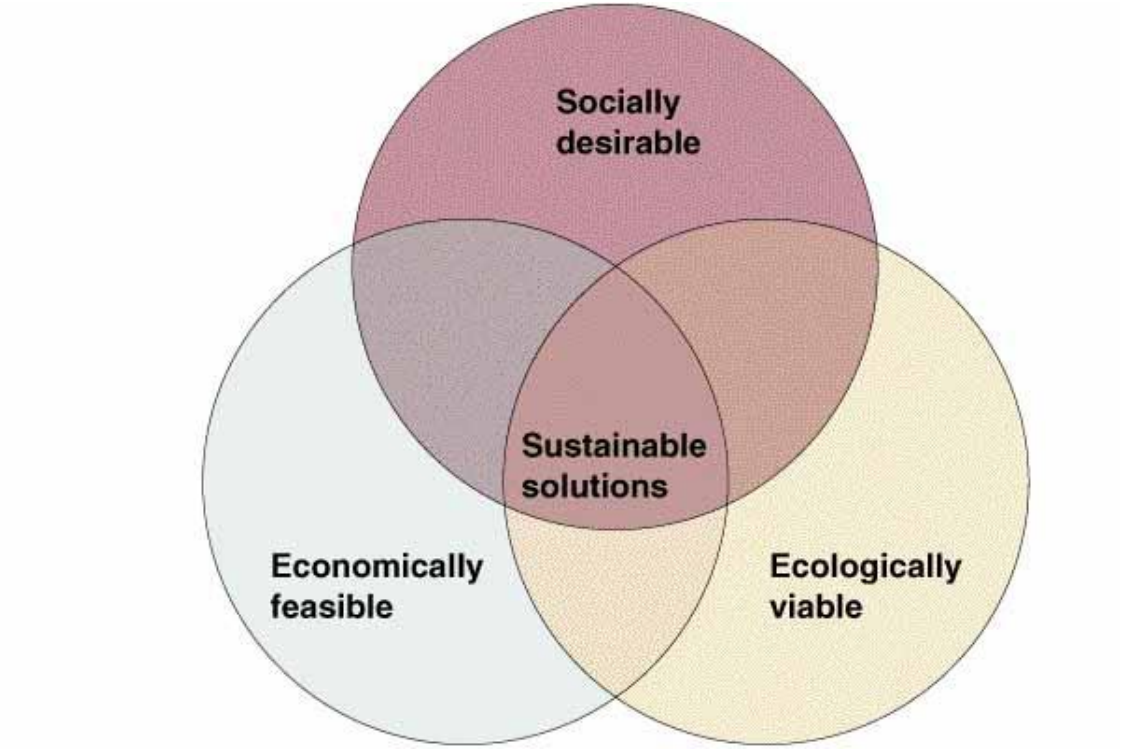

SUV
I'M MAD AS HELL AND I'M NOT GOING TO TAKE IT ANYMORE!
Reg. Unleaded 2.86
Prem. Unleaded 2.99
Super Unleaded 3.10
VIC HARVILLE

How sustainability can help your business?

Phil Riebel
Director, Environmental Affairs (NA)
UPM-Kymmene Inc.

What is Sustainability?



The Triple Bottom Line: People, Planet, Profits

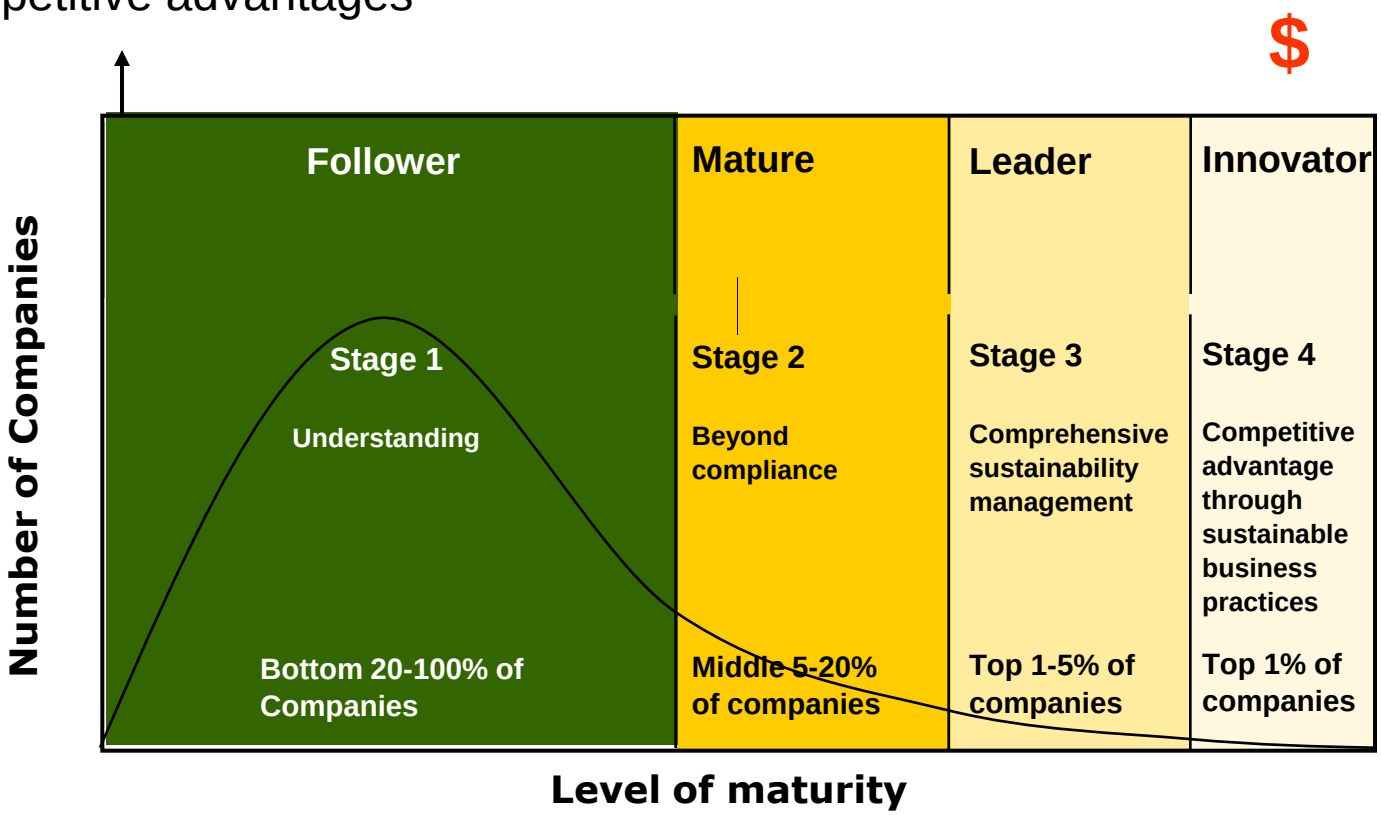
Business Case

- Economic-environmental-social win-win:

1. Driving out costs
   - More responsible use of raw materials, packaging reduction, less energy and water, more efficient logistics / fuel consumption, better supply chain management
2. Market differentiation
   - Getting a sustainable product to market faster, meeting consumer needs, reputation / corporate branding

Where is your company?

- Organizations progress along 4 stages of maturity on their way to realizing competitive advantages

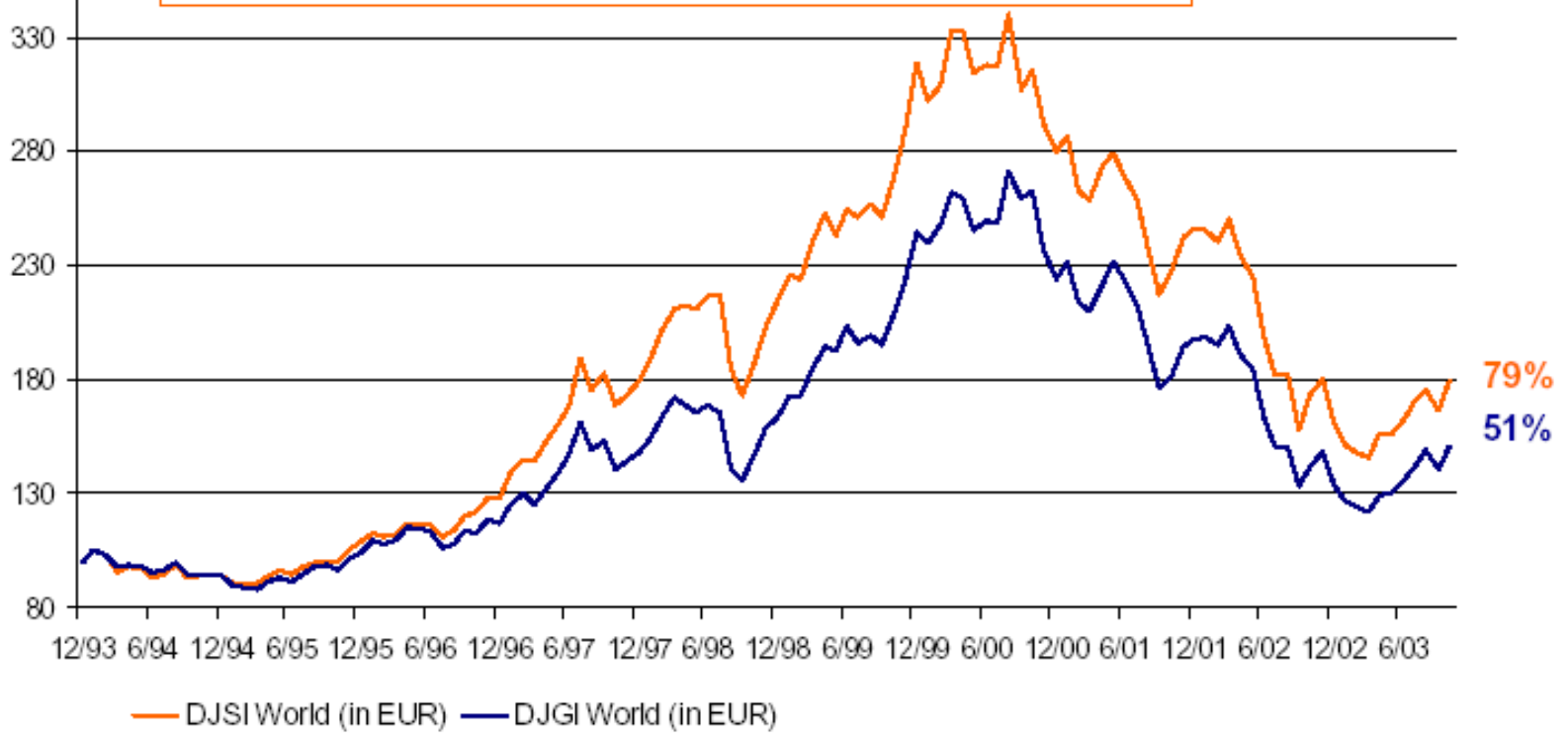


Public awareness is growing, but only a small % of businesses have capitalized on these benefits.

Sustainable Companies Have More Value

DJSI World / DJGI World:

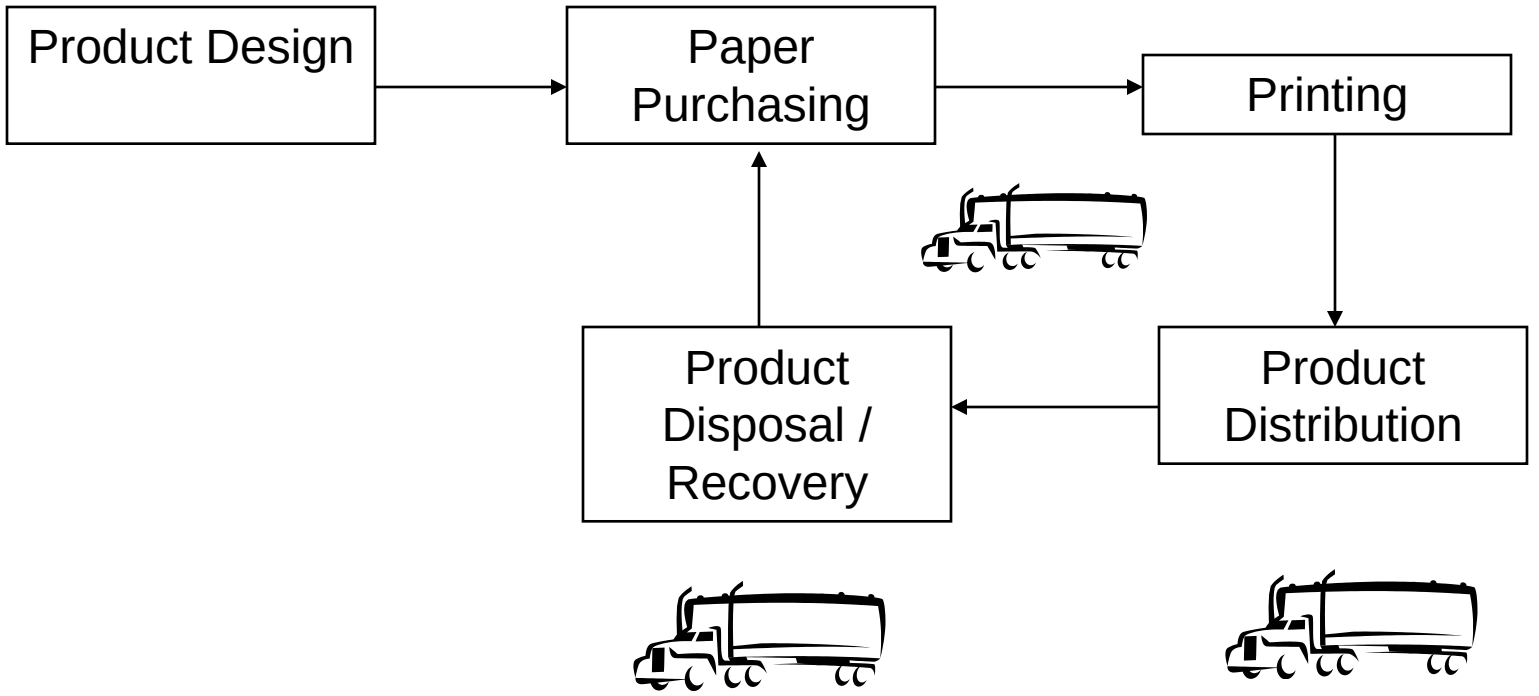
Correlation:	0.9701	Tracking Error:	4.49%
DJSI Volatility:	18.43%	DJGI Volatility:	17.52%



Sustainability in Practice

Product design, paper and print

Life-Cycle


Product Design
Paper Purchasing
Printing
Product Distribution
Product Disposal / Recovery

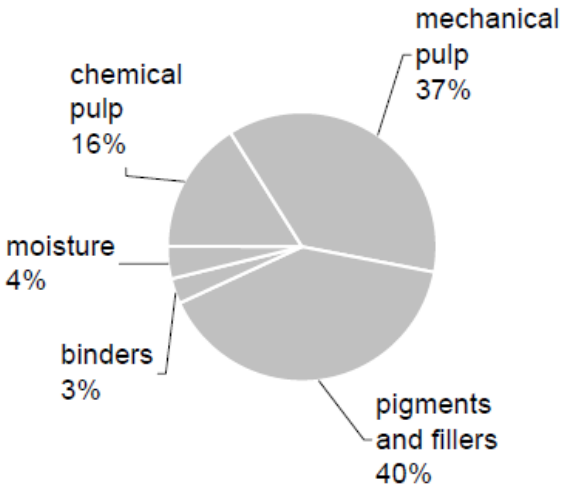
Paper Profile

Environmental parameters

The figures are based on methods and procedures of measurement approved by the local (or national) environmental regulators at the production site.
The figures include both paper and pulp production.

Water	**COD**	**6.0**	kg/tonne
	AOX	**0.02**	kg/tonne
	N_{Tot}	**0.04**	kg/tonne
	P_{Tot}	**0.004**	kg/tonne
Air	**SO_2**	**0.2**	kg/tonne
	NO_x	**0.6**	kg/tonne
	CO_2 (fossil)	**80**	kg/tonne
Solid waste landfilled		**20**	BDkg/tonne

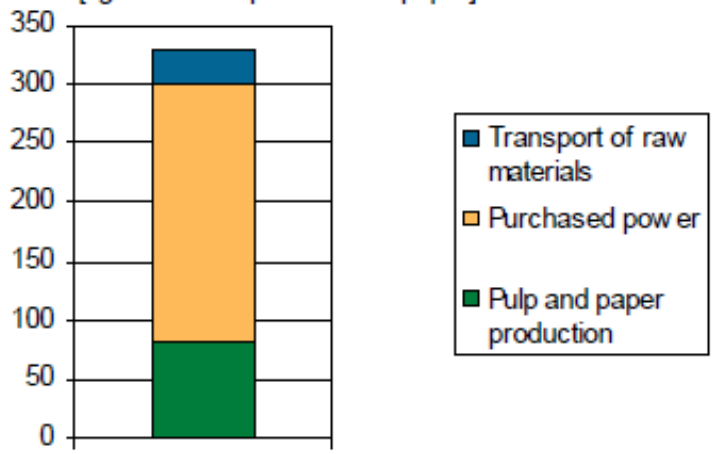
Product composition



Carbon Footprint

- UPM calculates the Carbon Footprint of its paper products based on the ten elements of the Carbon Footprint Framework for Paper and Board Products developed by CEPI (the Confederation of European Paper Industries).
  Detailed information on the CEPI Framework can be found at www.cepi.org.
- The data used in the calculation are based on annual averages for a paper machine line.
- GHG = greenhouse gas. UPM figures refer only to emissions of fossil CO_2.

Carbon footprint of Rauma PM 1
[kg fossil CO2 per tonne of paper]



Ten elements of the CEPI Framework (See next page for remarks and explanations)	Fossil CO_2 (kg/tonne of paper)	Biogenic CO_2 (kg/tonne of paper)
1. Carbon sequestration in the forest		0
2. Carbon stored in the product		970
Net sequestration of biomass carbon		**970**
3. GHG emissions from pulp and paper production	80	
4. GHG emissions associated with producing virgin or recovered fibre	-	
5. GHG emissions associated with producing other raw materials	-	
6. GHG emissions associated with purchased electricity and steam *)	220	
7. Transport-related GHG emissions	30	
Total fossil CO_2 emissions	**330**	
8. GHG emissions attributable to product use (e.g. printing)	-	
9. GHG emissions attributable to end-of-life-management of products	-	
10. Avoided emissions	-	

#	Desired Outcome	Key Indicators	Units
1	Efficient Use & Conservation of Raw Materials	Recovered content	
		Pre Consumer	% of total fiber wt
		Post Consumer	% of total fiber wt
		Agriculture Residues	% of total fiber wt
		Water Use	m^3 / Mt
		Energy Use	gigajoules / Mt
		Innovation Credit	Buyer may award up to 20% of total original score
2	Minimization of Waste	Recyclability & Compostability	% Content – Wax, plastic, metal
		Innovation Credit	Buyer may award up to 20% of total original score
3	Conservation of Natural Systems	Source	% Traceable
		Certified Forest Management	% FSC
			% SFI, CSA, PEFC
			% other national & international certifications (NATL-INTL)
			% small private landowner programs (SPLP)
		Sensitive Forest Fiber	0 / 1 / 2 / 3 / 4 / 5
		Innovation Credit	Buyer may award up to 20% of total original score

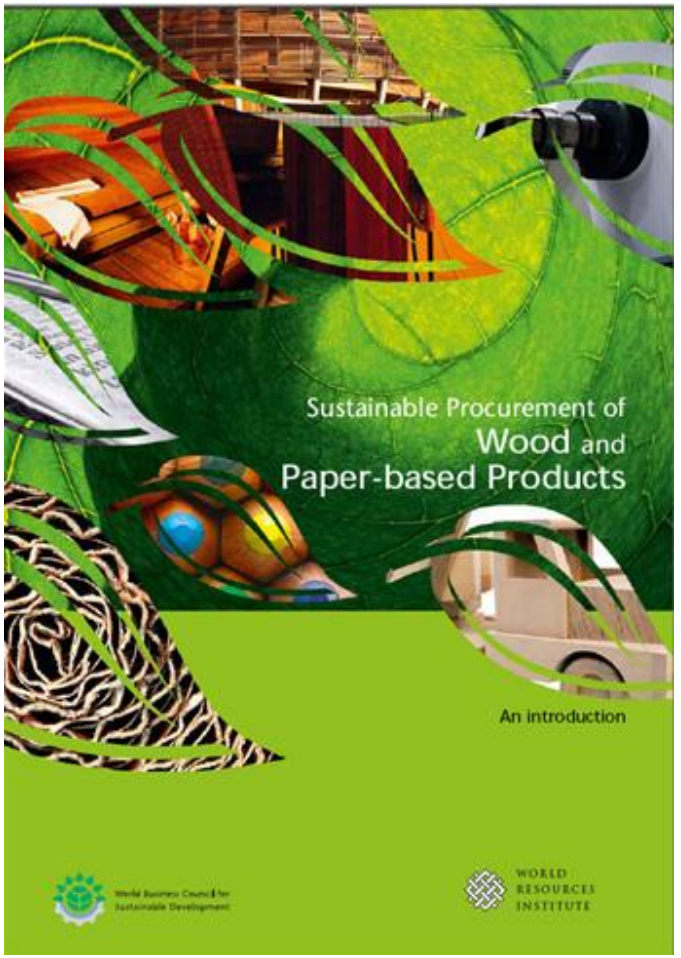
Environmental Paper Assessment Tool, Version 2.0

#	Desired Outcome	Key Indicators	Units
4	Clean Production	Air Quality	
		SO_2	kg SO_2 / Mt
		NOx	kg NO_x / Mt
		TSP	kg TSP / Mt
		Mercury	milligrams Hg / Mt
		Water Quality	
		AOX	kg AOX / Mt
		Oxygen Demand	kg BOD_5 and kg COD / Mt (when both available)
		TSS	kg TSS / Mt
		Climate Stability	
		CO_2-e	kg CO_2-e / Mt
		GHG Reduction Efforts	0 / 1 / 2 / 3 / 4 / 5
		Minimum Impact Mill Efforts	0 / 1 / 2 / 3 / 4 / 5
		Solid Waste	Kg solid waste / Mt
		Environmental Management System	0 / 1 / 2 / 3 / 4 / 5
		Innovation Credit	Buyer may award up to 20% of total original score
5	Community & Human Well-Being	Labor and Human Rights	0 / 1 / 2 / 3
		Human Health and Safety	0 / 1 / 2 / 3 / 4
		Stakeholder Impacts	0 / 1 / 2 / 3
		Innovation Credit	Buyer may award up to 20% of total original score
6	Credible Verification & Reporting	Public Reporting	Weighted % of data
		Independent Verification	Weighted % of data
		Innovation Credit	Buyer may award up to 20% of total original score

Create and Implement a Sustainability Policy / Guideline

- Based on:
  - Key elements of the life-cycle
  - Measured performance data
  - Recognized international standards
  - Independent third party verification

- WBCSD / WRI guide
- FPAC / PWC Buyer's Guide to Canada's Sustainable Forest Products
- EU Commission Green Public Procurement Training Toolkit
- DMA Environmental Policy Generator



Policy Elements: Example

- Incorporate responsible use at product design stage
  - ex: The Little Green Guide to Printing & Design
- Evaluate paper using a report card (EPAT, Paper Profile)
- Paper:
  - Awarded proven eco-labels (ex: EU eco-label, Carbon Trust)
  - Covered by a verified chain-of-custody (ex: SFI, PEFC, FSC)
- Promote biodiversity of forests
- Measure, track and lower your carbon footprint
- Evaluate the corporate social responsibility of your supply chain
- Printing, product distribution, recovery / recycling

Basis Weight Reduction

- Environmental performance improvements from moving basis weight from 40# to 28#, per page

– Water use	20%
– Effluent quality	10%
– Air quality	15-25%
– CO2 emissions	25%
– Solid waste to landfill	15%
– Purchased power	28%

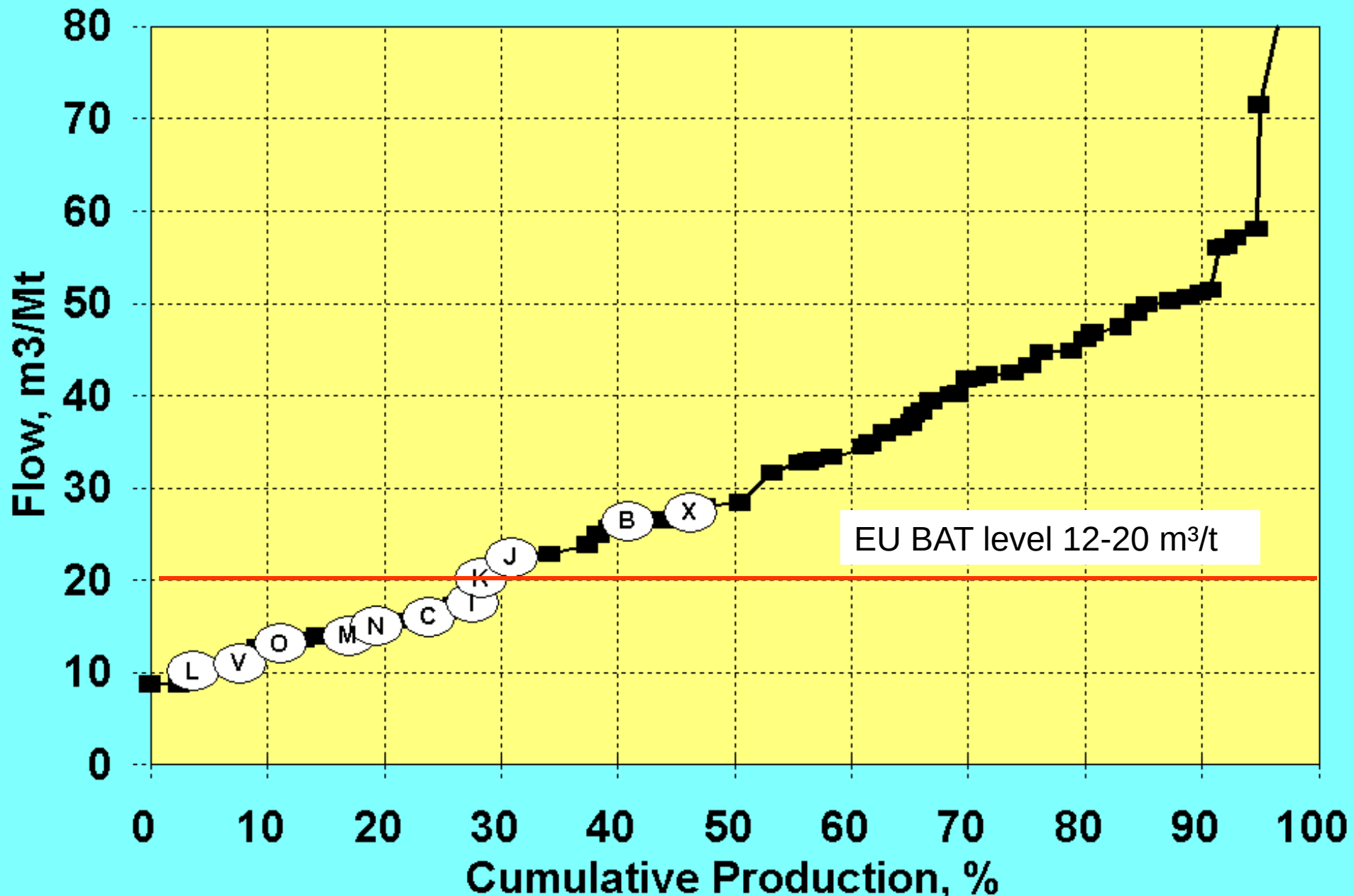
- Transport / move more information to your readers per tonne of paper...lower carbon footprint due to transport

Coverage of Eco-Labels & Environmental Product Declarations

Programs	Forest Operations / Fiber					Pulp and Paper Mill Performance																		Other							
						Water / Energy Use					Air Quality / GHG Emissions						Wastewater Quality						Solid Waste		Chemical Use							
	Recycled content	Agricultural Residues	Sustainable forest management	Sensitive Forest Fiber (non scoreable)	Chain of Custody	Total energy	Purchased Electricity	Renewable vs. non-renewable energy	Water use or effluent flow	Mercury emissions	Greenhouse Gases	GHG Reduction Efforts	SO2 and/or NOx	TRS	Particulate emissions to air	Chlorinated organics	Bleaching Method	BOD or COD	Effluent nutrients	Total suspended solid in effluent	Minimum Impact mill Efforts	Solid waste	Recyclability and compostability	Listing or testing requirements on specified additives	EMS	Labour and Human Rights	Health and safety	Stakeholder Impacts	Public reporting of performance data	Independent Verification (optional)	Innovation Credits (up to 20% of total score)	TOTAL ELEMENTS COVERED
ISO Type 1 Features																															
PEFC & FSC	X	X	X		X																										4
EU Flower	X		X		X	X					X		X	X			X		X	X			X		X						12
Others: Blue Angel, Nordic Swan, Green seal, Canada Environmental Choice (Ecologo)																															
ISO Type III Features																															
EPAT	X	X	X	X	X	X	X		X	X	X	X		X	X	X		X		X	X	X	X		X	X	X	X	X	X	X	26
Paper Profile	X		X		X		X	X		X		X				X		X	X			X			X							12
WWF Scorecard	X		X		X					X						X		X				X			X				X			9
PREPs	X		X	X	X												X															5
Others: EPDS (Environmental Profile Data Sheet)																															

Source: NCASI, 2007

Water Use – Integrated Mills Making News/Catalog/Magazine Paper

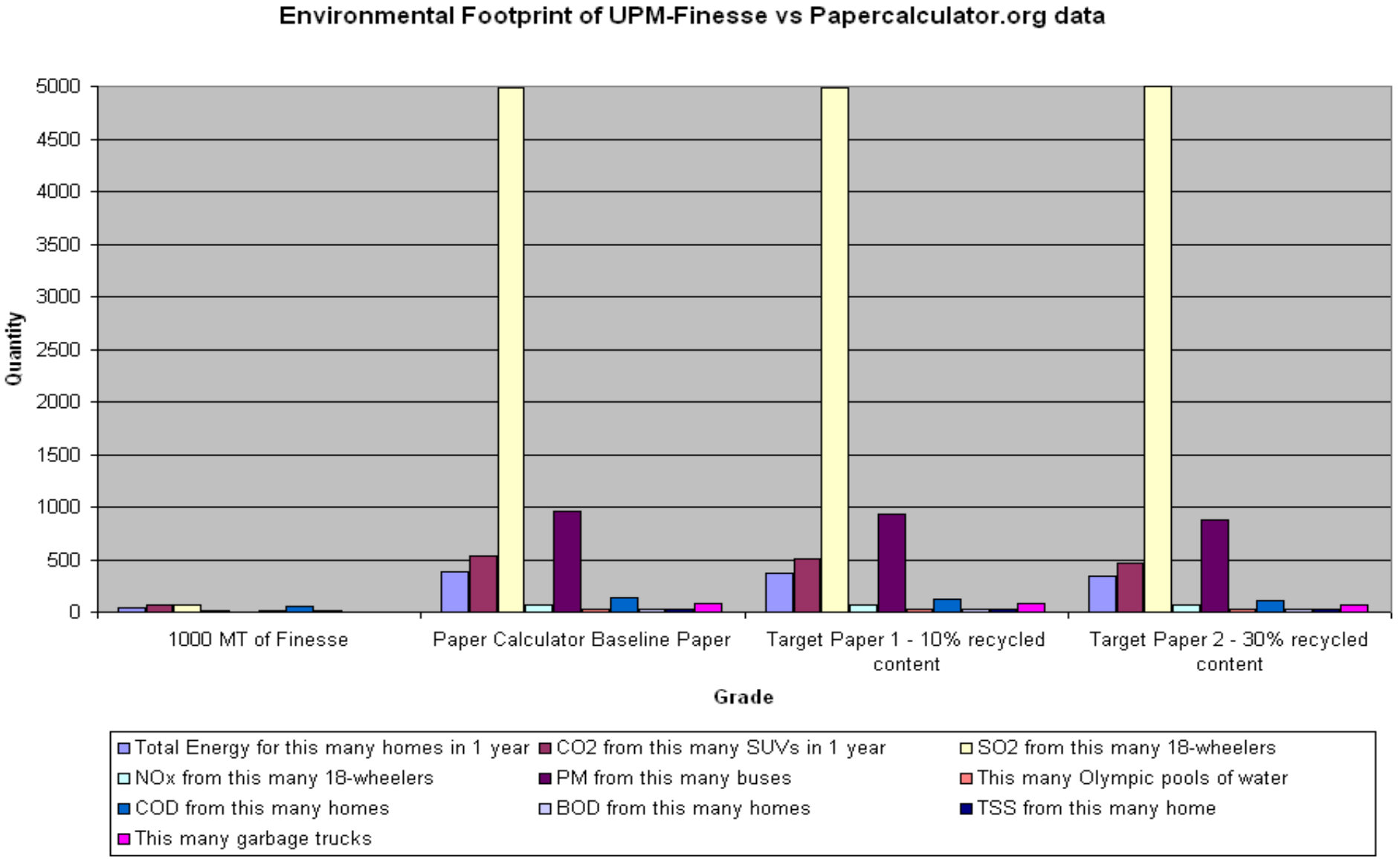


Myth / Fact

- Recycled fiber in high end printing grades (catalogs, magazines) reduces the environmental footprint of paper

- It may...but unless you measure the footprint you will never know...and you may be very wrong

Be Cautious About Which Tools you Use



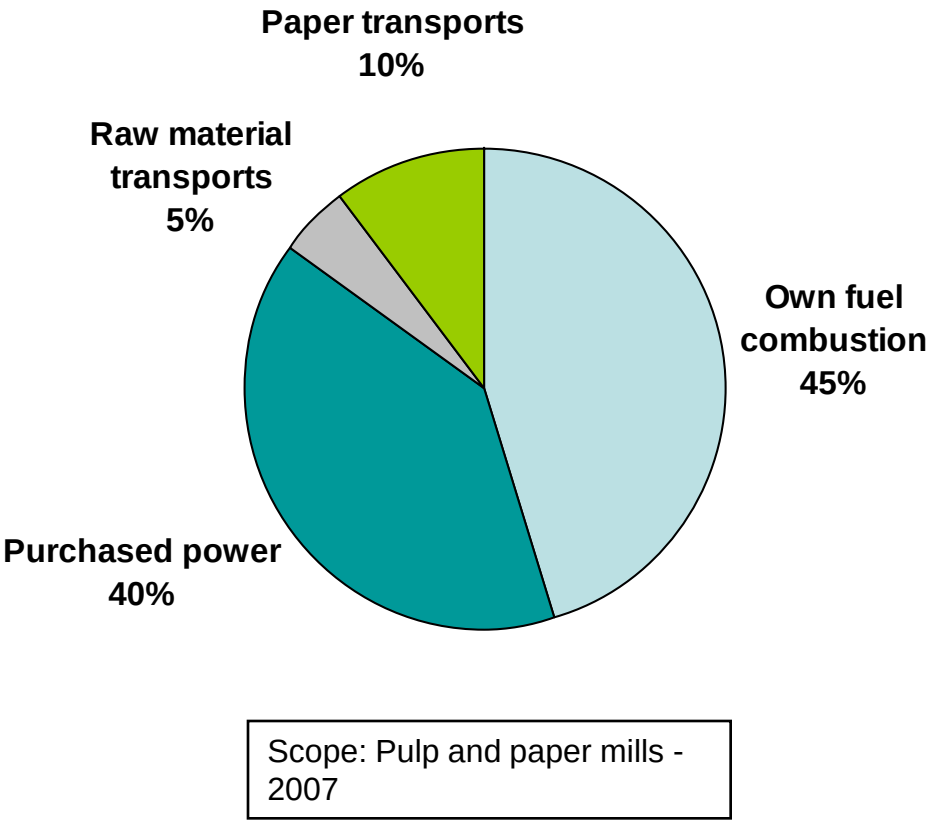
Myth / Fact

- FSC is the only acceptable sustainable forest management standard
- There is much variability among and between standards and regions.
- Studies have shown that all systems achieve sustainable forest management (SFI, PEFC).
- An inclusive position promotes overall sustainable forest management and ensure availability of certified paper (60-70% under PEFC).

Myth / Fact

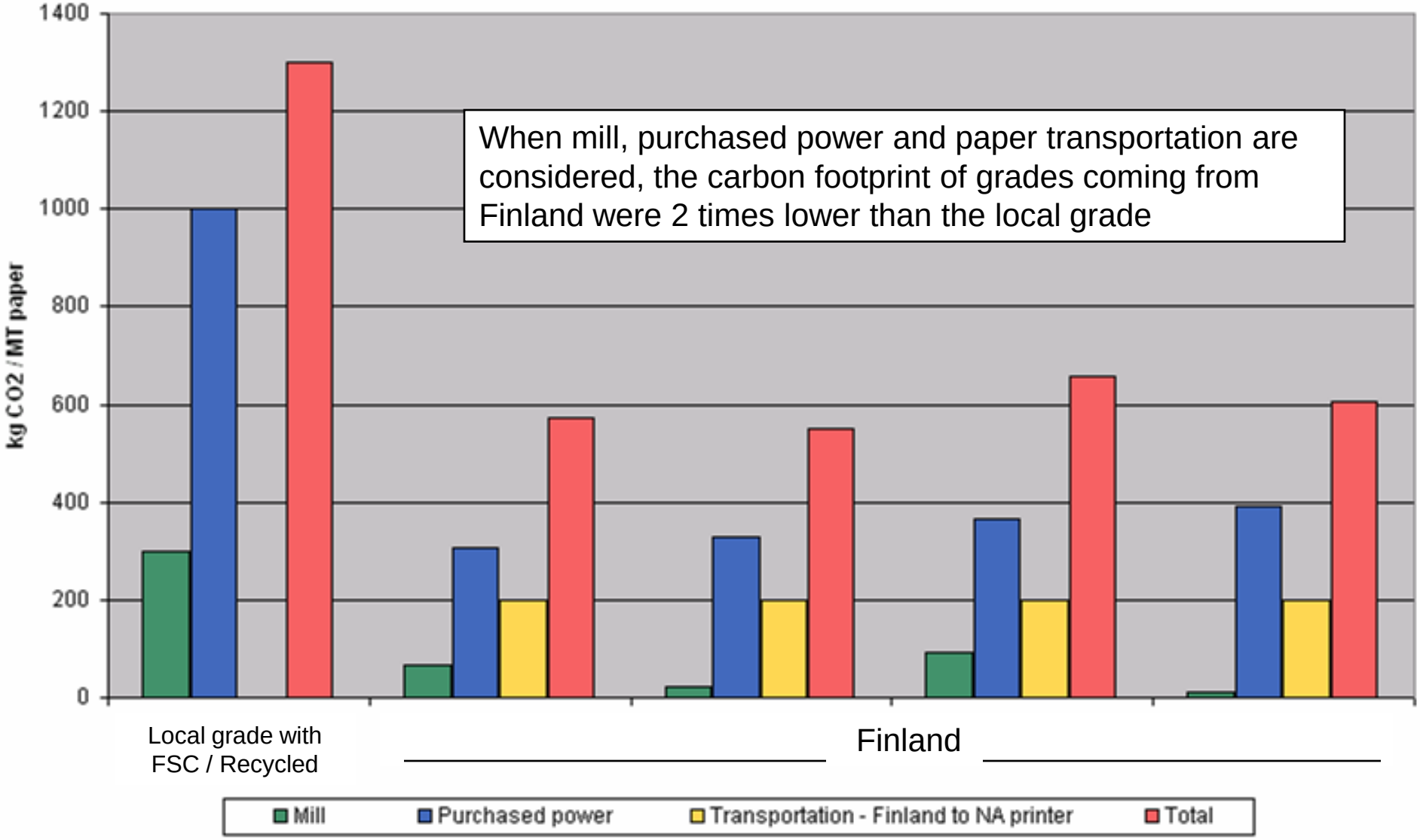
- The carbon footprint of paper increases when paper and pulp are transported long distances.

- Not really....60-85% of the carbon footprint comes from the mill site and purchased power. The best bang for the buck is to use renewable energy to make the paper.



Scope: Pulp and paper mills - 2007

Carbon footprint of SC grades – Mill, purchased power and paper transportation to printer



The Cost / Opportunity of Carbon

- A typical UPM biomass energy plant reduce fossil CO2 emissions by 300,000 MT / year
  - At 15 EU/MT CO2 = 4.5 million EU
- Mill closure in North America and elimination of fossil fuel = $4 million via the Chicago Climate Exchange
- High capital required to construct (over $1 billion over last 10 years) but good energy and carbon return

$90-150 million US per facility

What to do?

- Deal with "environment" in the context of sustainability
  - ID win-win !
  - CEO support and engagement
  - Integrate into operations & products
- Develop & implement a sustainability policy
  - Over the product life-cycle
  - Don't assume...learn, develop expertise
  - Use credible tools, measure and track
  - Focus on responsible product / material / resource use
- Market your accomplishments to get an edge
  - People want "green" products and companies