

Raj Sharma
Vishnu Pareek

The World of Energy

Engine of Life

Understanding that there is
no free lunch—caught between
a rock and a hard place!



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Raj Sharma
Curtin University
Perth, WA, Australia

Vishnu Pareek
Curtin University
Perth, WA, Australia

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*It is for us to understand the Laws of Nature
—not for them to explain themselves!*

Dedicated to Our Parents

*Mrs. Shanta Sharma and Late Dr. Shyam Lal
Sharma*

—Raj Sharma

*Mrs. Santosh Pareek and Late Mr. Madan
Lal Pareek*

—Vishnu Pareek

Preface

The Arab Oil embargo of the early 1970s created a panic reaction in the West. Fearing the end of oil, people formed miles long queues at gas stations (petrol pumps) waiting to fill a tank of gas (gasoline; petrol). Calls for alternate energy began, which waxed and waned with fluctuating oil prices over the next couple of decades even though alternate energy and oil do not have much in common. Calls for alternate energy have metamorphosed over the past few decades into calls for renewable energy, clean energy and now green energy with global warming and climate change as *raison d'être*, pinning it on fossil fuel use. Perhaps, this is what has driven increased media coverage of matters-energy in recent years.

Energy drives all life. Without energy, there is no life. Adapting a common saying, money alone cannot make the world go around, it is energy that does! In view of the renewed interest in energy among public at large, including policy makers, who are too preoccupied to gain a formal understanding of the field of energy via attending lectures or from textbooks, this slim book attempts to provide a sound introduction to the field of energy. What is energy? Why is it important? Where and how did it all begin? Role it has played in the development of modern life? Current status? The alternatives and limitations? Nature's laws governing energy? Should the reader gain an understanding of the fundamentals of energy to arrive at informed conclusions, we would have succeeded. Perhaps, this will also spark an informed debate on the way forward.

Perth, Australia

Raj Sharma
Vishnu Pareek

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Finally, we say '*thank you*' to the scores of our students over the past few decades who contributed directly or indirectly to our understanding of 'energy' resulting in this book.

Raj Sharma
Vishnu Pareek