

Chapter 1 : Ashford Writing

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Basic information on wind energy and wind power technology, resources, and issues of concern. Wind Energy and Wind Power Wind is a form of solar energy. This wind flow, or motion energy, when "harvested" by modern wind turbines, can be used to generate electricity. How Wind Power Is Generated The terms "wind energy" or "wind power" describe the process by which the wind is used to generate mechanical power or electricity. Wind turbines convert the kinetic energy in the wind into mechanical power. This mechanical power can be used for specific tasks such as grinding grain or pumping water or a generator can convert this mechanical power into electricity to power homes, businesses, schools, and the like. Wind Turbines Wind turbines, like aircraft propeller blades, turn in the moving air and power an electric generator that supplies an electric current. Simply stated, a wind turbine is the opposite of a fan. Instead of using electricity to make wind, like a fan, wind turbines use wind to make electricity. The wind turns the blades, which spin a shaft, which connects to a generator and makes electricity. Wind Turbine Types Modern wind turbines fall into two basic groups; the horizontal-axis variety, like the traditional farm windmills used for pumping water, and the vertical-axis design, like the eggbeater-style Darrieus model, named after its French inventor. Most large modern wind turbines are horizontal-axis turbines. Turbine Components blade or rotor, which converts the energy in the wind to rotational shaft energy; a drive train, usually including a gearbox and a generator; a tower that supports the rotor and drive train; and other equipment, including controls, electrical cables, ground support equipment, and interconnection equipment. Wind turbine diagram - click for enlarged image. Turbine Configurations Wind turbines are often grouped together into a single wind power plant, also known as a wind farm, and generate bulk electrical power. Electricity from these turbines is fed into a utility grid and distributed to customers, just as with conventional power plants. See Wind Energy Photos page for wind farm photographs. Wind Turbine Size and Power Ratings Wind turbines are available in a variety of sizes, and therefore power ratings. The largest machine has blades that span more than the length of a football field, stands 20 building stories high, and produces enough electricity to power 1, homes. A small home-sized wind machine has rotors between 8 and 25 feet in diameter and stands upwards of 30 feet and can supply the power needs of an all-electric home or small business. Utility-scale turbines range in size from 50 to kilowatts. Single small turbines, below 50 kilowatts, are used for homes, telecommunications dishes, or water pumping. See Wind Energy Photos page for wind turbine photographs. Wind resources are characterized by wind-power density classes, ranging from class 1 the lowest to class 7 the highest. Good wind resources e. Wind speed is a critical feature of wind resources, because the energy in wind is proportional to the cube of the wind speed. In other words, a stronger wind means a lot more power. Advantages and Disadvantages of Wind-Generated Electricity A Renewable Non-Polluting Resource Wind energy is a free, renewable resource, so no matter how much is used today, there will still be the same supply in the future. Wind energy is also a source of clean, non-polluting, electricity. Unlike conventional power plants, wind plants emit no air pollutants or greenhouse gases. According to the U. It would take a forest of 90 million to million trees to provide the same air quality. Cost Issues Even though the cost of wind power has decreased dramatically in the past 10 years, the technology requires a higher initial investment than fossil-fueled generators. If wind generating systems are compared with fossil-fueled systems on a "life-cycle" cost basis counting fuel and operating expenses for the life of the generator , however, wind costs are much more competitive with other generating technologies because there is no fuel to purchase and minimal operating expenses. Most of these problems have been resolved or greatly reduced through technological development or by properly siting wind plants. Supply and Transport Issues The major challenge to using wind as a source of power is that it is intermittent and does not always blow when electricity is needed. Wind cannot be stored although wind-generated electricity can be stored, if batteries are used , and not all winds can be harnessed to meet the timing of electricity demands.

Further, good wind sites are often located in remote locations far from areas of electric power demand such as cities. Finally, wind resource development may compete with other uses for the land, and those alternative uses may be more highly valued than electricity generation. However, wind turbines can be located on land that is also used for grazing or even farming. For More Information Much additional information on wind energy science and technology and wind energy development issues is available through the Web. Visit the Wind Energy Links page to access sites with more information. In particular, the DOE Wind Energy Technologies page has good information on wind energy basics, and is the source for much of the information presented here. The American Wind Energy Association web site has an excellent FAQ page with information about wind technology, and the The Danish Wind Industry Association web site has extensive information about wind energy and technology, including a minute video introducing wind technology.

Chapter 2 : The Construction Information Service (CIS) | IHS Markit

This guide is a companion to CIRIA Control of risk (SP) which provides advice and methods for identifying, assessing, monitoring and managing risks in an informed and structured manner. Culvert design & operation guide.

Here are some fantastic resources and tips on how to use them to their fullest extent: Depending on the size of your school, you may have a subject area librarian for the particular type of research you are doing. Some universities, for instance, have specialist librarians for topics like music, art, and humanities. When asking your librarian or teacher, just be sure to be tactful. Academic journals – These journals are a great way to find cutting edge research on your topic. Academic journals add credibility and professionalism to a paper. They work well for both humanities and scientific papers. Another great way to access academic papers is Google Scholar. It is a search tool that finds scholarly articles – academic journals, patents, theses, court proceedings, and more. Google Scholar displays how many times an academic piece of literature was cited, which is a rough numerical indicator of how influential the research was. Google Scholar also has link under each posting to help you find related articles. Books – Books are still one of the best ways to find credible information about a source. Some fields such as the humanities prefer their students use books for sources rather than websites, since books typically contain more detailed information and perhaps more in-depth thinking than websites do. Books can be found on your school or public library website. Type in keywords related to your topic in the search field, and see what kinds of literature comes up. Write down the call number of the book so that you can find it within your library. Google has another service, Google Books, that will help you find books related to your topic. Just type your research topic into the field and Google Books will provide you with a list of relevant books. Once you click on a book you like, Google Books will give you a preview of the book and information related to buying the book or finding it in your library. Websites – Websites are sources you should approach with caution. The trick is to weed out the unreliable information. They help people with a lot of things shopping, searching for flights, comparing restaurants. Here are some tools that help you find information for a particular field of interest:

Chapter 3 : Works Cited: A Quick Guide – The MLA Style Center

CIRIA guide to European Community and international sources of construction information. name " CIRIA guide to European Community and international sources of.

All in-text citations require the same basic information: Some educational theorists suggest that schooling and a focus on teaching literacy divided society into educated and uneducated classes Cook-Gumperz, Schooling and literacy contributed to educational divisions in society Cook-Gumperz, If you mention the author and the year in your writing to introduce the quote or paraphrased material, then you need only include the page or paragraph number in the in-text citation. For a web page: For an online article: For an email communication: Because most online sources do not contain page numbers, use the paragraph number. While many online sources may include numbers beside the paragraphs, others may not, and you might have to count them yourself. Sometimes the quote you want to use is quoted by someone else in another source, like your textbook. You can still use that quote inside the textbook –” this is called citing from a secondary source. In this case, the secondary source is your textbook and its author; the primary source is the quote and its author. For instance, you might want to include a quote by Sarah Vowell that is cited in your textbook by Ryan Smith. You would write this: When citing from a secondary source, only the secondary source information appears in the references list. The primary source author and original date of publication only appears in your writing. Moving the Citation Information Around In-text citations contain three pieces of information: However, if in your writing you place this information elsewhere, like in the introductory phrase before the quote, you do not need to repeat it in the citation. Here are three examples where the citation information is placed in different locations around the quote: Parentheses that contain citation information come after the closing quote mark but before the punctuation ending the entire sentence. Block quotes are the exception, where the parenthetical citation comes after the period at the end of the quote. For a comprehensive overview of crediting sources, consult Chapter 6 of the Publication Manual of the American Psychological Association.

Chapter 4 : Your Source for Reliable Health Information - www.nxgvision.com

*CIRIA Guide to European Community and International Sources of Construction Information (CIRIA Special Publications) [Anon] on www.nxgvision.com *FREE* shipping on qualifying offers.*

Chapter 5 : Diffuse pollution in the urban environment | Scottish Environment Protection Agency (SEPA)

Pre-release offer: Guide to tower crane foundation and tie design This guide is intended to promote the safe design and construction of foundations for tower cranes through an improved understanding of temporary works design and health and safety issues.

Chapter 6 : Evaluating Health Information: MedlinePlus

About the Guide The Investigator's Guide to Sources of Information contains five chapters, four on information sources and a fifth on how to access.

Chapter 7 : IHS Markit | Leading Source of Critical Information

Information sources can be observations, people, speeches, documents, pictures, organizations. Information sources can be in print, non-print and electronic media or format.

Chapter 8 : Finding sources for your research

(BRE), Construction Industry Research and Information Association (CIRIA)). The documents available vary widely in their scope, size, and format dependent on issues such as the intended audience and place of use for the document.

Chapter 9 : WRTG - How to Evaluate Research Sources

Other sources of information or contacts who may know about the likely risks of flooding in This guide is available on line at CIRIA's Repair and.