

The Impact Analyser methodology for the Ecosure Paint launch

Introduction and Background

Increasingly, businesses want to make decisions based on environmental considerations. People want to be able to make informed decisions based on quantitative evidence. One option is to undertake a detailed life cycle analysis, but this involves investing more time and money than is often feasible, and the result is still dependent on assumptions and conditions.

Forum for the Future worked with ICI to develop a decision making tool called The Impact Analyser. The aim was to quantify the change in the environmental impacts of product's lifecycle caused by a proposed change in the product (for example swapping ingredients), but not to waste time on unnecessary detail. It was important that the method was rigorous enough to be reliable, but streamlined enough to be worthwhile undertaking. We believe this approach can maximise the impact environmental considerations can have on decision-making.

The process

ICI were especially interested in applying the Impact Analyser methodology to a new range of Ecosure trade paints. To compare the paints with the ICI standard trade range, we considered their lifecycle from extraction, growing and pre-processing of raw-materials to processing at the ICI plant. To gather information we first contacted primary suppliers, and then supplemented this with secondary data.

For chalk pigments, for example, ICI's main suppliers provided the processing impacts directly. For the impact of mining the chalk, we used publicly available mining data from a mining company. The transport impacts were calculated from distances given by the supplier using conversion factors for shipping and road transport from The Department for Environment, Food and Rural Affairs (Defra). A summary of all the data sources is shown in the chart below.

Where we had a choice of which data to use, we used the most conservative source. A final step was to check how sensitive the result was to the assumptions made. ICI are now looking to use this process to inform a far wider range of decisions.

Overview of Data Sources

Pigments	Mining	Road and Shipping	Processing	Road			
Latex Binder	Extraction	Tanker	Chemical processing to make monomer	Road	Conversion to Polymer		
Alkyd Binder	Growth	Harvesting	Milling	Shipping	Road		Alkyd formation
	Extraction	Tanker	Refinery	Transport	Chemical Processing	Road	
Water	Transport	Processing					
Petrochemical solvent	Extraction	Tanker	Refinery	Transport	Chemical Processing	Road	
Generic petrochemical ingredients	Extraction	Tanker	Refinery	Transport	Chemical Processing	Road	
Generic non-petrochemical ingredients	Growth	Harvesting	Milling	Transport	Chemical Processing	Road	

Flow chart		Data	
	Initial step		Supplier
	Processing		Combination of supplier and industry/comparable data
	Transport		Industry/Comparable data
			Defra factors

Scope

Included:

- All greenhouse gases (not just carbon dioxide), water and waste
- Extraction, growing and pre-processing
- Manufacturing
- Transport up to the manufacturing stage
- The global warming potential of solvents emitted during use

Not included (no reason to believe they are different for the standard and Ecosure paints):

- Storage
- The lifecycle after factory gate
- Manufacture and maintenance of plant and machinery