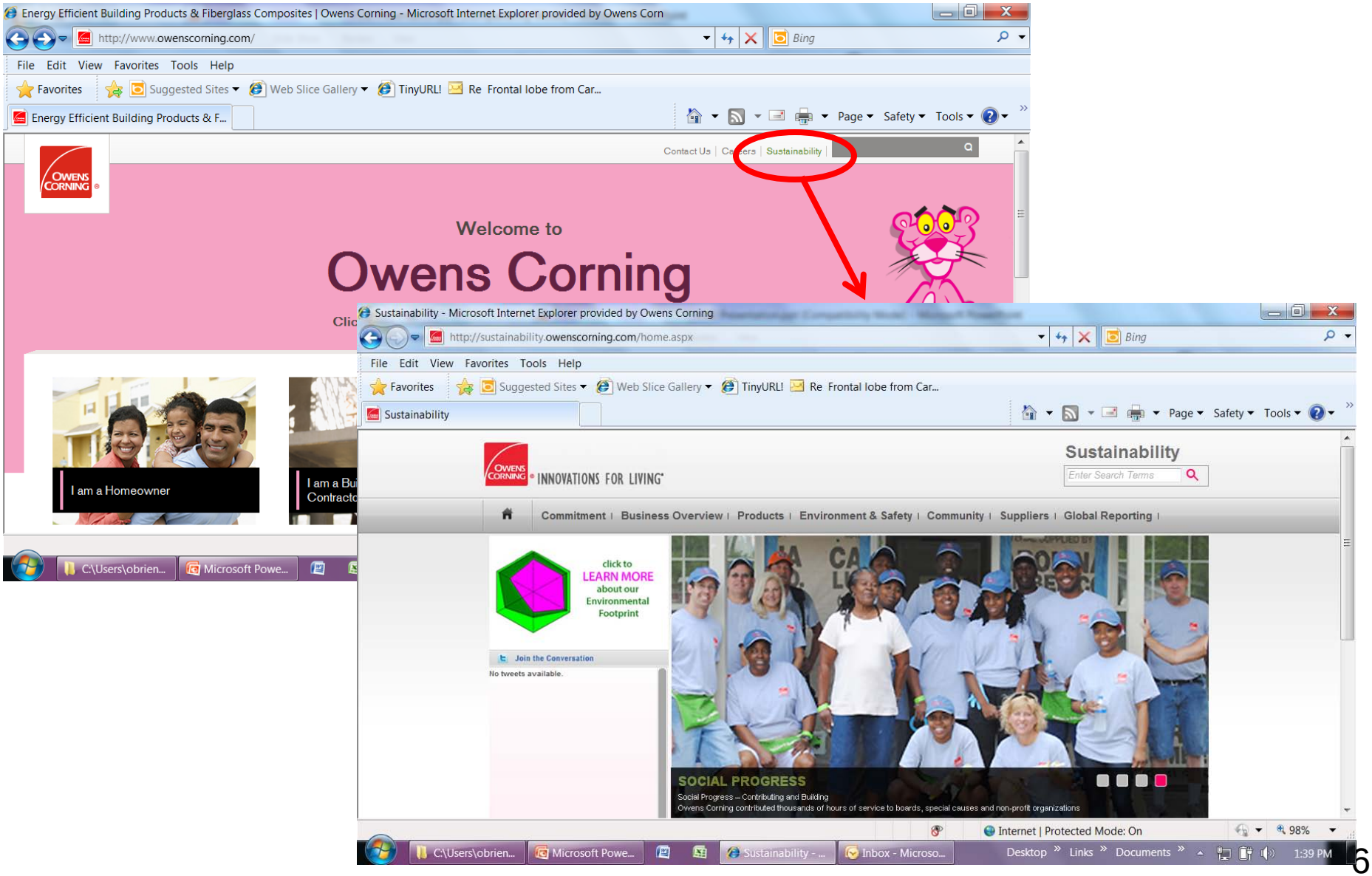
Set 2020 goals

Leading in Transparency

7th Sustainability Report

2014 NSC Green Cross Awardee

Transparent External Reporting



Owens Corning Safety Journey – 2001-2013

- EHS Conference – Principles of Safety Practice
- Six Sigma
- Principles of Safety Leadership PSL Training
- OSHAS 18001
- EHS Conference – Safety School 2001

- EHS Spring Training School
- OCU EHS eLearning
- Safety Videos/ Posters/Banners
- EHS Networks
- Virtual Safety School
- OC Safety Stand

- Employee Safety Responsibilities
- SDT
- Contractor EHS Handbook with Video
- Personal Safety Action Plans

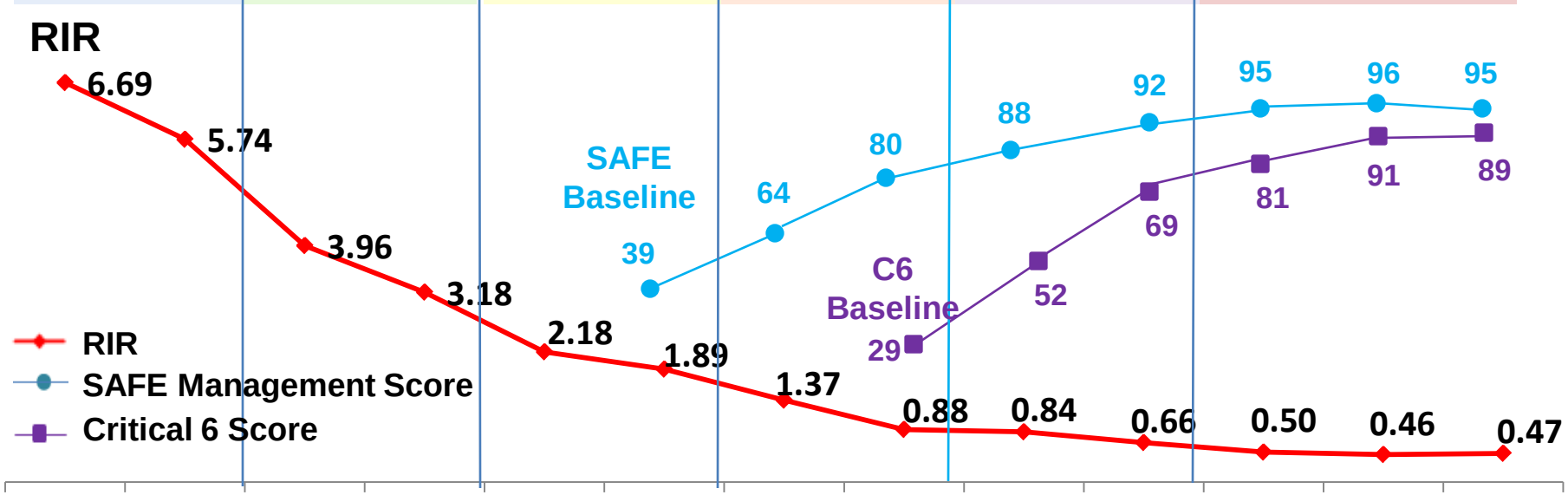
- New OC LTT Program
- OC Safety Web Site
- OC Vendor Partnership
- Focus Plants
- VPP – Brookville
- BBS Implementation
- EHS Career Ladder
- Safety Awards
- Leadership Safety Accountabilities
- Risk Assessment Conference – WHQ
- ESL Training
- Safety Alerts
- SAFE Mgmt. Module
- MSDS Vault/ Gatekeeper

- LTT-T Electrical Update
- Weekly Injury Reviews & Lessons Learned
- Web-Based Medgate
- Lean Safety Kaizens, 5S, Standard Work
- SAFE Critical 6 Module
- Pre-Task Planning
- Safety Professionals 4 Competencies

-EMS

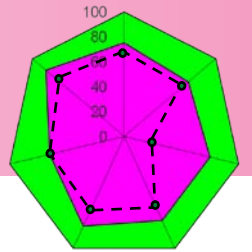
- Global EHS Community
- ESDP Candidate Program
- Corporate EHS Assessment Process

- C6 Basic Control
- Hazard ID & Control
- BBS
- -Talent Dashboard
- X Matrix
- On-boarding
- Cell Phone Policy Change



Recordables:												
1365	1133	740	657	473	412	264	172	137	111	81	76	78

Operations Sustainability …closing out our 1st 10 year goals

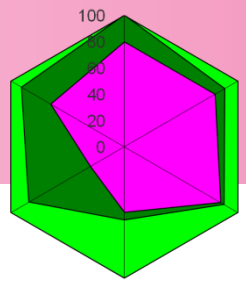


Global Intensity (2002-2012)

	Goal	Actual	
Energy	-25%	-30%	✓
Greenhouse Gas	-30%	-34%	✓
Nitrogen Oxides	-25%	-74%	✓
Volatile Organic Compounds	-25%	-33%	✓
Particulate	-20%	-36%	✓
Waste to Landfill	-35%	-35%	✓
Water	-15%	-38%	✓

We successfully met all 7 aggressive Environmental Footprint reduction goals!

Operations Sustainability …progress on our 2nd 10 year goals



Global Intensity (2010-2020)

	Goal	2010-2012
Primary Energy	-20%	0%
Greenhouse Gas	-20%	-12%
Particulate Matter 2.5	-15%	-12%
Toxic Air Emissions*	-50%	-44%
Waste to Landfill	-70%	-16%
Water	-35%	-9%

*formaldehyde, ammonia, polycylic aromatic compounds, manganese and hexavalent chromium

Continuously Shrinking our Environmental Footprint and…
Exponentially Growing our Positive Handprint

Typical Energy Projects

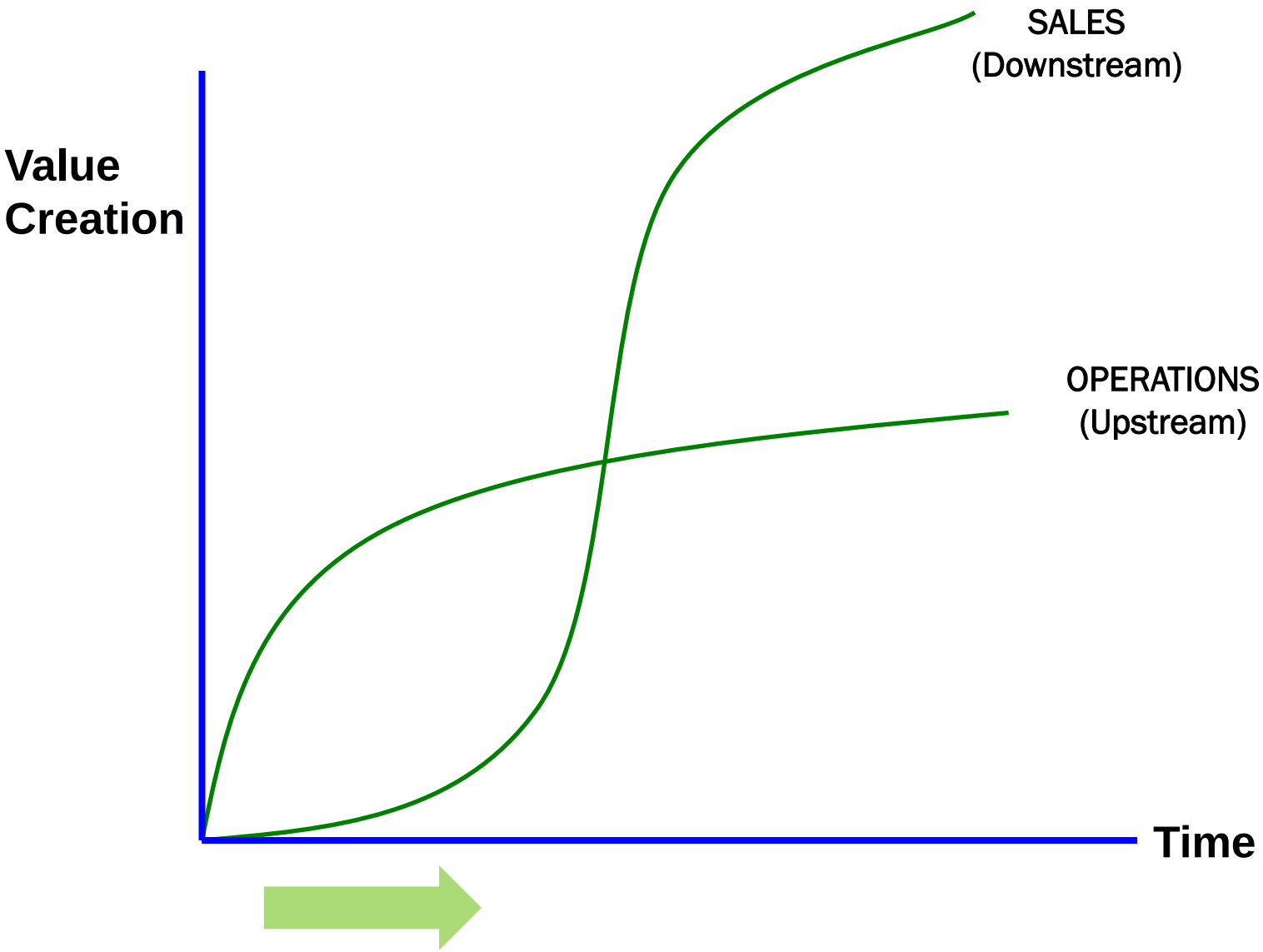
General

- Lighting, daylighting, HVAC
- Natural Gas leak detection/repair
- Boiler upgrades/replacement/insulation
- Incinerator upgrades/optimization
- Compressor upgrades/optimization
- Pneumatic to electric motor conversions
- Pneumatic to hydraulic conversions
- Compressed air to blower conversions
- Water (pumping) use reduction
- Diesel to NG conversions
- VFD's for fans & pumps
- Energy audits, DOE and Industrial Assessment Center (IAC), Audits by universities, plant Kaizen events

Process Specific

- High recycled glass usage
- Furnace technology upgrades
- Furnace/FH waste heat recovery
- Oven upgrades/optimization
- High emissivity furnace coatings
- Tank fume use as combustion air
- Building and Process Insulation
- Compressed Air Leak Detection
- Glass Chemistry and Raw Materials
- Steam Systems Optimization
- Campus/facility consolidation
- Advanced process modeling/control
- Process make-up air
- Solar hot water/space/PV, Biomass, fuel cells

Sustainability Value Creation



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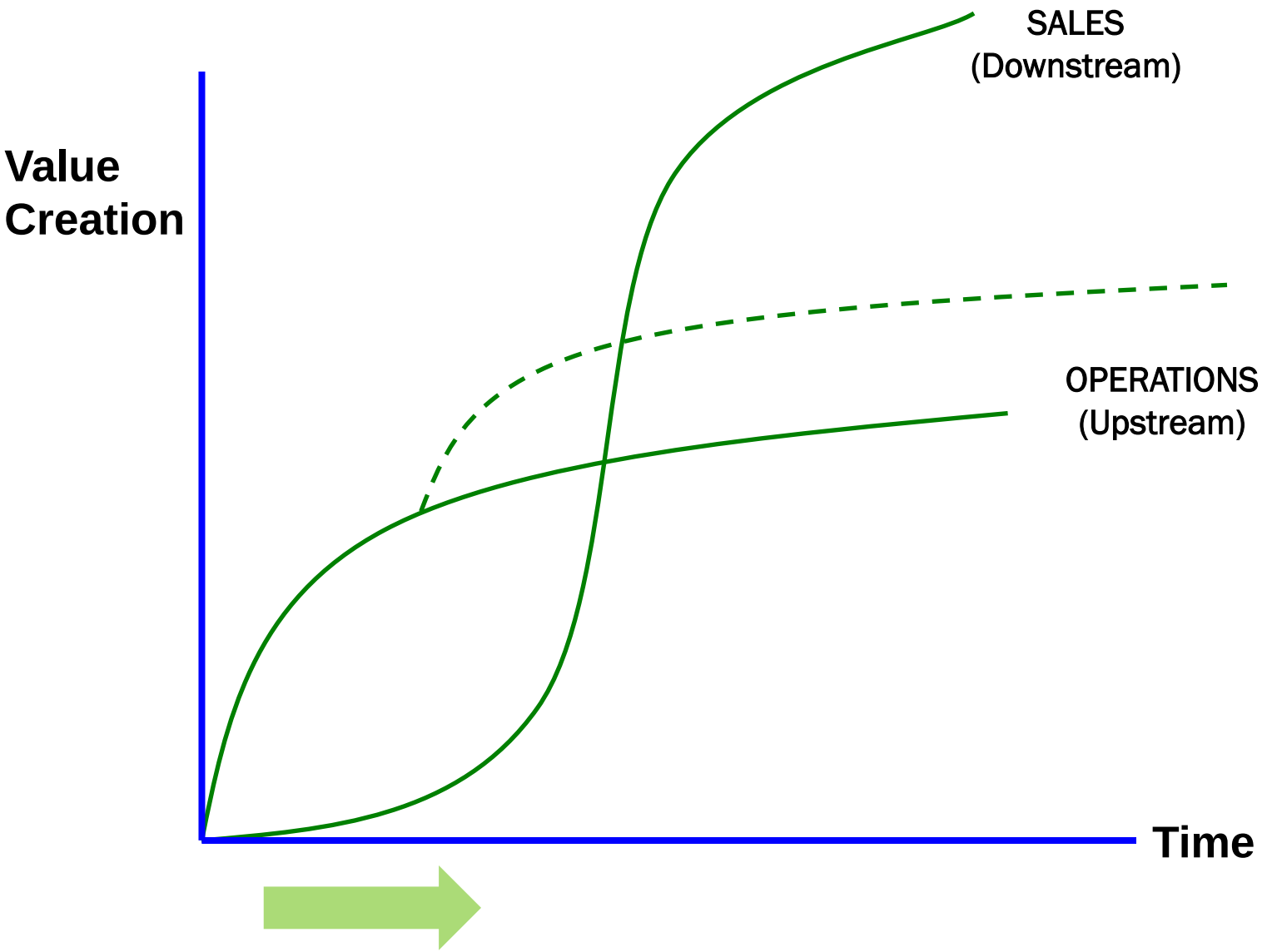


Product Sustainability …Attribute Based

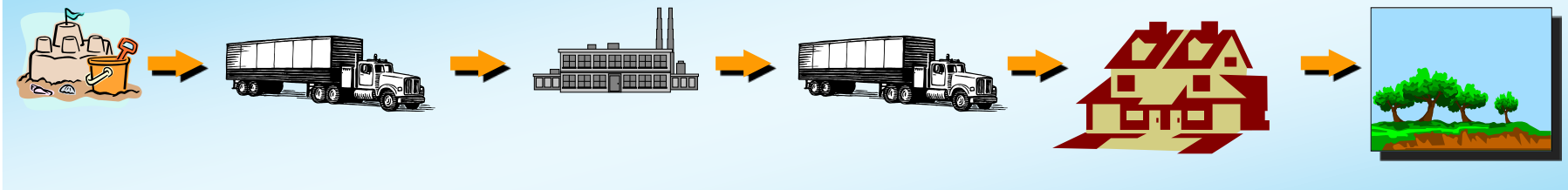
1. Save energy or water
2. Use salvaged, recycled or plant-based content
3. Conserve natural resources through
   - Reducing material usage
   - Exceptional durability or low maintenance
   - Use of rapidly renewable materials
4. Avoid toxic or other emissions
5. Contribute to safe, healthy indoor environment
6. Are reusable or recyclable at end-of-life

Green is well defined in our markets: Science based – 3rd party certified

Product and Supply Chain Sustainability…LCA Based

The term Life Cycle Assessment (LCA) is a compilation and evaluation of the inputs, outputs and potential environmental impacts of a product system through out its life cycle

Raw material and energy consumption



Emissions to air, water and soil

Our 2015 goal is to make transparent the total LCA of all our core products

Example: Competitive Advantage in Product Sustainability

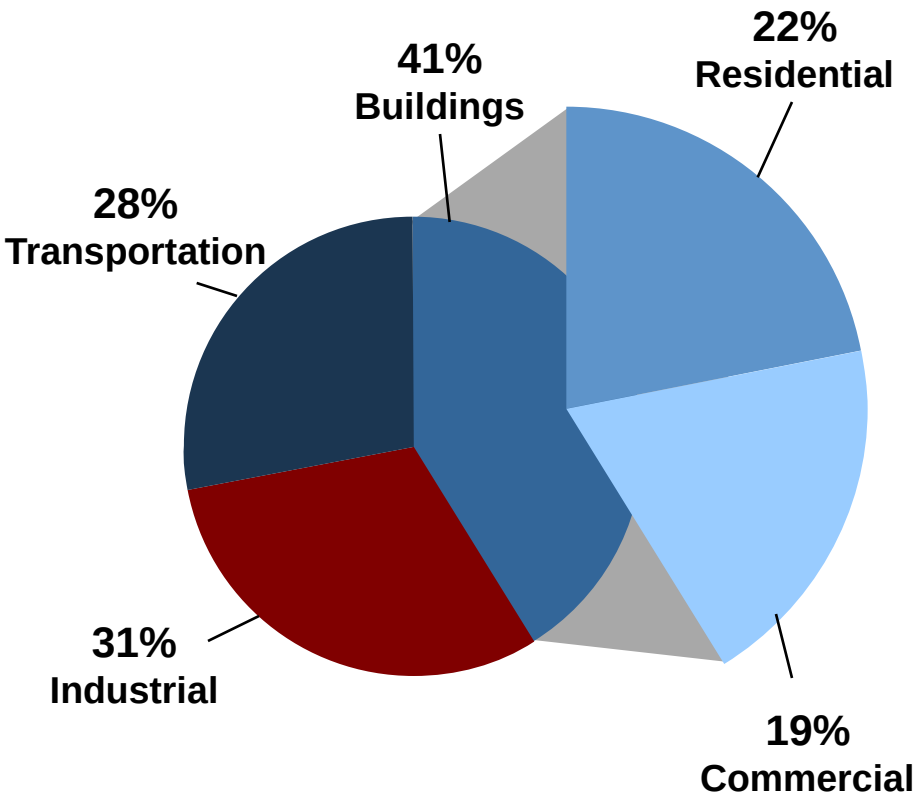
Environmental Product Declarations:

- 3rd party verified, internationally recognized, transparent disclosure of product life cycle impact
- A green “nutrition” label for a product
- Quantified environmental data based on an LCA that specifiers, consumers and purchasers can use to identify environmental risks
  (LEED v4 Credit)

Driving adoption of EPDs creates the transparency needed for data-based decisions

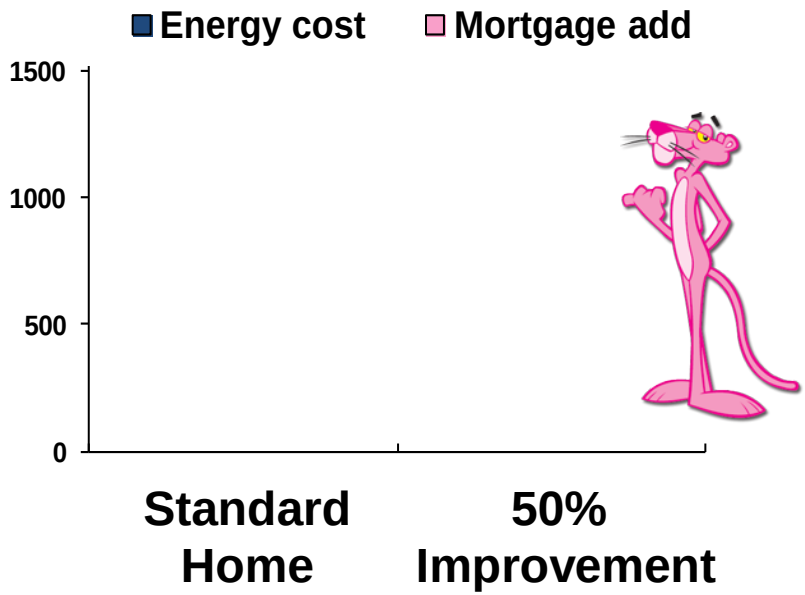
Innovation and collaboration to deliver energy efficiency and durable material solutions at scale

Energy consumption by end-use sector



Source: U.S. Energy Information Administration Annual Energy Review 2011

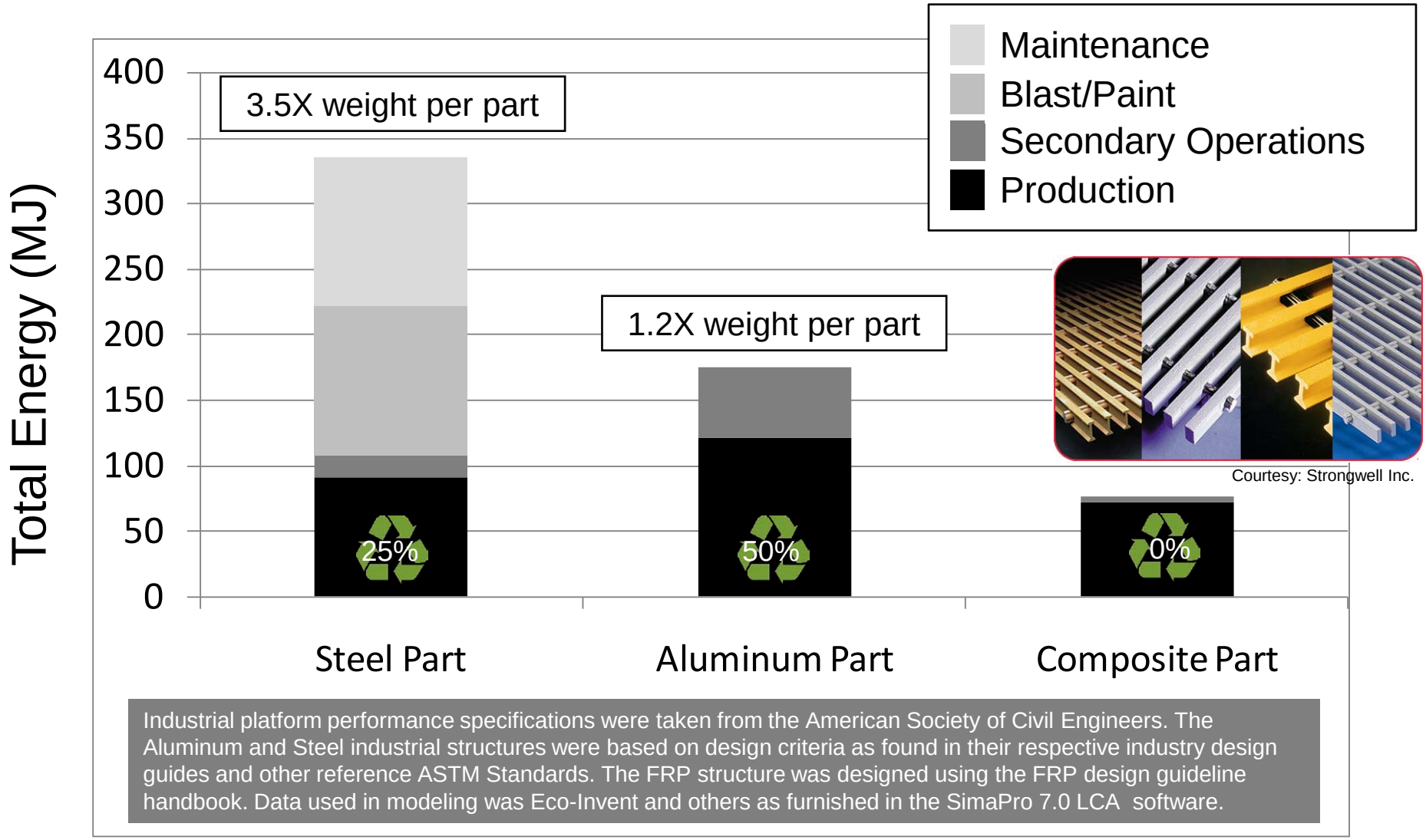
Heating and Cooling Cost ($/yr)



~$10,000 available

Sources: Owens Corning management estimates

Innovation and collaboration to deliver energy efficiency and durable material solutions at scale



Courtesy: Strongwell Inc.

Industrial platform performance specifications were taken from the American Society of Civil Engineers. The Aluminum and Steel industrial structures were based on design criteria as found in their respective industry design guides and other reference ASTM Standards. The FRP structure was designed using the FRP design guideline handbook. Data used in modeling was Eco-Invent and others as furnished in the SimaPro 7.0 LCA software.

Growing our Handprint

Large net-positive Handprint impacts:

- **Insulation**
  energy efficiency improvements in buildings
- **Composites**
  vehicle lightweighting via steel replacement
- **Roofing**:
  end-of-life shingle recycling for road paving

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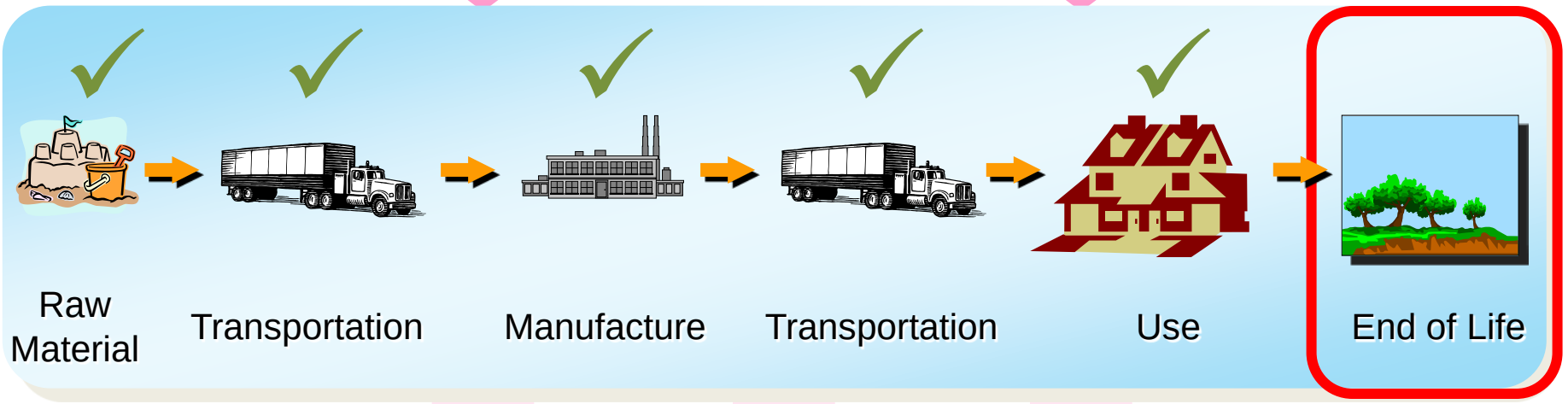

Emissions to air, water and soil

Seeking and capturing ways to amplify the net-positive impact of our company

Shingle Recycling

TEAR-OFF

DROP

GRIND

R.A.S.

HOT MIX ASPHALT

ROAD PAVING

Owens Corning Roofing makes shingle recycling differentiating, easy, and cost-competitive by connecting contractors with eligible recycling services

Criteria…its easy:

- Contractors find an eligible recycler at www.Earth911.com
- Take the Pledge to recycle at www.roofing.owenscorning.com/recycle

Benefits:

- Leads…identified on Contractor Locator and homeowner promotional programs
- Recycling discounts available
- Marketing tools
- Convenient drop-off or dumpster delivery

Results[1]

- Over 100 open markets
- Over 60% population coverage
- Over 10% waste stream recycled in 2013 …1,000,000 tons
- Contractors save over 30% compared to landfill fees

Our Shingles are now labeled as recyclable!

[1] Owens Corning Roofing and Asphalt results and estimates, March 2013.

Take-Aways…

1. At ~400ppm CO2…the time to act is now
2. Footprint reduction is (just) a start
3. Handprint increases can be limitless
4. We need Building/Transportation/Industrial solutions that are massively scalable
5. Do the (right) math…an important, yet imprecise, metric is way better than a precise meaningless one

Everyone…in every job…is a sustainability professional!
Devote your precious time and energy to getting "big stuff" done…

Questions?













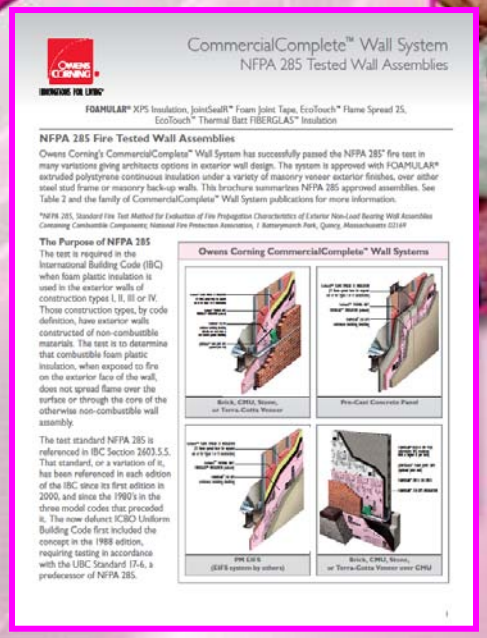
CommercialComplete™ Wall System
NFPA 285 Tested Wall Assemblies

FOAMULAR® XPS Insulation, JointSeal®™ Foam Joint Tape, EcoTouch™ Flame Spread 25, EcoTouch™ Thermal Batt FIBERGLAS™ Insulation

NFPA 285 Fire Tested Wall Assemblies

Owens Corning's CommercialComplete™ Wall System has successfully passed the NFPA 285* fire test in many variations giving architects options in exterior wall design. The system is approved with FOAMULAR® extruded polystyrene continuous insulation under a variety of masonry veneer exterior finishes, over either steel stud frame or masonry back-up walls. This brochure summarizes NFPA 285 approved assemblies. See Table 2 and the family of CommercialComplete™ Wall System publications for more information.

*NFPA 285, Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load Bearing Wall Assemblies Containing Combustible Components, National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts 02169

The Purpose of NFPA 285

The test is required in the International Building Code (IBC) when foam plastic insulation is used in the exterior walls of construction types I, II, III or IV. Those construction types, by code definition, have exterior walls constructed of non-combustible materials. The test is to determine that combustible foam plastic insulation, when exposed to fire on the exterior face of the wall, does not spread flame over the surface or through the core of the otherwise non-combustible wall assembly.

The test standard NFPA 285 is referenced in IBC Section 2603.5.5. That standard, or a variation of it, has been referenced in each edition of the IBC since its first edition in 2000, and since the 1980's in the three model codes that preceded it. The now defunct ICBO Uniform Building Code first included the concept in the 1988 edition, requiring testing in accordance with the UBC Standard 17-6, a predecessor of NFPA 285.

Owens Corning CommercialComplete™ Wall Systems