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The Peaking of World Oil Production: The Problem and Its Mitigation

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The peaking of world conventional oil production will be unlike any energy problem yet faced by modern industrial society. Without timely mitigation, the economic, social, and political costs will be dire and unprecedented. Viable mitigation options exist on both the supply and demand sides, but to have substantial impact, they must be initiated more than a decade in advance of peaking, because the scale of liquid fuels mitigation is inherently extremely large. When world oil peaking will occur is not known with certainty. A fundamental problem in predicting oil peaking is the poor quality of, and political biases in, world oil reserves data. Some experts believe peaking may occur soon, while some think later, but not beyond the time required for effective mitigation. The problems associated with world oil production peaking will not be temporary, and past “energy crisis” experience will provide relatively little guidance. Oil peaking will create a severe liquid fuels problem primarily for the transportation sector, not an “energy crisis” in the usual sense that term has been used. While greater end-use efficiency is essential, increased efficiency alone will be neither sufficient nor timely enough to solve the problem. Production of large amounts of substitute liquid fuels will be required. A number of commercial or near-commercial substitute fuel production technologies are currently available for deployment, so the production of vast amounts of substitute liquid fuels is feasible with existing technology. Intervention by governments will be required, because the economic and social implications of oil peaking would otherwise be chaotic. The experiences of the 1970s and 1980s offer important guides as to government actions that are desirable and those that are undesirable, but the process will not be easy.