

## Lexmark position paper on Best Foot Forward study “Toner Refills at Cartridge World – Comparative Carbon Footprints”

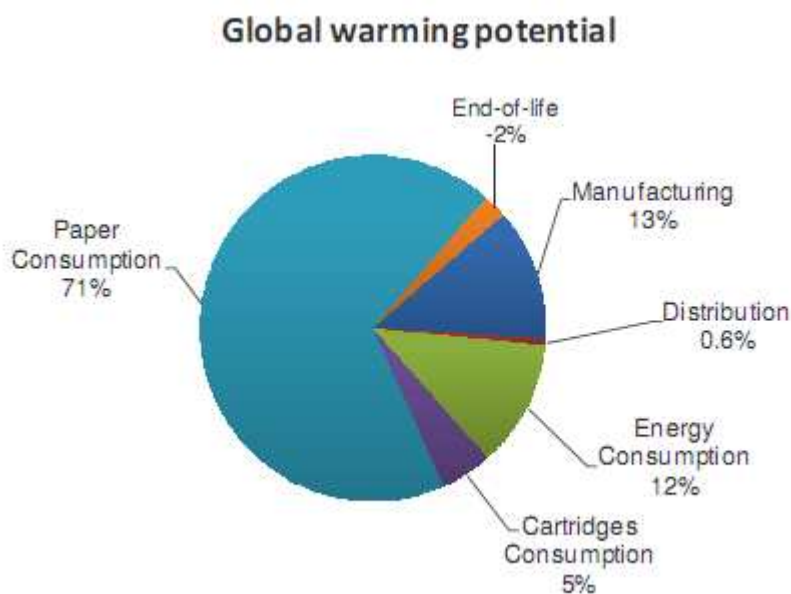
Via this paper Lexmark would like to give constructive feedback on Best Foot Forward toner refills study. Lexmark appreciates having an interactive process with The Centre for Remanufacturing and Reuse and supports the efforts to better remanufacture and recycle toner cartridge so that the number of landfilled cartridges can be significantly reduced. We have steadily increased the percentage of retrieved cartridges every year we have been in business. Among our UK accounts, our return rate is in excess of 73 percent.

Firstly, it has to be noted that the major environmental impact when looking at mono-laser printing devices is not from cartridges, but the paper used during printing. Lexmark strongly advocates the “print less” approach. We have set out to play a leadership role in helping promote responsible eco-behaviour throughout the life-cycle of its products and service.

The latest LCA (Life Cycle Assessment) results show that laser cartridge consumption contributes only 5% (in terms of global warming potential) to the impacts of the printer use phase.<sup>1</sup>

In addition, the EuP Preparatory Study on Imaging compiled for the EU Commission comes to the conclusion that “the use of office paper has the largest environmental impact” and that “the impact of the toner consumption was surprisingly low”.<sup>2</sup>

### LCA results by Life Cycle Steps:



<sup>1</sup> LCA 2008 study on the Lexmark X646dte laser printer prepared by BIO IS. Study complies to ISO 14040 and 14044.

<sup>2</sup> EuP Preparatory Studies « Imaging Equipment » (LOT4) Final 2008 Report on task 8 “Scenario, Policy, Impact, and Sensitivity Analysis” page 15

Therefore, appropriate environmental measures to reduce the carbon footprint of laser printing should mainly focus on the reduction of paper consumption as for example via duplex or two-up options.

Secondly, one needs to be careful to have a balanced and nuanced view when defining the potential environmental footprint impact of a laser cartridge. The average cartridge refilled by a remanufacturer can only have a lower carbon footprint than a cartridge that is used once under certain conditions.

The potential lower carbon footprint of a remanufactured cartridge mainly depends on:

- The laser cartridge yield and reliability performance (acceptable pages printed, text quality, impact on printer performance and value). The latest Lexmark BLI study shows that only 71% of the tested remanufactured cartridges printed the expected number of pages.<sup>3</sup> The laser cartridge should be tested to the ISO 19752 or 19798 Standards and should have an individual test Report accessible to customers as Lexmark does on [www.lexmark.com](http://www.lexmark.com).
- The complete life cycle process (manufacturing, distribution, use and end of life).
- The quality of the recycling process to avoid landfill (i.e. material recycled into new product instead material recycled into energy).
- The quality of the toner (i.e. Lexmark toner requires lower temperature for the fusers: it reduces paper curl and consumes less energy).

### ***CRR Response***

*We agree that the largest impact is from the paper itself and wholly support the need to reduce the number of wasted pages printed in offices. This can be achieved through duplex printing, user education and technological advances. However, the central point to this investigation is to examine the production of a remanufactured cartridge versus new and does not affect the overall conclusions from the study. Therefore, reducing printed pages is important but remanufacturing also reduces the carbon impact of printing.*

*As we state in the report, we feel that debate should now focus on the in use phase of the cartridge. Claims of poorer quality printing, resulting in lower page yields or more wasted pages needs to be substantiated. We feel that a 'real world' study involving a large print user would help address the question of quality when comparing new and remanufactured cartridges rather than another laboratory test where the subjectiveness of the test criteria can be disputed.*

*We also agree that all printer cartridges should be recycled at the end of their useful life. Production and use of different toners will have some impact on the carbon footprint but assessing individual cartridges was beyond the scope of the report.*

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<sup>3</sup> Buyers Laboratory 2005 Report tested 11 remanufactured cartridge brands