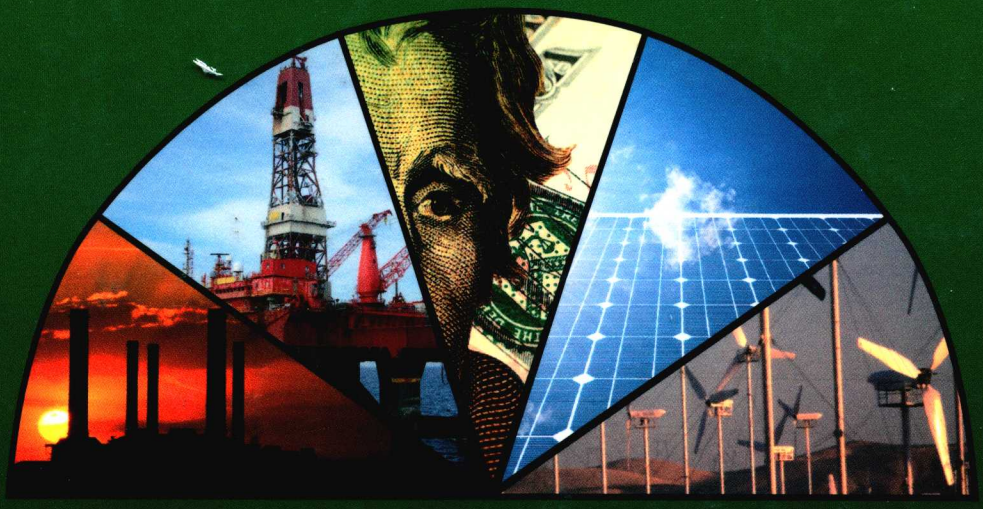

SUSTAINABLE ENERGY PRICING

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The following work is dedicated to all those men and women of science, and of conscience, who continue in all conditions to seek truth from facts to serve people

Acknowledgements

All judgments and any potential errors expressed in this book (and in the companion volume entitled *Sustainable Resource Development: How to Achieve Zero-Waste and Sustainability in Energy Engineering*) are entirely my own. Along the way down this path, however, I have shared the company of various personal, intellectual and professional fellow-travelers. Here is where I acknowledge publicly my appreciation and thanks — some personally, some collectively but anonymously, some even posthumously — for their inspiration, help and support through the processes of this book's eventual gestation and birth pangs.

First and foremost there is the incredible patience and support, 'through thick and thicker,' as she would put it, of fellow writer and professional colleague Rhoda Shapiro, the woman with whom I happily share a life sentence as well as a life of sentences. The love and support of our various networks of family and friends also proved critical for surmounting many obstacles along the way. The support at all levels of Isaac Saney, academic colleague and friend, has been constant and appreciated also beyond words, as has that of Charles Spurr, a salt-of-the-earth friend who always seems to be there when we need him.

A dense and often toxic fog of disinformation engulfs the truth about how the modern economy actually robs Humanity of so much of its true potential. The inspiration to produce a work about sustainable development that would cut through all that originated personally for me from the life and work of Hardial Bains (1939-1997). With his co-workers, he elaborated the "necessity for change" analysis more than 45 years ago that continues — among its many other benefits too numerous to catalogue here in this brief space — to open the eyes of new generations about the tricks, traps and prejudices of Eurocentric outlook in world politics and economics.

The idea of taking such an outlook and applying it to examine how the economics and engineering of resource development could be turned towards genuinely sustainable development that would no longer rape the natural environment was the gift of Prof. Mohamed Rafiq Islam, the editor of the series of which the present book forms part. His confidence in my ability to nail the question squarely and his unflagging personal, academic and intellectual support, along with that of his sons Jaan and Ali Omar, produced a number of life-altering moments en route to delivery of the final version of this book's manuscript to the publisher.

Through Professor Islam's research group, I enjoyed the rare privilege to work closely with Shabbir Mustafiz, who happily served as a sounding-board and effective puncturer of some of my more absurd balloons, as well as to hold many discussions about "true sustainability" with Mohamed Ibrahim Khan (the "M.I. Khan" of this book's Bibliography), which is gone into in some depth in the second volume.

On a closing professional note, I have been very lucky to be able to collaborate professionally with Phil Carmical and his team at Scrivener Publishing, whose confidence in my abilities sustained us through one or two darker moments.

Preface

This volume, like its companion volume (*Sustainable Resource Development*), is organized into an introductory chapter, seven chapters of content and an appendix. The underlying question posed throughout this book is: Does resource extraction — and the subsequent economic development patterns dependent on those processes of primary energy-source production — have to end badly for the natural environment? Accordingly, the chapters create their dissonant atonal symphony, exploring a number of aspects of economic theory and where they fit — or more properly: fail to fit — any rational plan of sustainable development. The appendix supplies the coda, in the form of an exploration of aspects of the 500-year history of commercial exploitation of the ocean fisheries on the Continental Shelf of the northwest Atlantic. It is not an understatement to say that, for the first 470 years, the harvesting of these resources posed little or no threat either to the marine environment nor to the present or future prospects of the coastal communities most involved in this activity. However, in the last 30 years of that half-millennium, what remained was literally raped from stem to stern at unprecedented speed. The historical exegesis brings out in striking manner how far off-base both the promoters of this fishery and its critics actually were with regard to the conduct of this fishery in modern economic conditions of vertically-integrated resource extraction. None of them manifested the slightest awareness of how this fishery could have averted the dramatic collapse that eventually destroyed the livelihood of the families of more than 40,000 commercial fishermen from the Canadian provinces of Newfoundland and Labrador, Quebec and Nova Scotia after 1992. This dialogue of the deaf was manifest not only in the late 1970s — as the struggle over the northwest Atlantic fisheries' future

heated up to become one of the sideshows of the global confrontation between the U.S. and Soviet superpowers over control of the world's oceanic spaces. The same thinking that failed to address the problems of that time was being repeated 30 years later by some of the most vociferous critics of the antics of the trawling fleets, Canadian and foreign, back in the 1970s.

Finally, a word about the subtitle of this book: "Creating A Sustainable Environment and Economy Through a New Science of Energy Pricing." Just to clarify the matter up front for the reader: the author does not actually set out a "science of energy pricing." The aim of this book is to initiate that process by preparing the necessary groundwork.

The late Nobel physics laureate Richard Feynman, in his 1985 autobiographical memoir *'Surely You're Joking, Mr. Feynman' : Memoirs of a Curious Character*, set forth his vision of the meaningful content of the notion of "scientific integrity" in an arresting manner, with an anecdote from the annals of actual scientific research in the field of behavioral psychology. Although students in the field are carefully schooled in the concept of "conditioned stimulus – conditioned response"(CS-CR) including spending hours in the laboratory with mice running various experiments premised on the truth of this fundamental notion, what Feynman learned was that students are never steered towards actually testing the veracity of the CS-CR hypothesis itself, viz., that the response of the mammalian brain can be trained or conditioned by a consciously-planned series of stimuli. Looking further into the matter, he uncovered a research paper published before the Second World War whose author deliberately attempted to replicate the original experiments of John Watson purporting to demonstrate the CS-CR hypothesis. The investigator relaxed the condition that CS-CR be assumed true and sought alternative explanations for the lab mice's responses to various conditioned stimuli. He narrowed down one-by-one all other possible physical causes for the stampeding of the mice through the experiment's "maze" apparatus to get their "food" reward. He found the strongest and most positive correlation existed between the level of vibration of the boards of the raceways in the apparatus and when mice from various points inside the apparatus found their way through the correct series of tunnels in the maze to the reward-point. As he removed all possible sources of vibratory transmission from inside the apparatus, he reached a point where the response of the mice could no longer be

said to correspond to the original stimulus. Feynman noted that he could find no references to this experiment anywhere in the literature: it disappeared, or perhaps was "disappeared" by those who sniffed its devastating implication that the CS-CR hypothesis itself was unproven. Feynman hailed the experiment for its profound pædagogical value as a basic primer in scientific integrity — and for teaching everything one would need to know about how to verify the CS-CR hypothesis experimentally.

In this book and the above-mentioned companion work, neither is any cookbook recipe provided for guaranteeing sustainable pricing of energy, nor is it suggested that there is any guaranteed or specific way of arriving at sustainable energy pricing. However, every effort has been made to supply the reader with everything needed for implementing a positive intention to develop and implement practical steps of various kinds towards such a goal.

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