

Hybrid Electric Vehicles: A Comprehensive Review

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Abstract: *Hybrid Electric Vehicles (HEVs) have emerged as a key solution to reducing greenhouse gas emissions and fossil fuel dependency in the transportation sector. This review explores the historical evolution, technological advancements, powertrain architectures, and energy management strategies of HEVs. The paper highlights improvements in battery technology, power electronics, and control systems that have enhanced fuel efficiency and performance. Additionally, it examines economic and environmental considerations, along with the challenges limiting widespread adoption. By synthesizing recent research, this review provides a comprehensive assessment of HEV development, its impact on sustainability, and future prospects in the automotive industry.*

Keywords: Hybrid Electric Vehicles, fuel efficiency, powertrain architecture, energy management, sustainable transportation