

ON THE ROAD IN 2020: A LIFE-CYCLE ANALYSIS OF NEW AUTOMOTIVE TECHNOLOGIES

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This presentation will review the results of a recent study done at MIT to assess technologies for new passenger cars that could be developed and commercialized by the year 2020. It focuses primarily on life-cycle (well-to-wheels) energy consumption and CO₂ emissions of these technologies; it also examines impacts on many of the other characteristics that are important to car purchasers and users. The scope includes fuels derived from petroleum, natural gas, and electric power; the vehicle propulsion systems (internal combustion engines, hybrids, and fuel cells); transmission; and chassis/body materials changes and improvements. The comparisons are made with an evolving baseline vehicle that includes incremental improvements anticipated by 2020 and match the performance of today's average U.S. car. Results for total system energy consumption, CO₂ emissions, and cost relative to that evolving baseline will be reviewed. The report is available on the web at <http://web.mit.edu/energylab/www/>.