

Using LCA to Develop Climate Neutral Products, a practical example

*Connie Hensler &
Interface, Inc*

*John Jewell
PE Americas*

LCA IX

September 2009



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

Agenda

- *Who is PE International?*
- *Who is Interface?*
- *What is Cool Carpet™?*
- *LCA for multiple products*
- *Paramaterization of models*
- *Grouping*
- *Carbon offsets and Verification*



PE INTERNATIONAL



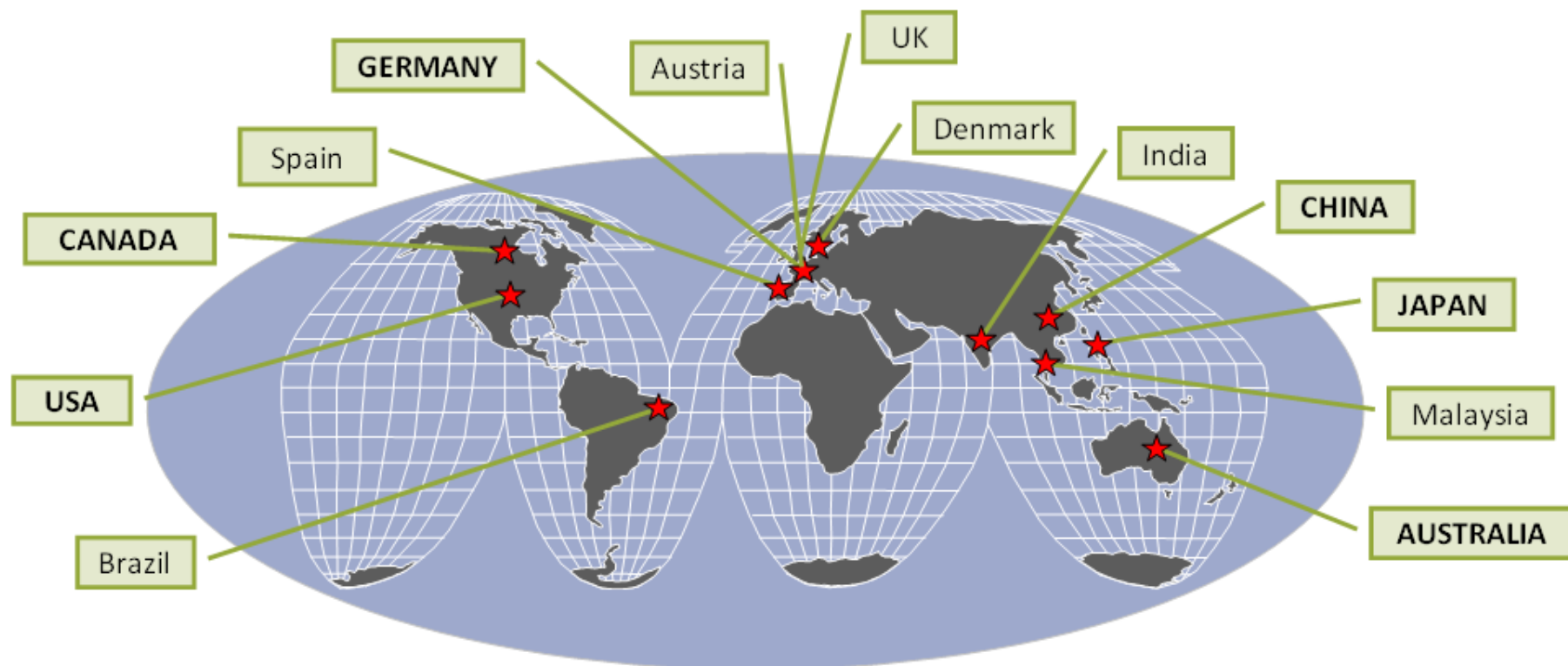
In 2006, after collaborating for more than a decade, two global leaders in sustainability, Five Winds International and PE International, joined forces to provide to the American market their unrivaled expertise designed to help global businesses meet the growing demand for excellence in the environmental performance of materials, products and processes.



PE AMERICAS

A joint venture of Five Winds and PE

PE Americas, based in Boston, MA, is now able to deploy in America the expertise and experience of more than 80 PE International and Five Winds sustainability experts located across North America, Europe, Asia and Australia.



Five Winds International founded in 1998

- Technical staff members: 20+
- Locations: Boulder, Miami, Chicago
Ottawa, Philadelphia, Toronto, Tübingen

PE International founded 1991

- Full-time technical staff members: 50+
- Headquarters: Stuttgart, Germany
- Locations: Australia, Malaysia, Japan, China, India,
UK, Denmark, Austria

Interface Brands

Interface **FLOR**®



FLOR™

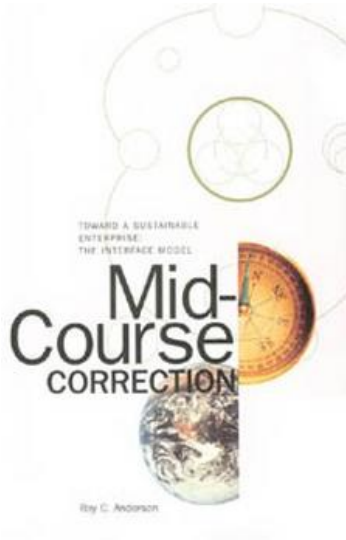


BENTLEY PRINCE STREET®

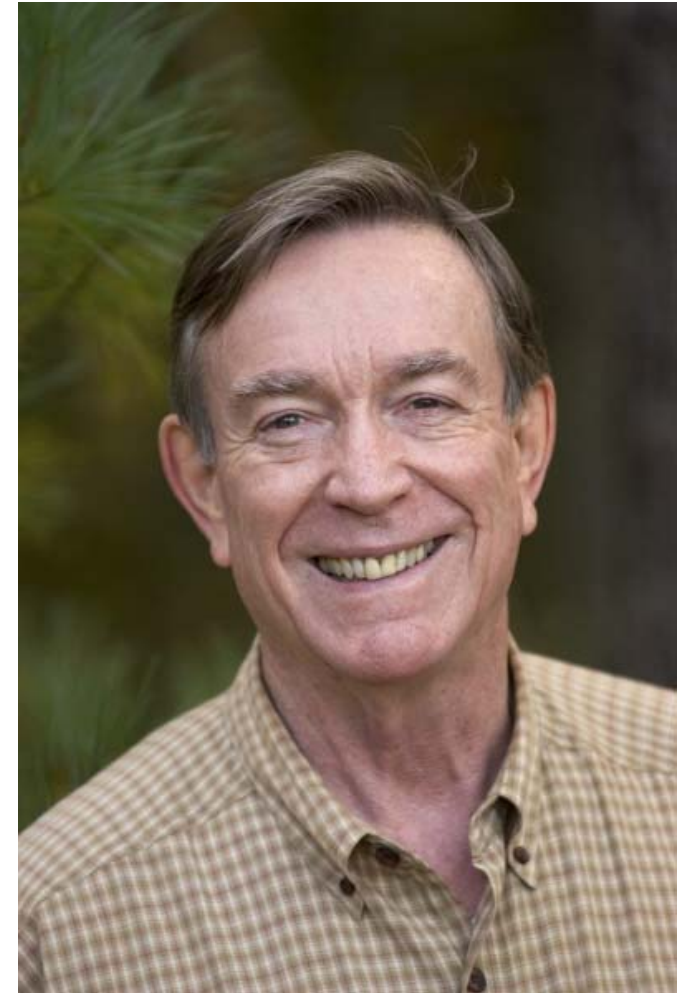
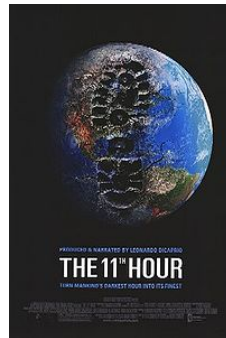


Ray Anderson

Chairman and Founder of Interface



so right so smart
narrated by **Daryl Hannah**



- *President's Council on Sustainable Development*
- *Mitchell prize for Sustainable Development*

Mission Zero



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Cool Carpet

COOL CARPET™ A CLIMATE NEUTRAL OPTION



SGS Verified: Interface Cool Carpet™ Program Modeling and off-setting the life cycle greenhouse gas emissions of carpet.

SGS successfully verified **Interface's Cool Carpet program** including the modeling of **greenhouse gas (GHG) emissions** associated with the full life cycle of its carpet, and then off-setting those emissions through the retirement of an equivalent number of verified emission reduction credits.



VERIFIED

INTERFACE COOL CARPET Program
Modeling and off-setting of
carpet life cycle GHG emissions
www.sgs.com/climatechange

Cool Carpet

Thousands of different products, hundreds of different product categories



Cool Carpet

Thousands of different products, hundreds of different product categories



Cool Carpet

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Cool Carpet

Thousands of different products, hundreds of different product categories

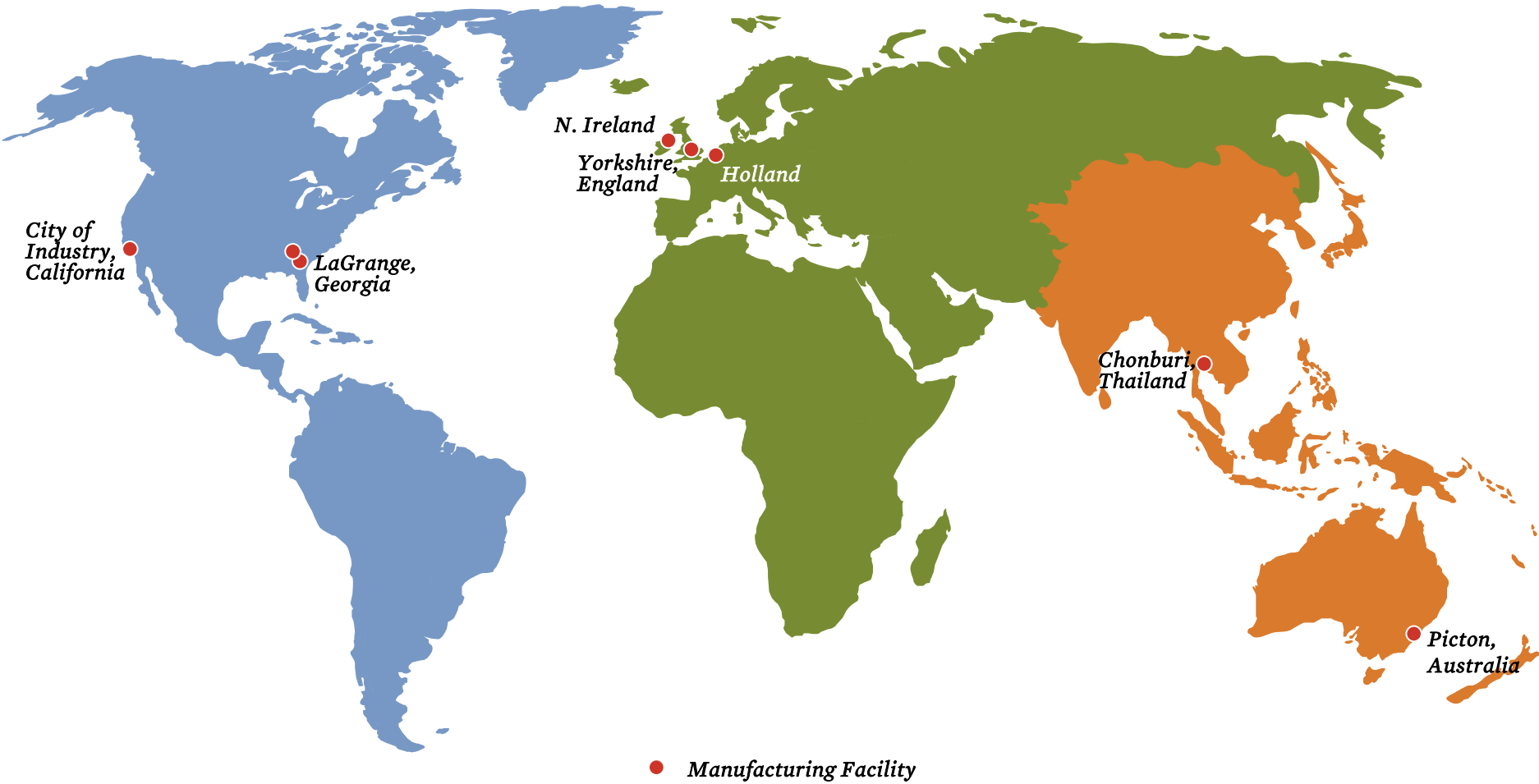


Cool Carpet

Thousands of different products, hundreds of different product categories

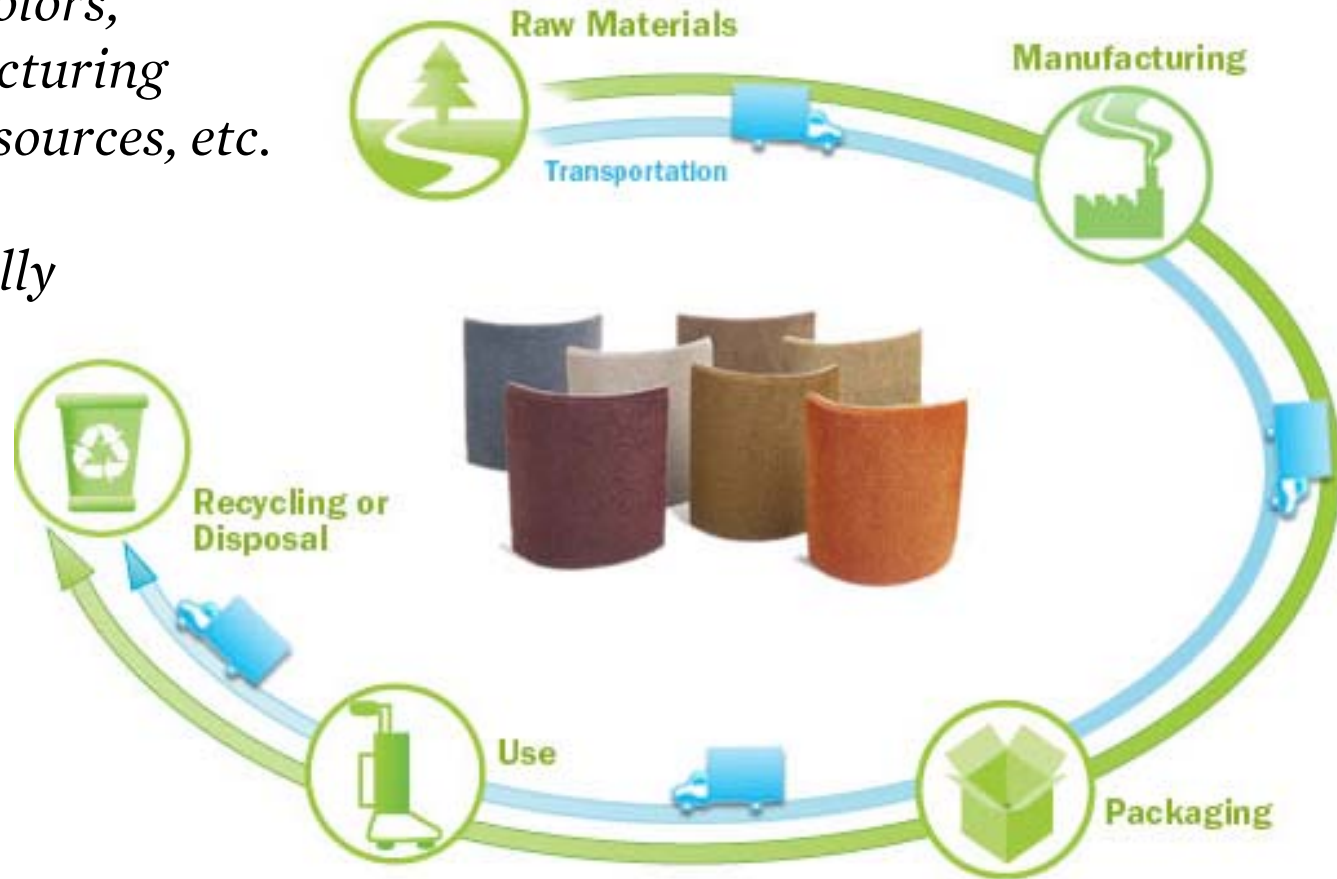


Eight Manufacturing Locations

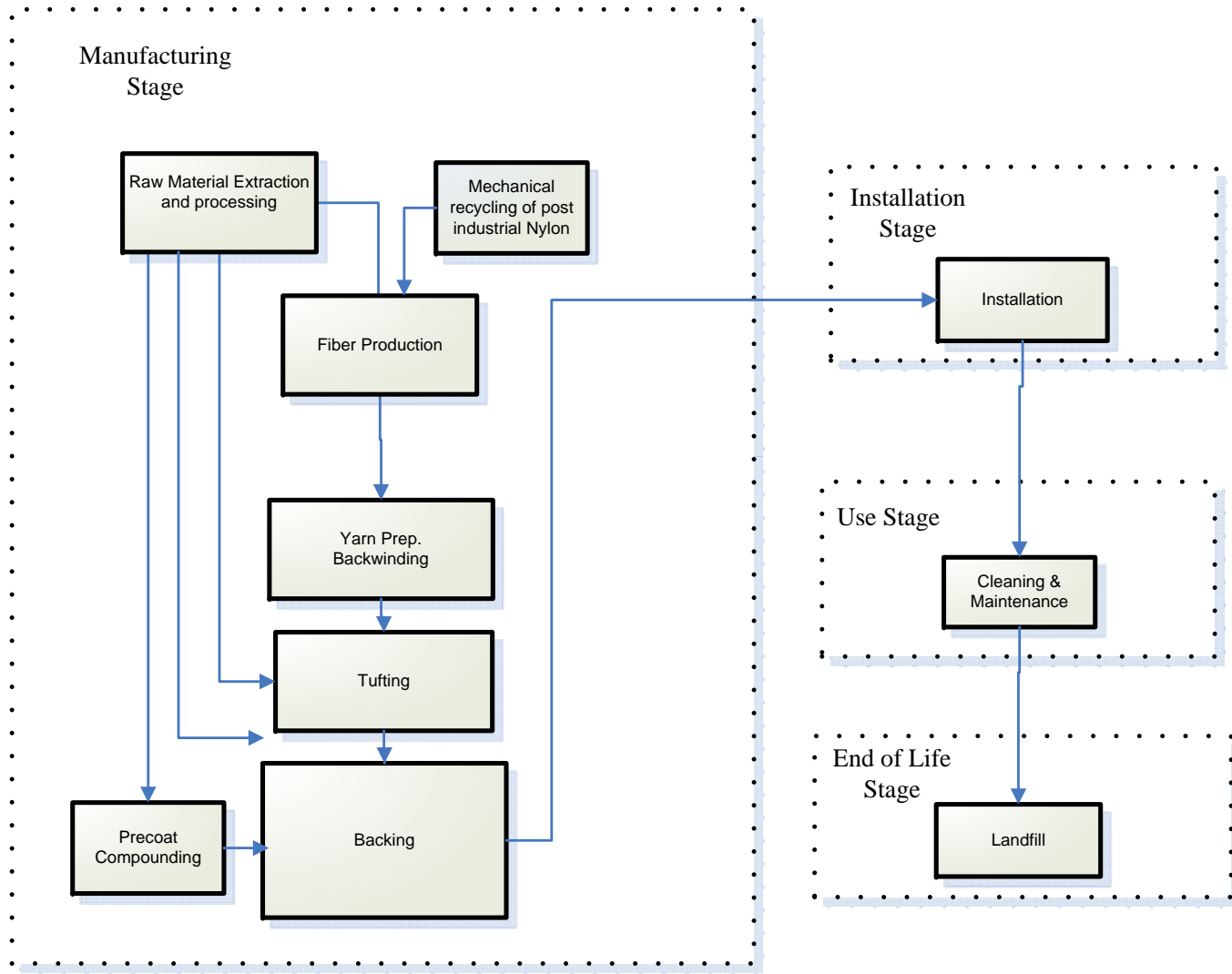


Life Cycle Assessments

- *Hundred's of individual LCAs*
- *Different styles, colors, backings, manufacturing locations, energy sources, etc.*
- *Completed annually*



Life Cycle Stages



Parameters to vary product construction

Fiber Type

- *Nylon 6*
- *Nylon 6,6*
- *Recycled Fiber*
- *Polyester*

Backing Type

- *Vinyl*
- *Recycled Vinyl*
- *Bitumen + Foam*
- *Urethane*



Material Weights

- *Fiber*
- *Coating*
- *Backing*
- *Packaging*



End Of Life

- *Landfill*
- *Internal Recycling*
- *External Recycling*
- *Waste to Energy*

Installation Style

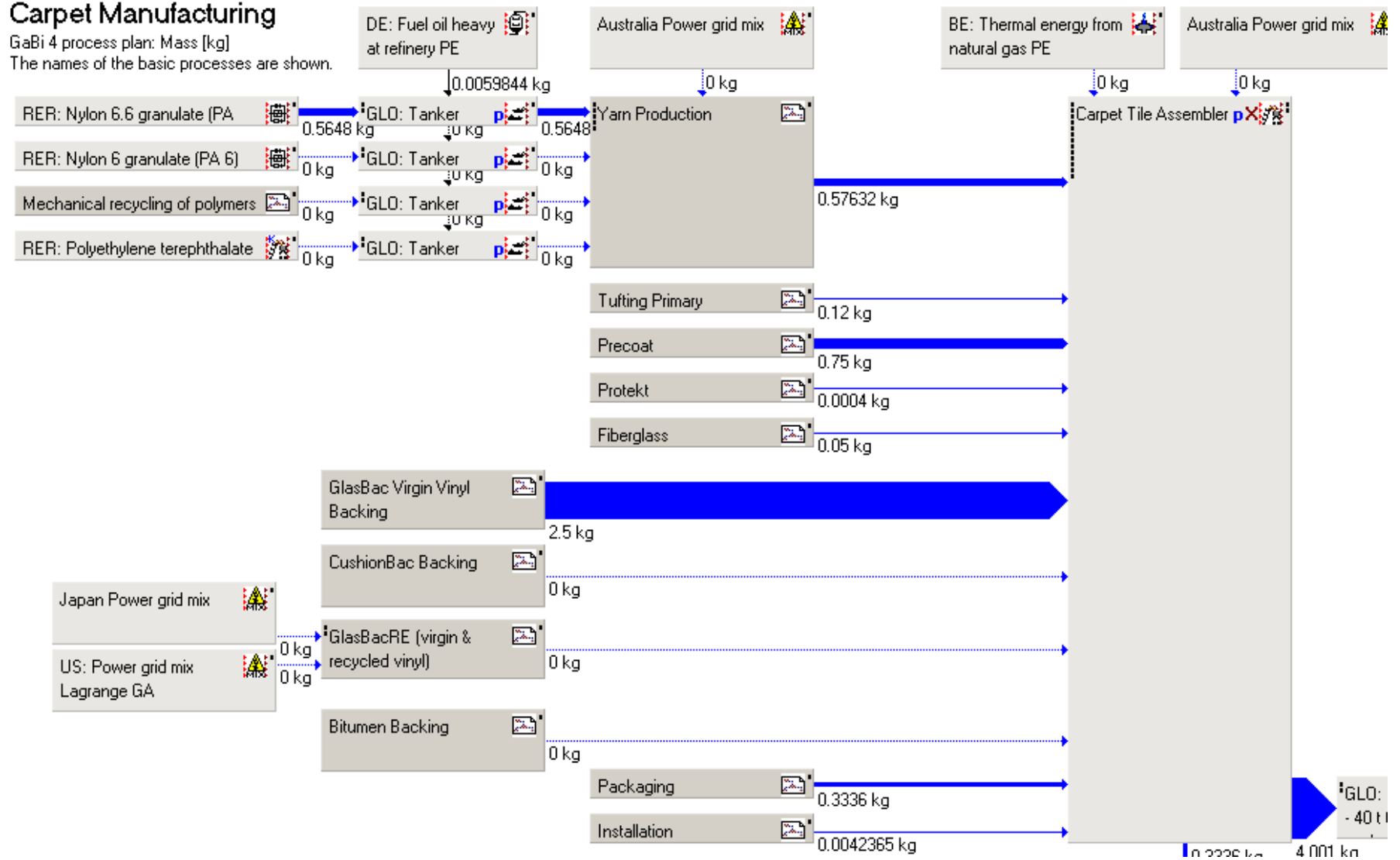
- *Modular (Tile)*
- *Broadloom*

Easy Results Sorting with GaBi 'Groupings'

Carpet Manufacturing

GaBi 4 process plan: Mass [kg]

The names of the basic processes are shown.

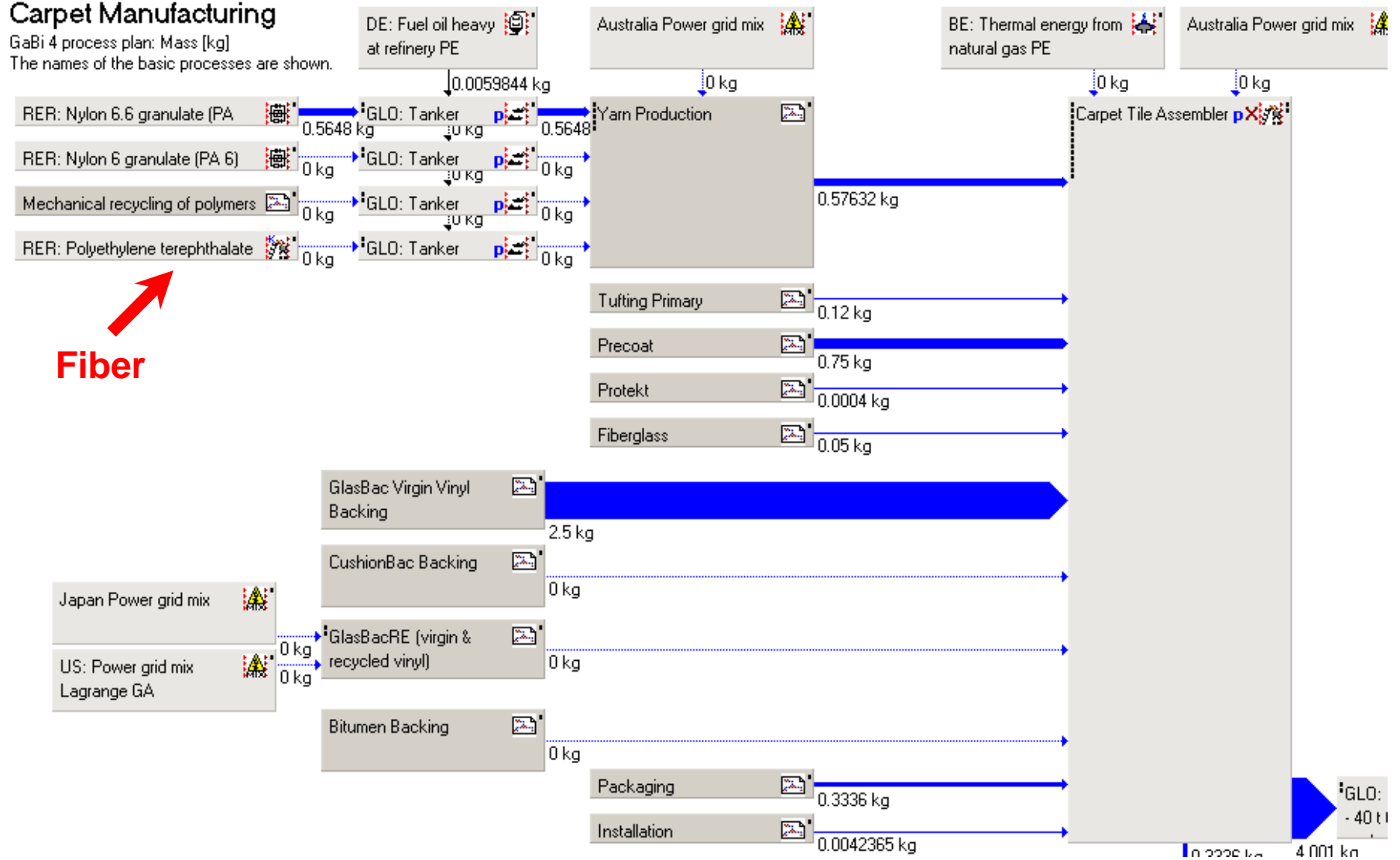


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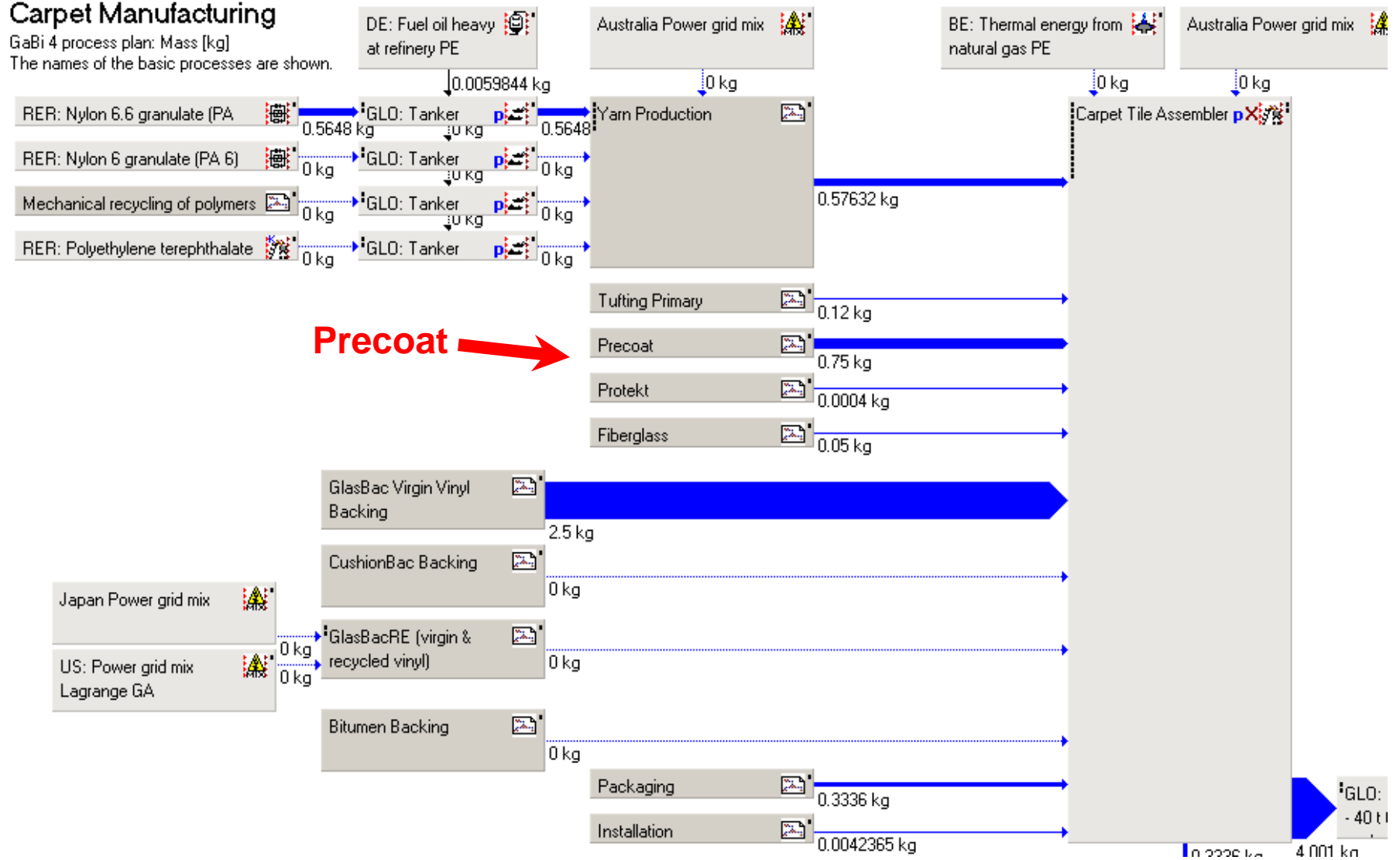
Fiber

Easy Results Sorting with GaBi 'Groupings'

Carpet Manufacturing

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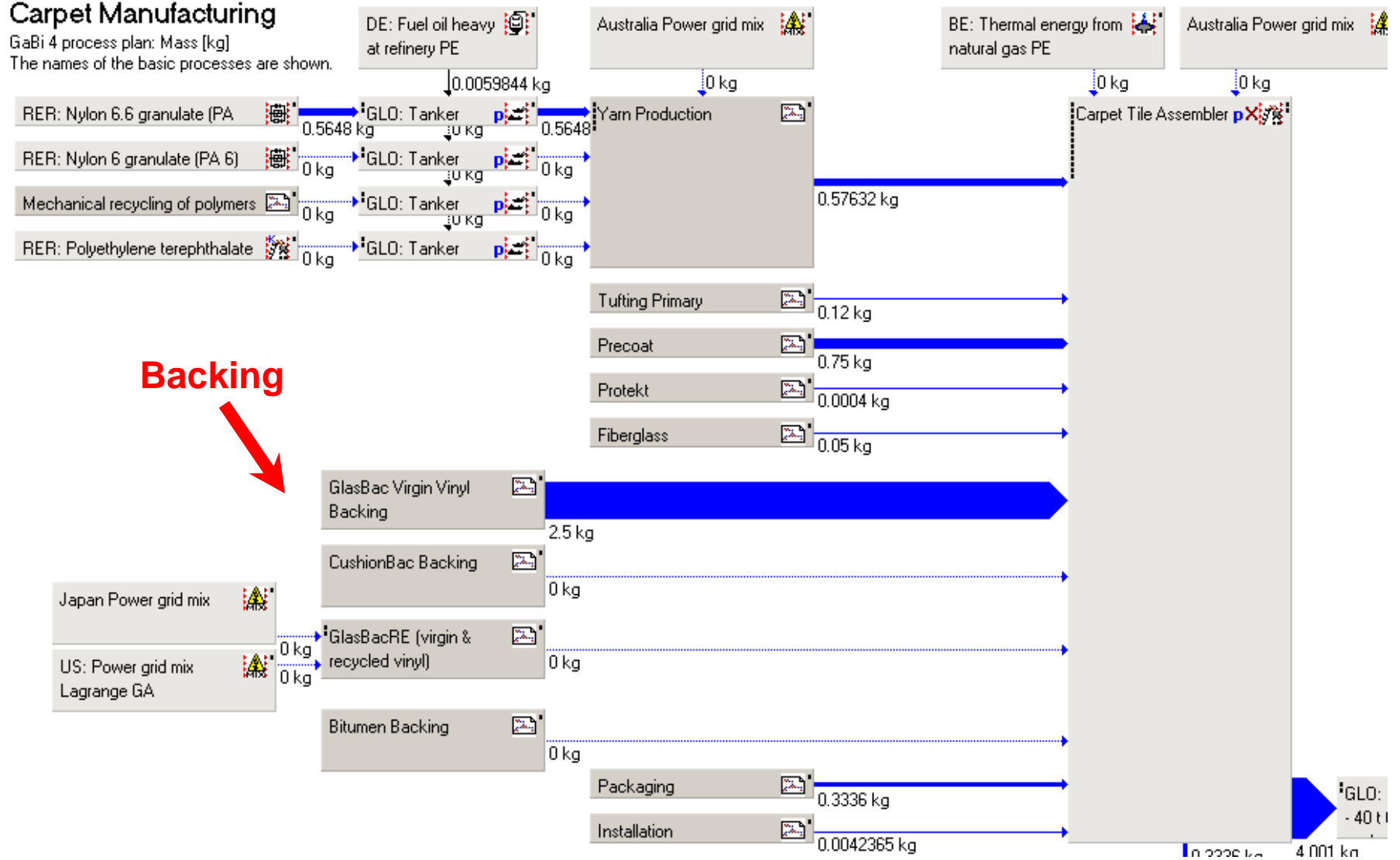


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Backings

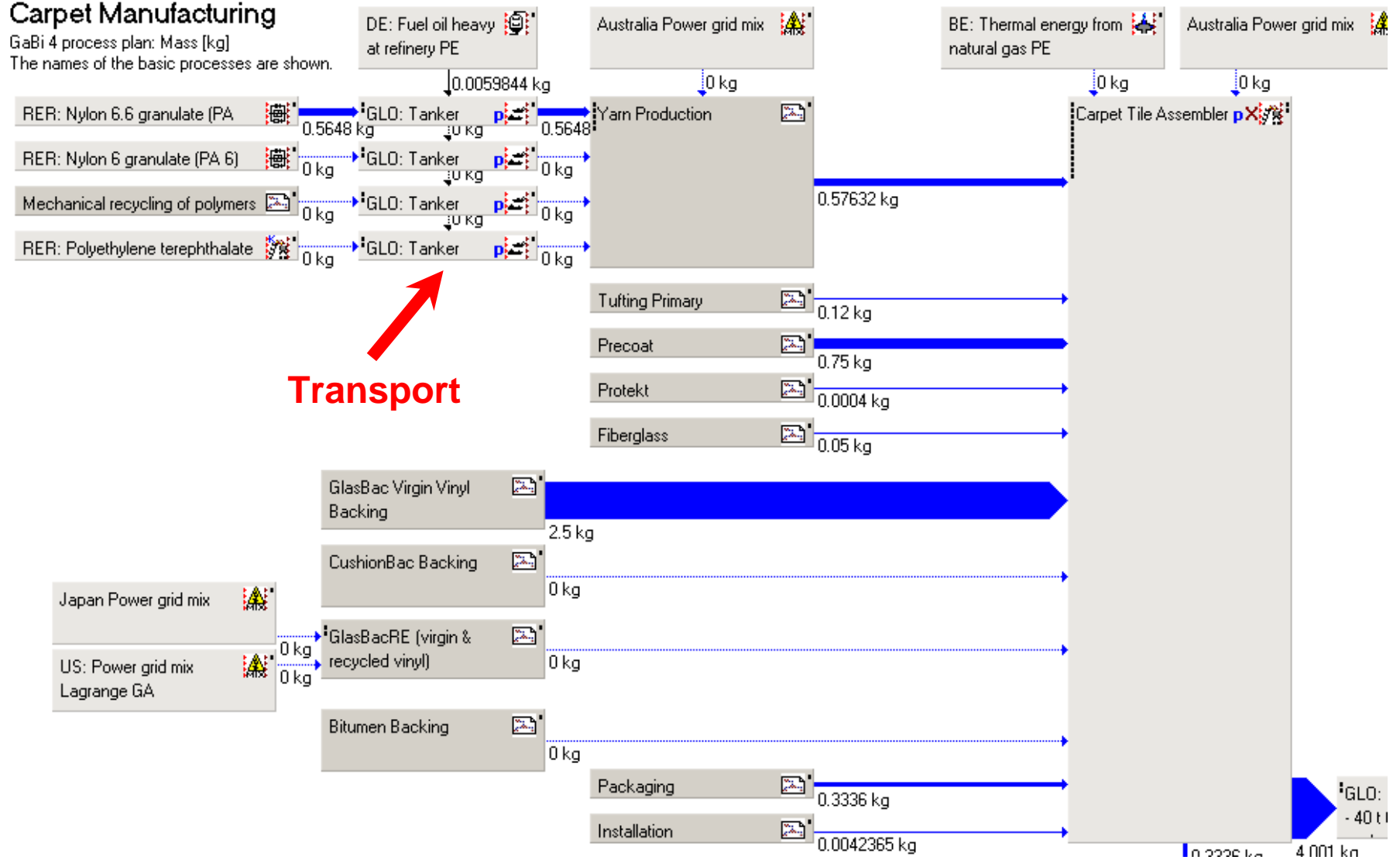


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Transport

2007 GHG Impacts of Product Mix by Component

(lb CO₂/yd²)

	Component							Manuf. Energy	Total
	Fiber	Precoat	Backing	Other Matls	Transport	Use & Maint	Disposal		
US California	18.27	1.65	2.42	1.63	1.25	6.54	0.55	4.29	36.61
US Georgia	12.07	3.70	5.01	1.30	0.56	6.54	0.69	1.89	31.78
Canada	12.60	3.03	5.59	1.06	0.85	6.54	0.68	1.66	32.00
Australia	9.39	3.66	3.27	0.85	0.79	6.87	0.61	2.47	27.90
Thailand	7.98	3.48	4.84	1.27	2.95	6.58	0.69	1.45	29.24

Once the GWPs are determined from the LCA's:

- *The sales weighted average product GWP is calculated*

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- The Voluntary Carbon Standard 2007 (<http://www.v-c-s.org/>)*
- VER+ (<https://www.netinform.de/GW/files/pdf/VER+%20GHG%2030.pdf>)*
- CDM- VER (Clean Development Mechanism- Verified Emission Reduction) (<http://unfccc.int/2860.php>)*
- The Gold Standard (<http://www.cdmgoldstandard.org/>)*
- Vintage no greater than one year*

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- *The sales weighted average product GWP is calculated*
- *The verified offsets are purchased and retired*
- *The program is third party verified*
- *This is done annually to keep the current products carbon neutral*