

# Green Office...Green Production

The practical application of the Interface's sustainability model at the manufacturing facility in Thailand



**Mission Zero:**

*Our promise to eliminate any negative impact our companies may have on the environment by the year 2020.*



Robin S. Wilson  
CEng. MIMechE. CMIOSH  
Technical Director, Asia

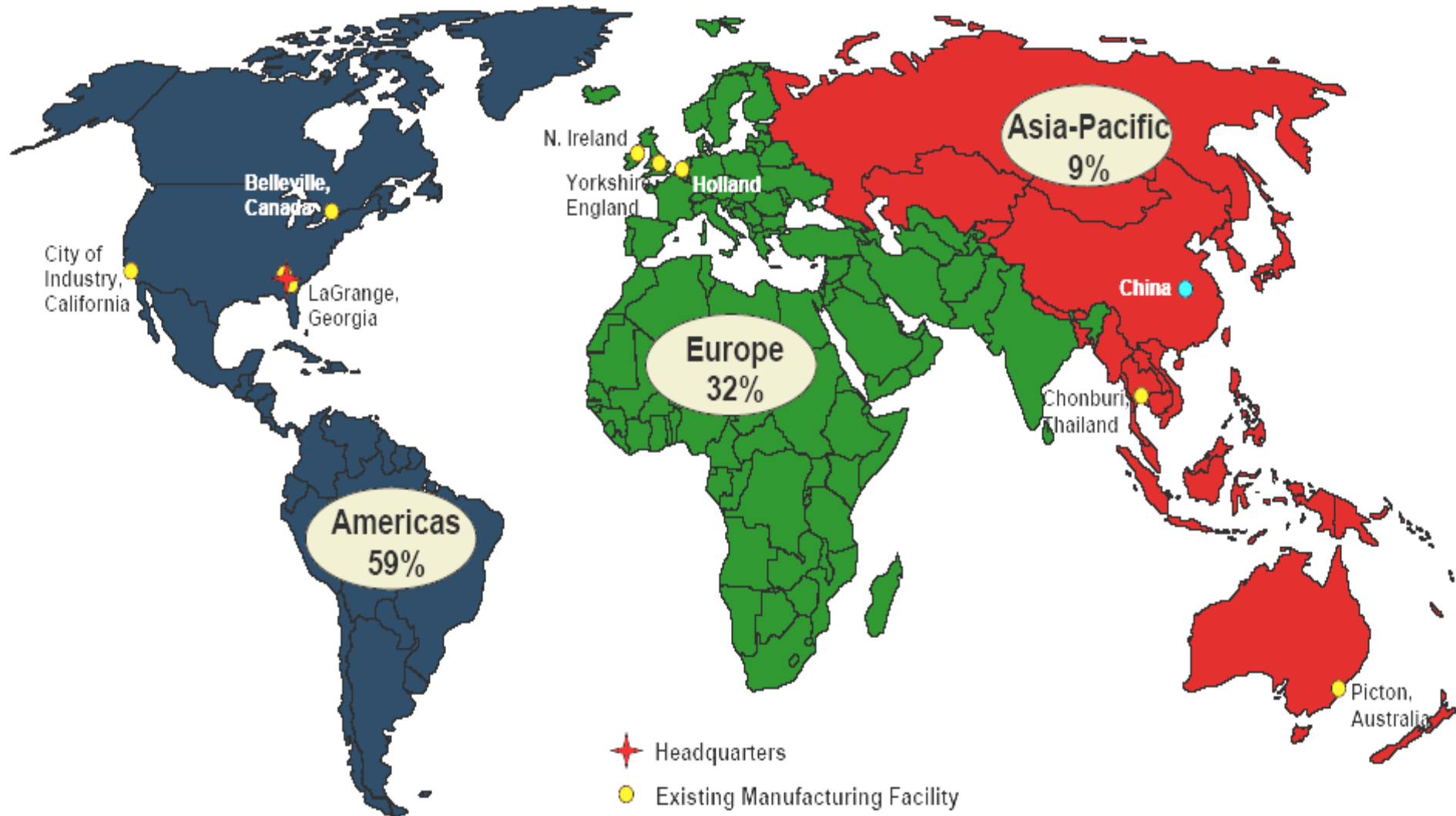
**InterfaceFLOR**

# INTERFACE INC

- Business
  - Commercial Carpet
- 37-Year history
- Size: \$ 1.0 Billion
- Where: Global
- Footprint:
  - 11 Factories
  - 37 Offices



# INTERFACEFLOR





# THAILAND FACILITY



**InterfaceFLOR**

# InterfaceFlor Facility in Chonburi, Thailand

**1994** JV established with  
Modernform Co. Ltd.

**1996 June** Production Start

**6 million** m<sup>2</sup>/year Today

**12** tufting machines

**270** people

**24 hour** Operation

**ISO 9001 & 14001**

**CRI certified products**

**NSF140 Silver products**

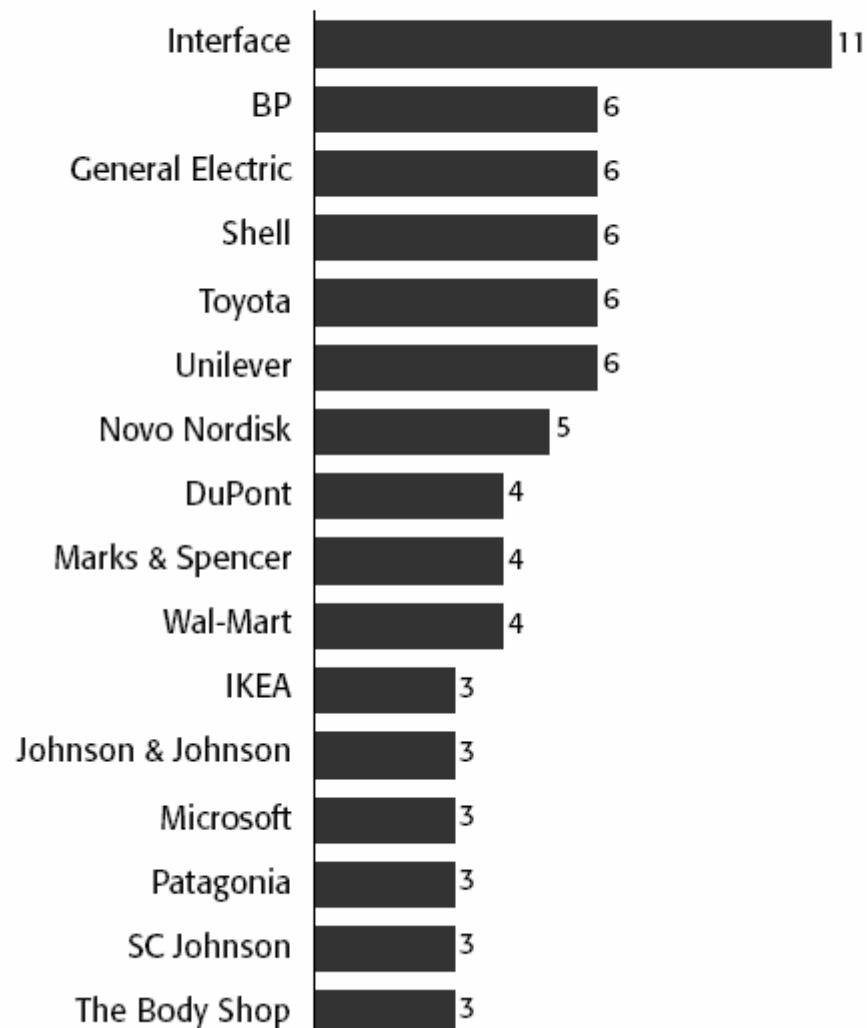


**Interface**FLOR

THE GLOBESCAN  
SURVEY OF SUSTAINABILITY EXPERTS

2008-2 REPORT

Companies Fulfilling Responsibilities to Society  
Unprompted, Combined Mentions







*“To be the first company that, by its deeds, shows the entire industrial world what Sustainability is in all its dimensions: people, process, product, place and profits – by 2020 – and in doing so we will become restorative through the power of influence.”*

16 Years ago Ray Anderson's epiphany and vision set his company Interface on the journey towards sustainability.....





# THE JOURNEY TO MOUNT SUSTAINABILITY



# Ø Interface's 7 Fronts of Sustainability;

ELIMINATE WASTE

BENIGN EMISSIONS

RENEWABLE ENERGY

CLOSING THE LOOP

RESOURCE-EFFICIENT TRANSPORTATION

SENSITIZING STAKEHOLDERS

REDESIGN COMMERCE



**MISSION ZERO IS OUR  
PROMISE TO ELIMINATE  
ANY NEGATIVE IMPACT  
OUR COMPANY MAY HAVE ON  
THE ENVIRONMENT BY 2020**



**BUSINESS NEEDS TO BE  
ACCOUNTABLE FOR  
WHAT IT TAKES,  
MAKES AND WASTES**





**GREEN SOLUTIONS  
MUST MAKE  
COMMERCIAL SENSE**



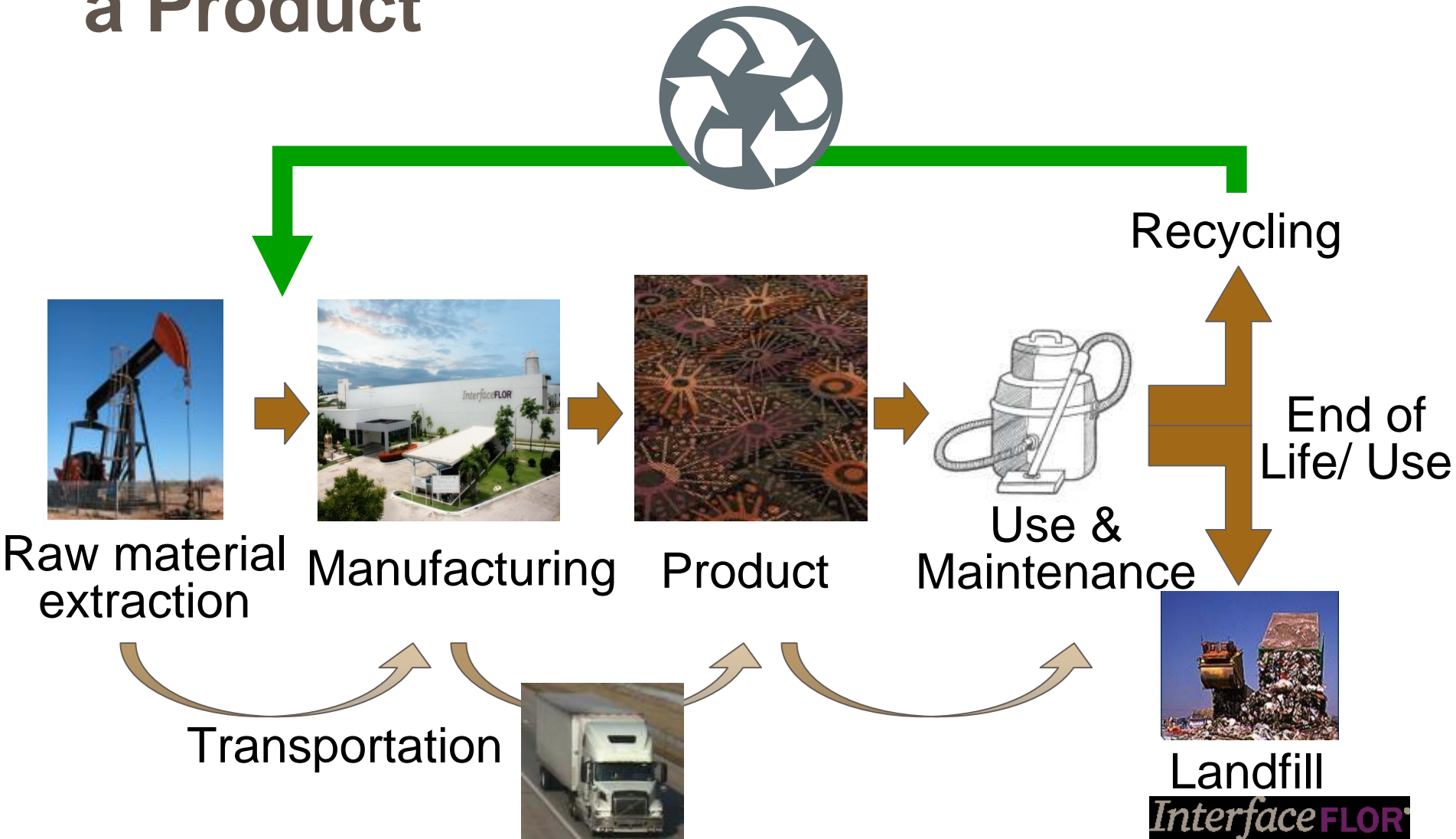
# Where to start?

**What gets measured gets done....**

**4 key measurement systems developed;**

- QUEST
- Ecometrics
- Ecosense
- Sociometrics

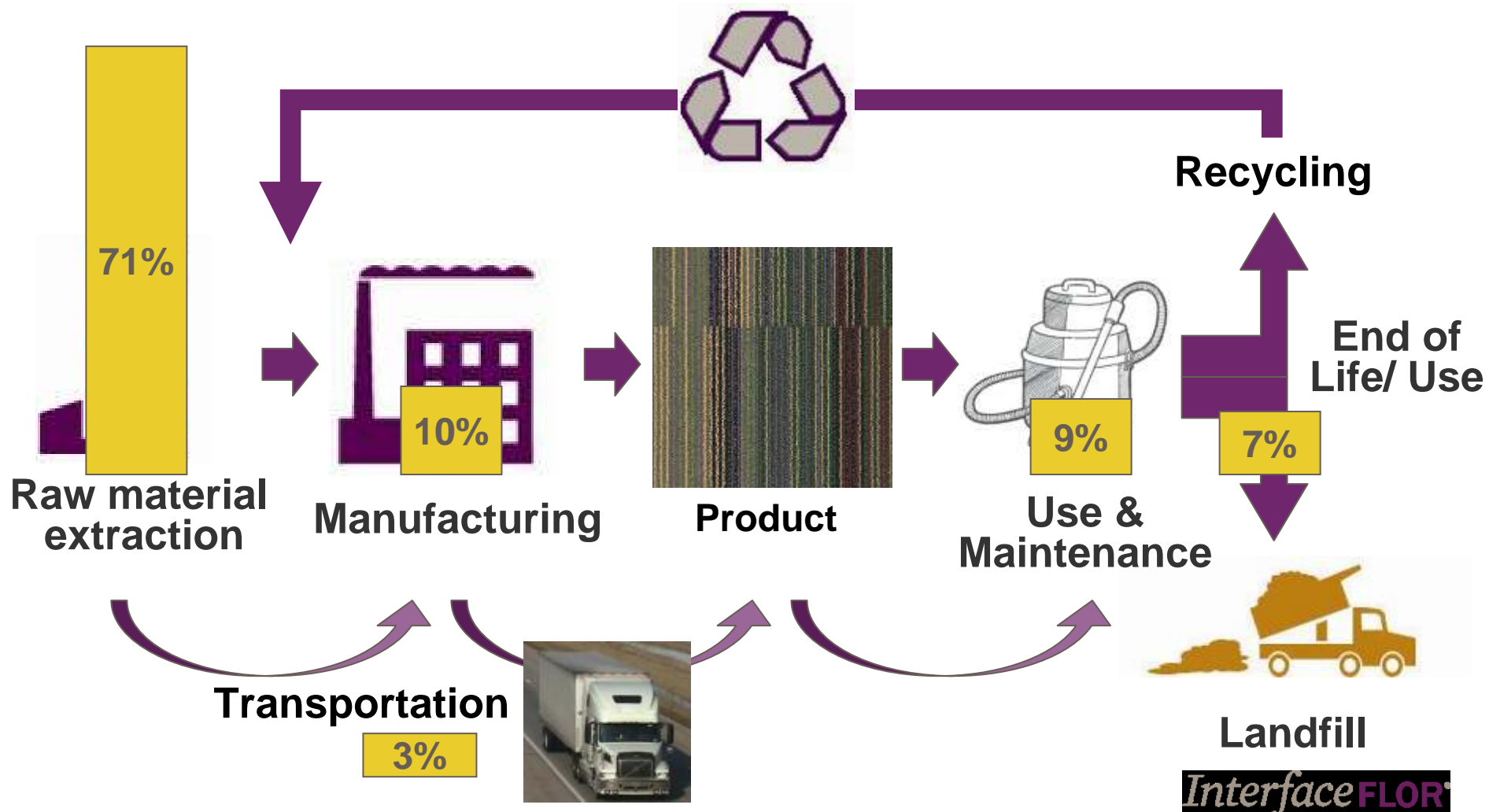
# Environmental Impacts occur throughout the entire Life Cycle of a Product



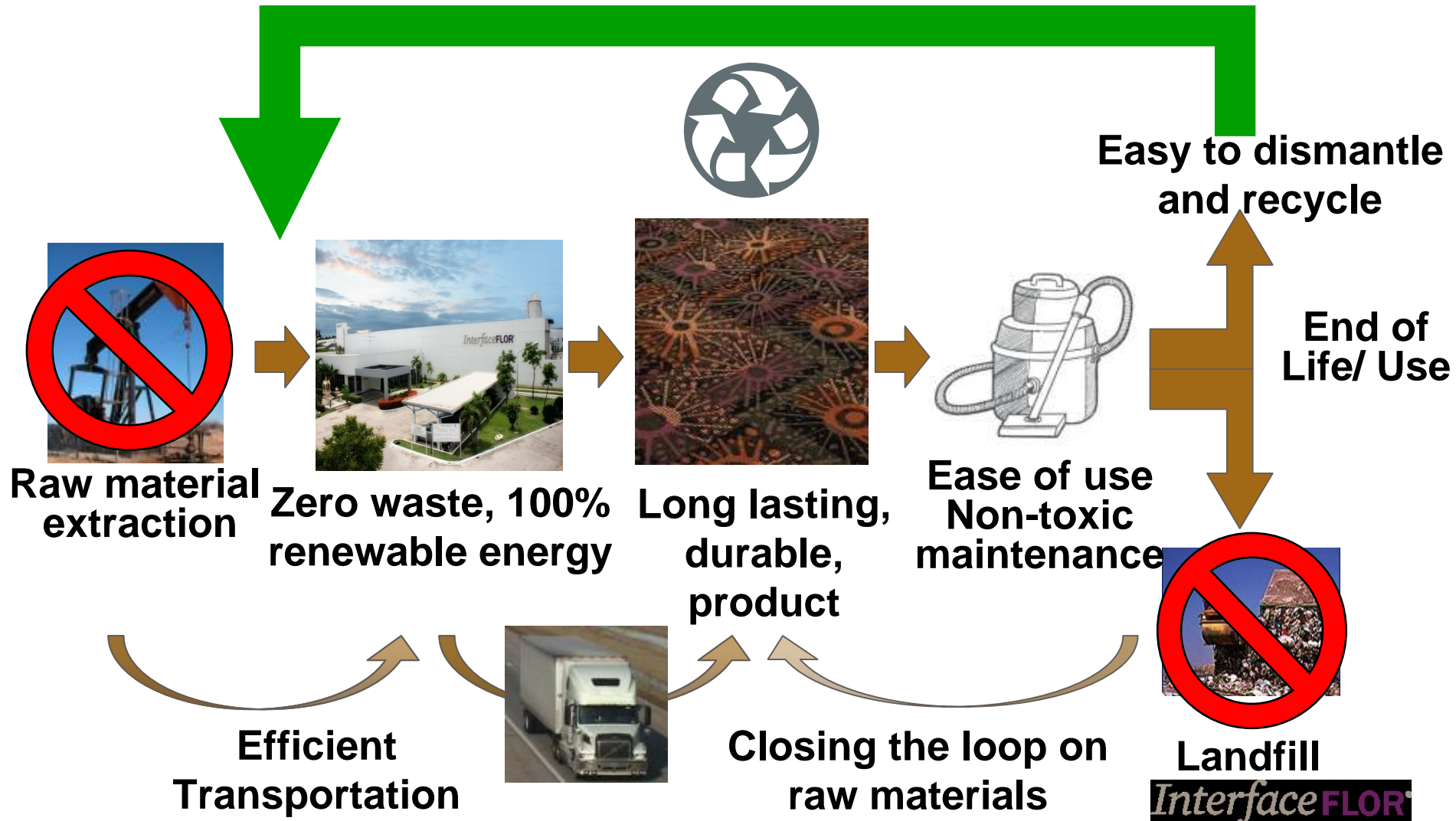


# Measurement of Global Warming Impact: Where do impacts occur with Carpet?

## Greenhouse gas emissions



# RECYCLING – HOW WE CREATE GREENER CARPET





# REDUCING THE IMPACT OF PRODUCTS & PROCESSES

1. Use Less Energy
2. Use Less Materials
3. Make It Last
4. Turn Backing Into Backing
5. Turn Fibre Into Fibre

mission



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# USE LESS ENERGY



125,000 BTU/yd<sup>2</sup>

....CARPET TILE  
IS ALREADY AT  
AN ADVANTAGE...



12,737 BTU/yd<sup>2</sup>

*Interface***FLOR**



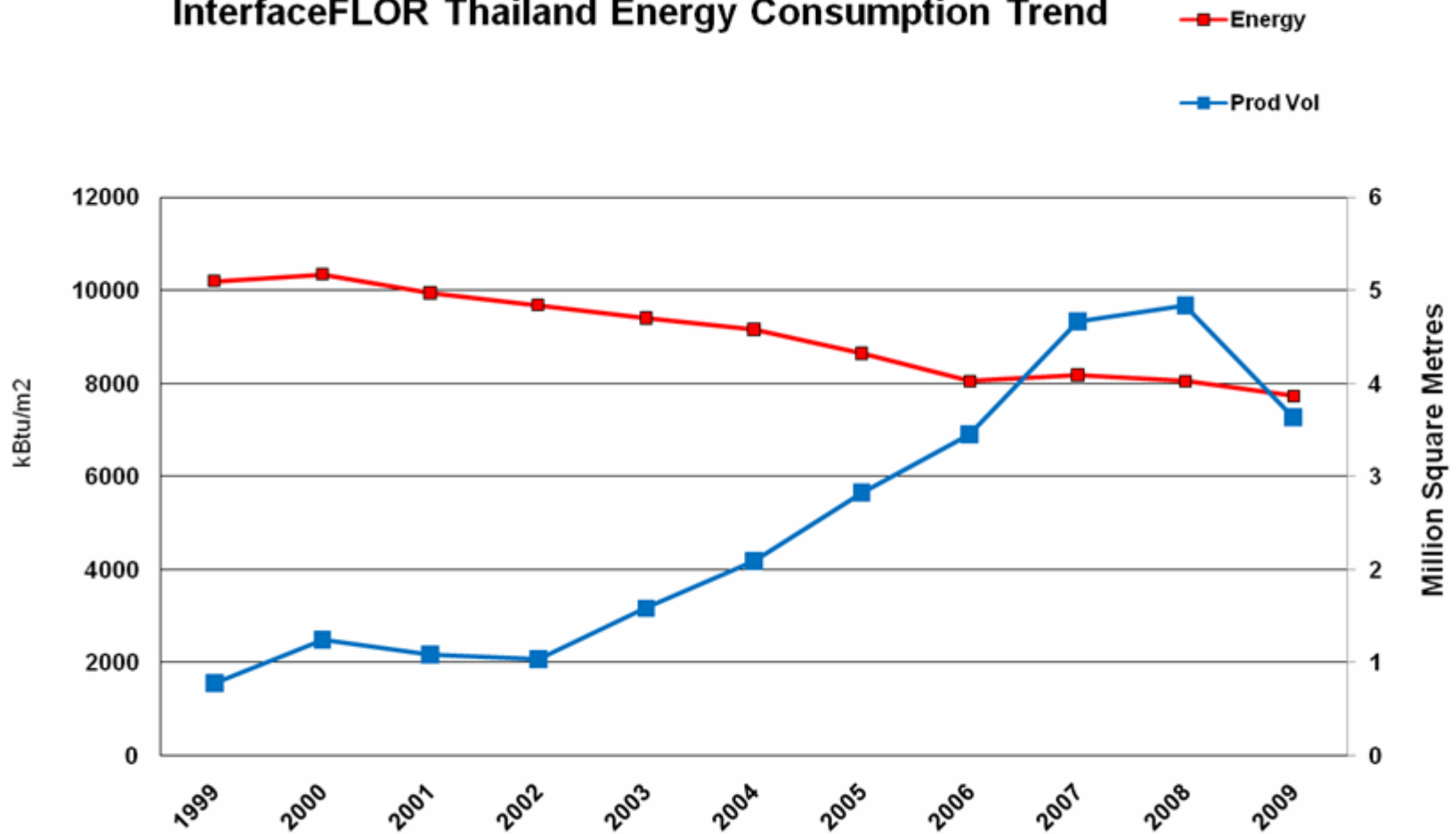
# USE LESS ENERGY FROM FOSSIL FUELS



The Elephant is Oil

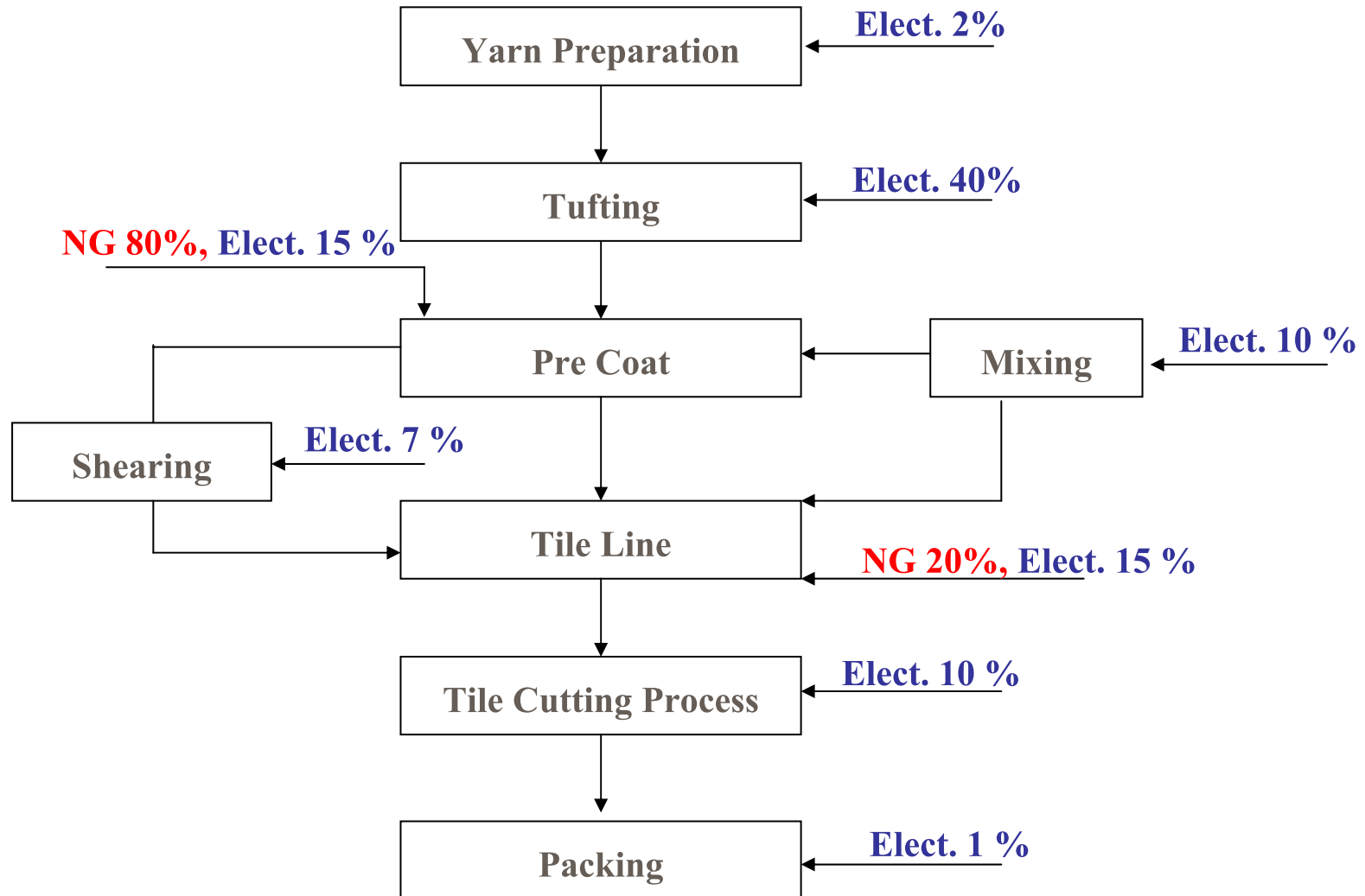
*Interface***FLOR**

## InterfaceFLOR Thailand Energy Consumption Trend





# Split of Process Energy Requirements

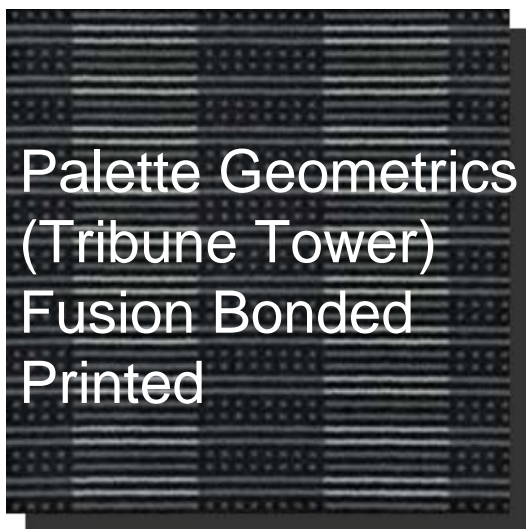


# Recent Energy Reduction Projects;

- Increase Operating Temperature of Process Chilled Water System
- Replace Chiller Unit with more efficient, “right size” unit.
- Install Inverter Controlled Air Compressor Units
- Decrease Plant Compressed Air System Pressure
- Improve Plant Preventative Maintenance
- Increase Process Line Insulation
- Increase Process Line Speeds
- Install Improved Process Temperature Monitoring & Variable Speed Exhaust Fans to maximize process oven efficiency
- Improved Office Lighting control – zoned switches for individual control
- Revised Lighting Types (T5) & Ballasts



# USE LESS MATERIALS



Nylon reduced  
by 10.8%

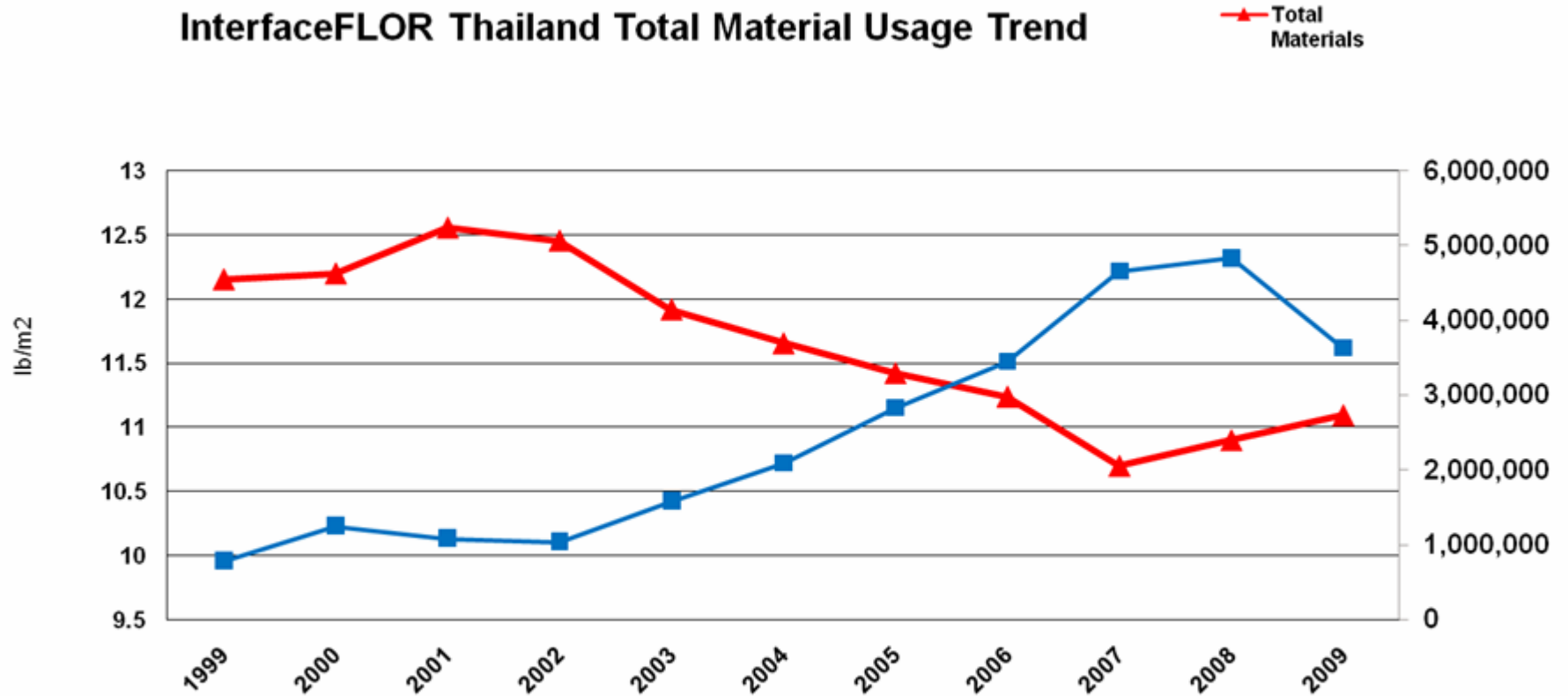
Total nylon reduction  
50%



Nylon reduced  
by 43.4%



# InterfaceFLOR Thailand Material Usage





# Recent Material Reduction Projects;

- **Improve Quality performance – Target less than 1.25%**
- **Reduction of Backing Weights from 2.85kg to 2.5kg.**
- **Lower curing temperature of backing recipe to reduce the heating requirement on the Glasbac line**
- **Lower Precoat add on weight and increased solid content require less water to be removed in the drying process**
- **Introduced Lower face weight products with same high product performance (e.g. F!T Range)**
- **Reducing production selvedge widths**
- **Implementing “Make To Order” model reduces obsolete stock**



MAXIMIZING EFFECTIVE  
PILE WEIGHT

MAKE IT LAST

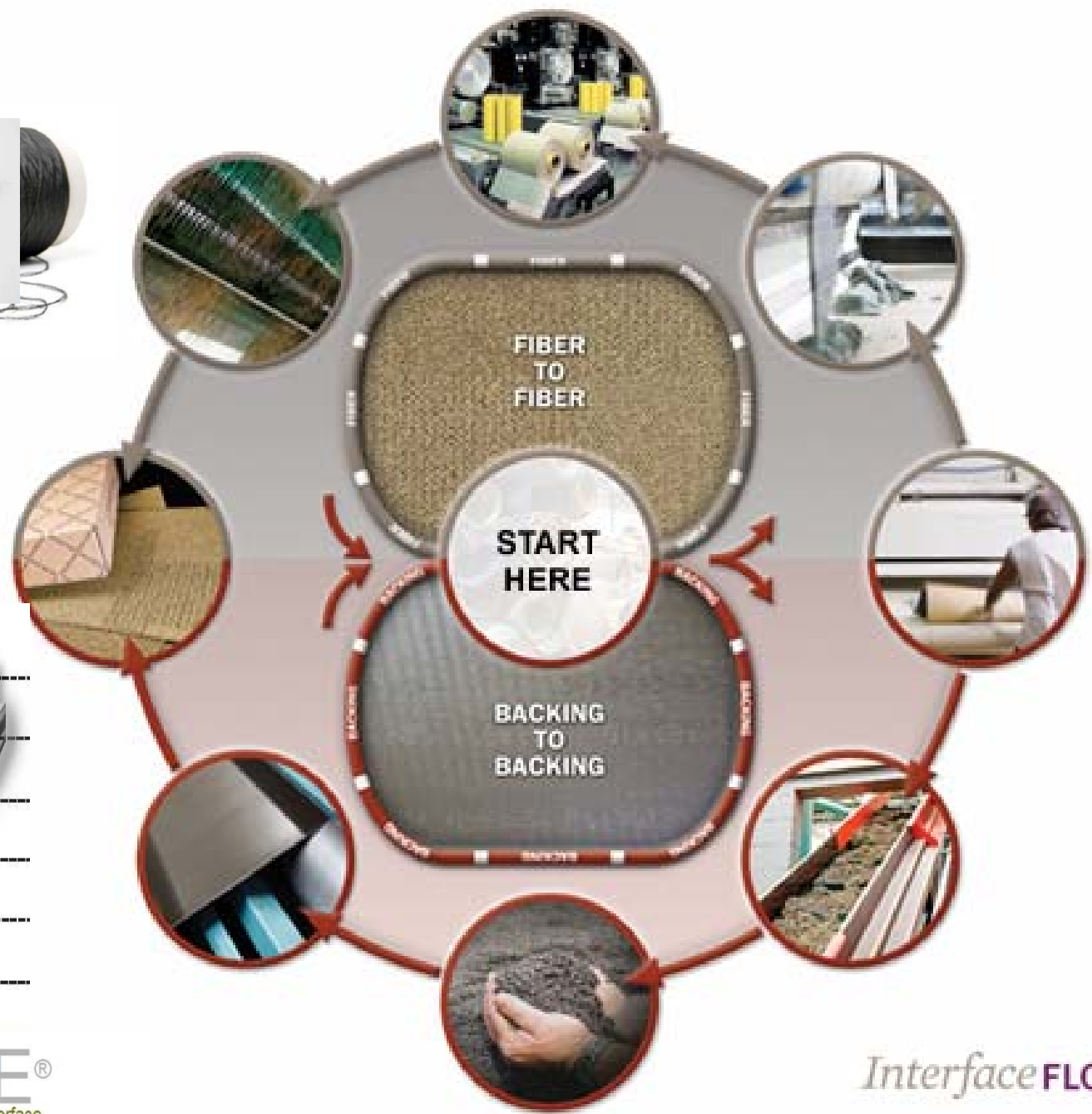
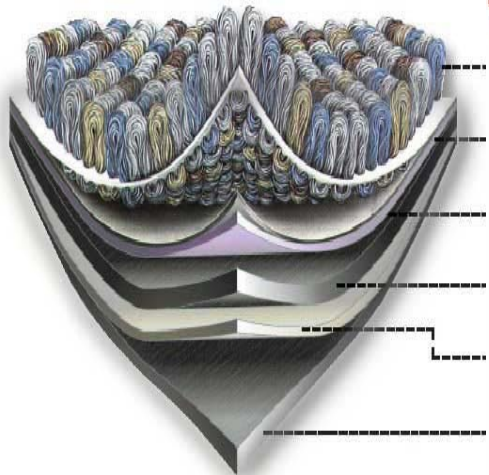


Apppearance  
Retention  
Testing



*Interface***FLOR**





**GlasBac RE®**  
another step towards sustainability by Interface

*Interface***FLOR®**

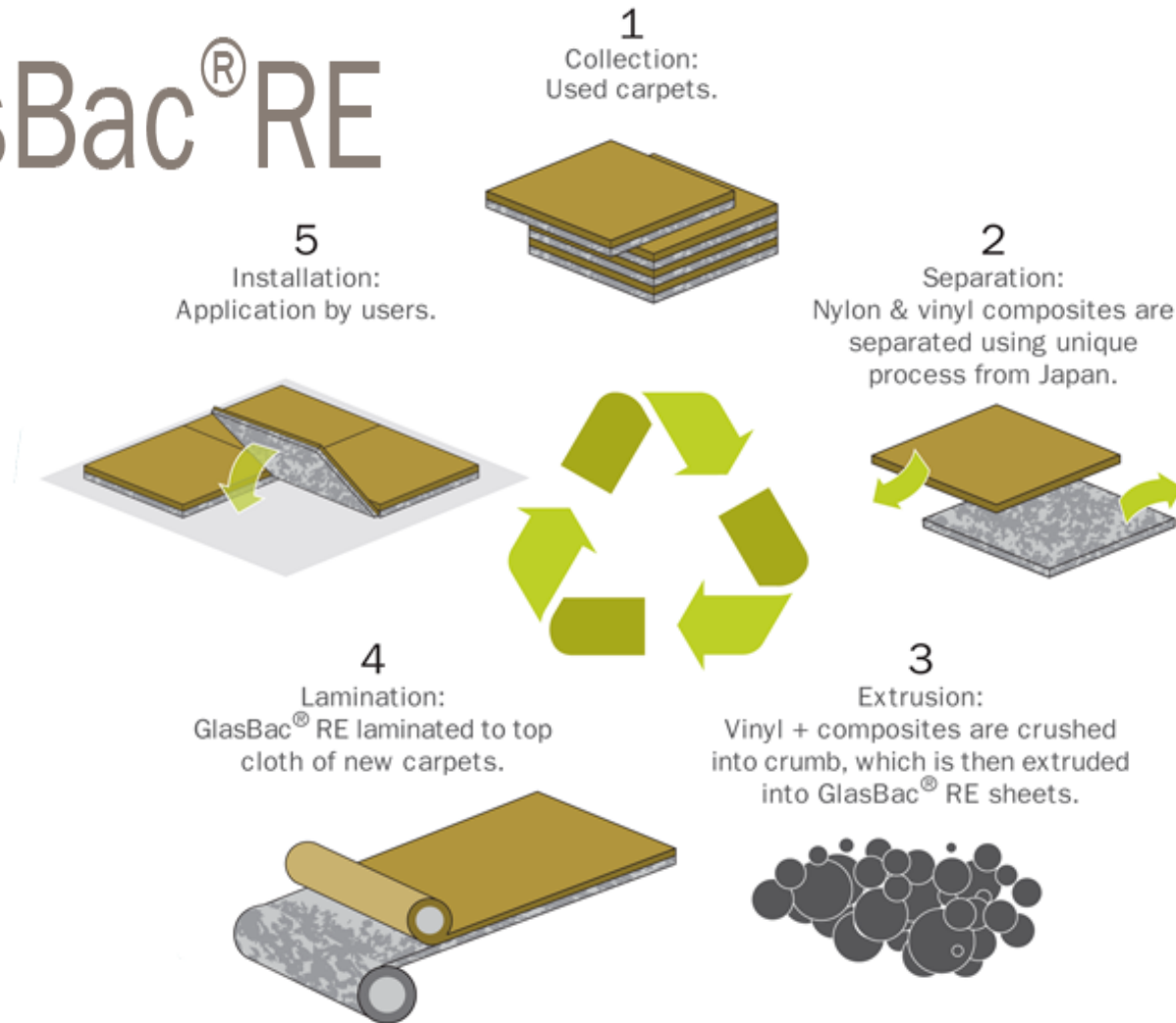


## TURN BACKING INTO BACKING...



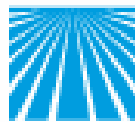
# Recycled Backing in Asia

## GlasBac<sup>®</sup> RE



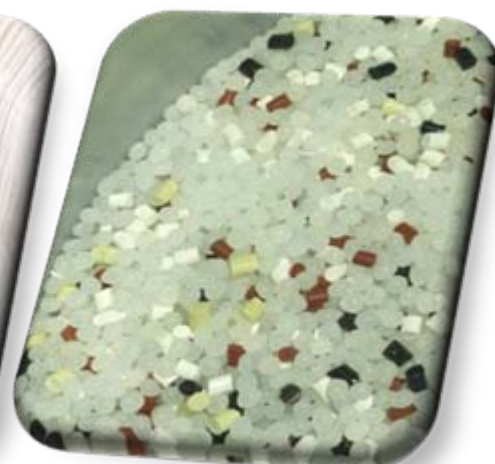


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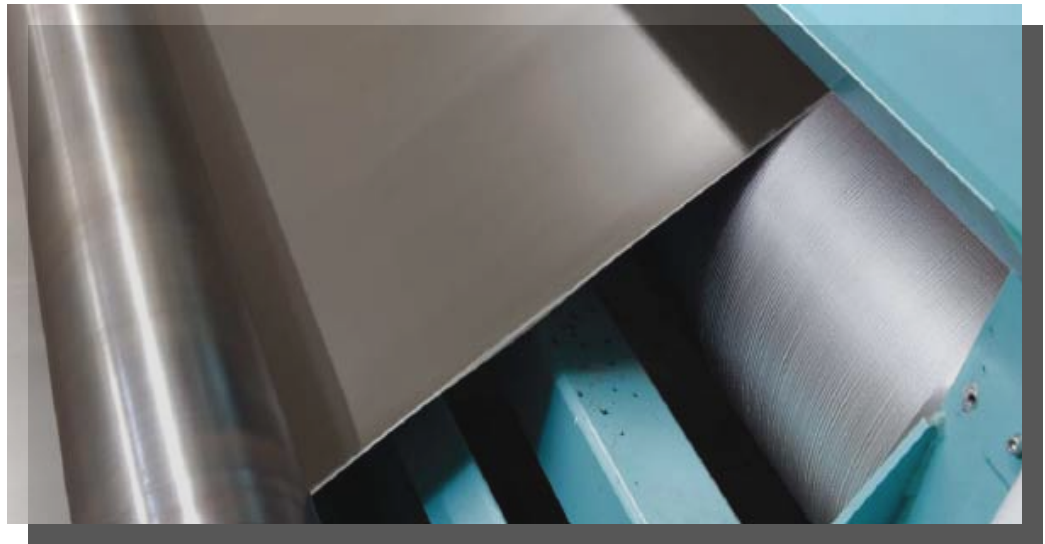
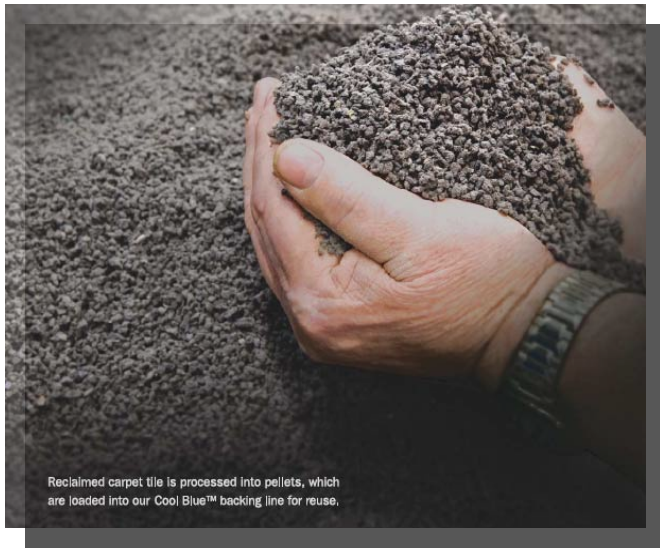


UNIVERSAL  
FIBERS

TURN FIBRE INTO FIBRE...



Interface **FLOR**



# TO BE SUSTAINABLE – WE MUST STOP USING OIL



*Interface***FLOR**







## **LEED NC categories;**

- 1. Reduced heat absorption**
- 2. Landscaping**
- 3. Air Conditioning**
- 4. Recycling**
- 5. Construction waste management**
- 6. Recycled construction materials**
- 7. Locally sourced materials**



**INTERFACEFLOR THAILAND Factory Extension – LEED NC certified**

## **What Did We Achieve?**

- **The first LEED-NC Accredited facility in Thailand**
- **A facility that is constructed to best practice green building standards**
- **Lower environmental footprint building**
- **Lower energy and utility costs**
- **Good working environment for our employees**
- **A building we can be proud of!**



# LEED CERTIFIED BUILDINGS – INTERFACEFLOR ASIA

## InterfaceFLOR Thailand Plant First LEED New Construction in Thailand



## InterfaceFLOR Shanghai Showroom First LEED Commercial Interiors Gold Rating in China



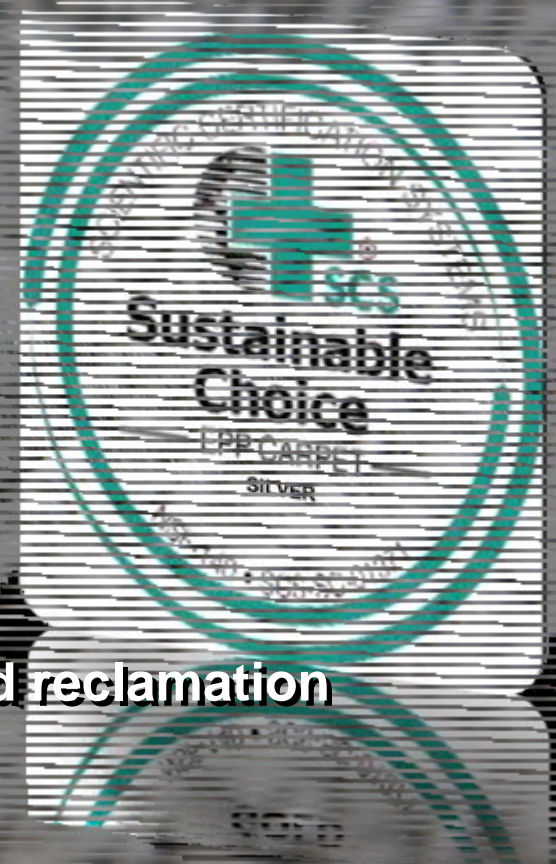




# NSF 140, SCS Sustainable Choice

## Sustainable Carpet Assessment Standard

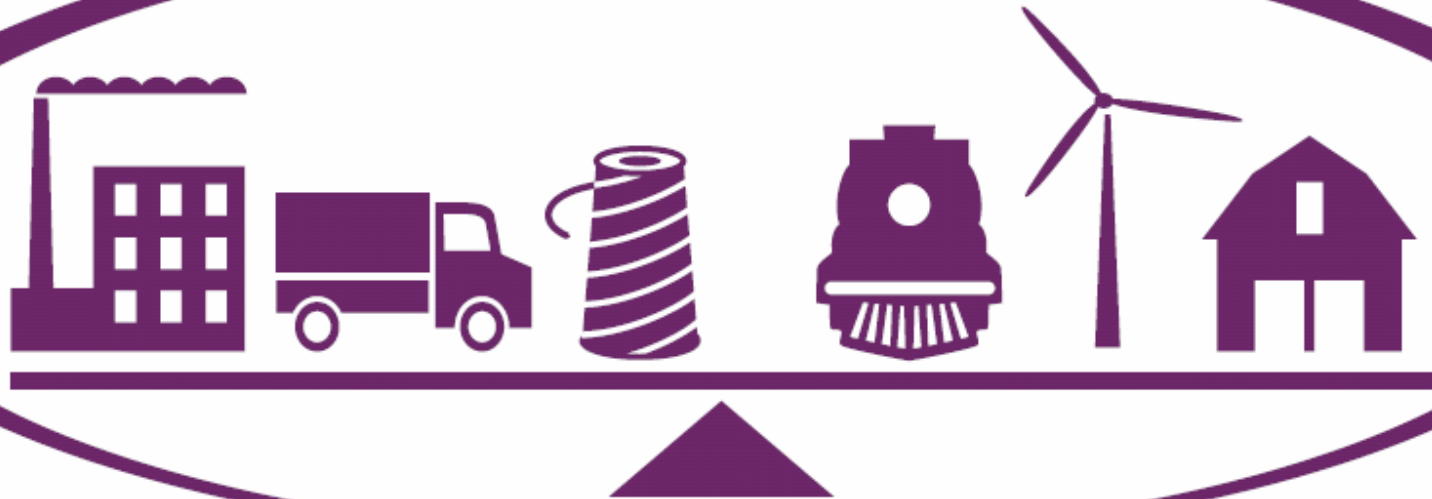
- Highest consensus standard on sustainable carpet
- Independent 3<sup>rd</sup> party certification:
  1. Reducing pollutants and energy use
  2. Renewable energy
  3. Recycled content and bio-based materials
  4. Corporate wide environmental and social responsibility commitment
  5. Product performance, durability, reuse and reclamation



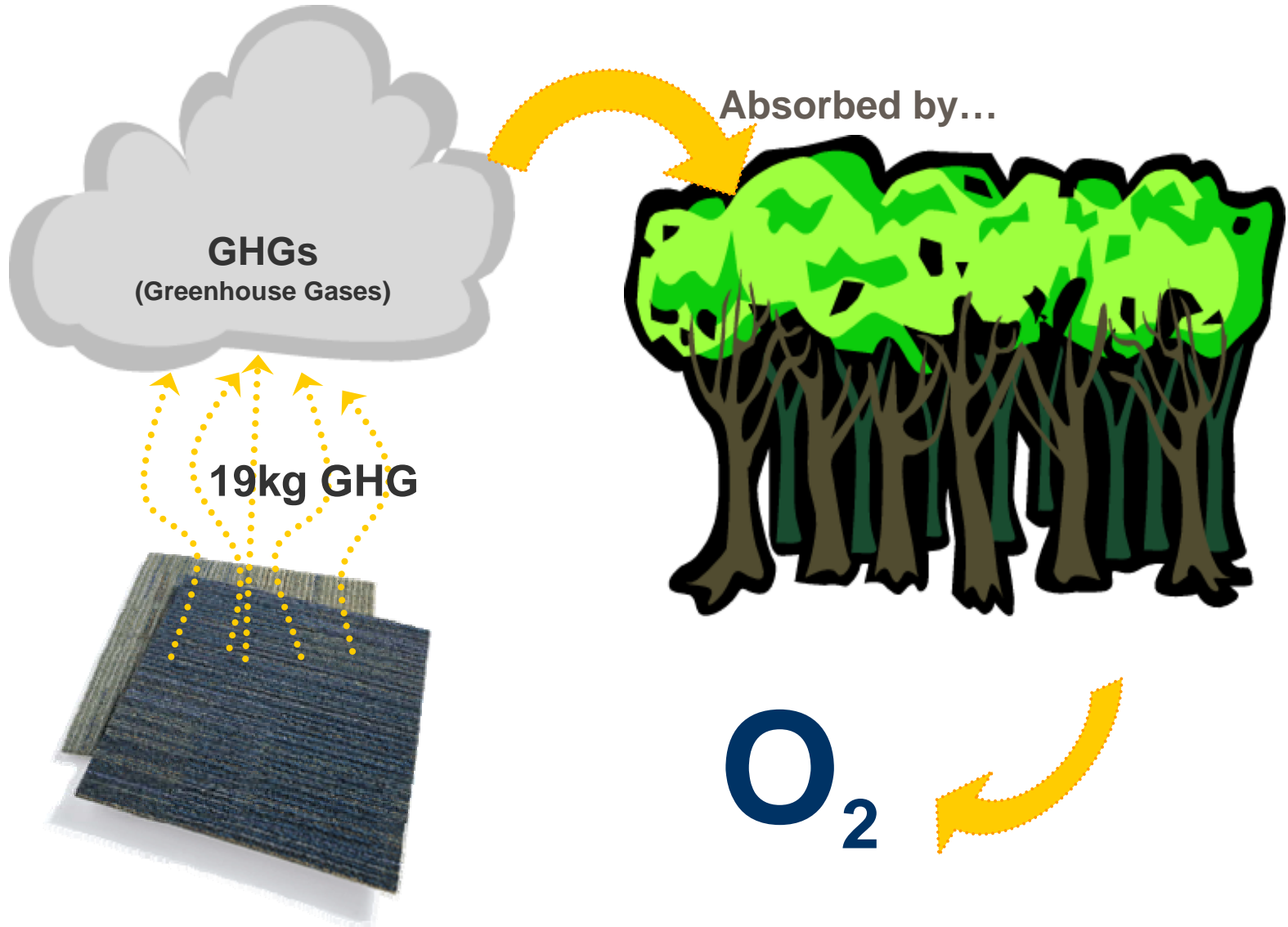


# COOL CARPET

BALANCING THE SCALES: EMISSIONS = CREDITS



# HOW COOL CARPET™ WORKS?





# Cool Carpet™



## VERIFIED

INTERFACE COOL CARPET Program  
Modeling and off-setting of  
carpet life cycle GHG emissions  
[www.sgs.com/climatechange](http://www.sgs.com/climatechange)

Purchase any InterfaceFLOR  
i2 product with Cool  
Carpet Option

Receive certification

Congratulations!

InterfaceFLOR®

Cool Carpet™ InterfaceFLOR® would like to thank

**INTERFACE HEUGA (S) PTE LTD**

Cool Carpet™

*This certificate is to acknowledge that 0000 square metres of  
Cool Carpet® from InterfaceFLOR® are installed in this facility.*

*As a result, 0000 tonnes of certified carbon dioxide credits have been permanently  
retired, representing the total life-cycle impact of this purchase.*

**Rob Coombs**  
President  
Interface Asia Pacific



This certificate is issued by INTERFACE, INC. The design awarded license was based upon information provided by  
Interface. Agreement dated 1st September 2010 entered into by and between INTERFACE, INC. and SGS Ltd.  
Credits are valid for the time of the license only as indicated above. The scope and conditions available in the  
license at 3000 Peachtree Road, Suite 2000, Atlanta, Georgia 30309, USA.



Interface Zero  
Our products contribute  
very little to the company's  
carbon footprint as the company  
is 100% green.

**InterfaceFLOR®**



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by the year 2020.



*Cool CO<sub>2</sub>mmute™*

**Interface Associates**  
**Making a difference for the environment**

***Interface*FLOR®**



## **SUSTAINABILITY: Grass Roots Lessons from Interface Thailand**

- Measure and understand the full impact of your product / service
- Engage Your Employees
- Get Started
- Focus Internally First - Change things you control
- Go beyond compliance, seek out best practice
- Set stretch targets
- Do well by doing good – sustainable activity can be good for business
- “If Interface can do it, anybody can and if anybody can, everybody can” Ray C Anderson





**‘DOING WELL BY DOING GOOD’**

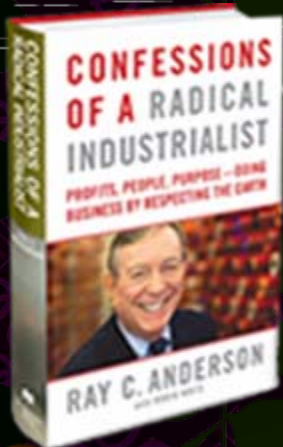




# TIME FOR CHANGE

Find out more....

At the bookstore;



Confessions of a Radical Industrialist

Ray C. Anderson

On the internet;

[www.interfaceflor.com](http://www.interfaceflor.com)

[www.missionzero.org](http://www.missionzero.org)

[www.rayanderson.com](http://www.rayanderson.com)

**mission**



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InterfaceFLOR®