

HUNTSMAN

Enriching lives through innovation

Huntsman Textile Effects - Partners in Sustainability



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Key drivers of sustainability

Legislation

(longer term / global)

- Water shortages
- Energy shortages
- Pollution control

Brand & Retail

(quick impact)

- Restricted Substances Lists
- CSR initiatives
- Saving the planet

Economics

(survival)

- Profit
- Labour
- Currency



Economic & Environmental Sustainability??

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Largest textile production area
with 700 units shutdown in Jan 2011

Source: The Economic Times(29th Jan2011)

HC orders closure of Tirupur dyeing units

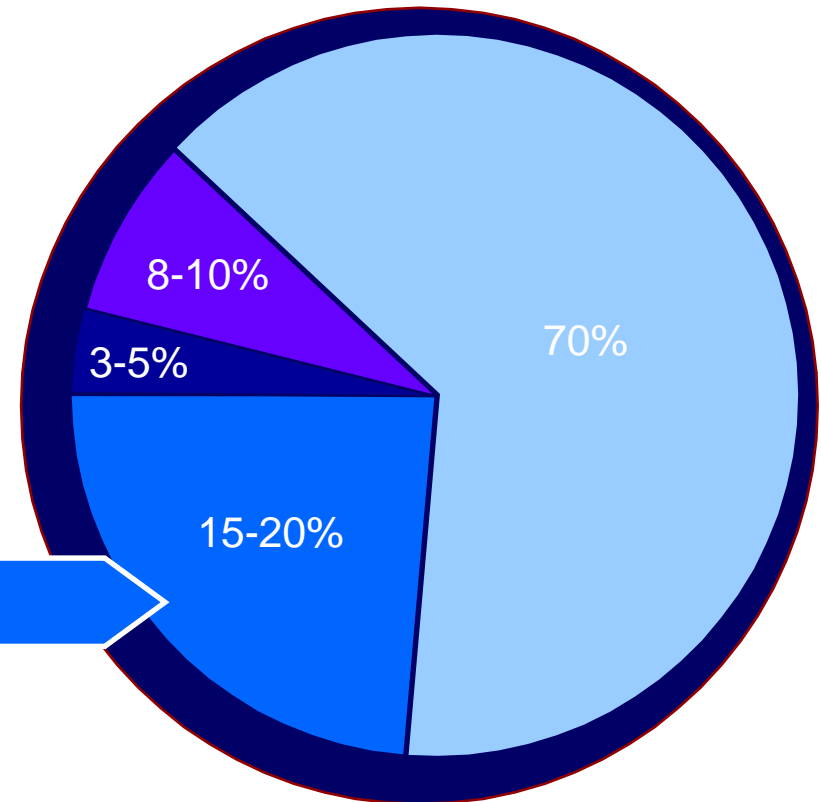
- CHENNAI/COIMBATORE: The Madras High Court has ordered the closure of all dyeing and bleaching units in Tirupur,
- The move will affect around 720 units, employing 40,000-50,000 workers, and cause an estimated loss of Rs 50
- it said dyeing and bleaching units are discharging industrial effluents into the river, making the water unfit for domestic use".

'No Tirupur without dyeing factories'

Which costs can be controlled?

Cost Analysis of a Cotton T-Shirt

- Challenge to manage and control fiber and labor costs
- Dyes constitute the smallest cost
- Utilities costs-scope for reduction through environmental and operational excellence



Biggest potential for cost reduction



● Fiber ● Utilities ● Labor ● Dyes & Chemicals

Industry Needs from a Partner

Relevant Products

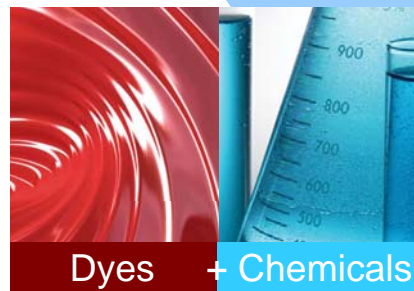
- for your end articles
- for your equipment

Knowledgeable People

- technology experience
- able to work in your facilities

Innovation

- to help you improve your business
- to help you meet new challenges



What Partnership Can Deliver

Resource consumption per year-100%Co Knit (20t/day)

	Before audit	Optimized	GPB / Avitera SE
Water:	960000 m ³	660000 m ³	360000 m ³
Electricity:	2.1 mio KW	1.5 mio KW	0.8 mio KW
CO ₂ :	42 t	30 t	16 t

One process optimisation step with a huge impact on sustainability.

Huge reduction in utilities costs



Relevant products

Powerful pretreatment

- GENTLE POWER BLEACH™—Bleaching at its best

Reactive Dyes – Next Generation

The average water consumption for **dyeing** 1 kg of cotton

- Using conventional dyes **60 to 80 liters**
- Using today's Best Available Technology (BAT) **30 to 40 liters**
- **AVITERA® SE** **15-20 liters**



Knowledgeable People

Productivity Improvement Program (PIP)

Leveraging people knowledge

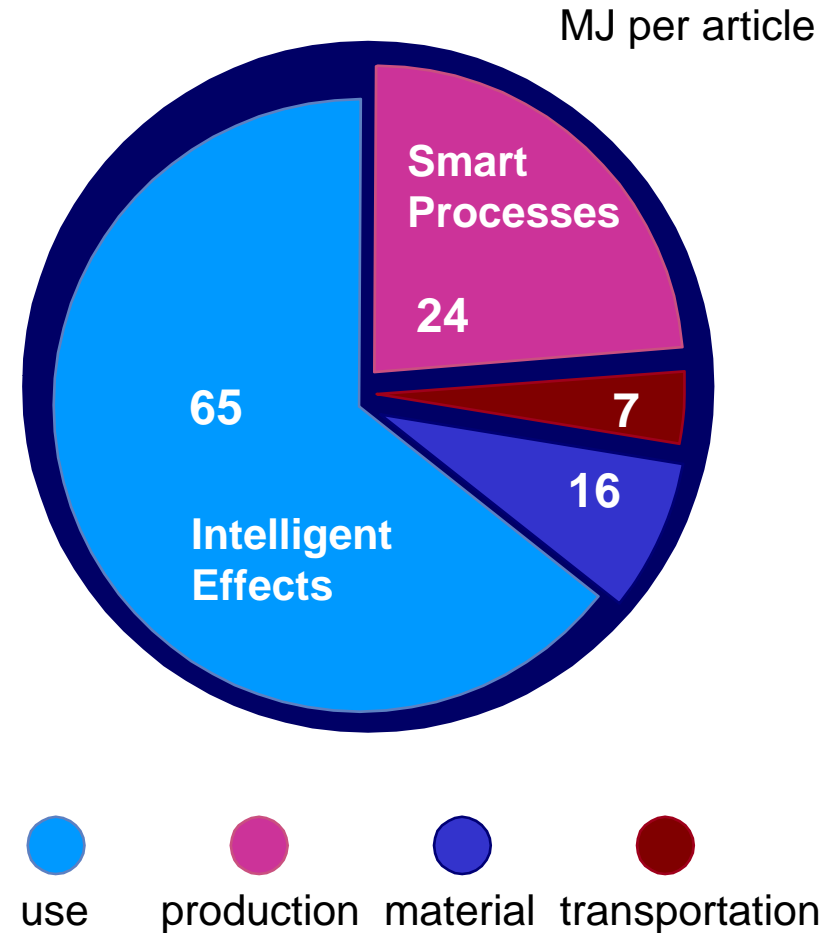
- Textile Effects brings its proprietary know-how and expertise to audit textile mills to optimize their processes and production rates for savings in water, energy and effluent.
- Demonstrates the cost effectiveness of Huntsman products to create value.



Brands & Retailers – Differentiation through Ecology

Ecological balance, a cotton T-shirt

Primary energy profile



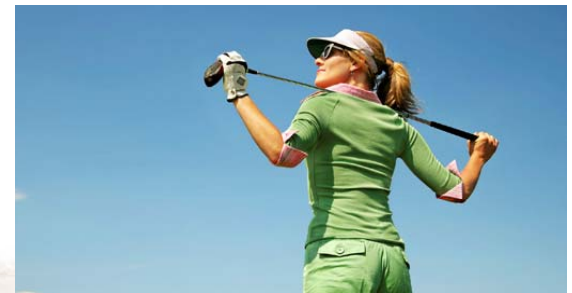
Source; well dressed? University of Cambridge 2006

Innovation

Intelligent Garment Effects to drive sustainability

Freshness
Active Comfort
Lasting Color
Easy Care Plus

Garments need to be laundered less
Make life easier
Give the garment a longer life
Reduce the need for tumble drying / ironing



Huntsman- Partner ?

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Commitment (EHS & CSR initiatives)

Baroda Manufacturing site



Snapshot –Site Sustainability

EHS-First Priority

- Safety of associates & surrounding community is our top priority with ongoing investments made and the progress on safety performance in last 2 years since the acquisition.
- Significant investments to improve the Environmental performance e.g investments in Dust control in Boiler, Spray Dryers, WWTP etc

Operational Excellence

- Dyes production ramped up to 12000t/ annum
- Some semi specialty dyes transferred from other sites.
- Currently the site is working on
 - capacity expansion of Dyes plant for other key ranges
 - improving the efficiency of H-acid plant.
 - energy conservation

CSR- A broader focus

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- Huntsman has undertaken various Education and Health related initiatives under the ambit of its Corporate Social Responsibility.
- The launch of ‘Anandi...Towards Joyful Learning” project in March 2011.
- The main focus of Anandi has been on making Anganwadi (pre-school) effective in surrounding villages and focusing on activity base learning.
- Several initiatives have been undertaken for the same.



Sustainability of the Indian Textile Industry

- Sustainability relates to the continuity of economic, social, institutional and environmental aspects of human society.
- A need to foster stronger working relationships with the textile industry and government in Gujarat and other major textile hubs within India



- The technology we need to make an impact is available today.

Huntsman – Partner for a Sustainable Future