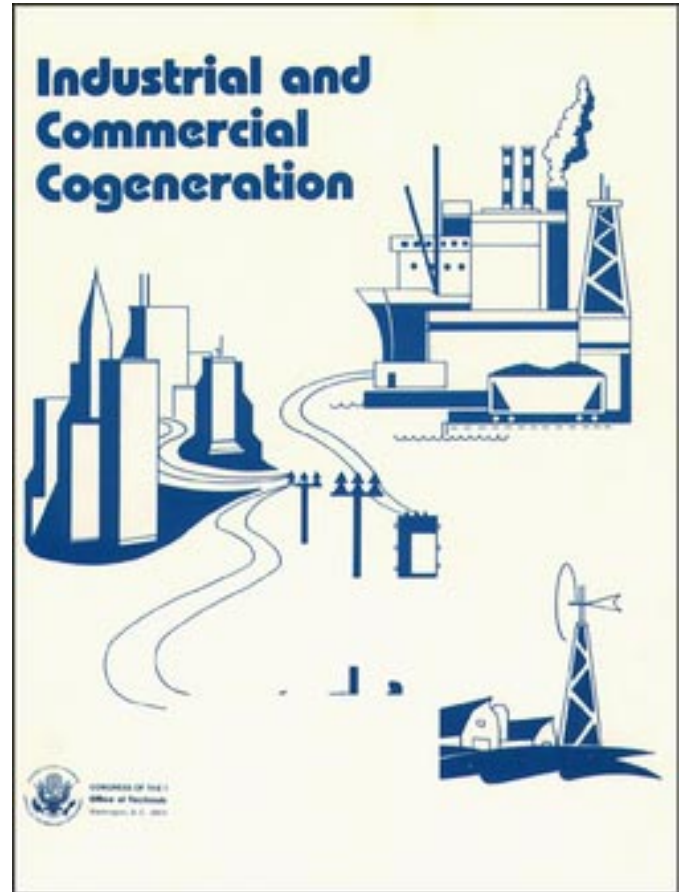


Industrial and Commercial Cogeneration

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Foreword

This assessment responds to requests by the House Committees on Banking, Finance, and Urban Affairs; Energy and Commerce; and Science and Technology for an evaluation of the economic, regulatory, and institutional barriers to the development of cogeneration systems by utilities, industries, and businesses. This report complements a forthcoming OTA analysis of Industrial Energy Use in evaluating the potential for onsite energy production in industry. The findings also will serve as part of the material to be used in future OTA assessments of other electricity-generating technologies.

The report describes the available and promising future cogeneration technologies, including their likely costs and operating characteristics, and reviews the potential applications for these technologies in industry, commercial buildings, and rural/agricultural areas. It also describes the technical requirements for interconnecting cogeneration systems with the utility grid, and discusses advanced combustion and conversion technologies (fluidized bed and gasification systems) that will enable cogenerators to use fuels other than oil and natural gas. The analysis of cogeneration's market potential focuses on the competitiveness of cogeneration when compared to investments in conservation or in conventional separate thermal and electric energy systems (e.g., an industrial boiler and a central station utility powerplant). In addition, the report examines the possible effects of the widespread use of cogeneration systems on utilities and their ratepayers, and on air quality. Several options for changes in Federal policy in order to enhance cogeneration's market potential, to optimize its ability to displace oil and natural gas, and to mitigate its possible adverse economic and environmental impacts are discussed.

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