



## Statement of Verification

BREG EN EPD No: 000780

Issue: 01

This is to verify that the Environmental Product Declaration provided by:

### Jacaranda Carpets Limited

are in accordance with the requirements of:

**EN 15804:2012+A2:2019**

and

BRE Global Scheme Document SD207

This declaration is for:

1 m<sup>2</sup> of 100% pure wool carpet with weights from 3.75 to 4.5 kg

### Company Address

Jacaranda Carpets Limited  
1 Cockerel Rise  
Desborough  
Northamptonshire  
NN14 2WE



  
Signed for BRE Global Limited

Hayley Thomson  
Operator

10 April 2026  
Date of this Issue

10 April 2026  
Date of First Issue

09 April 2031  
Expiry Date



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BRE Global Ltd., Garston, Watford WD25 9XX  
T: +44 (0)333 321 8811 F: +44 (0)1923 664603 E: [Enquiries@breglobal.com](mailto:Enquiries@breglobal.com)





# Environmental Product Declaration

EPD Number: 000780

## General Information

EPD Programme Operator	Applicable Product Category Rules
BRE Global Watford, Herts WD25 9XX United Kingdom	BRE Environmental Profiles 2025 Product Category Rules for Type III environmental product declaration of construction products to EN 15804+A2 PN 514 Rev 3.2
Commissioner of LCA study	LCA consultant/Tool
Jacaranda Carpets Limited 1 Cockerel Rise Desborough Northamptonshire NN14 2WE	LCA Consultant: Regina Poveda Tool: BRE LINA A2
Declared/Functional Unit	Applicability/Coverage
1 m <sup>2</sup> of 100% pure wool carpet with weights from 3.75 to 4.5 kg	Other (please specify)Product specific
EPD Type	Background database
Cradle to Gate with Module C and D	Ecoinvent 3.8
Demonstration of Verification	
CEN standard EN 15804 serves as the core PCR <sup>a</sup>	
Independent verification of the declaration and data according to EN ISO 14025:2010 <input checked="" type="checkbox"/> Internal <input type="checkbox"/> External	
(Where appropriate <sup>b</sup> )Third party verifier: Bala Subramanian	
a: Product category rules b: Optional for business-to-business communication; mandatory for business-to-consumer communication (see EN ISO 14025:2010, 9.4)	
Comparability	
Environmental product declarations from different programmes may not be comparable if not compliant with EN 15804:2012+A2:2019. Comparability is further dependent on the specific product category rules, system boundaries and allocations, and background data sources. See Clause 5.3 of EN 15804:2012+A2:2019 for further guidance	



## Information modules covered

Product			Construction		Use stage							End-of-life				Benefits and loads beyond the system boundary
					Related to the building fabric					Related to the building						
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Raw materials supply	Transport	Manufacturing	Transport to site	Construction – Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal	Reuse, Recovery and/or Recycling potential
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Note: Ticks indicate the Information Modules declared.

### Manufacturing site(s)

Jacaranda Carpets Limited

Jacaranda Carpets Limited  
1 Cockerel Rise,  
Desborough,  
Northants,  
NN14 2WE

Jacaranda Carpets  
Panipat, India

### Construction Product:

#### Product Description

The 100% pure wool carpets are used for aesthetic purposes in interiors and claim to provide sound insulation and warmth.

All the carpets are manufactured using the same raw materials and following the same manufacturing process. This EPD describes the environmental impacts of 1 m<sup>2</sup> of 100% pure wool carpet with weights from 3.75 to 4.5 kg/m<sup>2</sup>, distributed from the UK and manufactured in India.



## Technical Information

Property	Carpet designs					
	Chatra	Chennai	Daiya	Desuri	Jaspur	Willingdon
DOP/DOC	1043	1044	1056	1057	1045	1027
DOP/DOC	1043	1044	1056	1057	1045	1027
Texture	Loop pile	Tip-sheared pile	Loop pile	Loop pile	Cut pile	Tip-sheared pile
Broadloom widths	4 & 5 m	4 & 5 m	4 & 5 m	4 & 5 m	4 & 5 m	4 & 5 m
Bespoke	Rugs made to measure	Rugs made to measure	Rugs made to measure	Rugs made to measure	Rugs made to measure	Rugs made to measure
Stocked rugs	-	170x240cm, 200x300cm, 300x400 cm	200x300cm, 300x400cm	200x300cm, 300x400cm	-	170x240cm, 200x300cm, 250x350cm, 300x400cm
Stocked colours	Various	Various	Various	Various	Various	Various
Construction	Handwoven	Handwoven	Handwoven	Handwoven	Handwoven	Handwoven
Pile material	100% pure wool	100% pure wool	100% Undyed wool	100% Undyed wool	100% pure wool	100% pure wool
Backing	PP	PP	Broadloom – PP. Rugs - cotton	Broadloom – PP. Rugs - cotton	PP	Broadloom – PP. Rugs - cotton
Carpet thickness (approx)	15mm	10mm	10mm	13mm	13mm	12mm
Moth guarantee	10 years	10 years	10 years	10 years	10 years	10 years
Stripe direction	-	Across roll	-	-	-	Across roll
Use classification EN1307	Class 23 heavy domestic / 33 heavy contract	Class 23 heavy domestic / 33 heavy contract	Class 33 heavy contract	Class 33 heavy contract	Class 33 heavy contract	Class 33 heavy contract
Comfort rating EN1307	Class 5	Class 5	Class 4	Class 5	Class 5	Class 5
Stairs suitability BS EN ISO 12951			Domestic use	Intensive use		
Stairs suitability EN1963	Intensive use	Not suitable		-	Intensive use	Intensive use
Castor chair suitability	Not recommended	Not recommended	Not recommended	Not recommended	Not recommended	Not recommended
Thermal resistance BS4745	2.74 tog, 0.27 m <sup>2</sup> K/W	1.76 tog, 0.17 m <sup>2</sup> K/W	2.23 tog, 0.22 m <sup>2</sup> K/W	1.86 tog, 0.18 m <sup>2</sup> K/W	2.65 tog, 0.26 m <sup>2</sup> K/W	1.65 tog, 0.16 m <sup>2</sup> K/W
Static electric charge ISO 6356	Anti-static	Anti-static	Anti-static	Anti-static	Anti-static	Anti-static
Colourfastness to light ISO 105 B02	5	6	6	5-6	5-6	6
Colourfastness to rubbing - dry ISO 105 x12	5	4-5	5	5	5	5
Colourfastness to rubbing - wet ISO 105 x12	5	4-5	4-5	5	5	5
Colourfastness to water ISO 105 E01	5	4-5	4-5	4-5	4-5	5
Sensitivity to spilled water BS EN 15115	5	5	5	4-5	4-5	5
Burning behaviour BS EN 13501-1:2002	Class Bfl-s1	Class Bfl-s1	Class Cfl-s1	Class Bfl-s1	Class Cfl-s1	Class Cfl-s1
Weight per m2 in kg	4.25	3.75	3.8	3.8	4.5	3.8

DOP – Declaration of performance

DOC – Declaration of conformity

PP – Polypropylene



Note: Technical information available at [https://jacarandacarpets.com/browse-all/?\\_yarn=wool](https://jacarandacarpets.com/browse-all/?_yarn=wool). For more information, please contact +44 (0)1536 762697.



**Chatra**



**Chennai**



**Daiya**



**Desuri**



**Jaspur**



**Willingdon**

Note: these are all the 100% wool carpets that are listed in the scope within this EPD.



## Main Product Contents

The main product contents percentages were obtained from the manufacturing site in India, since there are no alterations in the product composition once they reach the UK.

The main product contents percentage reflects the recipe for all Jacaranda wool carpets.

### 100% pure Wool carpets

Material/Chemical Input	%
Wool	71.12
PP Backing	1.98
Cotton	3.56
Latex	23.11
Colour	0.02
Moth Repellent	0.21

## Manufacturing Process

Pre-dyed or undyed wool is hand-filled onto bobbins, which connect to the hand-operated warping wheel to fill the cones for the wooden looms. Each wooden loom is operated by hand/foot without the need for electricity. Then, latex is applied with a cotton or PP grid. Rugs are finished with hand-sewn edges.

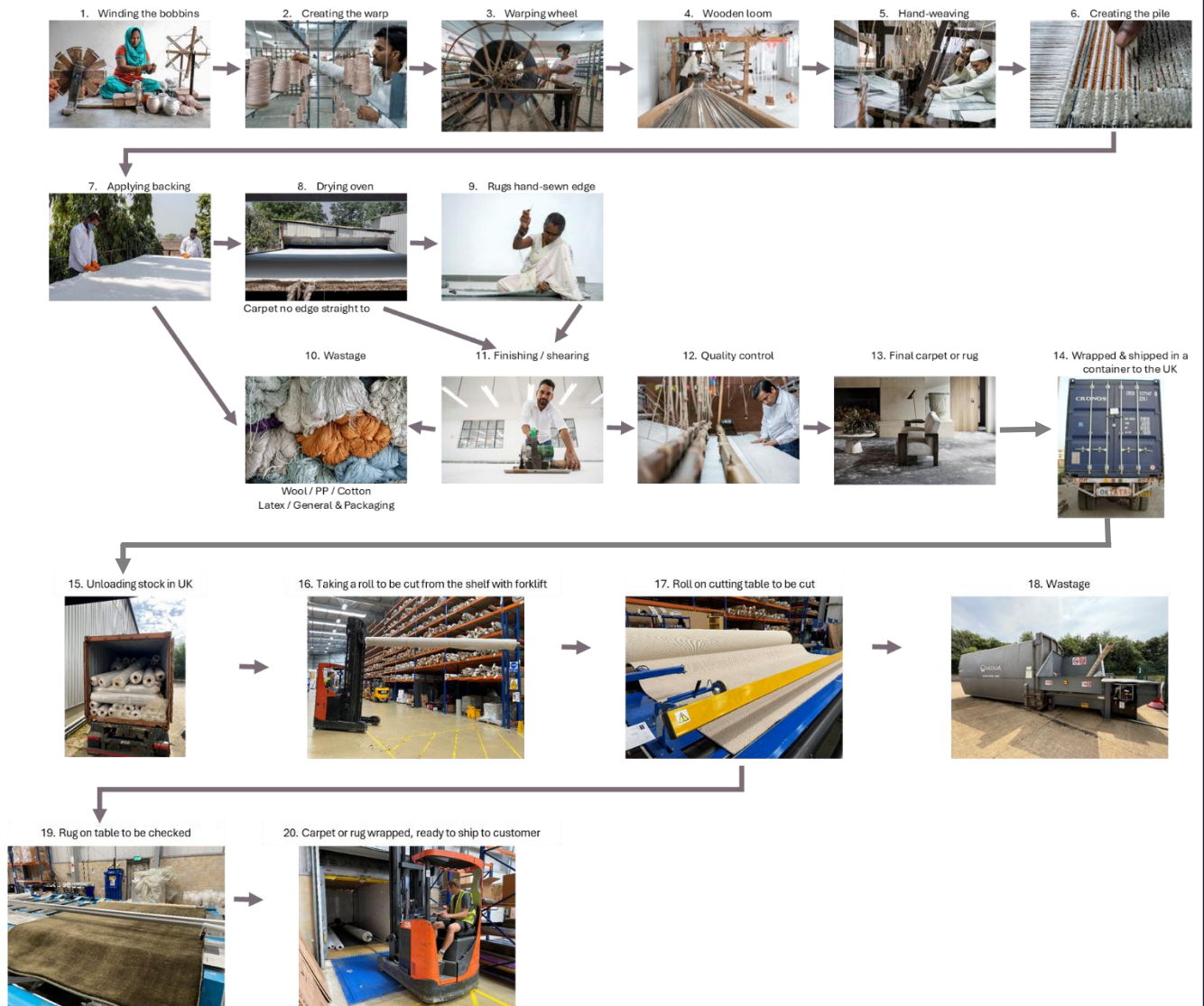
At the India manufacturing site, electricity is used for the normal operation of the factory, and it is only used for production when shearing is required. After applying backing to the carpets, they undergo a drying process. During this process, wood chips are used to produce heat to dry the carpets.

As a result of the final production, the waste, such as wool, polypropylene and cotton are sent to recycling, and the latex is sent to landfill.

Once the final product is packaged, it is transported to the UK manufacturing site, and then it is stored using the same packaging material and cut to comply with the customer's requirements. The carpet waste is sent to incineration, and the cardboard and plastic wrap are sent to recycling. All the waste is handled by a third party. Before the carpet or rug is shipped to the customer, there is a quality control check.

# Process flow diagram

CARPET/RUG PRODUCTION PROCESS CHART





## End of Life

This stage includes the Demolition (C1), Transport (C2), Waste processing (C3) and Disposal (C4) of 1 m<sup>2</sup> of 100% pure wool carpet with weights from 3.75 to 4.5 kg End-of-Life.

The demolition approach employed for the building will differ considerably on a site-by-site basis due to its dependence on various factors, such as construction methodology and local geography. However, when the 100% pure wool reaches its End-of-Life, it will be manually dismantled from the building.

Since the End-of-Life scenario is not yet defined for this specific product, an industrial average scenario has been used to model the LCA analysis. This scenario is based on BRE 2025 PCR PN514 Rev 3.2 and it relates to Floor finish (underlay), textile (recycled). i.e 100% to incineration.

The energy used for removing the components from the final waste are considered to be negligible.



## Life Cycle Assessment Calculation Rules

### Declared / Functional unit description

1 m<sup>2</sup> of 100% pure wool carpet with weights from 3.75 to 4.5 kg

### System boundary

This is a Cradle to Gate with Module C & D, reporting the upstream processing stages A1 to A3, End of Life (C1-C3) and Benefits and Loads beyond the System Boundary (D) in accordance with EN15804:2012+A2:2019 and BRE 2025, Product Category Rules (PN 514 Rev3.2).

The manufacturer LCA covers the upstream manufacturing processes for pure wool carpets produced at Jacaranda's manufacturing site in India.

The UK manufacturing facility LCA includes the transportation of the finished carpets from India to the UK, as well as the operational energy used to reprocess the carpets to meet specific measurement requirements in the UK. Therefore, the scope includes:

- A1 – manufacturing impacts at the Indian facility,
  - A2 – transportation from India to the UK (and other relevant transport),
  - A3 – additional processing at the UK facility.
- C1- C4 includes the End-of-life stages  
Module D – Benefits and loads beyond the system

### Data sources, quality and allocation

Specific primary data derived from the 100% pure wool carpet production process in Jacaranda Carpets based in the manufacturing site in Panipat, India and distributed by the UK facility based on 1 Cockerel Rise, Desborough, Northants, NN14 2WE, have been modelled using BRE LINA A2 and the ecoinvent 3.8 database. In accordance with the requirements of EN 15804:2012+A2:2019, the most current data available has been used. The manufacturer-specific data from Jacaranda Carpets India and UK sites covers a period of one year from 01 March 2023 to 29 February 2024.

Jacaranda Carpets UK receives all the varieties of 100% pure wool carpets from the same Jacaranda's manufacturing site based in Panipat, India, which produces carpets for Europe and the UK. Upon arrival in the UK, carpets are stored in the UK warehouse distributor centre in their original packaging. When a customer places an order, each carpet is sized and repackaged to meet the customer's requirements. The 100% pure wool carpet waste is sent to incineration, and the cardboard packaging and plastic wrap are recycled. Waste disposal is overseen by a third-party management company; although this contract commenced in April 2023, the estimated packaging waste generated is based on the same treatment practices applied by the third-party facility.

Other products are produced in India and UK manufacturing sites, so allocation for India and UK site activities was applied to site values for ancillary, packaging, energy, water, waste and wastewater based on production by m<sup>2</sup>. Therefore, the allocation percentages vary according to each carpet, and the packaging non-production waste from India only considers what is consumed in the UK.

There is no uplift in raw material inputs, as they remain within tolerance for the India and UK manufacturing sites.

Secondary data has been obtained for all other upstream and downstream processes beyond the manufacturer's control (i.e., raw material production) from the ecoinvent 3.8 database. All ecoinvent datasets are complete within the context used and conform to the system boundary and the criteria for the exclusion of inputs and outputs, according to the requirements specified in EN 15804:2012+A2:2019.

Since there is no available data for wool products in Ecoinvent 3.8 that accounts for impacts after the shearing of the wool from the sheep, i.e. scouring, drying and carding. The dataset for Sheep wool India was created to add these additional impacts. The basis for this dataset is the Global Market Yarn Cotton. Instead



of including the Cotton data, it includes the values for sheep, considering ring and end spinning, knitting and weaving, as well as the electricity used to produce the wool. The transport distance is obtained from actual figures from Jacaranda manufacturing site in India. As per the dataset for sheep' wool UK, it has been obtained from the LCA individual results of product stage (A1-A3) from Sheep Wool India.

Unspecific organic pigment is used as a proxy for Azo Dyes, and Perigen® Defence Residual Insecticide is used as a proxy for moth repellent.

ISO14044 guidance. Quality Level	Geographical representativeness	Technical representativeness	Time representativeness
Good	Average data from a larger area in which the area under study is included	Data from processes and products under study (with similar technology). Evidence of deviations in the state of technology, e.g. different by-products.	
Very good			Less than 3 years difference between the reference year according to the documentation, and the time period for which data are representative

Data from Indian and UK datasets have been selected from the ecoinvent LCI for this LCA. The quality level of geographical and technical representativeness is therefore Good. The quality level of time representativeness is Very Good as the background LCI datasets are based on ecoinvent v3.8 which was compiled in 2021. Therefore, there is less than 3 years between the ecoinvent LCI reference year and the period for which the LCA was undertaken.

For the factory in India, India North market for electricity, medium voltage was used with emissions factor of 1.26 kgCO<sub>2</sub>e/kWh and Rest of the World Heat production from wood chips with emissions factor of 0.07 kgCO<sub>2</sub>e/kWh. Renewable energy solar India Haryana with emissions factor of 0.06 kgCO<sub>2</sub>e/kWh

As per the factory in UK, the GWP carbon footprint for using 1 kWh of electricity, GB (2022) kWh is 0.239 in kgCO<sub>2</sub>e/kWh. UK Natural gas data (at industrial furnace) was used with an emissions factor of 0.232 kgCO<sub>2</sub>e/kWh, and renewable energy solar UK with an emissions factor of 0.06 kgCO<sub>2</sub>e/kWh.

### Cut-off criteria

All inputs and outputs have been included for the India manufacturing site and all raw materials, ancillary, packaging, energy and fuels, water consumption and waste; except emission to air, water and soil. As per the UK manufacturing site the same principle applies, all raw materials, ancillary, packaging, energy & fuels, water and wastes are included; except emission to air, water and soil.



## LCA Results - 1 m<sup>2</sup> of 100% pure wool Chatra carpet with weight of 4.25 kg.

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts			GWP-total	GWP-fossil	GWP-biogenic	GWP-luluc	ODP	AP	EP-freshwater
			kg CO <sub>2</sub> eq	kg CO <sub>2</sub> eq	kg CO <sub>2</sub> eq	kg CO <sub>2</sub> eq	kg CFC11 eq	mol H <sup>+</sup> eq	kg (PO <sub>4</sub> ) <sup>3-</sup> eq
Product stage	Raw material supply	A1	6.47E+02	2.77E+02	2.97E+02	7.31E+01	1.33E-05	1.72E+01	2.03E-01
	Transport	A2	5.37E+00	5.36E+00	4.61E-03	2.12E-03	1.24E-06	2.21E-02	3.48E-04
	Manufacturing	A3	6.94E-01	5.29E-01	1.63E-01	7.05E-04	3.56E-08	1.66E-03	7.58E-05
	Total (Consumption grid)	A1-3	6.53E+02	2.83E+02	2.97E+02	7.31E+01	1.46E-05	1.72E+01	2.03E-01
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	3.54E-02	3.53E-02	3.01E-05	1.39E-05	8.17E-09	1.43E-04	2.27E-06
	Waste processing	C3	7.18E+00	3.33E+00	3.85E+00	1.40E-04	6.20E-08	1.17E-02	6.66E-05
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.77E+00	-1.74E+00	-2.54E-02	-2.02E-03	-1.20E-07	-1.01E-02	-1.02E-03

GWP-total = Global warming potential, total;  
 GWP-fossil = Global warming potential, fossil;  
 GWP-biogenic = Global warming potential, biogenic;  
 GWP-luluc = Global warming potential, land use and land use change;

ODP = Depletion potential of the stratospheric ozone layer;  
 AP = Acidification potential, accumulated exceedance; and  
 EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment



## LCA Results Chatra (continued).

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts			EP-marine	EP-terrestrial	POCP	ADP-mineral & metal	ADP-fossil	WDP	PM
			kg N eq	mol N eq	kg NMVOC eq	kg Sb eq	MJ, net calorific value	m <sup>3</sup> world eq deprived	disease incidence
Product stage	Raw material supply	A1	3.08E+00	7.53E+01	9.32E-01	1.67E-03	2.03E+03	3.18E+02	1.23E-04
	Transport	A2	6.63E-03	7.25E-02	2.22E-02	1.90E-05	8.11E+01	3.66E-01	4.63E-07
	Manufacturing	A3	8.63E-04	6.34E-03	1.63E-03	1.96E-06	7.91E+00	1.05E-01	1.62E-08
	Total (Consumption grid)	A1-3	3.09E+00	7.54E+01	9.56E-01	1.69E-03	2.12E+03	3.19E+02	1.24E-04
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	4.32E-05	4.72E-04	1.44E-04	1.23E-07	5.34E-01	2.40E-03	3.05E-09
	Waste processing	C3	8.57E-03	5.79E-02	1.38E-02	1.60E-06	6.69E+00	2.56E-01	4.19E-08
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.49E-03	-1.46E-02	-4.08E-03	-1.08E-06	-2.82E+01	-7.72E-01	-6.73E-08

EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment;  
 EP-terrestrial = Eutrophication potential, accumulated exceedance;  
 POCP = Formation potential of tropospheric ozone;  
 ADP-mineral&metals = Abiotic depletion potential for non-fossil resources;

ADP-fossil = Depletion potential of the stratospheric ozone layer;  
 WDP = Water (user) deprivation potential, deprivation-weighted water consumption; and  
 PM = Particulate matter.



## LCA Results Chatra (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

			Parameters describing environmental impacts				
			IRP	ETP-fw	HTP-c	HTP-nc	SQP
			kBq U <sup>235</sup> eq	CTUe	CTUh	CTUh	dimensionless
Product stage	Raw material supply	A1	9.50E+00	1.28E+04	2.38E-07	6.91E-06	7.67E+04
	Transport	A2	4.17E-01	6.34E+01	2.09E-09	6.65E-08	5.55E+01
	Manufacturing	A3	1.54E-01	4.93E+00	1.76E-10	3.28E-09	5.36E+00
	Total (Consumption grid)	A1-3	1.01E+01	1.29E+04	2.40E-07	6.98E-06	7.67E+04
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	2.74E-03	4.17E-01	1.35E-11	4.37E-10	3.67E-01
	Waste processing	C3	9.24E-03	7.89E+00	3.23E-10	5.41E-09	1.02E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-4.91E-01	-2.46E+01	-4.16E-10	-1.31E-08	-8.12E+00

IRP = Potential human exposure efficiency relative to U235;  
 ETP-fw = Potential comparative toxic unit for ecosystems;  
 HTP-c = Potential comparative toxic unit for humans;

HTP-nc = Potential comparative toxic unit for humans; and  
 SQP = Potential soil quality index.



## LCA Results Chatra (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

			Parameters describing resource use, primary energy					
			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	3.44E+01	4.90E+01	1.67E+02	5.08E+02	2.86E+01	1.07E+03
	Transport	A2	1.15E+00	0.00E+00	1.15E+00	7.96E+01	0.00E+00	7.96E+01
	Manufacturing	A3	-9.57E+00	1.14E+01	1.87E+00	5.09E+00	3.99E+00	9.08E+00
	Total (Consumption grid)	A1-3	2.60E+01	6.05E+01	1.70E+02	5.93E+02	3.26E+01	1.16E+03
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	7.52E-03	0.00E+00	7.52E-03	5.24E-01	0.00E+00	5.24E-01
	Waste processing	C3	-6.13E+01	6.14E+01	1.14E-01	6.68E+00	0.00E+00	6.68E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-4.26E+00	0.00E+00	-4.26E+00	-2.84E+01	0.00E+00	-2.84E+01

PERE = Use of renewable primary energy excluding renewable primary energy used as raw materials;  
 PERM = Use of renewable primary energy resources used as raw materials;  
 PERT = Total use of renewable primary energy resources;

PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials;  
 PENRM = Use of non-renewable primary energy resources used as raw materials;  
 PENRT = Total use of non-renewable primary energy resource



## LCA Results Chatra (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

			SM	RSF	NRSF	FW
			kg	MJ net calorific value	MJ net calorific value	m <sup>3</sup>
Product stage	Raw material supply	A1	1.98E+00	1.90E-02	0.00E+00	8.34E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	9.07E-03
	Manufacturing	A3	8.05E-02	3.66E-06	0.00E+00	3.20E-03
	Total (Consumption grid)	A1-3	2.06E+00	1.90E-02	0.00E+00	8.35E+00
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	5.95E-05
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	6.00E-03
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	-1.93E-02

SM = Use of secondary material;  
RSF = Use of renewable secondary fuels;

NRSF = Use of non-renewable secondary fuels;  
FW = Net use of fresh water



## LCA Results Chatra (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Other environmental information describing waste categories			HWD	NHWD	RWD
			kg	kg	kg
Product stage	Raw material supply	A1	2.74E+01	1.67E+02	6.24E-03
	Transport	A2	8.99E-02	1.60E+00	3.06E+00
	Manufacturing	A3	2.12E-02	5.20E-01	4.49E-05
	Total (Consumption grid)	A1-3	2.75E+01	1.69E+02	3.07E+00
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	5.89E-04	1.05E-02	3.61E-06
	Waste processing	C3	1.57E-01	4.72E+00	5.57E-06
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.14E-01	-6.17E+00	-1.46E-04

HWD = Hazardous waste disposed;  
 NHWD = Non-hazardous waste disposed;  
 RWD = Radioactive waste disposed



## LCA Results Chatra (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Other environmental information describing output flows – at end of life						
			CRU	MFR	MER	EE
			kg	kg	Kg	MJ per energy carrier
Product stage	Raw material supply	A1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Manufacturing	A3	0.00E+00	1.10E+00	4.67E-08	2.97E-03
	Total (Consumption grid)	A1-3	0.00E+00	1.10E+00	4.67E-08	2.97E-03
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Waste processing	C3	0.00E+00	0.00E+00	4.25E+00	0.00E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	2.27E+01
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00

CRU = Components for reuse;  
MFR = Materials for recycling

MER = Materials for energy recovery;  
EE = Exported Energy

Biogenic carbon (product)	Biogenic carbon (packaging)
kg C	kg C
0.00E+00	5.83E-01



## LCA Results - 1 m<sup>2</sup> of 100% pure wool Chennai carpet with weight of 3.75kg

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts			GWP-total	GWP-fossil	GWP-biogenic	GWP-luluc	ODP	AP	EP-freshwater
			kg CO <sub>2</sub> eq	kg CO <sub>2</sub> eq	kg CO <sub>2</sub> eq	kg CO <sub>2</sub> eq	kg CFC11 eq	mol H <sup>+</sup> eq	kg (PO <sub>4</sub> ) <sup>3-</sup> eq
Product stage	Raw material supply	A1	5.09E+02	2.19E+02	2.32E+02	5.74E+01	1.08E-05	1.35E+01	1.60E-01
	Transport	A2	4.31E+00	4.30E+00	3.70E-03	1.70E-03	9.94E-07	1.77E-02	2.79E-04
	Manufacturing	A3	6.75E-01	5.10E-01	1.64E-01	6.97E-04	3.33E-08	1.59E-03	7.42E-05
	Total (Consumption grid)	A1-3	5.14E+02	2.24E+02	2.33E+02	5.74E+01	1.18E-05	1.35E+01	1.60E-01
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	3.12E-02	3.12E-02	2.66E-05	1.22E-05	7.21E-09	1.26E-04	2.01E-06
	Waste processing	C3	6.34E+00	2.94E+00	3.40E+00	1.23E-04	5.47E-08	1.03E-02	5.88E-05
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.56E+00	-1.53E+00	-2.25E-02	-1.78E-03	-1.06E-07	-8.87E-03	-8.99E-04

GWP-total = Global warming potential, total;  
 GWP-fossil = Global warming potential, fossil;  
 GWP-biogenic = Global warming potential, biogenic;  
 GWP-luluc = Global warming potential, land use and land use change;

ODP = Depletion potential of the stratospheric ozone layer;  
 AP = Acidification potential, accumulated exceedance; and  
 EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment



## LCA Results Chennai (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts			EP-marine	EP-terrestrial	POCP	ADP-mineral&metals	ADP-fossil	WDP	PM
			kg N eq	mol N eq	kg NMVOC eq	kg Sb eq	MJ, net calorific value	m <sup>3</sup> world eq deprived	disease incidence
Product stage	Raw material supply	A1	2.42E+00	5.90E+01	7.40E-01	1.31E-03	1.62E+03	2.49E+02	9.70E-05
	Transport	A2	5.32E-03	5.82E-02	1.78E-02	1.53E-05	6.50E+01	2.94E-01	3.71E-07
	Manufacturing	A3	8.33E-04	6.05E-03	1.53E-03	1.89E-06	7.70E+00	1.03E-01	1.45E-08
	Total (Consumption grid)	A1-3	2.43E+00	5.91E+01	7.60E-01	1.33E-03	1.70E+03	2.50E+02	9.74E-05
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	3.81E-05	4.16E-04	1.27E-04	1.08E-07	4.71E-01	2.12E-03	2.69E-09
	Waste processing	C3	7.56E-03	5.11E-02	1.22E-02	1.41E-06	5.91E+00	2.25E-01	3.69E-08
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.31E-03	-1.29E-02	-3.60E-03	-9.55E-07	2.49E+01	-6.81E-01	-5.94E-08

EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment;  
 EP-terrestrial = Eutrophication potential, accumulated exceedance;  
 POCP = Formation potential of tropospheric ozone;  
 ADP-mineral&metals = Abiotic depletion potential for non-fossil resources;

ADP-fossil = Depletion potential of the stratospheric ozone layer;  
 WDP = Water (user) deprivation potential, deprivation-weighted water consumption; and  
 PM = Particulate matter.



## LCA Results Chennai (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

			Parameters describing environmental impacts				
			IRP	ETP-fw	HTP-c	HTP-nc	SQP
			kBq U <sup>235</sup> eq	CTUe	CTUh	CTUh	dimensionless
Product stage	Raw material supply	A1	7.60E+00	1.01E+04	1.87E-07	5.46E-06	6.02E+04
	Transport	A2	3.35E-01	5.08E+01	1.68E-09	5.34E-08	4.45E+01
	Manufacturing	A3	1.53E-01	4.77E+00	1.61E-10	3.12E-09	5.26E+00
	Total (Consumption grid)	A1-3	8.09E+00	1.02E+04	1.89E-07	5.52E-06	6.02E+04
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	2.42E-03	3.68E-01	1.19E-11	3.86E-10	3.24E-01
	Waste processing	C3	8.15E-03	6.96E+00	2.85E-10	4.77E-09	8.98E-01
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-4.33E-01	-2.17E+01	-3.67E-10	-1.16E-08	-7.17E+00

IRP = Potential human exposure efficiency relative to U235;  
 ETP-fw = Potential comparative toxic unit for ecosystems;  
 HTP-c = Potential comparative toxic unit for humans;

HTP-nc = Potential comparative toxic unit for humans; and  
 SQP = Potential soil quality index.



## LCA Results Chennai (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing resource use, primary energy			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	2.66E+01	4.00E+01	1.33E+02	4.28E+02	2.24E+01	9.01E+02
	Transport	A2	9.21E-01	0.00E+00	9.21E-01	6.38E+01	0.00E+00	6.38E+01
	Manufacturing	A3	-6.71E+00	8.57E+00	1.86E+00	6.31E+00	2.63E+00	8.94E+00
	Total (Consumption grid)	A1-3	2.08E+01	4.86E+01	1.36E+02	4.98E+02	2.51E+01	9.74E+02
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	6.64E-03	0.00E+00	6.64E-03	4.63E-01	0.00E+00	4.63E-01
	Waste processing	C3	-5.41E+01	5.42E+01	1.00E-01	5.89E+00	0.00E+00	5.89E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-3.76E+00	0.00E+00	-3.76E+00	-2.50E+01	0.00E+00	-2.50E+01

PERE = Use of renewable primary energy excluding renewable primary energy used as raw materials;  
 PERM = Use of renewable primary energy resources used as raw materials;  
 PERT = Total use of renewable primary energy resources;

PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials;  
 PENRM = Use of non-renewable primary energy resources used as raw materials;  
 PENRT = Total use of non-renewable primary energy resource



## LCA Results Chennai (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing resource use, secondary materials and fuels, use of water			SM	RSF	NRSF	FW
			kg	MJ net calorific value	MJ net calorific value	m <sup>3</sup>
Product stage	Raw material supply	A1	1.56E+00	1.49E-02	0.00E+00	6.53E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	7.27E-03
	Manufacturing	A3	8.05E-02	3.66E-06	0.00E+00	3.13E-03
	Total (Consumption grid)	A1-3	1.64E+00	1.49E-02	0.00E+00	6.54E+00
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	5.25E-05
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	5.30E-03
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	-1.70E-02

SM = Use of secondary material;  
RSF = Use of renewable secondary fuels;

NRSF = Use of non-renewable secondary fuels;  
FW = Net use of fresh water



## LCA Results Chennai (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Other environmental information describing waste categories			HWD	NHWD	RWD
			kg	Kg	kg
Product stage	Raw material supply	A1	2.14E+01	1.33E+02	5.07E-03
	Transport	A2	7.21E-02	1.28E+00	3.06E+00
	Manufacturing	A3	2.03E-02	5.04E-01	4.41E-05
	Total (Consumption grid)	A1-3	2.15E+01	1.34E+02	3.07E+00
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	5.19E-04	9.23E-03	3.19E-06
	Waste processing	C3	1.38E-01	4.16E+00	4.91E-06
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.01E-01	-5.44E+00	-1.29E-04

HWD = Hazardous waste disposed;  
 NHWD = Non-hazardous waste disposed;  
 RWD = Radioactive waste disposed



## LCA Results Chennai (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Other environmental information describing output flows – at end of life			CRU	MFR	MER	EE
			kg	kg	Kg	MJ per energy carrier
Product stage	Raw material supply	A1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Manufacturing	A3	0.00E+00	6.76E-01	4.00E-08	2.97E-03
	Total (Consumption grid)	A1-3	0.00E+00	6.76E-01	4.00E-08	2.97E-03
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Waste processing	C3	0.00E+00	0.00E+00	3.75E+00	0.00E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	2.00E+01
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00

CRU = Components for reuse;  
MFR = Materials for recycling

MER = Materials for energy recovery;  
EE = Exported Energy

Biogenic carbon (product)	Biogenic carbon (packaging)
kg C	kg C
0.00E+00	4.25E-01



## LCA Results - 1 m2 of 100% pure wool Daiya carpet with weight of 3.8 kg

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts			GWP-total	GWP-fossil	GWP-biogenic	GWP-luluc	ODP	AP	EP-freshwater
			kg CO <sub>2</sub> eq	kg CO <sub>2</sub> eq	kg CO <sub>2</sub> eq	kg CO <sub>2</sub> eq	kg CFC11 eq	mol H <sup>+</sup> eq	kg (PO <sub>4</sub> ) <sup>3-</sup> eq
Product stage	Raw material supply	A1	5.22E+02	2.25E+02	2.39E+02	5.89E+01	1.10E-05	1.38E+01	1.64E-01
	Transport	A2	4.36E+00	4.35E+00	3.75E-03	1.72E-03	1.01E-06	1.79E-02	2.83E-04
	Manufacturing	A3	7.28E-01	5.63E-01	1.63E-01	7.20E-04	3.98E-08	1.80E-03	7.89E-05
	Total (Consumption grid)	A1-3	5.27E+02	2.30E+02	2.39E+02	5.89E+01	1.21E-05	1.39E+01	1.64E-01
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	3.16E-02	3.16E-02	2.69E-05	1.24E-05	7.31E-09	1.28E-04	2.03E-06
	Waste processing	C3	6.42E+00	2.97E+00	3.45E+00	1.25E-04	5.55E-08	1.05E-02	5.95E-05
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.58E+00	-1.55E+00	-2.28E-02	-1.81E-03	-1.07E-07	-8.99E-03	-9.11E-04

GWP-total = Global warming potential, total;  
 GWP-fossil = Global warming potential, fossil;  
 GWP-biogenic = Global warming potential, biogenic;  
 GWP-luluc = Global warming potential, land use and land use change;

ODP = Depletion potential of the stratospheric ozone layer;  
 AP = Acidification potential, accumulated exceedance; and  
 EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment



## LCA Results Daiya (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts			EP-marine	EP-terrestrial	POCP	ADP-mineral&metals	ADP-fossil	WDP	PM
			kg N eq	mol N eq	kg NMVOC eq	kg Sb eq	MJ, net calorific value	m <sup>3</sup> world eq deprived	disease incidence
Product stage	Raw material supply	A1	2.48E+00	6.05E+01	7.58E-01	1.35E-03	1.66E+03	2.56E+02	9.94E-05
	Transport	A2	5.39E-03	5.89E-02	1.80E-02	1.55E-05	6.58E+01	2.97E-01	3.76E-07
	Manufacturing	A3	9.18E-04	6.87E-03	1.81E-03	2.07E-06	8.29E+00	1.11E-01	1.92E-08
	Total (Consumption grid)	A1-3	2.49E+00	6.06E+01	7.78E-01	1.37E-03	1.74E+03	2.57E+02	9.98E-05
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	3.86E-05	4.22E-04	1.29E-04	1.10E-07	4.77E-01	2.15E-03	2.73E-09
	Waste processing	C3	7.66E-03	5.18E-02	1.24E-02	1.43E-06	5.98E+00	2.28E-01	3.74E-08
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.33E-03	-1.31E-02	-3.65E-03	-9.68E-07	2.53E+01	-6.90E-01	-6.01E-08

EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment;  
 EP-terrestrial = Eutrophication potential, accumulated exceedance;  
 POCP = Formation potential of tropospheric ozone;  
 ADP-mineral&metals = Abiotic depletion potential for non-fossil resources;

ADP-fossil = Depletion potential of the stratospheric ozone layer;  
 WDP = Water (user) deprivation potential, deprivation-weighted water consumption; and  
 PM = Particulate matter.



## LCA Results Daiya (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

			Parameters describing environmental impacts				
			IRP	ETP-fw	HTP-c	HTP-nc	SQP
			kBq U <sup>235</sup> eq	CTUe	CTUh	CTUh	dimensionless
Product stage	Raw material supply	A1	7.78E+00	1.04E+04	1.92E-07	5.57E-06	6.17E+04
	Transport	A2	3.39E-01	5.14E+01	1.71E-09	5.40E-08	4.51E+01
	Manufacturing	A3	1.56E-01	5.24E+00	2.03E-10	3.57E-09	5.56E+00
	Total (Consumption grid)	A1-3	8.27E+00	1.04E+04	1.94E-07	5.63E-06	6.18E+04
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	2.45E-03	3.73E-01	1.21E-11	3.91E-10	3.28E-01
	Waste processing	C3	8.26E-03	7.06E+00	2.89E-10	4.84E-09	9.10E-01
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-4.39E-01	-2.20E+01	-3.72E-10	-1.17E-08	-7.26E+00

IRP = Potential human exposure efficiency relative to U235;  
 ETP-fw = Potential comparative toxic unit for ecosystems;  
 HTP-c = Potential comparative toxic unit for humans;

HTP-nc = Potential comparative toxic unit for humans; and  
 SQP = Potential soil quality index.



## LCA Results Daiya (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing resource use, primary energy			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	2.73E+01	4.09E+01	1.36E+02	4.37E+02	2.30E+01	9.21E+02
	Transport	A2	9.33E-01	0.00E+00	9.33E-01	6.46E+01	0.00E+00	6.46E+01
	Manufacturing	A3	-1.47E+01	1.66E+01	1.88E+00	2.88E+00	6.46E+00	9.33E+00
	Total (Consumption grid)	A1-3	1.35E+01	5.75E+01	1.39E+02	5.04E+02	2.95E+01	9.95E+02
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	6.73E-03	0.00E+00	6.73E-03	4.69E-01	0.00E+00	4.69E-01
	Waste processing	C3	-5.48E+01	5.49E+01	1.02E-01	5.97E+00	0.00E+00	5.97E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-3.81E+00	0.00E+00	-3.81E+00	-2.54E+01	0.00E+00	-2.54E+01

PERE = Use of renewable primary energy excluding renewable primary energy used as raw materials;  
 PERM = Use of renewable primary energy resources used as raw materials;  
 PERT = Total use of renewable primary energy resources;

PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials;  
 PENRM = Use of non-renewable primary energy resources used as raw materials;  
 PENRT = Total use of non-renewable primary energy resource



## LCA Results Daiya (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing resource use, secondary materials and fuels, use of water						
			SM	RSF	NRSF	FW
			kg	MJ net calorific value	MJ net calorific value	m <sup>3</sup>
Product stage	Raw material supply	A1	1.60E+00	1.53E-02	0.00E+00	6.70E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	7.36E-03
	Manufacturing	A3	8.05E-02	3.66E-06	0.00E+00	3.33E-03
	Total (Consumption grid)	A1-3	1.68E+00	1.53E-02	0.00E+00	6.71E+00
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	5.32E-05
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	5.37E-03
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	-1.72E-02

SM = Use of secondary material;  
RSF = Use of renewable secondary fuels;

NRSF = Use of non-renewable secondary fuels;  
FW = Net use of fresh water



## LCA Results Daiya (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Other environmental information describing waste categories			HWD	NHWD	RWD
			kg	kg	kg
Product stage	Raw material supply	A1	2.21E+01	1.36E+02	5.17E-03
	Transport	A2	7.30E-02	1.30E+00	3.06E+00
	Manufacturing	A3	2.28E-02	5.50E-01	4.66E-05
	Total (Consumption grid)	A1-3	2.22E+01	1.38E+02	3.07E+00
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	5.26E-04	9.35E-03	3.23E-06
	Waste processing	C3	1.40E-01	4.22E+00	4.98E-06
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.02E-01	-5.52E+00	-1.31E-04

HWD = Hazardous waste disposed;  
 NHWD = Non-hazardous waste disposed;  
 RWD = Radioactive waste disposed



## LCA Results Daiya (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Other environmental information describing output flows – at end of life						
			CRU	MFR	MER	EE
			kg	kg	kg	MJ per energy carrier
Product stage	Raw material supply	A1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Manufacturing	A3	0.00E+00	1.88E+00	5.89E-08	2.97E-03
	Total (Consumption grid)	A1-3	0.00E+00	1.88E+00	5.89E-08	2.97E-03
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Waste processing	C3	0.00E+00	0.00E+00	3.8E+00	0.00E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	2.03E+01
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00

CRU = Components for reuse;  
MFR = Materials for recycling

MER = Materials for energy recovery;  
EE = Exported Energy

Biogenic carbon (product)	Biogenic carbon (packaging)
kg C	kg C
0.00E+00	6.87E-01



## LCA Results - 1 m<sup>2</sup> of 100% pure wool Willingdon carpet with weight of 3.8kg

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts			GWP-total	GWP-fossil	GWP-biogenic	GWP-luluc	ODP	AP	EP-freshwater
			kg CO <sub>2</sub> eq	kg CO <sub>2</sub> eq	kg CO <sub>2</sub> eq	kg CO <sub>2</sub> eq	kg CFC11 eq	mol H <sup>+</sup> eq	kg (PO <sub>4</sub> ) <sup>3-</sup> eq
Product stage	Raw material supply	A1	5.22E+02	2.25E+02	2.39E+02	5.89E+01	1.10E-05	1.38E+01	1.64E-01
	Transport	A2	4.36E+00	4.35E+00	3.75E-03	1.72E-03	1.01E-06	1.79E-02	2.83E-04
	Manufacturing	A3	7.21E-01	5.57E-01	1.63E-01	7.18E-04	3.90E-08	1.78E-03	7.83E-05
	Total (Consumption grid)	A1-3	5.27E+02	2.30E+02	2.39E+02	5.89E+01	1.21E-05	1.39E+01	1.64E-01
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	3.16E-02	3.16E-02	2.69E-05	1.24E-05	7.31E-09	1.28E-04	2.03E-06
	Waste processing	C3	6.42E+00	2.97E+00	3.45E+00	1.25E-04	5.55E-08	1.05E-02	5.95E-05
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.58E+00	-1.55E+00	-2.28E-02	-1.81E-03	-1.07E-07	-8.99E-03	-9.11E-04

GWP-total = Global warming potential, total;  
 GWP-fossil = Global warming potential, fossil;  
 GWP-biogenic = Global warming potential, biogenic;  
 GWP-luluc = Global warming potential, land use and land use change;

ODP = Depletion potential of the stratospheric ozone layer;  
 AP = Acidification potential, accumulated exceedance; and  
 EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment



## LCA Results Willingdon (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts			EP-marine	EP-terrestrial	POCP	ADP-mineral&metals	ADP-fossil	WDP	PM
			kg N eq	mol N eq	kg NMVOC eq	kg Sb eq	MJ, net calorific value	m <sup>3</sup> world eq deprived	disease incidence
Product stage	Raw material supply	A1	2.48E+00	6.05E+01	7.58E-01	1.35E-03	1.66E+03	2.56E+02	9.94E-05
	Transport	A2	5.39E-03	5.89E-02	1.80E-02	1.55E-05	6.58E+01	2.97E-01	3.76E-07
	Manufacturing	A3	9.08E-04	6.77E-03	1.78E-03	2.05E-06	8.23E+00	1.10E-01	1.86E-08
	Total (Consumption grid)	A1-3	2.49E+00	6.06E+01	7.77E-01	1.37E-03	1.74E+03	2.57E+02	9.98E-05
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	3.86E-05	4.22E-04	1.29E-04	1.10E-07	4.77E-01	2.15E-03	2.73E-09
	Waste processing	C3	7.66E-03	5.18E-02	1.24E-02	1.43E-06	5.98E+00	2.28E-01	3.74E-08
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.33E-03	-1.31E-02	-3.65E-03	-9.68E-07	2.53E+01	-6.90E-01	-6.01E-08

EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment;  
 EP-terrestrial = Eutrophication potential, accumulated exceedance;  
 POCP = Formation potential of tropospheric ozone;  
 ADP-mineral&metals = Abiotic depletion potential for non-fossil resources;

ADP-fossil = Depletion potential of the stratospheric ozone layer;  
 WDP = Water (user) deprivation potential, deprivation-weighted water consumption; and  
 PM = Particulate matter.



## LCA Results Willingdon (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

			Parameters describing environmental impacts				
			IRP	ETP-fw	HTP-c	HTP-nc	SQP
			kBq U <sup>235</sup> eq	CTUe	CTUh	CTUh	dimensionless
Product stage	Raw material supply	A1	7.78E+00	1.04E+04	1.92E-07	5.57E-06	6.17E+04
	Transport	A2	3.39E-01	5.14E+01	1.71E-09	5.40E-08	4.51E+01
	Manufacturing	A3	1.55E-01	5.19E+00	1.99E-10	3.52E-09	5.52E+00
	Total (Consumption grid)	A1-3	8.27E+00	1.04E+04	1.94E-07	5.63E-06	6.18E+04
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	2.45E-03	3.73E-01	1.21E-11	3.91E-10	3.28E-01
	Waste processing	C3	8.26E-03	7.06E+00	2.89E-10	4.84E-09	9.10E-01
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-4.39E-01	-2.20E+01	-3.72E-10	-1.17E-08	-7.26E+00

IRP = Potential human exposure efficiency relative to U235;  
 ETP-fw = Potential comparative toxic unit for ecosystems;  
 HTP-c = Potential comparative toxic unit for humans;

HTP-nc = Potential comparative toxic unit for humans; and  
 SQP = Potential soil quality index.



## LCA Results Willingdon (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing resource use, primary energy			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	2.73E+01	4.09E+01	1.36E+02	4.37E+02	2.30E+01	9.21E+02
	Transport	A2	9.33E-01	0.00E+00	9.33E-01	6.46E+01	0.00E+00	6.46E+01
	Manufacturing	A3	-1.38E+01	1.57E+01	1.88E+00	3.28E+00	6.01E+00	9.29E+00
	Total (Consumption grid)	A1-3	1.44E+01	5.66E+01	1.39E+02	5.05E+02	2.90E+01	9.95E+02
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	6.73E-03	0.00E+00	6.73E-03	4.69E-01	0.00E+00	4.69E-01
	Waste processing	C3	-5.48E+01	5.49E+01	1.02E-01	5.97E+00	0.00E+00	5.97E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-3.81E+00	0.00E+00	-3.81E+00	-2.54E+01	0.00E+00	-2.54E+01

PERE = Use of renewable primary energy excluding renewable primary energy used as raw materials;  
 PERM = Use of renewable primary energy resources used as raw materials;  
 PERT = Total use of renewable primary energy resources;

PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials;  
 PENRM = Use of non-renewable primary energy resources used as raw materials;  
 PENRT = Total use of non-renewable primary energy resource



## LCA Results Willingdon (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing resource use, secondary materials and fuels, use of water						
			SM	RSF	NRSF	FW
			kg	MJ net calorific value	MJ net calorific value	m <sup>3</sup>
Product stage	Raw material supply	A1	1.60E+00	1.53E-02	0.00E+00	6.69E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	7.36E-03
	Manufacturing	A3	8.05E-02	3.66E-06	0.00E+00	3.31E-03
	Total (Consumption grid)	A1-3	1.68E+00	1.53E-02	0.00E+00	6.71E+00
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	5.32E-05
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	5.37E-03
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	-1.72E-02

SM = Use of secondary material;  
RSF = Use of renewable secondary fuels;

NRSF = Use of non-renewable secondary fuels;  
FW = Net use of fresh water



## LCA Results Willingdon (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Other environmental information describing waste categories			HWD	NHWD	RWD
			kg	kg	kg
Product stage	Raw material supply	A1	2.21E+01	1.36E+02	5.17E-03
	Transport	A2	7.30E-02	1.30E+00	3.06E+00
	Manufacturing	A3	2.25E-02	5.45E-01	4.63E-05
	Total (Consumption grid)	A1-3	2.22E+01	1.38E+02	3.07E+00
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	5.26E-04	9.35E-03	3.23E-06
	Waste processing	C3	1.40E-01	4.22E+00	4.98E-06
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.02E-01	-5.52E+00	-1.31E-04

HWD = Hazardous waste disposed;  
 NHWD = Non-hazardous waste disposed;  
 RWD = Radioactive waste disposed



## LCA Results Willingdon (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Other environmental information describing output flows – at end of life						
			CRU	MFR	MER	EE
			kg	kg	kg	MJ per energy carrier
Product stage	Raw material supply	A1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Manufacturing	A3	0.00E+00	1.74E+00	5.67E-08	2.97E-03
	Total (Consumption grid)	A1-3	0.00E+00	1.74E+00	5.67E-08	2.97E-03
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Waste processing	C3	0.00E+00	0.00E+00	3.80E+00	0.00E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	2.03E+01
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00

CRU = Components for reuse;  
MFR = Materials for recycling

MER = Materials for energy recovery;  
EE = Exported Energy

Biogenic carbon (product)	Biogenic carbon (packaging)
kg C	kg C
0.00E+00	6.57E-01



## LCA Results - 1 m<sup>2</sup> of 100% pure wool Jaspur carpet with weight of 4.5 kg

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts			GWP-total	GWP-fossil	GWP-biogenic	GWP-luluc	ODP	AP	EP-freshwater
			kg CO <sub>2</sub> eq	kg CO <sub>2</sub> eq	kg CO <sub>2</sub> eq	kg CO <sub>2</sub> eq	kg CFC11 eq	mol H <sup>+</sup> eq	kg (PO <sub>4</sub> ) <sup>3-</sup> eq
Product stage	Raw material supply	A1	7.21E+02	3.08E+02	3.31E+02	8.18E+01	1.46E-05	1.92E+01	2.26E-01
	Transport	A2	5.11E+00	5.10E+00	4.38E-03	2.01E-03	1.18E-06	2.10E-02	3.31E-04
	Manufacturing	A3	7.41E-01	5.76E-01	1.63E-01	7.26E-04	4.14E-08	1.85E-03	8.01E-05
	Total (Consumption grid)	A1-3	7.27E+02	3.14E+02	3.32E+02	8.18E+01	1.58E-05	1.92E+01	2.26E-01
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	3.74E-02	3.74E-02	3.19E-05	1.47E-05	8.65E-09	1.52E-04	2.41E-06
	Waste processing	C3	7.60E+00	3.52E+00	4.08E+00	1.48E-04	6.57E-08	1.24E-02	7.05E-05
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.87E+00	-1.84E+00	-2.69E-02	-2.14E-03	-1.27E-07	-1.06E-02	-1.08E-03

GWP-total = Global warming potential, total;  
 GWP-fossil = Global warming potential, fossil;  
 GWP-biogenic = Global warming potential, biogenic;  
 GWP-luluc = Global warming potential, land use and land use change;

ODP = Depletion potential of the stratospheric ozone layer;  
 AP = Acidification potential, accumulated exceedance; and  
 EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment



## LCA Results Jaspur (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts			EP-marine	EP-terrestrial	POCP	ADP-mineral & metal	ADP-fossil	WDP	PM
			kg N eq	mol N eq	kg NMVOC eq	kg Sb eq	MJ, net calorific value	m <sup>3</sup> world eq deprived	disease incidence
Product stage	Raw material supply	A1	3.44E+00	8.41E+01	1.04E+00	1.86E-03	2.25E+03	3.55E+02	1.38E-04
	Transport	A2	6.31E-03	6.89E-02	2.11E-02	1.81E-05	7.71E+01	3.48E-01	4.40E-07
	Manufacturing	A3	9.39E-04	7.07E-03	1.88E-03	2.12E-06	8.44E+00	1.13E-01	2.03E-08
	Total (Consumption grid)	A1-3	3.45E+00	8.42E+01	1.06E+00	1.88E-03	2.34E+03	3.56E+02	1.38E-04
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	4.57E-05	5.00E-04	1.53E-04	1.30E-07	5.65E-01	2.54E-03	3.23E-09
	Waste processing	C3	9.08E-03	6.13E-02	1.46E-02	1.70E-06	7.09E+00	2.71E-01	4.43E-08
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.57E-03	-1.55E-02	-4.32E-03	-1.15E-06	-2.99E+01	-8.18E-01	-7.12E-08

EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment;  
 EP-terrestrial = Eutrophication potential, accumulated exceedance;  
 POCP = Formation potential of tropospheric ozone;  
 ADP-mineral&metals = Abiotic depletion potential for non-fossil resources;

ADP-fossil = Depletion potential of the stratospheric ozone layer;  
 WDP = Water (user) deprivation potential, deprivation-weighted water consumption; and  
 PM = Particulate matter.



## LCA Results Jaspur (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

			IRP	ETP-fw	HTP-c	HTP-nc	SQP
			kBq U <sup>235</sup> eq	CTUe	CTUh	CTUh	dimensionless
Product stage	Raw material supply	A1	1.05E+01	1.43E+04	2.65E-07	7.71E-06	8.55E+04
	Transport	A2	3.97E-01	6.02E+01	1.99E-09	6.32E-08	5.28E+01
	Manufacturing	A3	1.56E-01	5.36E+00	2.15E-10	3.68E-09	5.63E+00
	Total (Consumption grid)	A1-3	1.11E+01	1.44E+04	2.67E-07	7.77E-06	8.56E+04
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	2.91E-03	4.41E-01	1.43E-11	4.63E-10	3.88E-01
	Waste processing	C3	9.79E-03	8.36E+00	3.42E-10	5.73E-09	1.08E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-5.20E-01	-2.61E+01	-4.40E-10	-1.39E-08	-8.60E+00

IRP = Potential human exposure efficiency relative to U235;  
 ETP-fw = Potential comparative toxic unit for ecosystems;  
 HTP-c = Potential comparative toxic unit for humans;

HTP-nc = Potential comparative toxic unit for humans; and  
 SQP = Potential soil quality index.



## LCA Results Jaspur (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	3.87E+01	5.40E+01	1.85E+02	5.45E+02	3.19E+01	1.16E+03
	Transport	A2	1.09E+00	0.00E+00	1.09E+00	7.57E+01	0.00E+00	7.57E+01
	Manufacturing	A3	-1.67E+01	1.86E+01	1.88E+00	2.04E+00	7.39E+00	9.43E+00
	Total (Consumption grid)	A1-3	2.31E+01	7.26E+01	1.88E+02	6.23E+02	3.93E+01	1.24E+03
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	7.97E-03	0.00E+00	7.97E-03	5.55E-01	0.00E+00	5.55E-01
	Waste processing	C3	-6.49E+01	6.50E+01	1.21E-01	7.07E+00	0.00E+00	7.07E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-4.51E+00	0.00E+00	-4.51E+00	-3.01E+01	0.00E+00	-3.01E+01

PERE = Use of renewable primary energy excluding renewable primary energy used as raw materials;  
 PERM = Use of renewable primary energy resources used as raw materials;  
 PERT = Total use of renewable primary energy resources;

PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials;  
 PENRM = Use of non-renewable primary energy resources used as raw materials;  
 PENRT = Total use of non-renewable primary energy resource



## LCA Results Jaspur (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

			SM	RSF	NRSF	FW
			kg	MJ net calorific value	MJ net calorific value	m <sup>3</sup>
Product stage	Raw material supply	A1	2.21E+00	2.12E-02	0.00E+00	9.31E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	8.62E-03
	Manufacturing	A3	8.05E-02	3.66E-06	0.00E+00	3.38E-03
	Total (Consumption grid)	A1-3	2.29E+00	2.12E-02	0.00E+00	9.32E+00
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	6.30E-05
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	6.35E-03
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	-2.04E-02

SM = Use of secondary material;  
RSF = Use of renewable secondary fuels;

NRSF = Use of non-renewable secondary fuels;  
FW = Net use of fresh water



## LCA Results Jaspur (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

			HWD	NHWD	RWD
			kg	kg	kg
Product stage	Raw material supply	A1	3.05E+01	1.85E+02	6.86E-03
	Transport	A2	8.55E-02	1.52E+00	3.06E+00
	Manufacturing	A3	2.34E-02	5.61E-01	4.72E-05
	Total (Consumption grid)	A1-3	3.07E+01	1.87E+02	3.07E+00
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	6.23E-04	1.11E-02	3.83E-06
	Waste processing	C3	1.66E-01	5.00E+00	5.90E-06
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.21E-01	-6.53E+00	-1.55E-04

HWD = Hazardous waste disposed;  
 NHWD = Non-hazardous waste disposed;  
 RWD = Radioactive waste disposed



## LCA Results Jaspur (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Other environmental information describing output flows						
			CRU	MFR	MER	EE
			kg	kg	kg	MJ per energy carrier
Product stage	Raw material supply	A1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Manufacturing	A3	0.00E+00	2.17E+00	6.36E-08	2.97E-03
	Total (Consumption grid)	A1-3	0.00E+00	2.17E+00	6.36E-08	2.97E-03
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Waste processing	C3	0.00E+00	0.00E+00	4.50E+00	0.00E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	2.40E+01
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00

CRU = Components for reuse;  
MFR = Materials for recycling

MER = Materials for energy recovery;  
EE = Exported Energy

Biogenic carbon (product)	Biogenic carbon (packaging)
kg C	kg C
0.00E+00	8.47E-01



## LCA Results Desuri

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

			GWP-total	GWP-fossil	GWP-biogenic	GWP-luluc	ODP	AP	EP-freshwater
			kg CO <sub>2</sub> eq	kg CO <sub>2</sub> eq	kg CO <sub>2</sub> eq	kg CO <sub>2</sub> eq	kg CFC11 eq	mol H <sup>+</sup> eq	kg (PO <sub>4</sub> ) <sup>3-</sup> eq
Product stage	Raw material supply	A1	5.22E+02	2.25E+02	2.39E+02	5.89E+01	1.10E-05	1.38E+01	1.64E-01
	Transport	A2	4.36E+00	4.35E+00	3.75E-03	1.72E-03	1.01E-06	1.79E-02	2.83E-04
	Manufacturing	A3	8.44E-01	6.87E-01	1.55E-01	7.78E-04	5.59E-08	2.31E-03	9.07E-05
	Total (Consumption grid)	A1-3	5.28E+02	2.30E+02	2.39E+02	5.89E+01	1.21E-05	1.39E+01	1.64E-01
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	3.16E-02	3.16E-02	2.69E-05	1.24E-05	7.31E-09	1.28E-04	2.03E-06
	Waste processing	C3	6.42E+00	2.97E+00	3.45E+00	1.25E-04	5.55E-08	1.05E-02	5.95E-05
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.58E+00	-1.55E+00	-2.28E-02	-1.81E-03	-1.07E-07	-8.99E-03	-9.11E-04

GWP-total = Global warming potential, total;  
 GWP-fossil = Global warming potential, fossil;  
 GWP-biogenic = Global warming potential, biogenic;  
 GWP-luluc = Global warming potential, land use and land use change;

ODP = Depletion potential of the stratospheric ozone layer;  
 AP = Acidification potential, accumulated exceedance; and  
 EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment



## LCA Results Desuri (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

			EP-marine	EP-terrestrial	POCP	ADP-mineral & metal	ADP-fossil	WDP	PM
			kg N eq	mol N eq	kg NMVOC eq	kg Sb eq	MJ, net calorific value	m <sup>3</sup> world eq deprived	disease incidence
Product stage	Raw material supply	A1	2.48E+00	6.05E+01	7.58E-01	1.35E-03	1.66E+03	2.56E+02	9.94E-05
	Transport	A2	5.39E-03	5.89E-02	1.80E-02	1.55E-05	6.58E+01	2.97E-01	3.76E-07
	Manufacturing	A3	1.11E-03	8.79E-03	2.49E-03	2.53E-06	9.75E+00	1.30E-01	3.07E-08
	Total (Consumption grid)	A1-3	2.49E+00	6.06E+01	7.78E-01	1.37E-03	1.74E+03	2.57E+02	9.98E-05
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	3.86E-05	4.22E-04	1.29E-04	1.10E-07	4.77E-01	2.15E-03	2.73E-09
	Waste processing	C3	7.66E-03	5.18E-02	1.24E-02	1.43E-06	5.98E+00	2.28E-01	3.74E-08
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.33E-03	-1.31E-02	-3.65E-03	-9.68E-07	-2.53E+01	-6.90E-01	-6.01E-08

EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment;  
 EP-terrestrial = Eutrophication potential, accumulated exceedance;  
 POCP = Formation potential of tropospheric ozone;  
 ADP-mineral&metals = Abiotic depletion potential for non-fossil resources;

ADP-fossil = Depletion potential of the stratospheric ozone layer;  
 WDP = Water (user) deprivation potential, deprivation-weighted water consumption; and  
 PM = Particulate matter.



## LCA Results Desuri (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

			IRP	ETP-fw	HTP-c	HTP-nc	SQP
			kBq U <sup>235</sup> eq	CTUe	CTUh	CTUh	dimensionless
Product stage	Raw material supply	A1	7.78E+00	1.04E+04	1.92E-07	5.57E-06	6.17E+04
	Transport	A2	3.39E-01	5.14E+01	1.71E-09	5.40E-08	4.51E+01
	Manufacturing	A3	1.63E-01	6.41E+00	3.11E-10	4.70E-09	6.31E+00
	Total (Consumption grid)	A1-3	8.28E+00	1.04E+04	1.94E-07	5.63E-06	6.18E+04
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	2.45E-03	3.73E-01	1.21E-11	3.91E-10	3.28E-01
	Waste processing	C3	8.26E-03	7.06E+00	2.89E-10	4.84E-09	9.10E-01
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-4.39E-01	-2.20E+01	-3.72E-10	-1.17E-08	-7.26E+00

IRP = Potential human exposure efficiency relative to U235;  
 ETP-fw = Potential comparative toxic unit for ecosystems;  
 HTP-c = Potential comparative toxic unit for humans;

HTP-nc = Potential comparative toxic unit for humans; and  
 SQP = Potential soil quality index.



## LCA Results Desuri (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	2.73E+01	4.09E+01	1.36E+02	4.37E+02	2.30E+01	9.21E+02
	Transport	A2	9.33E-01	0.00E+00	9.33E-01	6.46E+01	0.00E+00	6.46E+01
	Manufacturing	A3	-3.45E+01	3.65E+01	1.93E+00	-5.67E+00	1.60E+01	1.03E+01
	Total (Consumption grid)	A1-3	-6.29E+00	7.73E+01	1.39E+02	4.96E+02	3.90E+01	9.96E+02
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	6.73E-03	0.00E+00	6.73E-03	4.69E-01	0.00E+00	4.69E-01
	Waste processing	C3	-5.48E+01	5.49E+01	1.02E-01	5.97E+00	0.00E+00	5.97E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-3.81E+00	0.00E+00	-3.81E+00	-2.54E+01	0.00E+00	-2.54E+01

PERE = Use of renewable primary energy excluding renewable primary energy used as raw materials;  
 PERM = Use of renewable primary energy resources used as raw materials;  
 PERT = Total use of renewable primary energy resources;

PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials;  
 PENRM = Use of non-renewable primary energy resources used as raw materials;  
 PENRT = Total use of non-renewable primary energy resource



## LCA Results Desuri (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

			SM	RSF	NRSF	FW
			kg	MJ net calorific value	MJ net calorific value	m <sup>3</sup>
Product stage	Raw material supply	A1	1.60E+00	1.53E-02	0.00E+00	6.70E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	7.36E-03
	Manufacturing	A3	8.06E-02	3.66E-06	0.00E+00	3.80E-03
	Total (Consumption grid)	A1-3	1.68E+00	1.53E-02	0.00E+00	6.71E+00
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	5.32E-05
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	5.37E-03
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	-1.72E-02

SM = Use of secondary material;  
RSF = Use of renewable secondary fuels;

NRSF = Use of non-renewable secondary fuels;  
FW = Net use of fresh water



## LCA Results Desuri (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

			HWD	NHWD	RWD
			kg	kg	kg
Product stage	Raw material supply	A1	2.21E+01	1.36E+02	5.17E-03
	Transport	A2	7.30E-02	1.30E+00	3.07E+00
	Manufacturing	A3	2.88E-02	6.54E-01	5.28E-05
	Total (Consumption grid)	A1-3	2.22E+01	1.38E+02	3.07E+00
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	5.26E-04	9.35E-03	3.23E-06
	Waste processing	C3	1.40E-01	4.22E+00	4.98E-06
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.02E-01	-5.52E+00	-1.31E-04

HWD = Hazardous waste disposed;  
 NHWD = Non-hazardous waste disposed;  
 RWD = Radioactive waste disposed



## LCA Results Desuri (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

			CRU	MFR	MER	EE
			kg	kg	kg	MJ per energy carrier
Product stage	Raw material supply	A1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Manufacturing	A3	0.00E+00	4.87E+00	1.06E-07	2.97E-03
	Total (Consumption grid)	A1-3	0.00E+00	4.87E+00	1.06E-07	2.97E-03
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Waste processing	C3	0.00E+00	0.00E+00	3.80E+00	0.00E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	2.03E+01
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00

CRU = Components for reuse;  
MFR = Materials for recycling

MER = Materials for energy recovery;  
EE = Exported Energy

Biogenic carbon (product)	Biogenic carbon (packaging)
kg C	kg C
0.00E+00	1.32E+00

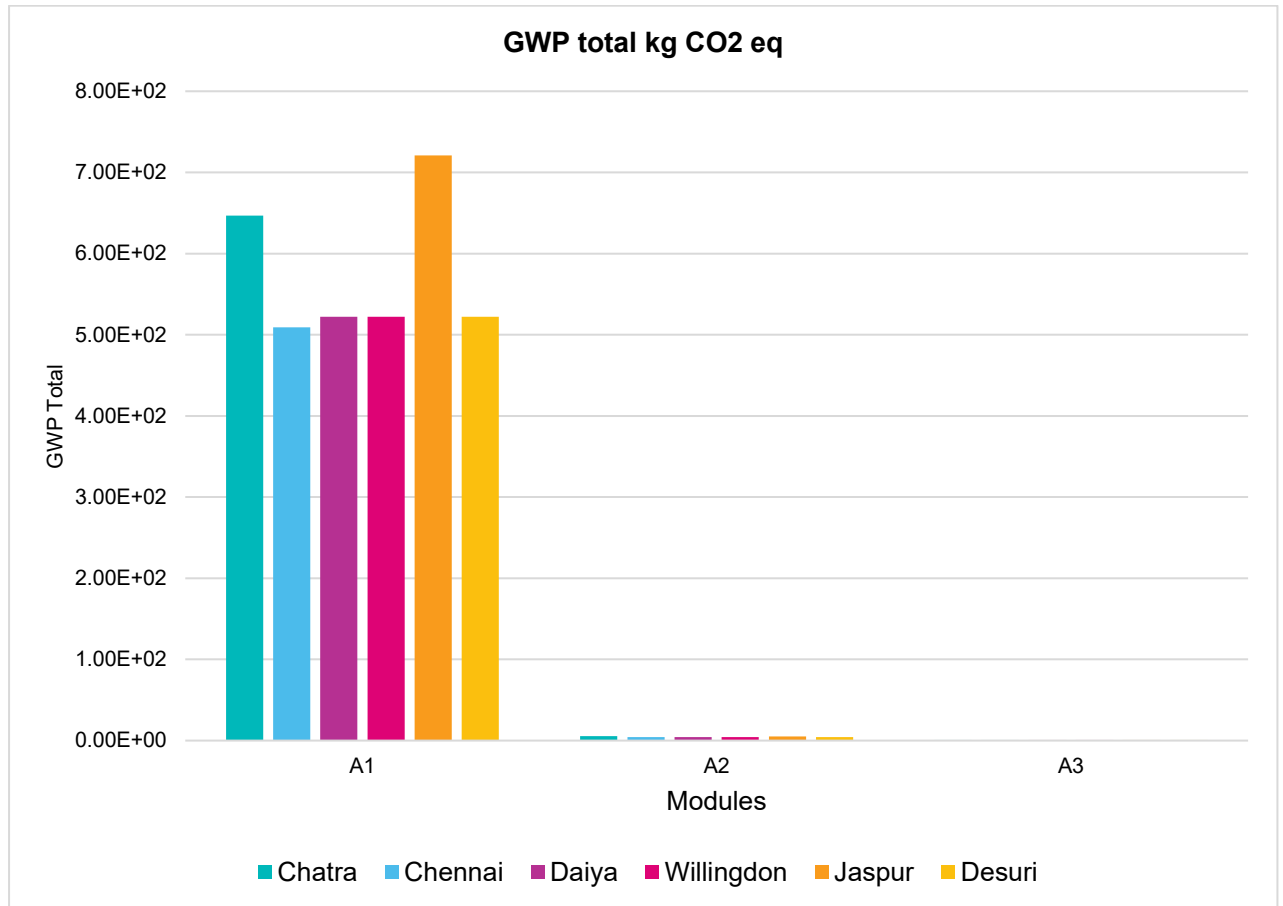


## Scenarios and additional technical information

Scenarios and additional technical information			
Scenario	Parameter	Units	Results
C1-Deconstruction	At the End-of-Life the 100% pure wool carpet is manually removed from the building. It is assumed that the product follows an industrial average End-of-Life referencing BRE 2025 PCR PN514 Rev 3.2. This industrial average scenario is for Floor finish (underlay), textile (recycled). And it assumes that after building demolition, the 100% pure wool carpet will be 100% sent to incineration. There are no impacts associated with this module.		
C2- Transport	50 km by road has been modelled for module C2 as a typical distance from the demolition site to the recycling/ landfill unit. However, end-users of the EPD can use this information to calculate the impacts of a bespoke transport distance for module C2 if required.	Litres per KM	0.227
	Distance: Deconstruction unit to pre-processing unit	km	50
	Transportation	Road transport	Lorry, 16-32 metric ton
C3- Waste processing	The End-of-Life scenario for Floor finish (underlay), textile (recycled) will be modelled according to BRE 2025 PCR PN514 Rev 3.2. i.e 100% to incineration.		
	Carpet to incineration	%	100
	Chatra to incineration	kg	4.25
	Chennai to incineration	kg	3.75
	Daiya, Desuri and Willingdon to incineration	kg	3.80
	Jaspur to incineration	kg	4.50
C4 - Disposal	No material to disposal	%	0
Module D	"Benefits and loads beyond the system boundary" (module D) accounts for the environmental benefits and loads resulting from the 100% pure wool carpet, which is collected for incineration at the end of life. The dataset used to calculate the avoided impacts of electricity consumption in a future system was 'Heat, district or industrial, other than natural gas {Europe without Switzerland}   market for'; 'Heat, district or industrial, natural gas {Europe without Switzerland}   market for' and 'Electricity, high voltage {Europe}  market group for electricity, high voltage'.		
	In the pre-processing stage, the recovered wool is sent to incineration. The benefits of incinerating the carpets were calculated for each product.		
	Chatra - Benefits due to incineration of waste textile	kg	4.25
	Chennai - Benefits due to incineration of waste textile	kg	3.75
	Daiya, Desuri and Willingdon - Benefits due to incineration of waste textile	kg	3.80
Jaspur - Benefits due to incineration of waste textile	kg	4.50	

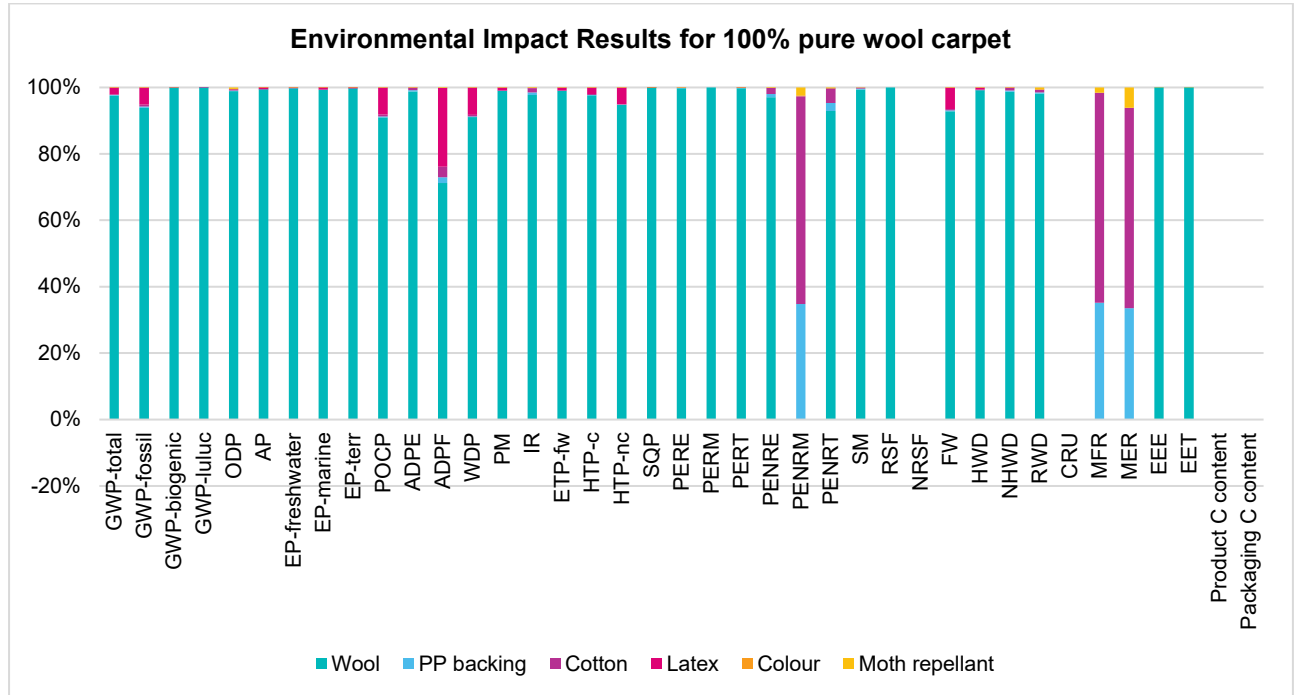
## Interpretation of results.

The manufacture of the raw materials for 1 m<sup>2</sup> of 100% pure wool carpet in its six presentations, has the greatest impact compared to other modules. Information available in Graph 1.



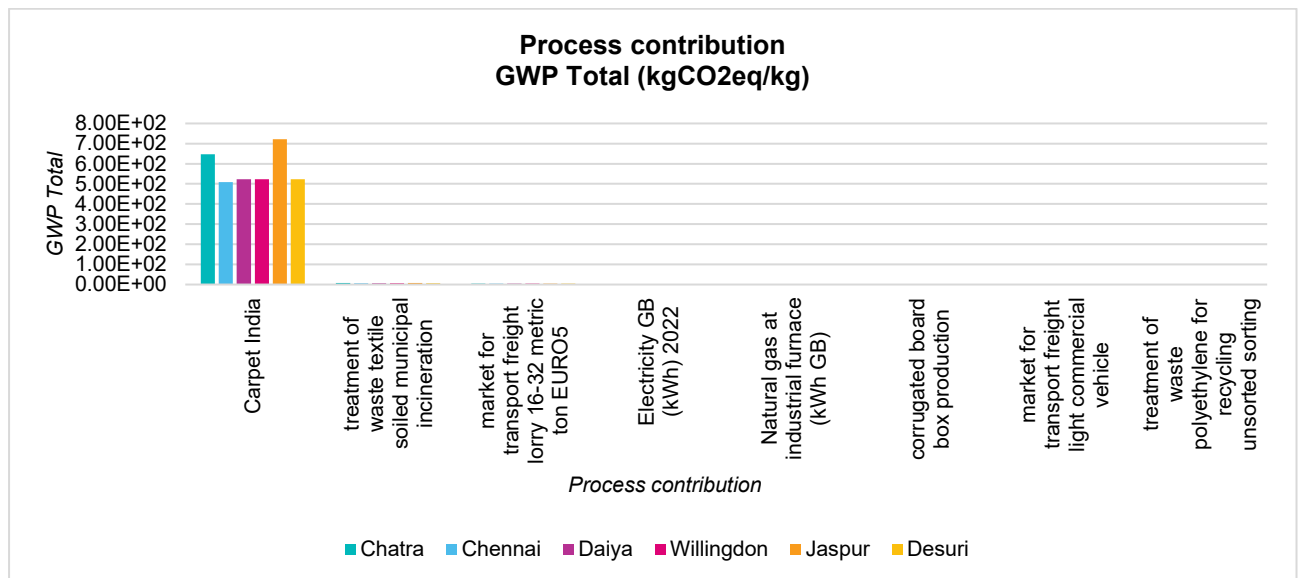
Graph 1. Core environmental impact, product modules, for 1 m<sup>2</sup> of 100% pure wool carpet with weights from 3.75 to 4.5 kg.

As per the 100% pure wool carpet, wool accounts for 97.57% of the impacts in almost all categories, except ADPF, PERM, NRSF, CRU, MFR, MER, Product C content and Packaging C content. More information is available in Graph 2.



Graph 2. Environmental Impact Results for 100% pure wool carpet (intermediate product imported from India to the UK for all carpet types).

The total GWP process contribution is mainly due to the import of carpet from India to the UK, regardless of the carpet model.



Graph 3. Process contribution per carpet.



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