Eco-design in ST: a Sustainable Journey

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We will present here a summary of STMicroelectronics (ST) Sustainability Journey that have started in 1987. We will zoom into ST sustainable product life cycle, ST responsible product definition and criteria. We will present some examples of ST product Life Cycle assessment (LCA) describing carbon footprint from cradle to grave. We will explain what ECO Design practices in ST are, why links with data & management system are key. We will conclude with future challenges we are facing in this domain. Strategic move we are doing is by a shift left approach to anticipate as much as possible sustainability criteria into product R&D & multiple associated engineering fields.

Table 1: ST Responsible product criteria

Environmentally responsible products			Socially
Power-efficient products ing power consumption: • Increased chip power efficiency • Lower power loss • Electronic system improved efficiency in power	**Low-carbon products** ing manuf. footprint: • Reduced die size • Reduced package size • Lower number of metal layers	**Green applications** ing ecological technologies: • Renewable energy • LED lighting • Car electrification • Emissions control	**Well-being applications** ng fundamental usages: • Health • People safety • Security of private property
Eco-design products		**Responsible applications**	

Table 2: ST ECO-Design criteria

	Wafer Technology	Package Technology	Chip Design	Software development	Test engineering
Environmental KPI	✓	✓	✓	✓	✓
Direct / Indirect material consumption	✓	✓			✓
Energy consumption	✓	✓	✓	✓	✓
Water usage	✓	✓			
CO_2 equivalent KPI	✓	✓	✓	✓	✓