Life Cycle Assessment Summary Report
KODAK i2800, i2600, i2400 Scanners
ISO 14044 Protocol

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Summary

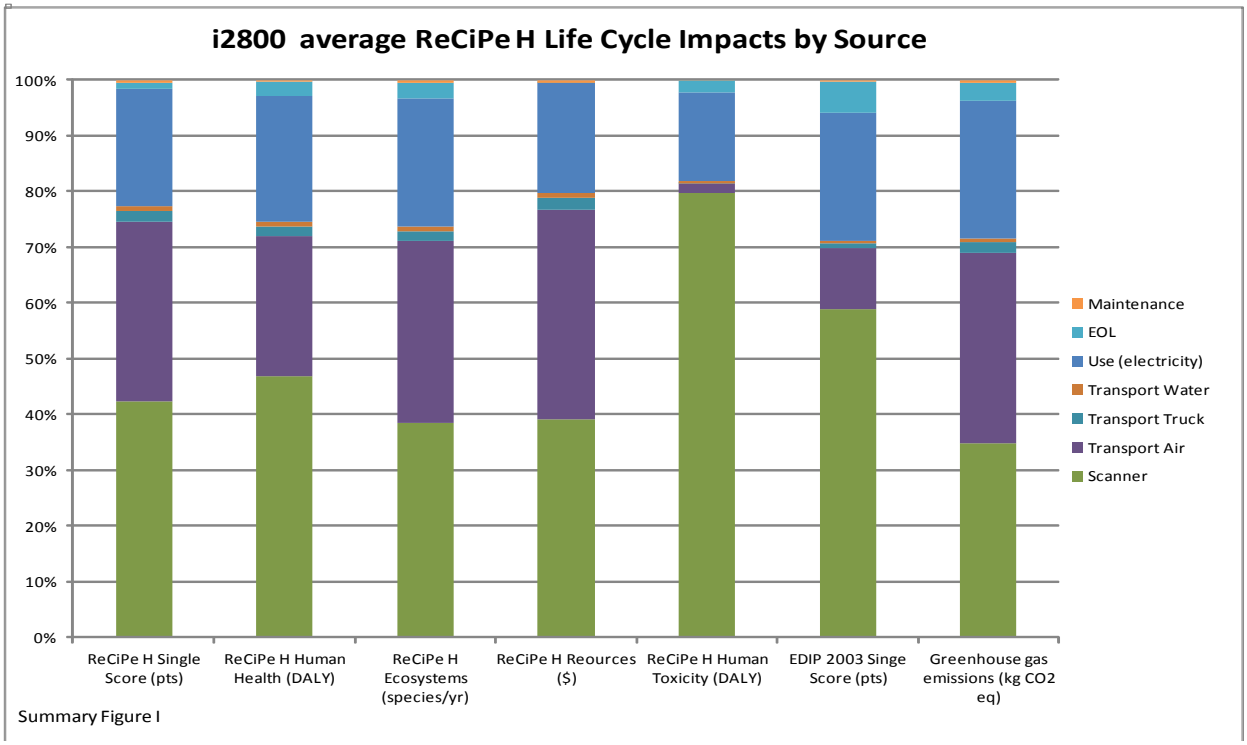
Kodak conducted an ISO 14044 life cycle assessment (LCA) of a line of nearly identical scanners – the KODAK i2400, i2600, and i2800 Scanners. The LCA covered the full life cycle - raw materials, manufacturing, packaging, distribution, use, and end of life. LCA objectives were to:

- identify areas of key environmental impact in order to focus improvement efforts,
- meet the imaging equipment EPEAT LCA requirements, and
- evaluate the effectiveness of a previous Streamlined LCA for the same scanner line.

The key indicators for this study were the ReCiPe H weighted environmental damage single score and the Greenhouse Gas Emissions (IPCC 2007 GWP 100a Version 1.02). The three ReCiPe H endpoints – human health, ecosystems, and resource depletion, and 17 contributing environmental impacts were also evaluated using average conditions for each scanner model and for a limited number of other scenarios. Traci 2, EDIP 2003 and Eco-indicator 99 were also used as alternative models for a limited number of scenarios to serve as a quality check. Simapro version 7.3.2 life cycle assessment software was used to model these environmental impacts.

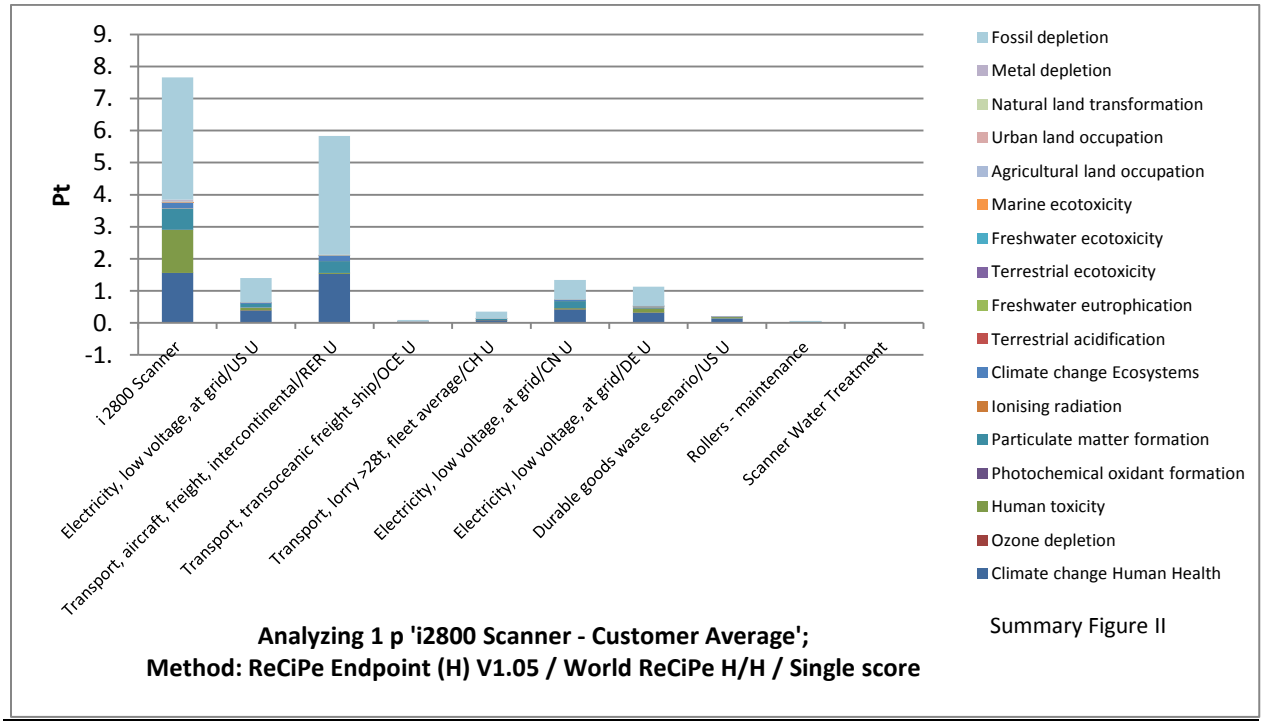
Several different scenarios were evaluated by varying user behavior, user location, transportation modes, and scanner model number. Summary Figure I shows that the ReCiPe H weighted damage single point impacts are largely from the scanner materials and manufacturing, air transport, and electricity consumption. Summary Figure II also shows the ReCiPe H single impact score, but separates the results by impact category. It shows that the majority of impacts are from climate change and fossil fuel depletion.

Summary Figure I:
KODAK i2800 Scanner Average ReCiPe H Life Cycle Impacts by Source



Summary Figure I

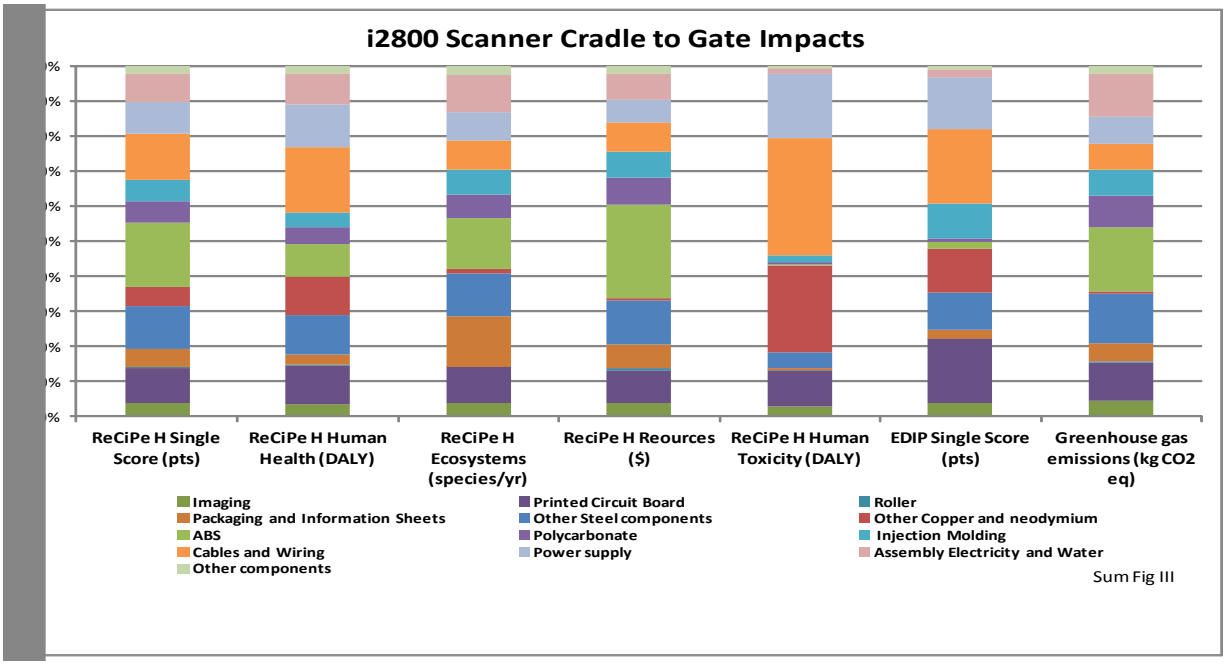
Summary Figure II:
KODAK i2800 Scanner LCA ReCiPe H Weighted Impacts by Source



Summary Figure II

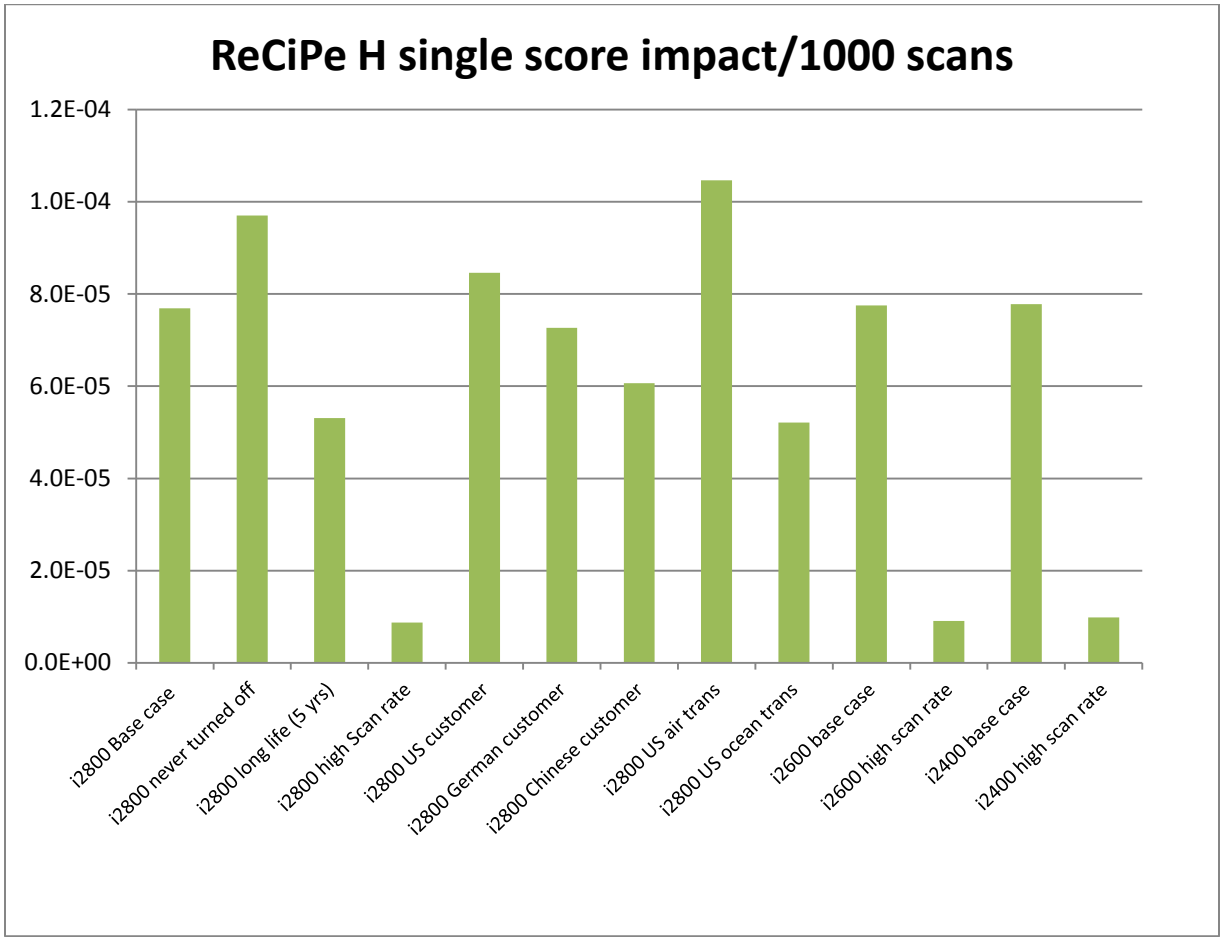
Additional details on the normalized impacts from the scanner component categories are shown in the following Summary Figure III. It illustrates that there is no single dominant component category, but most component categories contribute a significant impact. Additional detail on component impact per kg is found in the body of the report.

Summary Figure III:
KODAK i2800 Scanner Cradle to Gate Impacts



Summary Figure IV summarizes ReCiPe H single point impact results for all the scenarios modeled using the functional unit of impact/1000 scans. Compared with the base case, impact can be reduced by using the scanner for more scans as shown in the "high scan rate" and "long life" scenarios. Impacts are increased with air transport and decreased with ocean transport. Impacts are increased if the scanner is not turned off during non-working hours. Impacts of the i2600 and i2400 models are similar to the i2800 scanner, particularly at typical scan rates.

Summary Figure IV:
ReCiPe H Single Score Impact/1000 Scans for KODAK i2800, i2600 and i2400 Scanners



Results and conclusions based on the GHG emissions metric were essentially the same as the results and conclusions already shown for the ReCiPe H damage assessment. Therefore the GHG results are not shown in the summary section, but are provided in the body of the report.

The key conclusions are:

1. The environmental impacts of the KODAK i2400, i2600, and i2800 Scanners are materially equivalent at the typical 300 ppd scan rate. At a high scan rate, 3,000 ppd, i2400 has a slightly higher impact than i2600, which has a slightly higher impact than i2800.
2. Consumer use behavior has the biggest influence on environmental impact per scan. Higher use rates and longer scanner life reduce the impact per scan. Turning off the scanner when it will not be used for many hours (i.e. non-business hours) could significantly reduce impacts. Programs to change consumer use patterns might reduce environmental impacts. Means of upgrading or otherwise extending the life of out of date scanners could be investigated as a possible means of reducing environmental impact.
3. Shipment by ocean instead of by air significantly reduces overall environmental impact. Reducing shipping distances might also reduce impact. Locating the scanner manufacturing (including most subcomponents and raw materials) closer to the consumer (i.e. multiple locations) might achieve a significant impact reduction (if it did not significantly increase the impact of the supply chain or assembly operations).
4. Despite significant improvements compared to previous models, energy consumption in the ready and off modes is a significant source of environmental impact. Further reductions in off and ready energy consumption will significantly reduce impact. Design changes that move the scanner from sleep to off after a set time could also reduce impact.
5. No single component aggregation category (See categories in Figure 8) accounted for the majority of the impacts. Most of the component aggregation categories contributed significantly to some of the environmental impact midpoints. Reducing weight in any component system, including packaging and accessories will reduce environmental impact. Elimination of extra power cords, which are included for compatibility with multiple regions, would reduce impact without reducing function. Replacement of higher impact materials with lower impact materials might also reduce environmental impact.