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**Advanced materials manufacturing for solar energy**

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The US has a robust technical roadmap to get to a \$1/W total installed cost with several potential winners in the race. We dominate in the new technology arena and there is a good chance that tomorrow's winning technology will be from the current crop of contenders. One potential breakthrough is Direct Wafer<sup>TM</sup> a new manufacturing technique to make silicon wafers at a fraction of the traditional cost. Current wafer manufacturing is a multi-step, energy- and capital-intensive process that wastes half of the valuable silicon feedstock. 1366's Direct Wafer technology forms a standard, 156mm multi-crystalline wafer directly from molten silicon in a semi-continuous, efficient, high-throughput process that eliminates silicon waste. Direct Wafer<sup>TM</sup> cuts the amount of consumables by a factor of four and requires only half the capital per GigaWatt production capacity thus enabling solar to compete successfully with coal generated electricity.