



Sustainable olutions

Virtual Seminar

Tuesday, October 27, 2020

CO-HOSTED BY:



Moderator



Jill Scicchitano

South Bend | Elkhart Regional
Partnership

Director of Industry Growth

Speaker Lineup



Kelly Weger
Purdue University
Manufacturing Extension
Partnership
*Lead Project Manager -
Sustainability*



Therese Dorau
City of South Bend
Director of Sustainability



Brian Mormino
Cummins
*Executive Director, Technical &
Environmental Systems*



Adam Parsons
City of South Bend
*Director of Facilities
Management*

The Business Case for Sustainability

*MISSION: TO ADVANCE ECONOMIC PROSPERITY, HEALTH AND
QUALITY OF LIFE IN INDIANA AND BEYOND.*

ABOUT PURDUE MEP

Who we are: Purdue Manufacturing Extension Partnership (MEP)

- Division of Purdue Technical Assistance Program.
- Our staff consists of experts from a wide variety of business and manufacturing sectors.

What we do:

- We work exclusively with Indiana businesses to maximize performance through **streamlined processes, increased profitability, and increased competitiveness.**
- We offer public workshops, on-site training, and consulting services.
- Through these services Purdue MEP clients report **new sales, product and market growth, cost reductions, and job growth.**

REALITY



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AURORA, INDIANA



PORTAGE, INDIANA



EXCESSIVELY DRY 2020



MONTICELLO, INDIANA

PURDUE
UNIVERSITY

MANUFACTURING EXTENSION
PARTNERSHIP



RESILIENCY



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SUSTAINABILITY

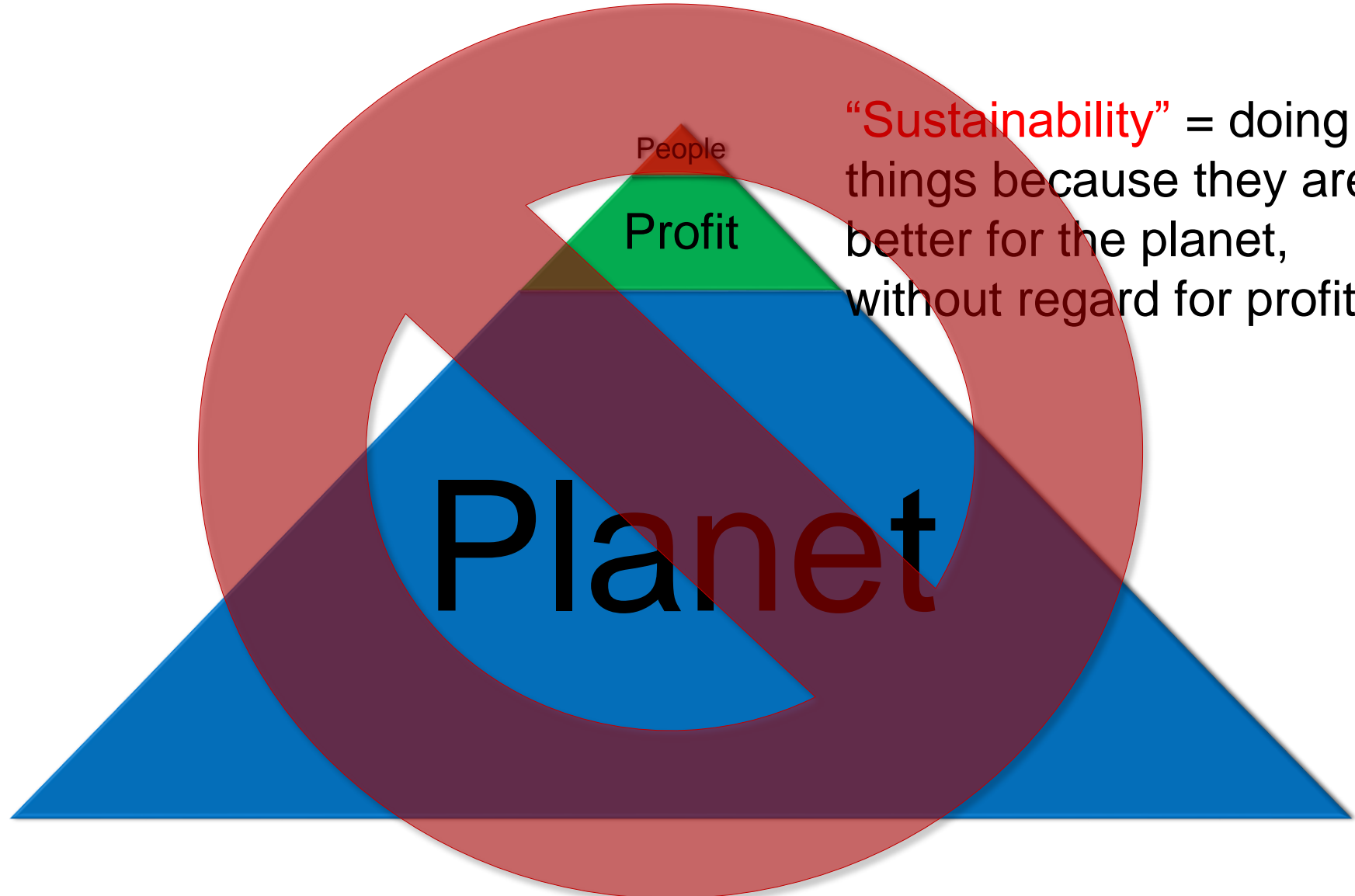


“Able to last or continue for a long time” – Merriam Webster

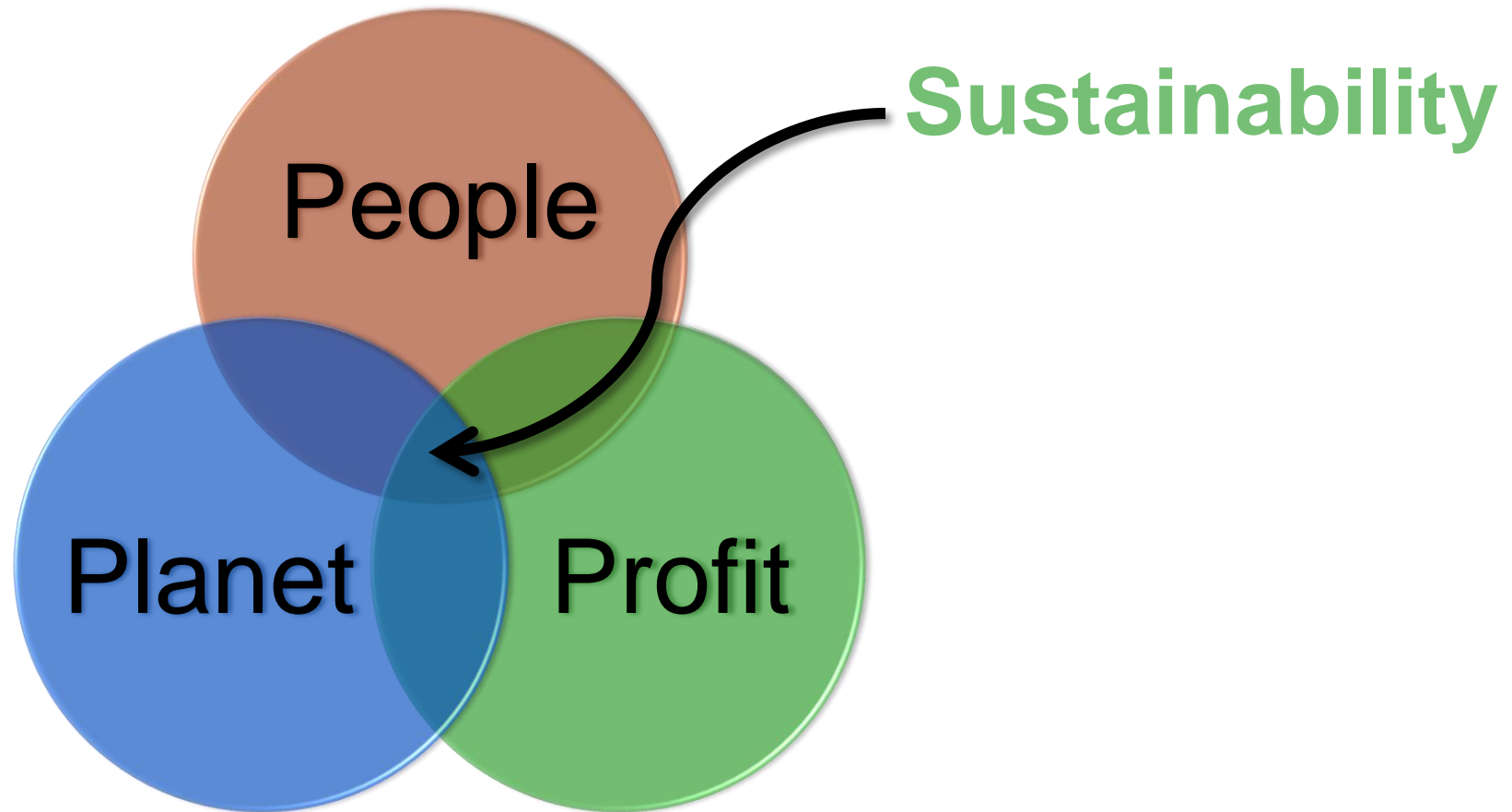
“Meeting the needs of the present without compromising the ability of future generations to meet their own needs.” – UN General Assembly, Report of the World Commission on Environment and Development

"In every deliberation, we must consider the impact on the seventh generation." – The Constitution of the Iroquois Nations

PERCEPTION OF 'SUSTAINABILITY'



ACTUAL SUSTAINABILITY



Triple Bottom Line

SUSTAINABILITY “TRIPLE BOTTOM LINE”

Profit (Economic)

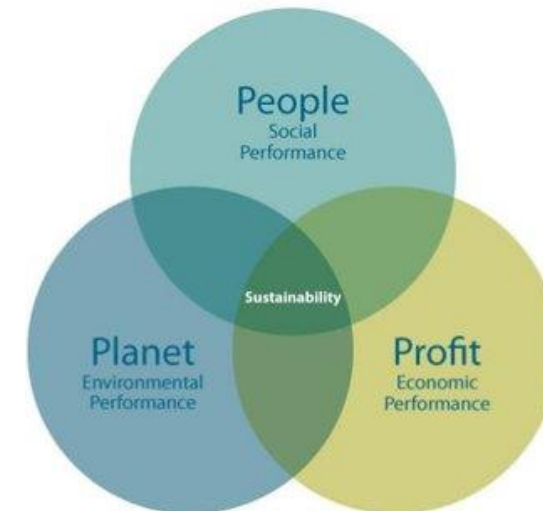
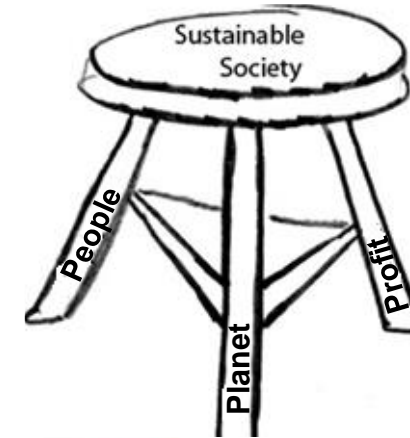
- Improves efficiency & lowers costs
- Reduces regulatory compliance costs
- Creates revenue enhancement opportunities

Planet (Environmental)

- Reduces demand for resources and energy *from* nature
- Reduces waste *to* nature

People (Social)

- More resources & energy become available for others
- Closing the loop generates new jobs



WHY ARE COMPANIES BECOMING MORE SUSTAINABLE?



Is your company trying to cope with increasing environmental regulation?



Are your customers demanding better environmental performance and data?



Do you want to lower your energy and materials costs?



Are you interested in producing and marketing greener products?

BIG HITTERS

In 2020, **90%** of S&P 500 Index Companies Publish
Sustainability Reports

Sustainability = critical to remain competitive

MORE PROFIT

Do companies that invest heavily in sustainability incur higher costs and become less profitable?

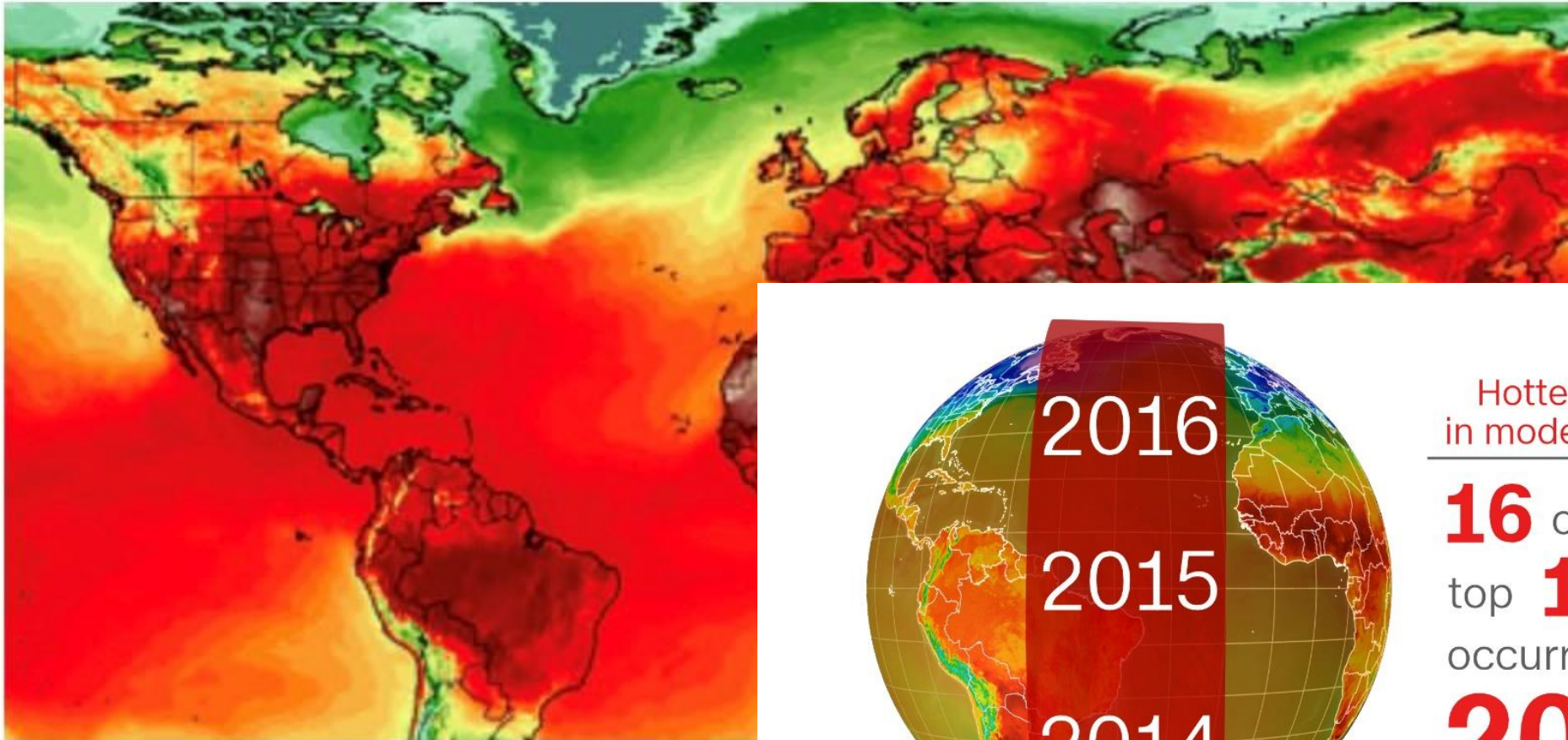
No. Global 100's cumulative return is **24 percentage points** higher than the ACWI benchmark.

INNOVATION

“Business as usual” is no longer good enough.

44% of business leaders developing urgent solutions cited **growth and new business** opportunities as reasons for tackling sustainability challenges

RISK MITIGATION



Hottest years
in modern record

16 of the
top **17** have
occurred since
2000

Top 5 Global Risks in Terms of Likelihood

	2008	2009	2010
1st	Asset price collapse	Asset price collapse	Asset price collapse
2nd	Middle East instability	Slowing Chinese economy (<6%)	Slowing Chinese economy (<6%)
3rd	Failed and failing states	Chronic disease	Chronic disease
4th	Oil and gas price spike	Global governance gaps	Fiscal crises
5th	Chronic disease, developed world	Retrenchment from globalization (emerging)	Global governance gaps

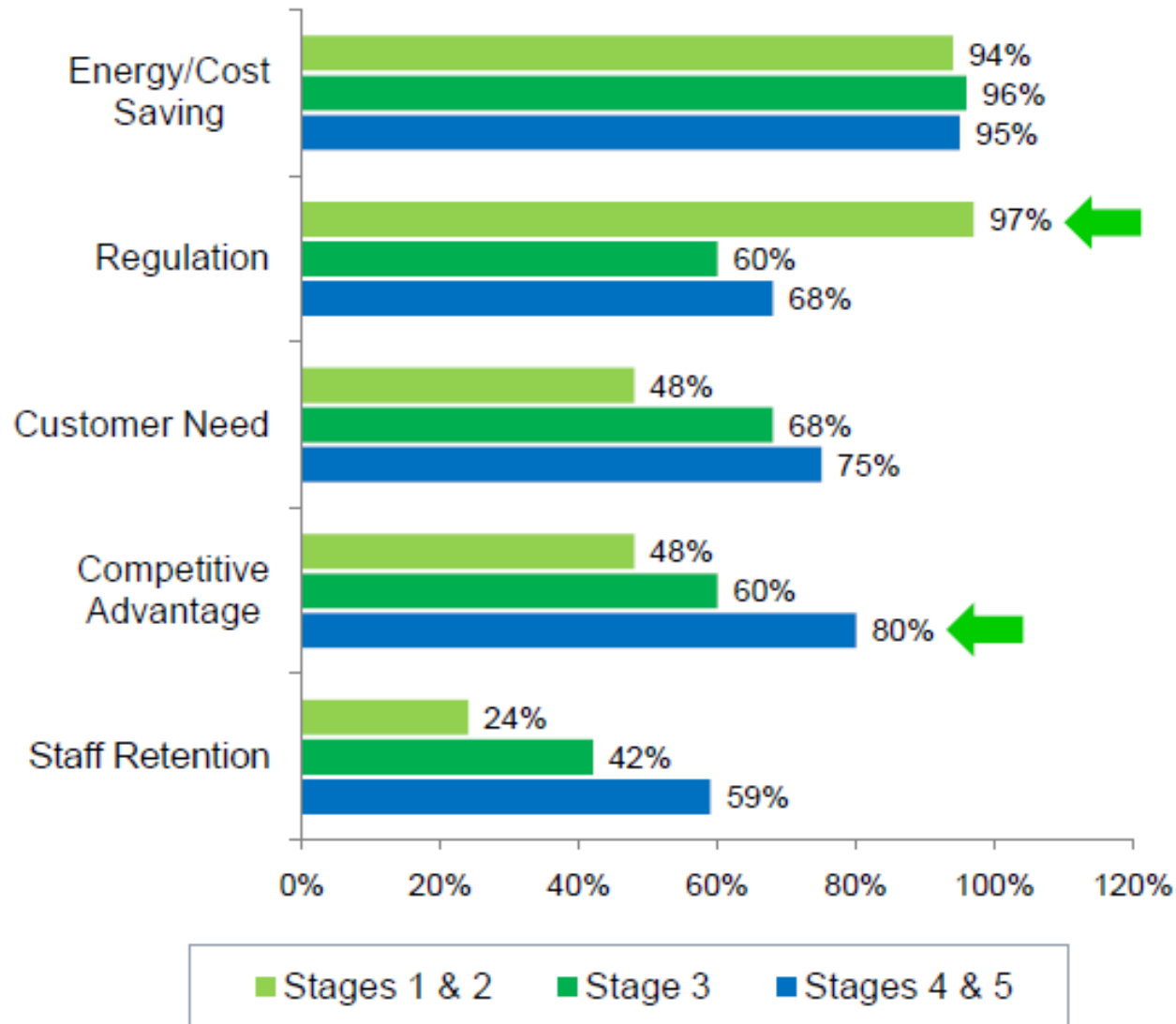
Top 5 Global Risks in Terms of Impact

	2008	2009	2010
1st	Asset price collapse	Asset price collapse	Asset price collapse
2nd	Retrenchment from globalization (developed)	Retrenchment from globalization (developed)	Retrenchment from globalization (developed)
3rd	Slowing Chinese economy (<6%)	Oil and gas price spike	Oil price spikes
4th	Oil and gas price spike	Chronic disease	Chronic disease
5th	Pandemics	Fiscal crises	Fiscal crises

STAGES OF SUSTAINABILITY

Stage	Description	Key Attitudes
Stage 1	Green not part of the organization mission	View Environmental Initiatives as Costs
Stage 2	Green enters into the organization mission as it is legally required	
Stage 3	The organization considers the proactive application of Green to be consistent with the profit mission	Sustainability can save money
Stage 4	The organization transforms into a Green organization. Green is viewed more as an opportunity than a cost	Sustainability part of corporate strategy
Stage 5	The organization approaches business as a holistic, restorative company	

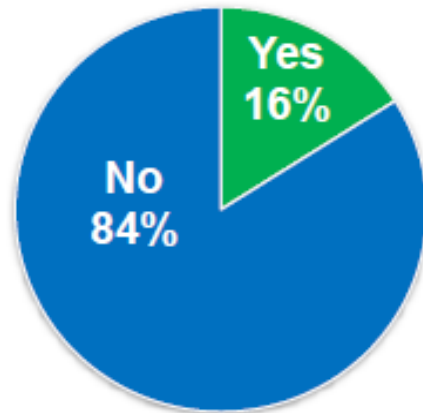
KEY DRIVERS



- On average, 81% Report that the Public is Expecting Sustainability from Corporate America - up from 66% in 2009
- All are driven by energy and cost savings...*but*
- Firms in higher stages also recognize importance of intangible metrics

SOFT BENEFITS

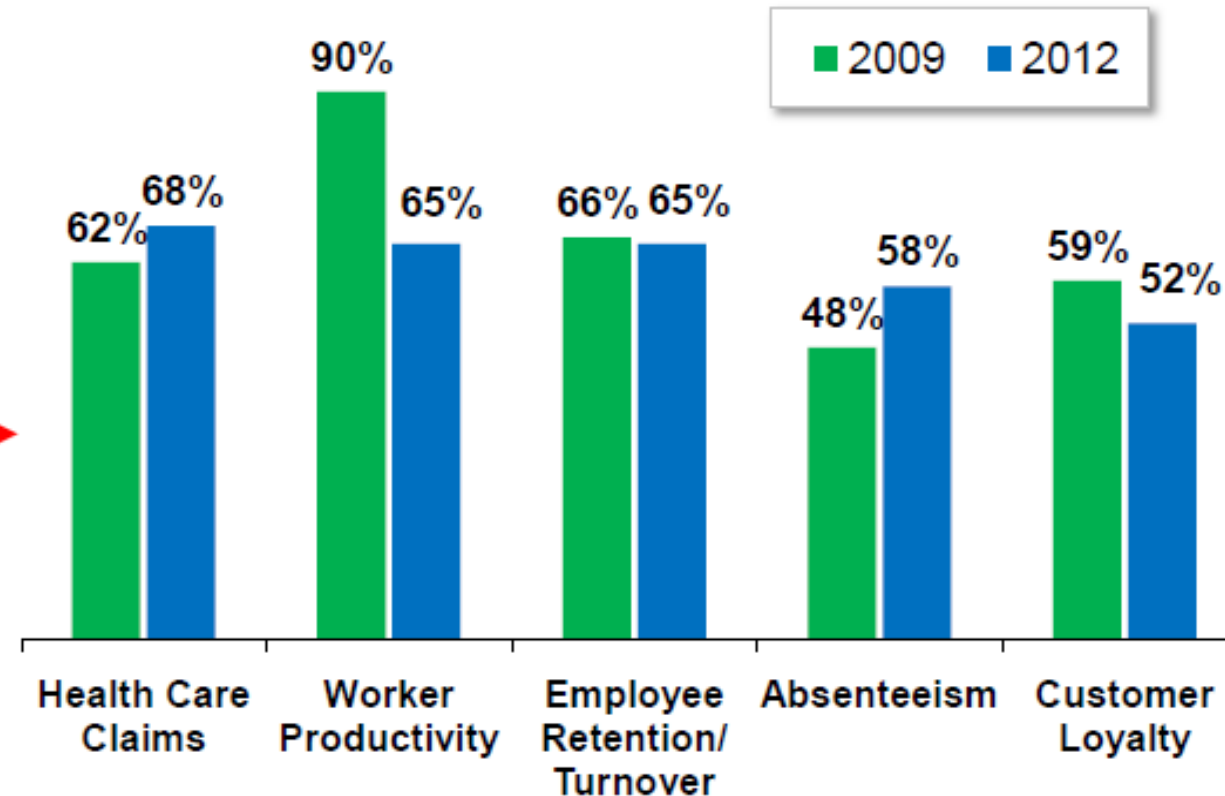
Currently Evaluate
Benefits with Soft
Measures



Similar use in 2009
(14%)



Soft Measures of Sustainability Used



“P” IS FOR PEOPLE



- ☐ Labor is typically the 1st or 2nd largest cost for companies.
- ☐ Companies with sustainability goals have higher employee retention, better recruitment, & reduced turnover.
- ☐ Reduced turnover means less time working understaffed, searching for talent, training, and bringing productivity back to 100%.

RECRUITMENT & RETENTION



Reuters

ENVIRONMENTAL WASTE CATEGORIES

Water



Air



Solids



Toxicity
(Chemicals)



Energy



Triple Bottom Line

WHAT ARE YOU WAITING FOR?



CONCLUSION

For more information, please contact:

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The Power of Sustainability

Brian Mormino

Executive Director, Technical &
Environmental Systems

Cummins Inc.

October 27, 2020

Public

Our Story

WHY WE EXIST

OUR MISSION

Making people's lives better by powering a more prosperous world

WHAT WE WANT TO ACCOMPLISH

OUR VISION

Innovating for our customers to power their success

HOW WE WILL DO IT

VALUES

INTEGRITY

Doing what you say you will do and doing what is right

DIVERSITY & INCLUSION

Valuing and including our differences in decision making is our competitive advantage

CARING

Demonstrating awareness and consideration for the wellbeing of others

EXCELLENCE

Always delivering superior results

TEAMWORK

Collaborating across teams, functions, businesses and borders to deliver the best work

LEADERSHIP CULTURE

Inspiring and encouraging all employees to achieve their full potential

BRAND PROMISE

Powering our customers through innovation and dependability

STRATEGY

Delivering value to all stakeholders

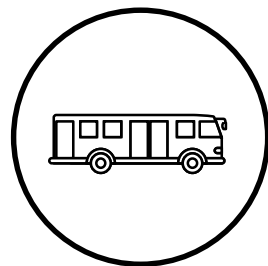
Cummins markets



Heavy-duty
Truck



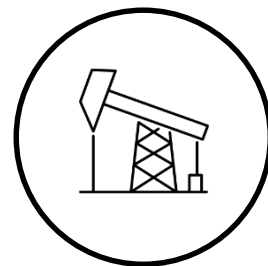
Medium-duty
Truck



Bus



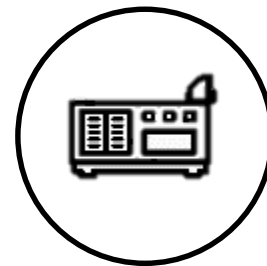
Construction



Oil & Gas



Fire &
Emergency



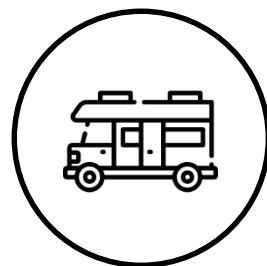
Power
Generation



Marine



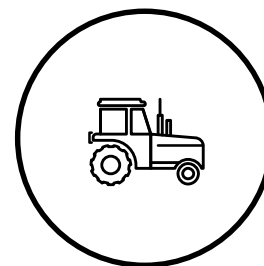
Mining



Light-duty Automotive
& Recreational
Vehicle



Defense

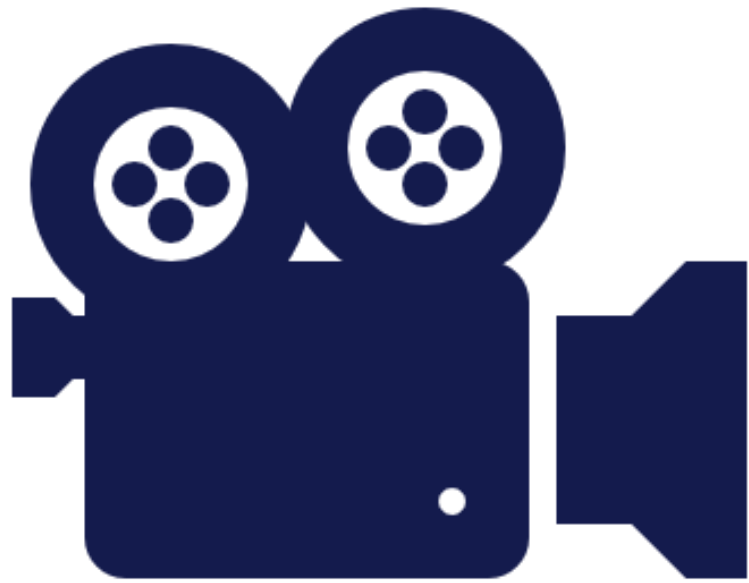


Agriculture



Rail

This is not an exhaustive display of Cummins-powered markets. Please refer to cummins.com for the most updated product information.



Cummins - Planet 2050 Video

5 Big issues affecting businesses and stakeholders



01

Pollution is an ongoing concern, especially as more people move to urban locations.

More than 90% of the world's children breathe toxic air every day



02

Unprecedented changing climate impacts lives and livelihoods.

Weather-related events affect 205 million lives annually



03

Water scarcity threatens communities and economies.

About 4 billion people (two-thirds of the world's population) experience severe water scarcity during at least one month of the year



04

Current global waste management approach does not work.

1.4 billion pounds of trash wind up in the world's oceans



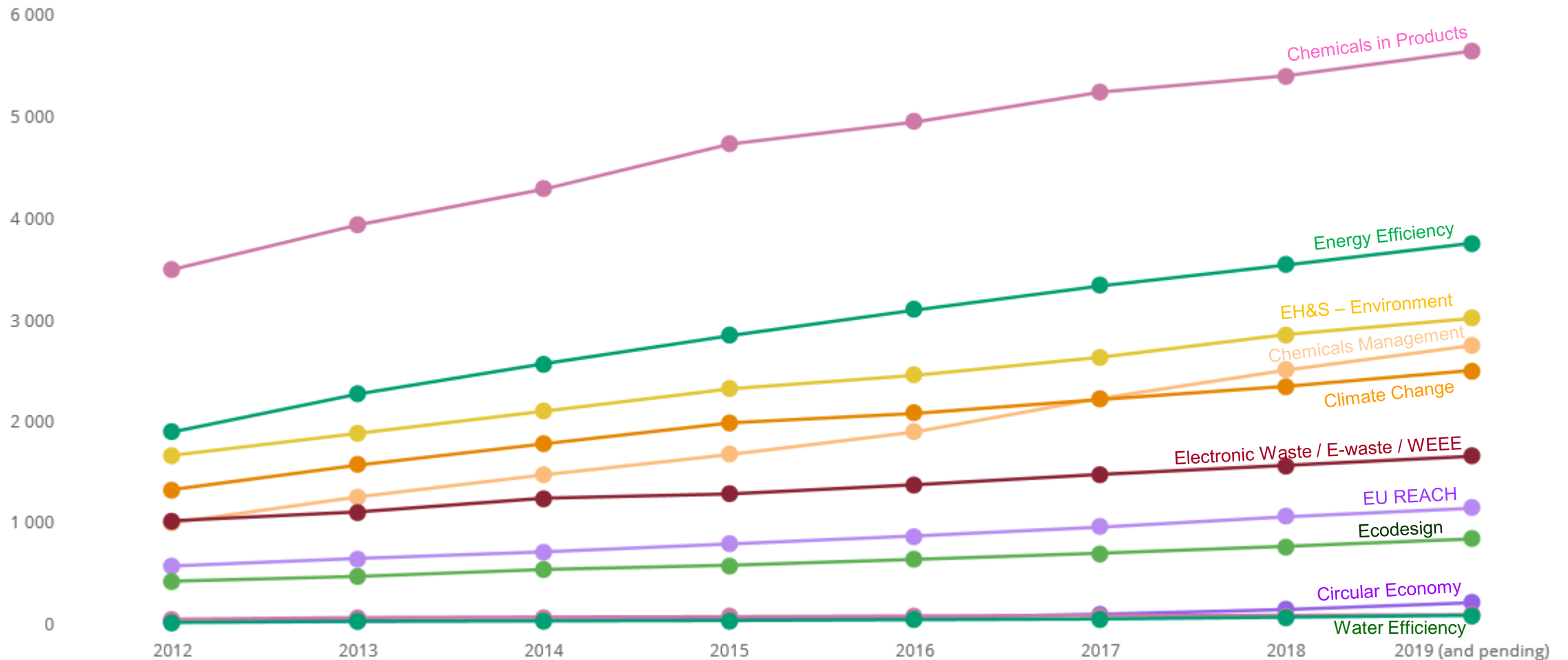
05

Resource consumption trends require new thinking.

Material consumption tripled since 1970.

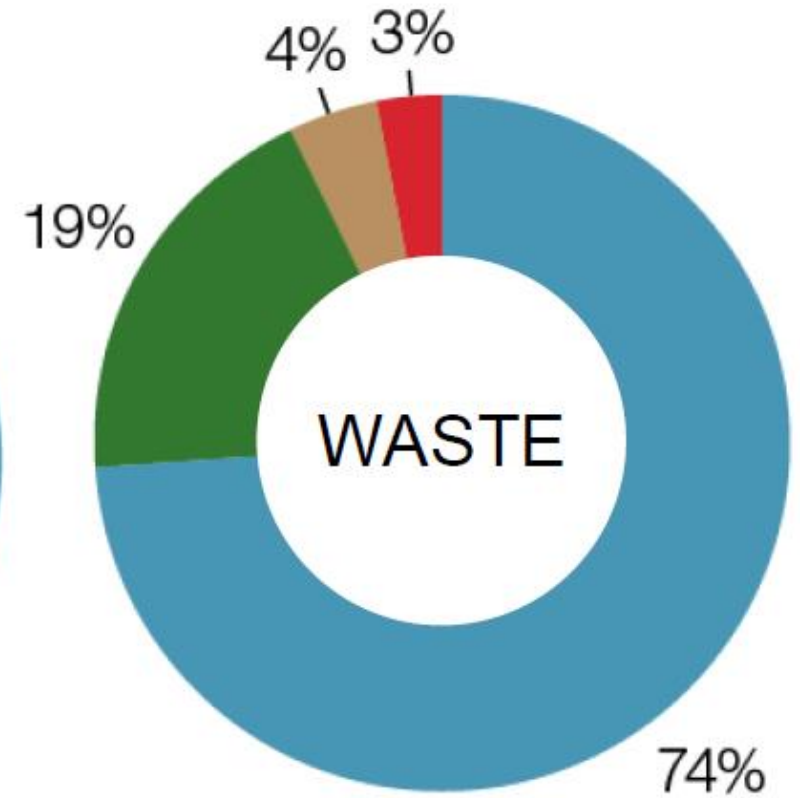
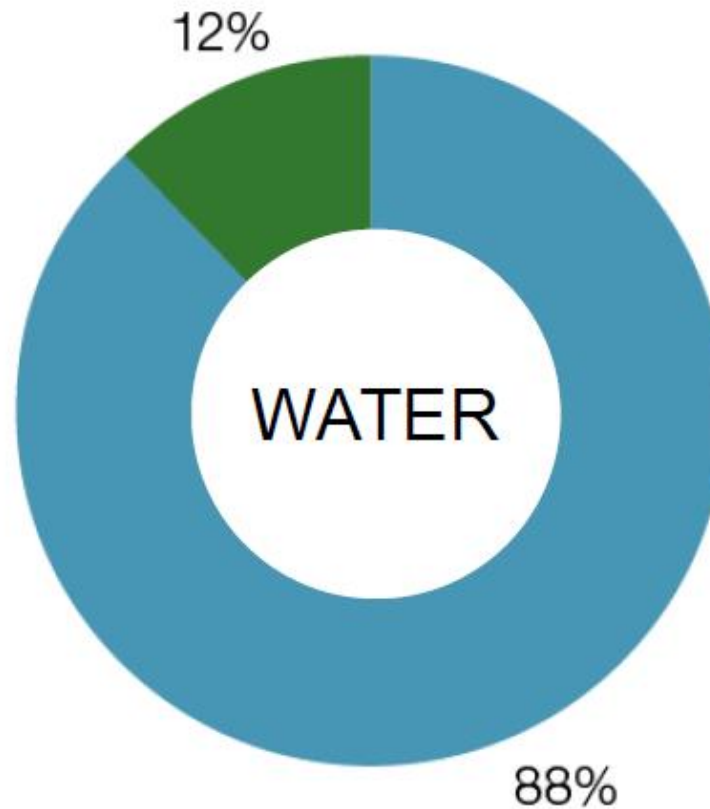
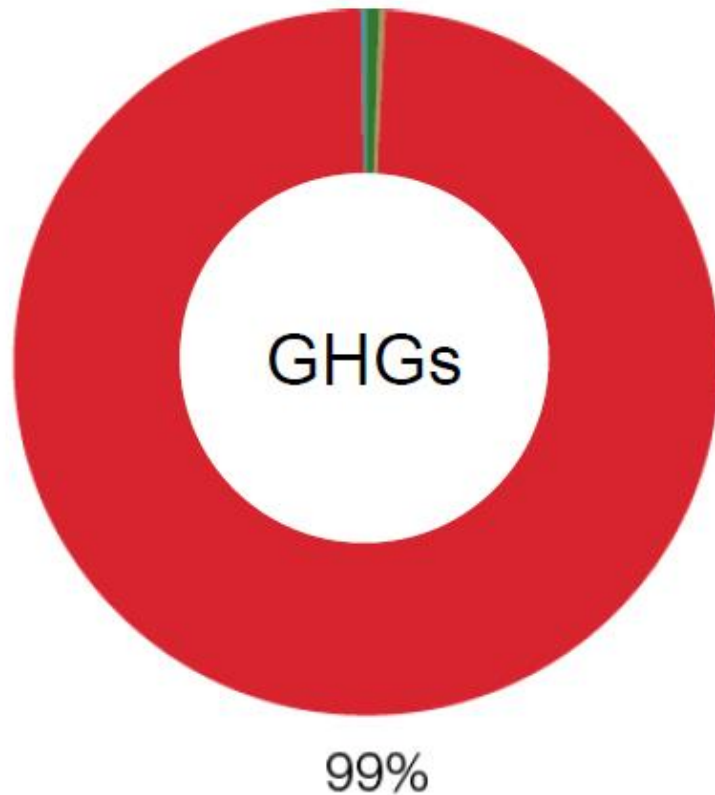
Growing regulatory requirements

Cumulative Global Count of Global Regulations/Amendments By Year and Category



Cummins environmental footprint

- Raw Materials / Processing
- Cummins Facilities
- Logistics & Transportation
- Products in use
- End of Life



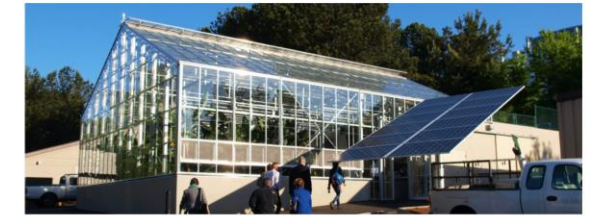
Examples of Cummins actions



Offsetting more than 25% of company's worldwide electricity consumption with renewable power



Solar installations competed or underway at more than two dozen locations



1 billion gallons of water use avoided since 2010 through water conservation efforts



Achieving water neutrality at 15 sites through community partnerships – restoring 4.3 billion gallons of water annually



125 sites globally have achieved above 90% recycling rate with 23 sites achieving zero disposal



Achieved 4.3 million annual metric ton rate of CO₂ reduction from products in-use since 2015

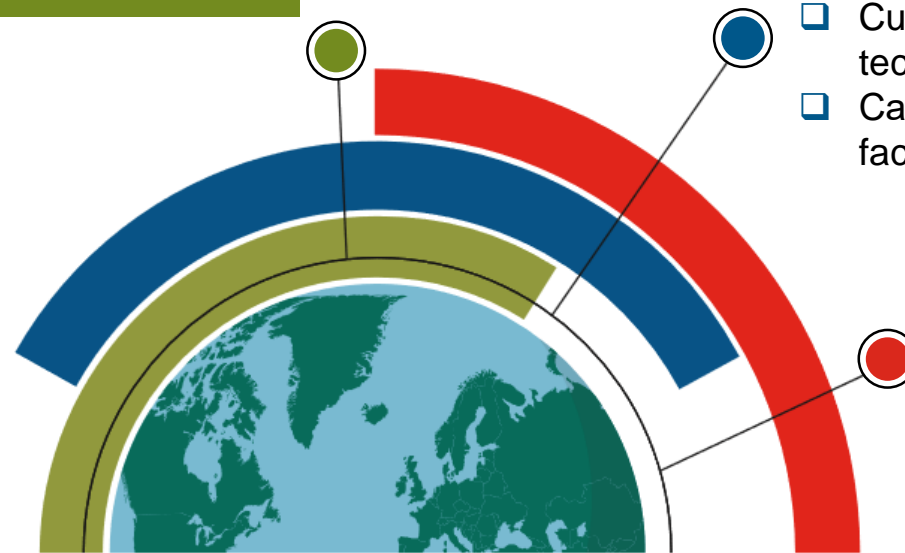


PLANET 2050

COMMUNITIES ARE BETTER BECAUSE WE ARE THERE

2050 Targets

- Net positive impact in every community in which we operate
= sum of environmental good > local environment footprint
- Near zero local environmental impact



PLANET2050

PROSPERITY | LEADERSHIP | ADVOCACY | NURTURE | ENVIRONMENT | TOGETHER

DOING OUR PART TO ADDRESS CLIMATE CHANGE AND AIR EMISSIONS

2050 Targets

- Customer success powered by carbon neutral technologies that address air quality
- Carbon neutrality and near zero pollution in Cummins' facilities and operations

USING NATURAL RESOURCES IN THE MOST SUSTAINABLE WAY

2050 Targets

- Nothing wasted
 - Design out waste in products and processes
 - Use materials again for next life
 - Reuse water and return clean to the community

NOTES References to "facilities" relate to all consolidated operations and joint ventures subscribing to Cummins' Enterprise Environmental Management System. Goals will be periodically assessed for progress and continued practicability

PLANET 2050: 2030 Goals

Doing our part to address climate change and air emissions

SCIENCE-BASED TARGETS

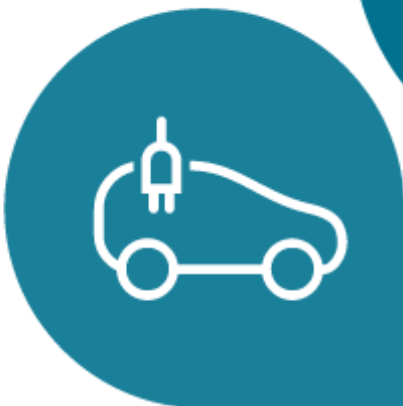
1. Reduce absolute greenhouse gas (GHG) emissions from facilities and operations by 50%.
2. Reduce scope 3 absolute lifetime GHG emissions from newly sold products by 25%.
3. Partner with customers to reduce scope 3 GHG emissions from products in the field by 55 million metric tons.
4. Reduce volatile organic compounds emissions from paint and coating operations by 50%.

Using natural resources in the most sustainable way

CIRCULAR ECONOMY

5. Create a circular lifecycle plan for every part to use less, use better, use again.
6. Generate 25% less waste in facilities and operations as percent of revenue.
7. Reuse or responsibly recycle 100% of packaging plastics and eliminate single-use plastics in dining facilities, employee amenities and events.
8. Reduce absolute water consumption in facilities and operations by 30%.

WE'VE HAD OUR SCIENCE-BASED TARGET APPROVED



SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

Powertrain of now....



DIESEL

HD Long Haul

Delivers coast to coast



NATURAL GAS

HD Regional Haul

Dedicated routes

Refuse Truck



HYBRID

Utility Truck

Makes repairs at regional/
local sites



Natural Gas

Urban Transit Bus

City Transportation

...and tomorrow

1. Blue Bird Electric School Bus
2. Fuel Cell Heavy Duty Truck
3. Electrified Power Heavy Duty Truck
4. Alstom Fuel Cell Train
5. GILLIG Electric Commercial Bus
6. Electric Mini Excavator
7. USPS Electric Van
8. Electric Terminal Tractor
9. Fuel Cell Commercial Bus
10. Power to gas facility, 2 MW electrolyzer



“Our industry is in a transition. Technology, regulations and customer expectations are changing rapidly, requiring our teams to innovate so they can deliver the value our customers expect.”

Vice President and Chief Technical Officer Jim Fier

Stakeholder Value



Customer partnerships

Cummins and Navistar announce new long-term agreement

Over 100 Blue Bird electric school buses plugging into districts

Aug 30, 2019 ■ Macon, Georgia



Cummins Partners with Microsoft and McKinstry to Shape the Future of Datacenters

Oct 03, 2017 ■ by Jon Mills, Director of External Communications



Hyundai Motor Company and Cummins to collaborate on hydrogen fuel cell technology

Sep 26, 2019 ■ Columbus, Indiana / Seoul, Korea



Cummins to Provide the United States Postal Service with Eight Fully-Electric Vehicles in California

Mar 04, 2019 ■ Columbus, IN



Investor interest



Top shareholders are stating their expectations more clearly and urging companies to report on material factors with Sustainability Accounting Standards Board (SASB) and Task Force on Climate-related Financial Disclosures (TCFD) becoming the standards

*"BlackRock believes that the Sustainability Accounting Standards Board (SASB) provides a clear set of standards for reporting sustainability information across a wide range of issues,.. For evaluating and reporting climate-related risks, as well as the related governance issues that are essential to managing them, the TCFD provides a valuable framework."**

*BlackRock "A Fundamental Reshaping of Finance" – Larry Fink's Letter to CEOs

Community involvement



**Founding member of the Indianapolis
Circular Economy Initiative**



**Community-wide
recycling day in
Columbus**



**Building bee motels at
Eagle Creek Park**

Advocacy and policy engagement



Tony Satterthwaite, President of Cummins' Distribution Business, provides testimony in front of the U.S. House Committee on the Climate Crisis (July 16, 2019).



Indiana General Assembly

21st Century Energy Policy Development Task Force

Power of Cummins

190

Countries & territories

61,615

Global employees

1.4M+

Engines built in 2019

8,000

Wholly-owned &
independent
distributor & dealer
locations

\$1B

Invested in research
& development in
2019

100

Years of industry
leadership

The Power of Sustainability



Sustainable Howard Park

Therese Dorau
Director of Sustainability

Adam Parsons
Director of Facilities



CITY OF SOUTH BEND
PUBLIC WORKS

Protecting our Core Business

Sustainability Value Proposition



CITY OF SOUTH BEND
PUBLIC WORKS

Sustainable Solutions Virtual Seminar



Our Mission:
We deliver
services that
empower
everyone to
thrive.

**REDUCED
WATER
and AIR
quality.**



**DECREASED
PRODUCTIVITY
of corn and
soybean crops.**



**LOSS OF SPECIES,
such as the
Karner
Blue
Butterfly.**



**INCREASED
HEAVY
RAINFALL,
leading
to more
flooding.**



**DELAYED
FALL FREEZE,
extending the
ragweed allergy
season.**



**RECORD-
BREAKING
heat waves.**



WHAT WILL CLIMATE CHANGE MEAN IN **INDIANA?**

Since the beginning of the 20th century in Indiana, temperatures have risen 1°F and total annual precipitation has increased nearly 5 inches. What does that mean for Hoosiers? Led by the Purdue Climate Change Research Center, scientists and decision makers from across the state are developing the Indiana Climate Change Impacts Assessment (IN CCIA) to assess effects of climate change for informed decision-making. Here are a few effects already documented or projected.



PURDUE UNIVERSITY
Discovery Park

**SHORTER
WINTERS,
increasing
exposure to
ticks and
Lyme Disease.**



**INCREASED
DEMAND
for
cooling.**



CITY OF SOUTH BEND
PUBLIC WORKS

<https://ag.purdue.edu/indianacclimate/>

Sustainable Solutions Virtual Seminar



“Either we have run some extraordinary odds these last few years, or something is changing... For South Bend, climate issues are no longer a political football. They are an on-the-ground reality that we will need to plan for”

Mayor Pete
2018 State of the City Address



Our Customers Demand Climate Action



Climate Action Serves our Mission



Protect and Serve the Public

- Prepare for emergencies
- Safeguard public infrastructure
- Provide services reliably
- Use tax dollars efficiently

Build a Thriving Community

- Reduce costs & risks for residents
- Improve economic & social equity
- Increase quality of place
- Foster “Next Gen” jobs & industries
- Protect public health



Sustainable Products and Services



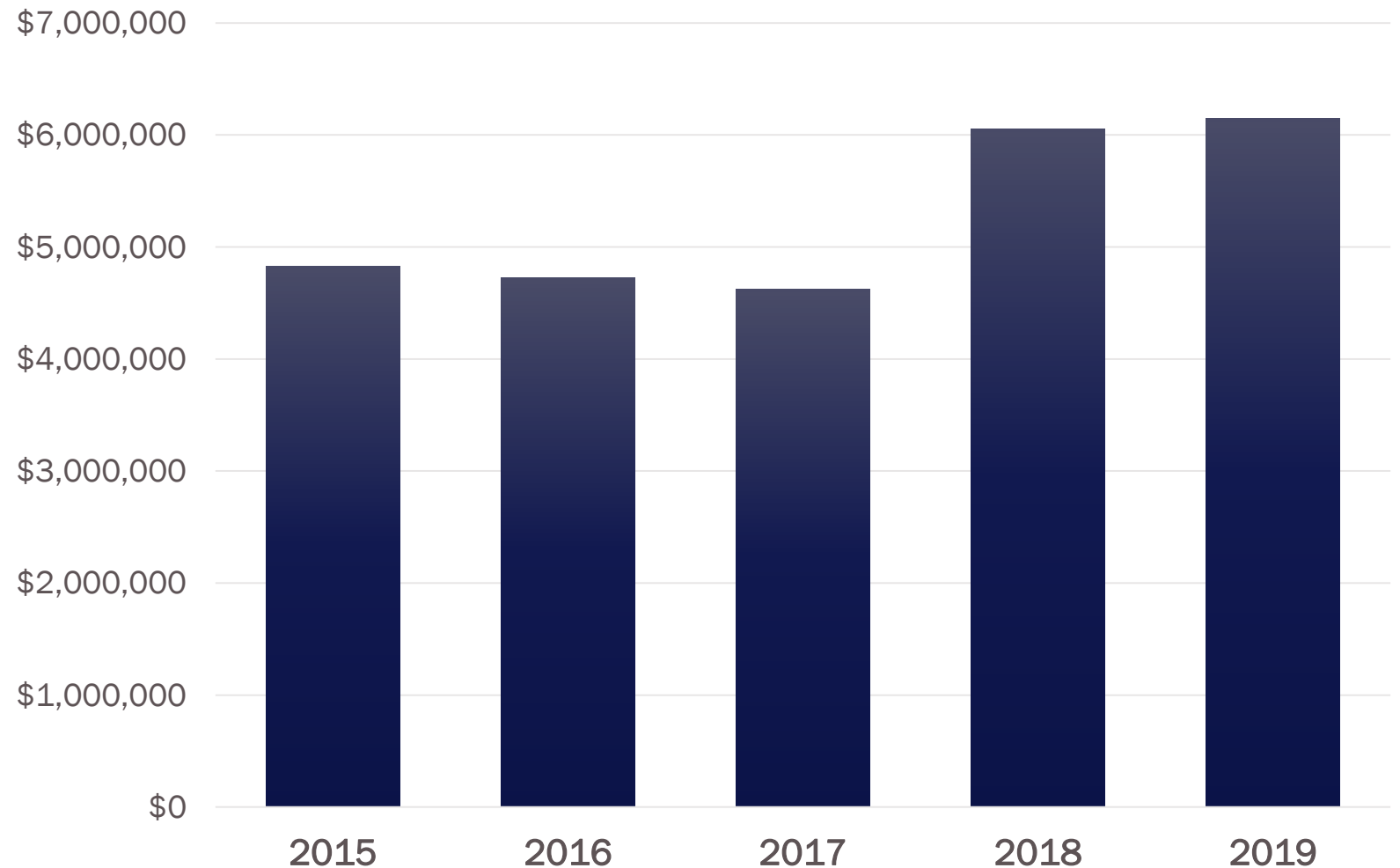
Sustainable City Operations



City Energy and Fuel Costs

2019 Fuel Costs
\$ 1,522,029

Annual Electricity and Gas Costs



Howard Park

Sustainable Construction Case Study



CITY OF SOUTH BEND
PUBLIC WORKS

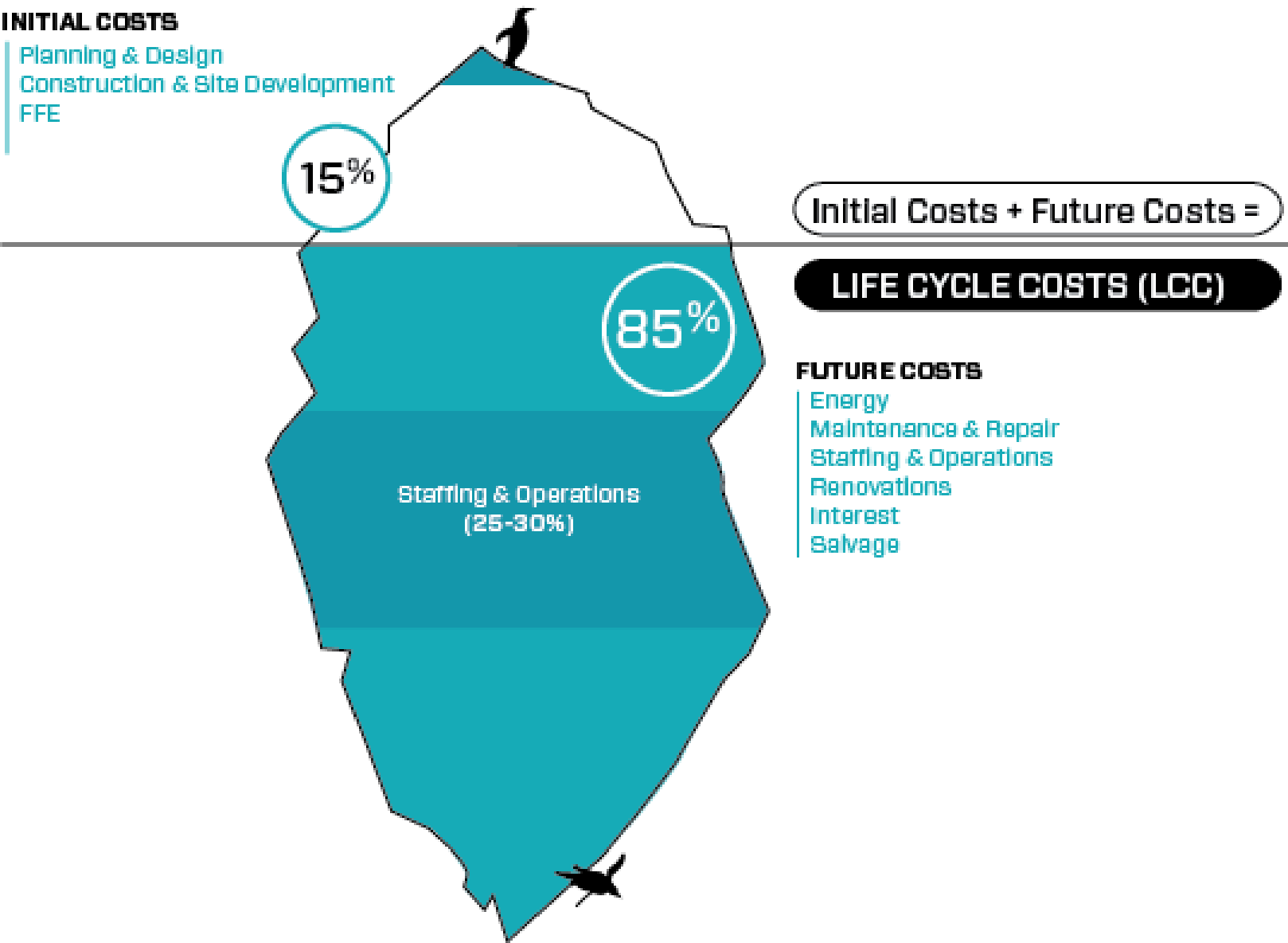
Sustainable Solutions Virtual Seminar

Howard Park - Design for a Generation

- Create a flagship building and park, a cornerstone of the VPA system. Tell a great story about economic, social, and environmental value of the Park.
- Minimize total cost of ownership across lifetime of facilities and site: Reduce utility, operations, and maintenance dollars and effort.
- Reduce greenhouse gas emissions: Reduce energy needs and install renewables.
- Use environmentally sound site design: Manage stormwater, landscaping, lighting, and hardscaping to protect or restore natural resources.
- Demonstrate environmentally-sensitive construction practices: Minimize construction and demolition waste, protect natural and cultural assets during construction.
- Optimize connectivity: Create a natural flow of people between neighborhoods and park. Provide for biking, walking, and transit. Visually match surrounding environment.



Life Cycle Economic Costs



Green Building: Triple Bottom Line Benefits

- Low environmental and carbon footprint
- Low cost of ownership (utilities, maintenance)
- Increase asset value and asset lifetime
- Higher rents
- Employees more productive, less absent
- Better occupant comfort, health
- Positive story, upholding core values
- Better serves the community



LEED Green Building Certification (v4)

- Integrative Process
- Location and Transportation
- Sustainable Sites
- Water Efficiency
- Energy and Atmosphere
- Materials and Resources
- Indoor Environmental Quality
- Innovation
- Regional Priority

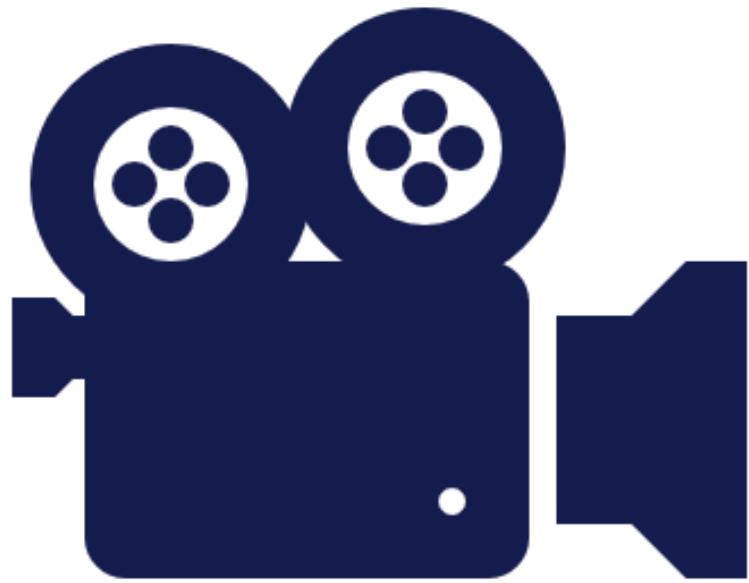




HOWARD PARK



- | | | |
|----------------------------|------------------------------|-------------------------------|
| 1 ICE TRAIL & POND | 6 CHOCOLATE CAFÉ TO-GO | 11 INOVATEUS SOLAR EVENT LAWN |
| 2 PLAYGROUND | 7 RIVERWALK TRAIL | 12 FESTIVAL LAWN |
| 3 EVENT CENTER | 8 VIETNAM VETERANS' MEMORIAL | 13 HISTORIC LODGE |
| 4 HOWARD PARK PUBLIC HOUSE | 9 WORKERS' MEMORIAL | 14 BOCCE COURT |
| 5 SUPPORT BUILDING | 10 THE RASK FAMILY FOUNTAINS | 15 NATURALIZED BIOSWALES |



Video Tour of Green Features

Connect with Us!

www.southbendin.gov/climateaction

facebook.com/sustainsb

Twitter: @SustainSB



Type your questions in the question box!



Connect with our speakers!



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Mark your calendars!



Tuesday, October 26, 2021

Century Center South Bend

Thank you!

