

# Sequoia Featured Client: DTI

## Creating sustainable supply chains

Packaging CO<sub>2</sub> is six times greater than transport CO<sub>2</sub>

As part of a DTI-funded investigation into sustainable best practice, Sequoia partnered Unilever, ICI and Forum for the Future to determine the feasibility of in-store dilution of liquid consumer goods.

Sequoia's role was to quantify the CO<sub>2</sub> reduction from transporting highly concentrated liquids to store and diluting them in the aisle rather than transporting products that are predominantly water from factory to store.

For example, fabric conditioner products, even with a recent shift to more concentrated forms, are still over 50% water, so a significant sustainability opportunity would seem to exist. In-store dilution also has the additional sustainability benefit of allowing consumers to re-use packaging by refilling (at a price discount) the same pack a number of times - giving consumers an opportunity to reduce their packaging footprint.

Naturally, as well as having a positive environmental impact, in-store dilution needs to be commercially

attractive to both retailers and consumers. By replenishing and diluting the concentrate in the back-store and piping to the shelf, in-store dilution can offer consumers a greater range of customisable products from a much reduced shelf space which doesn't need shelf-stacking.

Examining the end-to-end supply chain from raw material supplier through manufacturer and retailer networks to the store reveals that transporting 'Comfort' fabric conditioner accounts for 5,400 Tonnes of CO<sub>2</sub> (73g CO<sub>2</sub> per pack), which invites the question: is that a significant amount of CO<sub>2</sub>? Whilst comparisons help put 5,400 Tonnes of CO<sub>2</sub> into context (the average UK household emits 6 Tonnes of CO<sub>2</sub>), perhaps the more relevant question for business is 'will that cost a significant amount?'

The current market rate for CO<sub>2</sub> on the EU Exchange is £19 per tonne, whilst the UK government estimates the social cost of carbon dioxide to be £25 per tonne. Taking the £25 figure as the potential cost of CO<sub>2</sub> under future regulation, CO<sub>2</sub> costs for transport would represent a 2% cost increase when compared to the existing commercial costs of haulage - equivalent to an additional 7p on the cost of a litre of diesel.

CO<sub>2</sub> reductions from transport are only a small part of the sustainability benefits of in-store dispensing, however. The embedded CO<sub>2</sub> in producing the packaging for fabric conditioner is 6 times the amount of CO<sub>2</sub> from transport. Consequently, by promoting packaging re-use, in-store dilution can lead to significant reductions in both carbon dioxide and in waste going to landfill, and could help promote a cultural shift away from a throw-away society.

