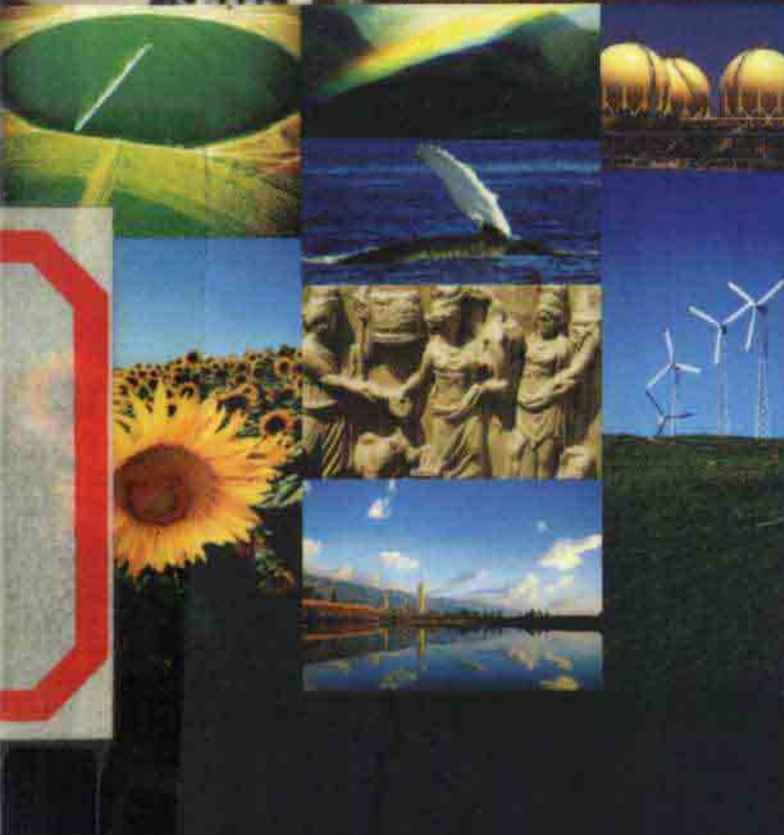




Energy 能源

Jefferson W. Tester (美) 著
Elisabeth M. Drake (美)



外语教学与研究出版社

FOREIGN LANGUAGE TEACHING AND RESEARCH PRESS

Energy

能源

Jefferson W. Tester (美)

著

M. Drake (美)

王永译

外语教学与研究出版社

FOREIGN LANGUAGE TEACHING AND RESEARCH PRESS

北京 BEIJING

京权图字：01 - 2004 - 3084

© 2004 Marshall Cavendish Corporation

Published previously as part of *The Environment Encyclopedia*

© 2001 Marshall Cavendish Corporation, 99 White Plains Road,
Tarrytown, New York 10591

This edition is produced under license by Foreign Language
Teaching and Research Press 2004

图书在版编目(CIP)数据

能源/(美)特斯特(Tester, J. W.), (美)德雷克(Drake, E. M.)著;王永译. —北京:外语教学与研究出版社, 2004. 11
ISBN 7-5600-4311-9

I. 能… II. ①特… ②德… ③王… III. 英语—对照读
物—英、汉 IV. H319.4

中国版本图书馆 CIP 数据核字(2004)第 079475 号

出 版 人: 李朋义

责任编辑: 周 晶

装帧设计: 潘振宇

出版发行: 外语教学与研究出版社

社 址: 北京市西三环北路 19 号 (100089)

网 址: <http://www.fltrp.com>

印 刷: 北京新丰印刷厂

开 本: 889×1194 1/64

印 张: 1

版 次: 2005 年 1 月第 1 版 2005 年 1 月第 1 次印刷

书 号: ISBN 7-5600-4311-9

定 价: 5.50 元

* * *

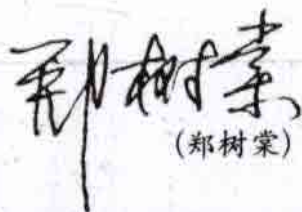
如有印刷、装订质量问题出版社负责调换

制售盗版必究 举报查实奖励

版权保护办公室举报电话: (010)88817519

序 言

英语学习，除了在课堂内下工夫外，课外的阅读也很重要。课外除了读文学类的文章，也要读一些非文学类的文章。这套“小书”就是非文学类的文章，涉及文学以外的许多领域和学科。每本书都由一两个相关的主题构成，图文并茂，融知识性和可读性于一体。这些“小书”谈到的很多东西都和我们的日常生活息息相关；更重要的是“小书”体现了人类要与自然和谐发展的思想，这与我们社会和时代的发展是吻合的。读一些这方面的书不仅有利于学生提高英语水平，拓宽自己的视野，也符合当今大学生要全面发展的要求。在“复合型”人才越来越受重视的今天，我很乐意向大学生朋友推荐这套“小书”。


(郑树棠)

《新视野大学英语》总主编
首届“国家级教学名师奖”获得者

Introduction

Throughout history humans have sought different sources of energy, such as firewood, falling water, and coal, as means to accomplish work. In the second half of the twentieth century, the consumption of energy resources increased enormously. The ability to meet future energy needs depends upon developing and using new and cleaner sources of energy as well as the moderation of energy use through implementation of energy-efficient technologies.

CONTENTS

目录

Energy 1

能量

Use of Fossil Fuels 5

矿物燃料的使用

Nonfossil Energy Sources 11

非矿物能源

Consumption of Energy 15

能源消耗

Environmental Issues 23

环境问题

Energy Source Options 33

可供选择利用的能源

Other Options 49

其他选择

Glossary 57

词汇表




Energy

能量

Energy is defined as the ability to do work. One of the earliest and most distinctive traits of human beings was their ability to harness energy for their own use. They did this through the control of fire and through using their own labor and that of other animals. Some early machines were powered by flowing water (hydropower) after people realized that an elevated lake or



reservoir was a potential energy source. This energy could be extracted from the downhill flow of the water and used to power machines.



所谓能量，即做功的能力。人类最早、最显著的特征之一就在于能够驾驭能量，为自己所用。他们通过控制火，以及用自己或其他动物的劳动来达到这一目的。人类很早就意识到地势较高的湖泊或水池蕴藏着丰富的能量，因而发明了一些靠流水（水力）驱动的机械。这种能量取自下泄的水流，用来为机械提供动力。

Before the European Industrial Revolution in the 1700s, the world's energy came mostly from hydropower

and fuelwood. Windmills pumped water and waterwheels were used as mechanical drives. In the 1700s, knowledge about steam power increased. Inventors found that boiling water in a confined system was a way to raise pressure. This pressure could then be used to do work as thermal energy was converted to mechanical energy. In 1784, a steam engine invented by James Watt was first operated in a mine in Britain. Later developments led to the use of steam power and much greater industrial growth.



在18世纪欧洲工业革命之前，世界上的能量主要来自水力与薪材。人们以风车抽水，用水车为机械提供动力。到了18

世纪，人们对蒸汽动力的了解有所加深。当时的发明家们发现封闭系统内的沸水不失为增压的一种手段。而这种压力可以在热能转化为机械能的过程中用来做功。1784年，詹姆斯·瓦特发明了蒸汽机，并将其首先用于英国的一处矿井。后来，人们又对其进行了多次改进，从而促进了蒸汽动力的使用，并使工业发展大为加速。




Use of Fossil Fuels

矿物燃料的使用

Fossil fuels, such as coal, petroleum, and natural gas, are the remains of compressed plant matter. Even though coal was used as a fuel in the 1700s, it was not until the mid-nineteenth century that this fossil fuel became a major source of power. The coal-based Bessemer process for making steel, combined with the growth in the railroad network, required a larger scale






of mining and use of coal. In the second half of the nineteenth century, Thomas Edison's invention of practical electric lighting created a demand for electricity. By the start of the twentieth century, electric power distribution networks were growing beyond local areas. Eventually they would form national grids, fed primarily by coal-fired power plants.

矿物燃料，如煤、石油和天然气，都是被压缩的植物残余。人们早在 18 世纪就已用煤作为燃料，但直到 19 世纪中叶，这种矿物燃料才真正成为人类的主要能源之一。以煤为燃料的贝塞麦炼钢法，以及铁路网络的飞速发展都要求扩大





采矿规模，并使煤炭的需求大增。19世纪后半期，托马斯·爱迪生发明了实用电力照明设备，从而促生了人们对电力的需求。到20世纪初期，电力输配网络已超越了地区范围，飞速发展，最终形成了全国性的高压输电线路网，而其能量主要来自各燃煤发电厂。

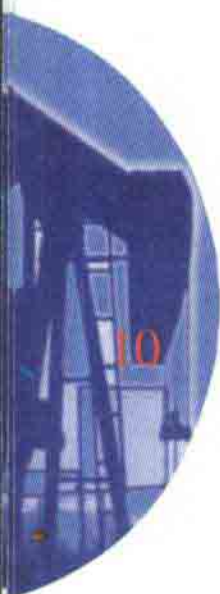
Although petroleum was discovered in the mid-nineteenth century, its use grew slowly until the introduction of the automobile in the early twentieth century. Crude petroleum is a mixture of compounds containing hydrogen and carbon. These range from heavy tars and asphalts to lighter gases such as butane, propane, ethane, and methane. Refining

technology allows the separation of crude oils into a variety of products. These include industrial fuels, gasoline, diesel fuel, heating oils, and raw materials for manufacturing chemicals. Many oil fields also contain gas, which was once burned off as a waste product. Eventually, though, this gas was used for situations where a cleaner fuel was required. The development of a national natural gas pipeline network occurred in the 1950s.

石油早在 19 世纪中叶就已被发现，但却未引起重视。直到 20 世纪早期汽车出现后，其利用才有了较快增长。原油是多种碳氢化合物的混合体。其中既有重质焦油、沥青，也有诸



如丁烷、丙烷、乙烷与甲烷之类的较轻气体。精炼技术使原油的分离成为可能，从而制造出一系列产品。它们包括工业燃料、汽油、柴油、燃油以及用于化工生产的多种原料。另外，许多油田还含有天然气。它曾经作为废品被烧掉。然而最终当人们需要某种更为清洁的燃料时，这种气体便派上了用场。全国性的天然气管道网络建设始于 20 世纪 50 年代。



Nonfossil Energy Sources

非矿物能源

The possibility of generating energy from nuclear fission (splitting the nucleus of an atom) was demonstrated in 1942. Consumers were becoming conscious of the limits of global resources of coal, oil, and gas; nuclear energy was seen as a major energy source for the future. Fission reactors using uranium fuel were designed and built for electric power generation in the 1950s and 1960s. Other nonfossil

