

Design Guidelines for Sustainable Manufacturing

Project Title	Design Guidelines for Sustainable Manufacturing
Why Do We Need to Do This Project?	<p>SM is viewed as a separate objective and not as an integrated systems approach to design and manufacturing.</p> <p>The shadow of the product design process affects all downstream decisions (e.g., cost, footprint, etc).</p>
<p>What Needs to Be Done (Key Goals)?</p> <p>What is Our Ultimate Achievement?</p>	<p>Use Project 1 to leverage and develop a deeper understanding of the broader aspects and implications of SM.</p> <p>Provide a uniform and comprehensive set of SM definitions by gaining understanding of SOA – use set of ISO (British, DIN, TUV etc) standards for LCA, environmental standards.</p> <p>Ultimately, we want the inclusion of SM in a systematic approach to the design process.</p> <p>We want education and training curricula in applied SM for current and next generation vehicle designers – e.g., Mike Ashby’s GRANTA packages, Process Planning packages,</p>
Project Deliverable(s)	<p>Documentation of design guidelines for SM.</p> <p>A framework for a general advisory toolset (e.g., expert system) on design of vehicle components (e.g., body)’ the database allows one to drill down to individual parts and materials, and resource and energy efficiency.</p> <p>Develop an appropriate sustainable mfg team that includes industry and academic research (as well as Govt policy interfaces), and implementation that is responsible for the management and currency of the advisory toolsets.</p> <p>Support easy population and management for utilization – simple interface, access, GUI, etc,</p>
Project Workflow Steps and duration of each step	<p>Establish the multi-stakeholder project team to set the scope and to break down the complexity, pick a couple of good example product/subsystems to begin the study.</p> <p>Identify other players working in the area (e.g., DMDI – NNMI, LIFT-NNMI which is heavily focused on vehicle body design/materials)</p>

	<p>Evangelize and obtain funding to execute the project.</p> <p>Pilot the target example products or component sets to develop the documentation and toolset.</p> <p>Ensure that design and manufacturing process planning/operation functions are involved. (This must be a full life cycle view) by considering alternatives at EOL (e.g., recycle, recovery, reuse, etc).</p> <p>Document and promote</p>
“Best Guess” Cost	
Industry Champion(s)	OEMs, Tooling, Design Engineering Service providers, Raw Materials suppliers, Auto-Steel Partnership, Aluminum Association, American Plastics Committee
Project Approach/ Guidelines	
Participant Names and contact info	Jody Hall/Caroline Philpott/Terry Cullum (A-SP),
Capable Technology Providers	Siemens PLM,