

# **Energy Sources and Global Warming**

**Author: Ms. Malti Goel**

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**Reviewed by: H.S. Virk, President of IAPT** *for IAPT Bulletin*

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The book under review is written by Dr. Malti Goel, a senior scientist in the Department of Science and Technology (DST), Government of India. The author presented me a copy of the book for review in the Bulletin of IAPT, so that members of IAPT can utilize the contents of this book to educate their students about energy problems of India. It has been lying on my shelf for the last three months but the recent energy crisis in Delhi motivated me to read and review it.

The book under review comprises 16 chapters, broadly grouped into four sections. Section 1 consists of 3 chapters and the author introduces basic concepts of Heat and Energy, Global Warming and CO<sub>2</sub> Mitigation actions. Chapter 4-12 constitute the second section and core of the book. All these chapters deal with various forms of energy sources, viz; Solar, heat and light, Air and water, Biomass, Oil and natural gas, Coal, Thermal springs and Atom. Section 3 consists of next 2 chapters on Clean Coal Technology and Hydrogen as energy fuel. Section 4 consists of the last chapter of the book titled 'Glimpses of the Energy Scene in India'.

I agree with the opening remarks of the author in the Preface that energy is a landmark of progress and a measure of the living standards in the world. It is also responsible for global warming of our environment and a serious cause of concern. In India, we face the most serious challenge of this century, as we need energy to feed over a billion people, and to raise the standards of living of our teeming millions of poor people. Our fossil fuels are limited and our only hope for the future is Nuclear Energy and other Renewable Energy Sources. India has set up a Ministry of Non-Conventional Sources of Energy to promote alternate sources of energy.

The book under review is written in a lucid style, which is a rare feature in a book on Science and Technology. It caters to a wide spectrum of readers, starting from Science Colleges, Polytechnics and Engineering Colleges, right up to Professionals, Planners and Environmentalists. The concepts are explained in a simple language without using rigorous mathematics. Each chapter is a complete unit covering the history of development of the subject, its evolution and its impact on society. Multiple-choice questions are given at the end of each chapter. Hence the book can prove highly useful for students preparing for competitive examinations in India.

The unique feature of the book 'Energy Sources and Global Warming' is its comprehensive nature. It deals with basic science and technology of each source of energy, national and international scenarios, policy and planning aspects and future outlook. The author has utilized her management skills gained while working in DST and academic inputs of training in IIT, Delhi for writing this encyclopaedic volume on energy sources. The book is a data mine for scientists, technologists and planners working in the field of energy.

It is my moral duty as a reviewer to point out any discrepancies in this otherwise most comprehensive book on sources of energy and global warming. The author gives two different dates in chapter 1 and 9 while referring to the Special Theory of Relativity proposed by Einstein. In Chapter 1 (page 25), the year of special theory is mentioned as 1922 but in Chapter 9 (page 247) it is correctly given as 1905. It is a well known fact that India has one of the largest reserves of Thorium in the world and our Uranium resources are meagre. However, the author shows the opposite picture in Figure 9.7 of Chapter 9 (page 267).

Proof reading is an art and it must be carried out thoroughly to improve the quality of book. I could locate a few typing mistakes during my casual reading of the book. For example on page 109, 'height' should be replaced by 'high' and 'solar resource' by 'solar flux'; similarly on page 168, 'three' need to be replaced by 'the'. Despite these minor mistakes, the author deserves my congratulations for writing this wonderful account of energy sources and global warming with special focus on India and her future needs.