

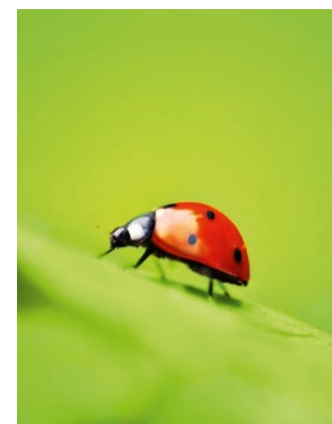
# G&D's Green World

Ecological awareness is steadily increasing worldwide. Environmental compatibility is a top priority at G&D with reference to the complete lifecycle of smart cards and devices.

It is not only the material that makes a card green. In addition, aspects such as raw materials, production, logistics, and maintenance of the product in the field have to be taken into consideration. G&D has defined a range of parameters to ensure that throughout the various stages in the

life of smart cards and devices the greatest number of environmental protection requirements are met.

Please refer to the figure below to see some of the most important stages and parameters in connection with green cards and devices.



## Materials



- Use of raw materials with low environmental impact
- Economical use of raw materials – as little as possible, as much as necessary
- Material selection using criteria such as RoHS (restriction of the use of certain hazardous substances)
- Vendor selection process is subject to environmental and corporate social responsibility criteria

## Production



- Minimization of scrap rates
- Switch to solvent-free, water-based inks, adhesives, and varnishes
- Collection and recycling of production waste
- Energy-saving and -recovery projects
- Alternative form factors
  - Plug-in only
  - Mini-UICC
  - M2M (Machine-to-Machine devices)

## Infrastructure



- Optimization of building infrastructure to minimize heating, cooling, and lighting needs
- Reduce paper consumption and use recycled paper
- Rainwater collection for emergency sprinklers

## Packaging



- Less is more!
- Recycled and/or recyclable materials
- Less plastic
- Smaller packages

## Transport



- Optimize logistics system for procurement and delivery with:
- Optimization of transport route
  - Optimization of shipment loading
  - Re-usable transportation boxes

## Field life



- Extend card field life with:
- High-quality components
  - Over-the-air card management
  - Durable material (PEC<sup>1</sup> and PC<sup>2</sup>)
    - Durability PVC cards = 3 years
    - Durability PEC and PC cards = 10 years and more

## End of life



- Applications which allow re-use of card
- Collection and recycling of cards

1 PEC = Polyester-enhanced polycarbonate  
2 PC = Polycarbonate

**For further information, please contact:**

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