



ENERGY

EFFICIENCY

FOR A SUSTAINABLE WORLD

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FOREWORD

BY AMORY B. LOVINS

ICE

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To MICHEL ROLANT,

IN MEMORIAM

FOUNDER AND FIRST CHAIRMAN
OF THE FRENCH AGENCY
FOR ENERGY MANAGEMENT
(AFME)

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Foreword

This book could not be more timely nor more important. Most of the world's energy continues to be wasted by inefficient devices and practices that simply turn resources into pollution, incurring staggering costs at both ends. The global climate experiment becomes steadily more risky and less reversible. Other hazards of energy profligacy become ever more painfully evident. And with the expansion of electricity supply alone consuming about one-fourth of the world's total development capital, the rapidly growing economies, especially in Asia, are facing an increasing prospect that unless they quickly make very efficient use of energy into the cornerstone of the development process, they may soon find energy-supply infrastructure swallowing up their budgets, leaving too little money to buy the things that were supposed to "use" all that energy.

After all, expanding the supply of electricity can easily take hundreds of times, even more than a thousand times, as much capital as building a factory to make (say) compact fluorescent lamps in Bombay or super windows in Bangkok to produce the same increments of light and comfort. And since the power plant also ties up its capital for about ten times as long as the factory, the product of capital intensity times capital velocity can make electrical supply effectively about one thousand to ten thousand times more capital-consumptive than investing in devices that use less electricity far more productively to provide the same service with the same or better quality. No country, even the richest, can afford to get that choice wrong for very long.

The notion that inefficient energy development could cripple the whole development process by drying up its needed capital is hardly new. But it gains a sharper edge in a world where East Asian nations alone were recently increasing their peak electricity demands for air-conditioning alone by some 15-25 gigawatts "per year" – with each gigawatt (thousand megawatts) costing on the order of US \$1-2 billions for investment in classical thermal stations and grid expansion. The answer is not simply to carpet Asia with project-financed