

1. Record Nr.	UNINA9911020167803321
Autore	Armaroli Nicola <1966->
Titolo	Powering planet earth : energy solutions for the future / / Nicola Armaroli, Vincenzo Balzani, and Nick Serpone
Pubbl/distr/stampa	Weinheim, : Wiley-VCH, c2013
ISBN	9783527667390 3527667393 9783527667420 3527667423 9781299157248 1299157246 9783527667413 3527667415
Descrizione fisica	1 online resource (255 p.)
Altri autori (Persone)	BalzaniVincenzo <1936-> SerponeNick <1939->
Disciplina	333.79
Soggetti	Renewable energy sources Power resources
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Title page; Copyright page; Dedication; Contents; Preface; Introduction; 1: What Is Energy?; Energy and Related Terms; From One Energy Form to Another; Sources of Energy; The Pillars of the Universe; Particles in Motion; Heat (Warmth) - an Exchangeable Energy; You Can't Run Away from Them - the Principles of Thermodynamics; Einstein's Equation: $E = mc^2$; From Kilowatt-hour to the Barrel of Oil; From a Chemical Bond to a Tsunami; 2: Yesterday and Today; The Energy Slaves; From Coal to Coal?; Hidden Energy; From Faraday to Blackouts; From Muscle Work to Jet Aircraft; Petroleum to Food From Fire to Air ConditioningFrom Horseback Messengers to E-mails; From Gunpowder to the Atomic Bomb; Emerging Issues; 3: How Much Energy Goes to Waste?; The Largest Explosion of All Time; Obese and Miserable; Fruits Out of Season; From Whale Oil to Pollution by Light; At Full Throttle; A Desperate Case - the Transportation System; Let's Get a

Move on; 4: Energy in the Spaceship's Hold; Crude Oil; Peaking of Oil Production?; Natural Gas; Coal and CO2 Rise; The Most Traded Commodities; The Hidden Treasure; Energy Also Travels; Costly Energy Invoices; Alliances, Tensions, Wars
5: Collateral DamageThe Planet Overheats; Agreements and Disagreements; Jailing the Offender?; A Subtle Danger; Rain Is No Longer What It Used to be; Financial Compensation; Minimize! Save the Planet; 6: Energy from the Atom; Splitting the Atom; Nuclear Accidents; An Inconvenient Legacy; Where Do We Store Nuclear Wastes?; We'll Settle the Bill Later; Current Nuclear Power Plants; Tomorrow's Nuclear Power Plants (Maybe); The Harsh Reality of the Marketplace; Solution or Problem?; Nuclear Fusion: if Not Roses . . . Then What?; 7: Energy from the Sun; Conversion and Exploitation of Sunlight
From Light to HeatFrom Light to Electricity; Concentrating Sunlight; Light to Chemical Energy - Natural Photosynthesis; Light to Chemical Energy - the Sunshine Vitamin; Biomass and Biofuels: Yes, but . . . !; Artificial Photosynthesis; The Hydrogen Myth; 8: Energy from Air, Water, and Land; Wind Changes; Wind Farms; Water - between Past and Future; Geothermal Energy; Sea Power; 9: Fukushima and the Future of Nuclear Energy; What Happened at Fukushima Daiichi?; The Consequences for the Population; A Lesson from the Fukushima Disaster; What Is Today's Cost of Nuclear Energy?
Should Italy Go Back to Nuclear Energy?The Fate of Nuclear Energy; Global Expansion of Nuclear Power?; Is It Worthwhile to Get Energy Using Technologies Exposed to Great Risks?; 10: Energy Italy; Stop Navigating Blind; Conserve Energy! Where? How?; Italy - a Country with an Abundance of Sunlight; Wind, Geothermal Energy, Biomass; Conservation and Renewables - a Summary; 11: Energy Canada; Primary Energy Resources; Oil Sands or Tar Sands?; Oil Sands and Their Environmental Impact; Water Usage; Natural Gas Usage; Greenhouse Gases; Coal in Canada; Natural Gas; Nuclear Energy and Electricity
Electricity

Sommario/riassunto

In their book Nicola Armaroli, Vincenzo Balzani and Nick Serpone uncover the background details associated with a transition to sustainable energy production that are routinely swept under the table in public discussions. They are not only concerned with the (alleged) advantages and disadvantages of any one energy generation technology from a technical viewpoint, but also with the ecological, economic, political and social consequences of an inevitable transition. In a highly readable manner aimed at an international audience, the authors introduce the often misused and sometimes abused ter
