Uk Aluminium Industry Fact Sheet 15 Aluminium Packaging

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KENYON SHANE

Light Alloys Springer Science & Business Media
We urgently need to transform to a low carbon society, yet our progress is painfully slow, in part because there is widespread public concern that this will require sacrifice and high costs. But this need not be the case. Many carbon reduction policies provide a range of additional benefits, from reduced air pollution and increased energy security to financial savings and healthier lifestyles, that can offset the costs of climate action. This book maps out the links between low carbon policies and their co-benefits, and shows how low carbon policies can lead to cleaner air and water, conservation of forests, more sustainable agriculture, less waste, safer and more secure energy, cost savings for households and businesses and a stronger and more stable economy. The book discusses the ways in which joined-up policies can help to maximise the synergies and minimise the conflicts between climate policy and other aspects of sustainability. Through rigorous analysis of the facts, the author presents well-reasoned and evidenced recommendations for policy-makers and all those with an interest in making a healthier and happier society. This book shows us how, instead of being paralysed by the threat of climate change, we can use it as a stimulus to escape from our dependence on polluting fossil fuels, and make the transition to a cleaner, safer and more sustainable future.
Sheet Metal Industries John Wiley & Sons
This encyclopedia, written by authoritative experts under the guidance of an international panel of key researchers from academia, national laboratories, and industry, is a comprehensive reference covering all major aspects of metallurgical science and engineering of aluminum and its alloys. Topics covered include extractive metallurgy, powder metallurgy (including processing), physical metallurgy, production engineering, corrosion engineering, thermal processing (processes such as metalworking and welding, heat treatment, rolling, casting, hot and cold forming), surface engineering and structure such as crystallography and metallography.
Global Energy Assessment Routledge
This Special Issue addresses the important issue of the energy efficiency of both manufacturing processes and systems. Manufacturing is responsible for one-third of global energy consumption and CO2 emissions. Thus, improving the energy efficiency of production has been the focus of research in recent years. Energy efficiency has begun to be considered as one of the key decision-making attributes for manufacturing. This book includes recent studies on methods for the measurement of energy efficiency, tools and techniques for the analysis and development of improvements with regards to energy consumption, modeling and simulation of energy efficiency, and the integration of green and lean manufacturing. This book presents a breadth of relevant information, material, and knowledge to support research, policy-making, practices, and experience transferability to address the issues of energy efficiency.
Metal Resources and Energy Springer Science & Business Media
Aluminium is an important metal in manufacturing, due to its versatile properties and the many applications of both the processed metal and its alloys in different industries. Fundamentals of aluminium metallurgy provides a comprehensive overview of the production, properties and processing of aluminium, and its applications in manufacturing industries. Part one discusses different methods of producing and casting aluminium, covering areas such as casting of alloys, quality issues and specific production methods such as high-pressure diecasting. The metallurgical properties of aluminium and its alloys are reviewed in Part two, with chapters on such topics as hardening, precipitation processes and solute partitioning and clustering, as well as properties such as fracture resistance. Finally, Part three includes chapters on joining, laser sintering and other methods of processing aluminium, and its applications in particular areas of industry such as aerospace. With its distinguished editor and team of expert contributors, Fundamentals of aluminium metallurgy is a standard reference for researchers in metallurgy, as well as all those involved in the manufacture and use of aluminium products. Provides a comprehensive overview of the production, properties and processing of aluminium, and its applications in manufacturing industries Considers many issues of central importance in aluminium production and utilization considering quality issues and design for fatigue growth resistance Metallurgical properties of aluminium and its alloys are further explored with particular reference to work hardening and applications of industrial alloys
Encyclopedia of Aluminum and Its Alloys, Two-Volume Set (Print) Elsevier
Light Alloys Directory and Databook is a world-wide directory of the properties and suppliers of light alloys used in, or proposed for, numerous engineering applications. Alloys covered will include aluminium alloys, magnesium alloys, titanium alloys, beryllium. For the metals considered each section will consist of: a short introduction; a table comparing basic data and a series of comparison sheets. The book will adopt standardised data in order to help the reader in finding and comparing different materials and identifying the required information. All comparison sheets are cross-referenced, so that the user will be able to locate data on a specific product or compare properties easily. The book is designed to complement the existing publications on high performance materials.
6th Report of Session 2007-08, Vol. 2: Evidence Elsevier
The Climate Change Levy package is the second biggest element in the UK Climate Change Programme, and savings appear to have been significant; but were strongly front-end loaded and have eased off since soon after its introduction. The Levy will reduce annual UK CO2 emissions by 12.8 million tonnes by 2010. But these savings have come mainly from the effect its announcement had on raising awareness of the potential for energy savings, and most of these savings were the result of actions taken before the tax actually came into operation. The Levy itself has had relatively little effect on business emissions, especially in the case of SMEs and large but non-energy intensive organisations. The Government believes that Climate Change Agreements (CCAs) will reduce annual CO2 emissions by an additional 7 million tonnes by 2010. Complying with CCAs has galvanised business interest in finding energy savings, and that key to this has been the incentive of the tax discount they offer. The exemptions on the Climate Change Levy for 'green electricity' and combined heat and power have had minimal effect on the construction of new renewables and CHP capacity, essentially because they are worth too little money. The CCL package does not impose a damaging economic burden on UK business overall, and is encouraging greater resource productivity and stimulating energy efficient industries. The CCL has not worked quite as expected. Instead of rationally seeking to reduce their costs through increased energy efficiency, businesses appear to have needed an extra stimulus to change their approach to energy use. This has profound implications for climate change policy more widely. If even large companies require additional policies to drive behavioural change, this must be all the more true for small businesses, public bodies, and private households.
Improved Energy Efficiency in the Aluminium Industry and its Supply Chains CUP Archive
This title was first published in 2002: This volume gives details of nearly 1000 publications and services (including electronic publications) produced by trade associations, professional bodies, banks, consultants, employers' federations, forecasting organizations and others, together with statistics appearing in trade journals and periodicals. Titles and services are listed alphabetically by publisher and each entry contains information, where available, on subject, content and source of statistics, as well as frequency and cost, and address, telephone and fax details for further information. This updated edition also includes details of internet sites and information on whether statistics are available on those sites.
33rd Report of Session 2007-08; Report with Evidence The Stationery Office
Aluminium is the most abundant metal in the Earth's crust but, because aluminium was isolated experimentally only in 1827 and produced in commercial quantities only after 1886, its production and use is many times less than that of iron. However over twice as much aluminium is produced as copper and the annual percentage growth in its consumption between 1985 and 1998 at 2.8% is significantly greater than that of iron and steel. The aluminium industry provides an in-depth overview of the international aluminium trade at the turn of the millennium. Its clearly presented information, analysis and statistics bring the industry into sharp focus – from extraction and refining to applications, markets, prices and future trends. The aluminium industry is essential reading for: Professionals whose businesses participate in, supply or buy from any part of the aluminium industry The finance community with investment interests in the metals or raw materials industries Engineers needing an overview of the structure and commercial operation of the aluminium industry Government policy makers and all those needing an introduction to the industry or a training resource for new entrants Read this guide and find out about: How the aluminium industry has developed from its earliest beginnings How the key raw materials, bauxite and alumina are processed Why technical trends are changing the production of aluminium How primary aluminium is priced The role of recycled aluminium metal How demand is changing and the main applications for aluminium products today and in the future The organisation of international trade, industry corporate structures and the key issues that will determine the industry's future
Climate Change 2007 - Mitigation of Climate Change Routledge
Waste Reduction : 6th report of session 2007-08, Vol. 2: Evidence
Industrial Case Studies The Stationery Office
This book is the definitive reference source for professionals involved in the conception, design and specification stages of a construction project. The theory and practical aspects of each material is covered, with an emphasis being placed on properties and appropriate use, enabling broader, deeper understanding of each material leading to greater confidence in their application. Containing fifty chapters written by subject specialists, Construction Materials Reference Book covers the wide range of materials that are encountered in the construction process, from traditional materials such as stone through masonry and steel to advanced plastics and composites. With increased significance being placed on broader environmental issues, issues of whole life cost and sustainability are covered, along with health and safety aspects of both use and installation.
Climate Change 2001: Mitigation Oxford Business Group
How can you tell if the materials and components you are specifying have a low environmental impact? A full life-cycle assessment is a complex, time-consuming and expensive process; the environmental ratings summarised in this Guide provide a quick and easy way for designers and specifiers to assess their options. The relative environmental performance of over 250 materials and components have been assessed in this guide, using carefully researched, quantitative data derived from the BRE Environmental Database. A wide range of alternative specifications are provided for: · walls · floor systems · floor finishes · roofs · windows · doors · ceilings · paints · insulation · landscaping. The performance of each specification is measured against a range of environmental impacts including: · climate change · toxicity · fossil fuel and ozone depletion · levels of emissions and pollutants · mineral and water extraction. Environmental performance is indicated by a simple to use A-B-C rating system. To further aid specifiers,

guidance on capital coasts, typical replacement intervals and information on recycling is also provided for each material and component. An important part of BREEAM, the BRE's widely accepted scheme to improve the environmental performance of buildings, The Green Guide to Specification is an essential tool for architects, surveyors, building managers and property owners seeking to reduce the environmental impacts of building materials through informed choice.

Energy Efficiency Construction Materials Reference Book

Energy is an essential resource in the daily lives of humans. However, the extraction and use of energy has an impact on the environment. The industrial sector accounts for a large share of the global final energy use and greenhouse gas (GHG) emissions. The largest source of industrial GHG emissions is energy use. The production and processing of aluminium is energy- and GHG-intensive, and uses significant amounts of fossil fuels and electricity. At the same time, the global demand for aluminium is predicted to rise significantly by the year 2050. Improved energy efficiency is one of the most important approaches for reducing industrial GHG emissions. Additionally, improved energy efficiency in industry is a competitive advantage for companies due to the cost reductions that energy efficiency improvements yield. The aim of this thesis was to study improved energy efficiency in the individual companies and the entire supply chains of the aluminium industry. This included studying energy efficiency measures, potentials for energy efficiency improvements and energy savings, and which factors inhibit or drive the work to improve energy efficiency. The aim and the research questions were answered by conducting a literature review, focus groups, questionnaires and calculations of effects on primary energy use, GHG emissions, and energy and CO2 costs. This thesis identified several energy efficiency measures that can be implemented by the individual companies in the aluminium industry and the aluminium casting foundries. The individual companies have large potentials for improving their energy efficiency. Energy efficiency measures within the electrolysis process have significant effects on primary energy use, GHG emissions, and energy and CO2 costs. This thesis showed that joint work between the companies in the supply chains of the aluminium industry is needed in order to achieve further energy efficiency improvements compared to the companies only working on their own. The joint work between the companies in the supply chain is needed to avoid sub-optimisation of the total energy use throughout the entire supply chain. Better communication and closer collaboration between all the companies in the supply chain are two of the most important aspects of the joint work to improve energy efficiency. An energy audit for the entire supply chain could be conducted as a first step in the joint work between the companies in the supply chains. Another important aspect is to increase the use of secondary aluminium or remelted material waste rather than primary aluminium. The companies in the Swedish aluminium industry and the aluminium casting foundries have come some way in their work to improve energy efficiency within their own facilities. However, the results in this thesis indicate that cost-effective technology and improved management can, in total, save 126–185 GWh/year in the Swedish aluminium industry and 8–15 GWh/year in the Swedish aluminium casting foundries. This thesis identified several demands regarding economics, product quality and performance, and environment placed on the companies and products in the supply chains that affect energy use and work to improve energy efficiency. These demands can sometimes counteract each other, and some demands are more important to meet than improving energy efficiency. This implies that improving the energy efficiency of the supply chains as well as designing products so they are energy-efficient in their use phase can sometimes be difficult. The results in this thesis indicate that it would be beneficial if the companies reviewed these demands to see whether any of them could be changed. Both the economic aspects and demands from customers and authorities were shown to be important drivers for improved energy efficiency in the supply chains. However, placing demands on energy-efficient production and a company’s improved energy efficiency would require those placing the demands to have deeper knowledge compared to demanding green energy, for example. Requiring a company to implement an energy management system to ensure active work to improve energy efficiency would be easier for the customer than demanding a certain level of energy efficiency in the company’s processes. Additionally, energy audits and demands on conducted energy audits could act as drivers for improved energy efficiency throughout the supply chains. This thesis showed that the most important barriers to improved energy efficiency within the individual companies include different types of risks as well as the cost of production disruption, complex production processes and technology being inappropriate at the site. Similar to the supply chains, important drivers for improved energy efficiency within the individual companies were shown to be economic aspects and demands from customers and authorities. However, the factors that are most important for driving the work to improve energy efficiency within the individual companies include the access to and utilisation of knowledge within the company, corporate culture, a longterm energy strategy, networking within the sector, information from technology suppliers and energy audits. Energi är en viktig resurs i människors dagliga liv, men utvinningen och användningen av energi påverkar miljön. Industrin står för en stor andel av den globala slutliga energianvändningen och de globala utsläppen av växthusgaser. Den största källan till industriella växthusgasutsläpp är energianvändning. Produktionen och bearbetningen av aluminium är energiintensiv och har stora utsläpp av växthusgaser och använder betydande mängder fossila bränslen och elektricitet. Samtidigt beräknas efterfrågan på aluminium öka avsevärt globalt till år 2050. Energieffektivisering är ett av de viktigaste medlen för att minska industriella växthusgasutsläpp. Dessutom är energieffektivisering inom industrin en konkurrensfördel för företagen på grund av de minskade kostnader som energieffektivisering medför. Syftet med den här avhandlingen var att studera hur energianvändningen kan bli effektivare i de enskilda företagen och hela försörjningskedjorna i aluminiumindustrin. Detta inkluderade att studera energieffektiviseringsåtgärder, potentialer för energieffektivisering och energibesparing samt vilka faktorer som hindrar eller driver arbetet med energieffektivisering. Syftet och frågeställningarna besvarades genom litteraturstudier, fokusgrupper, enkäter samt beräkningar av påverkan på primärenergianvändning, växthusgasutsläpp och energi- och koldioxidkostnader. Denna avhandling identifierade flera energieffektiviseringsåtgärder som kan genomföras av de enskilda företagen inom aluminiumindustrin och aluminiumgjuterierna. De enskilda företagen har stora potentialer för effektivare energianvändning. Energieffektiviseringsåtgärder inom elektrolysen har stor påverkan på primärenergianvändning, växthusgasutsläpp samt energi- och koldioxidkostnader. Denna avhandling visade att det gemensamma arbetet mellan företagen i aluminiumindustrins försörjningskedjor är viktigt för att uppnå ytterligare effektiviseringar av energianvändningen jämfört med om de individuella företagen skulle arbeta enbart på egen hand. Det gemensamma arbetet mellan företagen i försörjningskedjan är viktigt för att undvika suboptimering av den totala energianvändningen i hela försörjningskedjan. Bättre kommunikation och närmare samarbete mellan alla företagen i försörjningskedjan är två av de viktigaste aspekterna i det gemensamma arbetet för att uppnå effektivare energianvändning. En energikartläggning av hela försörjningskedjan kan genomföras som ett första steg i det gemensamma arbetet mellan företagen. En annan viktig aspekt är att öka användningen av sekundärt aluminium eller omsmält processkrot snarare än att använda primärt aluminium. Företagen i den svenska aluminiumindustrin och aluminiumgjuterierna har kommit en bit på vägen i deras arbeten mot effektivare energianvändning inom deras egna anläggningar. Dock visade resultaten i denna avhandling att kostnadseffektiv teknik och förbättrad energiledning totalt kan spara 126–185 GWh/år i den svenska aluminiumindustrin och 8–15 GWh/år i de svenska aluminiumgjuterierna. Denna avhandling identifierade flera krav rörande ekonomi, produktkvalitet och -prestanda samt miljö som ställs på företagen och produkterna i försörjningskedjorna och som påverkar energianvändningen och arbetet mot effektivare energianvändning. Dessa krav kan ibland motverka varandra och vissa krav är viktigare att möta än att effektivisera energianvändningen. Detta innebär att det ibland kan vara svårt att energieffektivisera försörjningskedjorna samt att designa energianvändande produkter så att de är energieffektiva i användningsfasen. Resultaten i denna avhandling visar att det skulle vara fördelaktigt om företagen granskar kraven för att se om något av kraven skulle kunna ändras. Både de ekonomiska aspekterna och krav från kunder och myndigheter visade sig vara viktiga drivkrafter för energieffektivisering i försörjningskedjorna. Om krav ställs på energieffektiv produktion och effektivare energianvändning inom ett företag behöver de aktörer som ställer kraven ha djupare kunskaper jämfört med om de till exempel skulle kräva användandet av grön energi. Ett krav på implementeringen av ett energiledningssystem för att säkerställa ett aktivt arbete med energieffektivisering skulle vara lättare för kunden att ställa än att kräva en viss energieffektiviseringsnivå i leverantörens processer. Dessutom kan energikartläggningar och krav på genomförda energikartläggningar fungera som drivkrafter för energieffektivisering i försörjningskedjorna. Denna avhandling visade att de viktigaste hindren mot energieffektivisering inom de enskilda företagen är olika typer av risker samt kostnader för produktionsstörningar, komplexa produktionsprocesser och att tekniken inte är applicerbar inom anläggningen. I likhet med försörjningskedjorna uppkom de ekonomiska aspekterna och krav från kunder och myndigheter som viktiga drivkrafter för energieffektivisering inom de enskilda företagen. Dock är de viktigaste faktorerna för att driva på arbetet med energieffektivisering inom de enskilda företagen tillgången till och utnyttjandet av kunskap inom företaget, företagskulturen, en långsiktig energistrategi, nätverkande inom branschen, information från teknikleverantörer och energikartläggningar.

Toward a Sustainable Future Lulu.com

This book presents a collection of papers that provide a snapshot of ongoing research on energy analysis, a record of the growing pains of a fledgling subject. The collection of papers arose out of a series of articles devised and designed for the journal Energy Policy.

Aluminium Oxford Business Group

The Climate Change 2007 volumes of the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) provide the most comprehensive and balanced assessment of climate change available. This IPCC Working Group III volume provides a comprehensive, state-of-the-art and worldwide overview of scientific knowledge related to the mitigation of climate change. It includes a detailed assessment of costs and potentials of mitigation technologies and practices, implementation barriers, and policy options for the sectors: energy supply, transport, buildings, industry, agriculture, forestry and waste management. It links sustainable development policies with climate change practices. This volume will again be the standard reference for all those concerned with climate change, including students and researchers, analysts and decision-makers in governments and the private sector.

Chemistry, Society and Environment Springer

This report analyses the state of the aluminium market at the beginning of the 21st century, looking at the aftermath of the MoU and at trends and developments in the established and emerging market economies considering the changes and challenges faced by aluminium in its core automotive, packaging and building end-use sectors. A clear and detailed analysis of the industry and its major markets A survey of trends in mining, refining, processing, end-use and consumption Unique industry and market forecasts

The Future of Atmospheric Oxygen Linköping University Electronic Press

The objective of this publication is to provide a 'one stop' guide to business information, insofar as that is possible within the confines of a useable book. It aims to give guidance on both the published and organisational sources relevant to the needs of the non-professional business researcher and provides a listing of 'worthwhile' references and contacts. As previously, the Directory is organised so that both published sources and information centres are grouped together under their applicable Standard Industrial Classification (SIC) number and heading. This new edition also incorporates NACE classification and correlation tables. The second category again includes those UK and pan-national organisations which focus on specific, discrete industry sectors, which limits the number of organisational sources in the directory to those that are 'most worthwhile'.

The Report: Bahrain 2016 Elsevier

Metal Resources and Energy was initially aimed at exploring the future availability of metals and the energy required to produce them. During the detailed planning of the book, the authors decided to extend the remit to consider fuel use in relation to resources and future availability. In order to explore this relationship a framework was established which provided an agenda of topics to examine. In the process of systematically working through this agenda a deeper understanding of resource issues and some new insights were obtained. This book develops a framework for assessing the future availability of metals by first reviewing the activities associated with the production of metals. These can be divided into four broad categories: exploration and establishment, mining, concentrating, and smelting and refining. It then examines factors such as energy economics, forecasting issues, resources and reserves estimation, and trends in technical efficiency. Subsequent chapters deal with the evaluation of fuel use in metals production; the secondary production of metals from scrap and other waste materials; non-technical issues that are potential sources of short-term crises; and other applications of energy data. This book is intended for final year students of engineering, geology, and economics, all of whom will find all the topics covered relevant to their studies. It attempts to convey the essentials of resource economics, metal production technology, energy analysis, and those aspects of geology and geochemistry which are pertinent to a study of resource issues. The full breadth of topics is covered at a depth which is comprehensible to students from other disciplines.

Energy Efficiency of Manufacturing Processes and Systems Information Today, Inc.

Construction Materials Reference BookRoutledge

Sources of Non-official UK Statistics Butterworth-Heinemann
First Published in 2017. Routledge is an imprint of Taylor & Francis, an Informa company.

The Safe Handling of Chemicals in Industry, Volume 3 MDPI
This is the first book to look critically at the whole development of industrial chemistry in the UK in the context of its effects on the environment.