

Sustainable Manufacturing - Beyond the Intel Fab Walls

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Intel has focused on design for environment (DfE) for over 10 years, integrating the practice into both its semiconductor manufacturing operations and its product design. However, as Intel's DfE programs matured and our understanding of the broad environmental impacts of our products and processes was comprehended, we realized that to fully minimize our environmental footprint required looking beyond the walls of the semiconductor fab. Sustainable manufacturing is not only minimizing process chemicals, natural resources and associated wastes, but designing a product that minimizes the environmental impact to the customer, end user and throughout the supply chain. This paper will present an overview of Intel's DfE program from the vantage point of sustainable development, evaluating challenges and opportunities throughout the product life cycle. In addition to traditional DfE programs, this paper will review new and emerging programs to evaluate and make improvements in the material content and energy use of Intel products, minimize packaging materials used to ship Intel products, and the development of solutions for the collection and recycling of Intel products at end of life. Finally, efforts to "green" the supply chain will also be visited as a key step toward achieving sustainable manufacturing.