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Hydrogen fuel cell vehicles (HFCVs) could alleviate the nation's dependence on oil and reduce U.S. emissions of carbon dioxide, the major greenhouse gas. Industry-and government-sponsored research programs have made very impressive technical progress over the past several years, and several companies are currently introducing pre-commercial vehicles and hydrogen fueling stations in limited markets. However, to achieve wide hydrogen vehicle penetration, further technological advances are required for commercial viability, and vehicle manufacturer and hydrogen supplier activities must be coordinated. In particular, costs must be reduced, new automotive manufacturing technologies commercialized, and adequate supplies of hydrogen produced and made available to motorists. These efforts will require considerable resources, especially federal and private sector funding. This book estimates the resources that will be needed to bring HFCVs to the point of competitive self-sustainability in the marketplace. It also estimates the impact on oil consumption and carbon dioxide emissions as HFCVs become a large fraction of the light-duty vehicle fleet.
