Is Alaska's Oil Age Ending? Living Energy Efficient
by Rich Seifert
Science for Alaska Lecture Series 2009

A list of materials about this topic provided by Aldean Kilbourn,
Geophysical Institute Keith B. Mather Library

Internet Resources

General Information (all sites accessible as of 2 Februrary 2009)

Alaska Energy and Housing, Cooperative Extension Service.
<http://www.uaf.edu/ces/faculty/seifert/>.

Alaska Sun. <http://www.alaskasun.org/>. "A coalition of solar businesses, academics, and interested individuals working toward a renewable energy future for Alaska."

American Council On Renewable Energy (ACORE). <http://www.americanrenewables.org/>.

American Wind Energy Association. <http://www.awe.org>.
The national trade association for the wind energy industry.

Canadian Wind Energy Association. <http://www.canwea.ca>.

CanmetEnergy: Software Tools. <http://canmetenergy.nrcan.gc.ca/eng/software_tools.html>.
Evaluation tools developed by the Department of Natural Resources of Canada.

Center for Energy Efficiency & Renewable Technologies (CEERT). <http://www.ceert.org/>.

Center for Renewable Energy Research Laboratory (RERL).
<http://www.ceere.org/rerl/index.html>.

Center for Renewable Energy and Sustainable Technology/Renewable Energy Policy Project (CREST/REPP). <http://www.repp.org/>.

Climate Ark: Climate Change and Global Warming Portal. <http://www.climateark.org/links/>.

Cold Climate and Housing Research Center. <http://www.cchrc.org/>.

Database of State Incentives for Renewable Energy & Efficiency. <http://www.dsireusa.org/>.

Energy Conservation Resources. <http://www.uaf.edu/ces/hhfd/energyconservation/>.
Links to a wide variety of ways to control energy consumption in the home.

Energy Information Administration: Official Energy Statistics from the U.S. Government.
<http://www.eia.doe.gov/emeu/states/_states.html>.

Energy Issues and Resources. <http://www.uaf.edu/ces/energy/>.
"Cooperative Extension Service works with many different organizations to bring research-based information to the people of Alaska. The purpose of this web page is to connect Alaskans to information they can use to achieve end use conservation of energy and other strategies to weather the rise in energy costs."

Green-e:. <http://www.green-e.org/>. Program of the Center for Resource Solutions that certifies renewable electricity products

Interstate Renewable. <http://www.irecusa.org>.

Interwest Energy Alliance. <www.interwestenergy.org>.

Inventions and Innovation Program - US Department of Energy.
<http://www1.eere.energy.gov/inventions/>.

Kern Wind Energy Association. <http://www.kwea.org/>.
This has two PDF documents on Wind Energy for download. Site is otherwise undeveloped.

Minnesota Department of Agriculture: Renewable Resources.
<http://www.mda.state.mn.us/renewable/default.htm>.

The Minnesota Project – Renewable Energy. <http://www.mnproject.org/e-intro.html>.

Montana Green Power. <http://www.montanagreenpower.com>.

Montana State University Wind Energy Program.
<http://extn.msu.montana.edu/energy/wind/windhome.asp>.

National Climatic Data Center. <http://www.ncdc.noaa.gov/oa/ncdc.html>.

National Wind Coordinating Committee (NWCC). <http://www.nationalwind.org>.

North Dakota Agencies and Organizations. <http://www.teachearth.com/states/North_Dakota.htm>.

Northwest SEED: Sustainable Energy for Economic Development. <http://www.nwseed.org/>.

Oregon State University Energy Resources Research Laboratory.
<http://me.oregonstate.edu/ERRL/>.

OWPI: Oklahoma Wind Power Initiative. <http://www.seic.okstate.edu/owpi/>.

PennFuture. <http://www.pennfuture.org/energy/energy_index.cfm>.

Power Scorecard: Twenty Things You Can Do To Conserve Energy.
<http://www.powerscorecard.org/reduce_energy.cfm>.

REASN Renewable Energy Analytic Studies Network. <http://www.nrel.gov/reasn/>.

Renew Wisconsin. <http://www.renewwisconsin.org>.

Renewable Energy Vermont. <http://www.revermont.org/index.htm>.

Renewable Northwest Project: Go Green! <http://www.rnp.org/GreenPower/default.html>.

Risoe National Laboratory Wind Energy & Atmospheric Physics Department (Denmark).
<http://www.risoe.dk/> (English).

Rutherford Appleton Laboratory Energy Research Unit (UK). <http://www.eru.rl.ac.uk>.

Sandia National Laboratories. <http://www.sandia.gov/wind>.

Scorecard: The Pollution Information Site. <http://www.scorecard.org>.

The Source for Renewable Energy. <http://energy.sourceguides.com/index.shtml>.

Texas Renewable Energy Industries Association (TREIA). <http://www.treia.org>.

US Department of Energy, National Renewable Energy Laboratory (NREL) and National Wind Technology Center (NWTC). <http://www.nrel.gov/wind>.

US Department of Energy, Wind Powering America Initiative.
<http://www.windpoweringamerica.gov/>.

US Department of Energy, Energy Efficiency and Renewable Energy.
<http://www.eere.energy.gov>.

Union of Concerned Scientists (UCS). <http://www.ucsusa.org/>.

University of North Dakota Energy and Environmental Research Center.
<http://www.undeerc.org/wind>.

University of Texas at El Paso Center for Environmental Resource Management Energy Center.
<http://research.utep.edu/Default.aspx?tabid=15697>.

Utility Wind Integration Group (UWIG). <http://www.uwig.org/>.

West Texas A&M University Alternative Energy Institute. <http://www.windenergy.org>.

Western Business Coalition for New Energy Technologies.
<http://www.newenergytechnologies.org/>.

Wind Energy Finance calculator. <http://analysis.nrel.gov/windfinance/login.asp>.

Wind Energy Resource Atlas of the United States. <http://rredc.nrel.gov/wind/pubs/atlas/>.

Wind and Renewable Energy (Regional) California Energy Commission.
<http://www.energy.ca.gov/renewables/>.

Wind – New Zealand's Energy. <http://www.windenergy.org.nz>.

Wind Powering America. < http://www.windpoweringamerica.gov/index.asp>.

Wind Research – National Renewable Energy Laboratory. <http://www.nrel.gov/wind/>.

Windustry. < http://www.windustry.org/>.
Many links to explanations about wind, links for those interested in participating in a wind project, a library with searchable features, and forum links.

Worldwatch Institute. <http://www.worldwatch.org/>.

The following are PDF files and require Adobe Acrobat Reader to successfully access online:

Alternative Energy for Southeast Alaska. Karen Petersen, John Bruns. Alaska Business Monthly. Oct 01, 2006, 22-10; p28. <http://www.uaf.edu/ces/ruraldevelopment/pdf/Petersen-Alternative-Energy.pdf>

Energy Conservation. EPA. 1997. <www.epa.gov/reg5rcra/wptdiv/p2pages/energy.pdf>.

Energy-Efficiency: Where You Can Save and How. Sonja Koukel <http://www.uaf.edu/ces/hhfd/pdfs/EnergyEfficiencyWhereYouCanSave.pdf>

Energy Saving Tips: Personal Computers. Sonja Koukel. April 2008 <http://www.uaf.edu/ces/hhfd/pdfs/EnergySavingTipsPersonalComputers.pdf>

50 Ways to Reduce Your Energy Consumption. Roxie Rodgers Dinstel. <http://www.uaf.edu/ces/hhfd/pdfs/EnergyConservation.pdf> 2 February 2009.

Partnership helps Alaskans build better homes. Amy Simpson and Jeff Fay Newsroom UAF. March 28, 2008. <http://www.uaf.edu/news/featured/06/cchrc/> 2 February 2009

Subarctic Lessons in Solar Hot Water System Performance. Rich Seifert. Alaska Science Building News. Winter 2008, 14-2. <http://www.uaf.edu/ces/faculty/seifert/ABSN/ABSN49.pdf> 2 February 2009.

Video and Electronic Resources

Solar Energy – saved by the sun. Videodisc (56 min.) WGBH (2007). NOVA interviews business people and scientists who are racing to make solar power practical, Discusses latest thinking of solar enthusiasts and skeptics.

E2: energy. Videodisc (180 min.) PBS Home Video (2007). Six episodes, looks at possibility of a more environmentally benign future being attainable.

Book Resources

Cravens, Gwyneth. **Power To Save The World: the truth about nuclear energy.** Alfred A. Knopf (2007) 439 p. A search for understanding of the myths, fears, and truths about nuclear energy.

Degunther, Rik. **Energy Efficient Homes For Dummies**. John Wiley & Sons (2008) 384p.

Dumaine, Brian. **The Plot To Save The Planet: how serious money, visionary entrepreneurs, and corporate titans are creating real solutions**. Crown Business (2008) 288 p.

Fine, Doug. **Farewell, My subaru: an epic adventure in local living**. Villard (2008) 210 p. Can one realistically "go green"? Follow Fine in his adventures of moving to a remote New Mexico ranch to try to find an answer.

Friedman, Thomas L. **Hot, Flat and Crowded: why we need a green revolution and how it can renew America**. Farrar, Straus and Giroux (2008) 438 p.

Gevorkian, Peter. **Solar Power In Building Design : the engineer's complete design resource**. McGraw-Hill (2008) 476p. Third is a series that covers solar energy and practice, intended as a pragmatic resource for solar photovoltaic power systems.

Gingrich, Newt**. Drill here, drill now, payless: a handbook for slashing gas prices and solving our energy crisis**. Regnery Publications (2008) 185 p.

Inslee, Jay. **Apollo's Fire: Igniting America's clean-energy economy**. Island Press (2008) 387 p.
Energy consumption is a big problem, and it will take "a revolution in how we produce and consume energy." Wide variety of thought coupled with stories and examples articulate strategies needed to "foster a green economy."

Kelly, Regina Anne. **Energy Supply and renewable resources.** Facts on File (2007) 406 p.

Krupp, Fred and Miriam Horn. **Earth, the Sequel: The race to reinvent energy and stop global warming.** W.W. Norton & Co. (2008) 279 p.
"Looks at innovators and investors who are reinventing energy and the ways we use it."

McCaffrey, Paul(ed.). **U.S. National Debate Topic 2008-2009: alternative energy**. H. W. Wilson (2008) 198p. Wide variety of opinions on renewable energy sources and energy development.

McNamee, Gregory. **Careers in Renewable Energy: get a green energy job**. PixyJack Press (2008) 190 p. Covers job sectors in various renewable energy fields.

Morgan, Sally. **From windmills to hydrogen fuel cells: discovering alternative energy.** Heinemann Library,(2007) 64 p. "Discusses alternatives to traditional energy sources."

Pahl, Greg. **The Citizen-powered Energy Handbook: community solutions to a global crisis.** Chelsea Green Publishing Company (2007) 347 p. Examines solar, wind, water, biomass, biofuels and geothermal technologies and attempts to inspire both individual and community action through examples of energy independence around the globe.

Ryker, Lori. **Off The Grid Homes: case studies for sustainable living.** Gibbs Smith (2007) 128 p.
Photovotaic sytems, wind turbines systems, solar hot water systems, geothermal systems with extensive references listed.

Schlager, Neil and Jayne Weisblatt, editors. **Alternative Energy.** UXL (2006), 3 volumes. Eight chapters focus on specific energy sources while two identify the need for conservation and future and theoretical energy sources.

Taylor, T. Allan and James Robert Parish. **Career Opportunities in the Energy Industry**. Ferguson (2008) 367 p.

Thomas, Isabel. **The Pros and Cons of Biomass Power**. Rosen Central (2008) 48 p. What is it, what about the environment, cost and investment to produce, does biomass have a future? Part of series called The Energy Debate (others deal with wind power, nuclear power, water power, solar power, and coal, oil, and gas).

Trainer, F.E. **Renewable Energy Cannot Sustain A Consumer Society**. Springer (2007) 197 p. Looks at all the potentials and concludes it isn't possible to sustain current level of global energy use.

Yannas, Simos. **Solar Energy and Housing Design, Bk. 2**. Architectural Association (2008).

Teacher Resources

Build Your Own Wind Turbine. <http://www.re-energy.ca/t-i_windbuild-1.shtml>.
Features online instructions, list of materials needed, assembly and testing instructions, along with a host of other links.

Energy Education Curriculum Project in Iowa. <http://www.earth.uni.edu/EECP/elem/mod3.html>.

Energy for Keeps: Electricity from Renewable Energy.<http://www.energyforkeeps.org/index.html>.
An illustrated guide for everyone who uses electricity.

Energy Matters. <http://library.thinkquest.org/20331/?tqskip1=1>.
This site describes the history, types, and uses of energy. Play a game in which you try to deal with an energy shortage.

Energy Quest. <http://www.energyquest.ca.gov/>.
"By moving the mouse over items in the room on this site, you can find different places to go to learn about energy. There are Puzzles and Games to play to learn about energy; an Energy Time Machine to teach you about historical energy events; Super Scientists you can learn about who were energy pioneers; and Energy Links to other internet resources on energy."

Dr. E's Energy Lab. <http://www.eere.energy.gov/kids/>.
"Learn about different types of energy, such as geothermal, solar, and wind energy on this interactive website! The site can also help you learn about renewable energy, alternative fuels, and gives you tips on how to use less energy."

The Franklin Institute's Educational Energy Hotlinks.
<http://www.fi.edu/learn/hotlists/energy.php>.
Kinds of energy, energy issues, background information, images links.

GE Wind Energy: "Just for Teachers and Kids."
<http://www.gepower.com/businesses/ge_wind_energy/en/kids_teachers/index.htm>.

The KidWind Project. <http://www.kidwind.org/>.
Introduces wind power through hands-on science activities while teaching basic science principles. Provides materials, curricula, a listing of workshops for teachers, and more.

Learning About Renewable Resources. <http://www.nrel.gov/learning/>.
Renewable energy and energy efficiency technologies are key to creating a clean energy future for not only the nation, but the world. This Web site describes NREL's research in renewable energy technologies, and also provides information on energy efficiency and various applications of renewable energy. *Student Resources* is a link.

Librarians' Internet Index-Energy Conservation.
<http://liiwww.ischool.drexel.edu/cs/lii/view/subject/9423>.

Make It Solar: Science Fair Titles. <http://www.makeitsolar.com/>.
"Make it Solar is devoted to providing information for science fair projects is especially useful for solar energy projects. They offer engaging pages and links for "the scientific method, poster board layouts, research, ideas, experiments and planning."

National Energy Education Development Project (NEED). <http://www.NEED.org>.

PicoTurbine Renewable Energy Projects. <http://www.picoturbine.com>.
Step-by-step instructions. Kits available. Links.

Roofus' Solar and Efficient Neighborhood. <http://www1.eere.energy.gov/kids/roofus/>.
Learn how to conserve energy by checking out Roofus' energy-smart house and by playing games in his backyard.

Spirit Lake Elementary School's Wind Turbine.
<http://www.spiritlake.k12.ia.us/dist/wind/index.htm>.
The Spirit Lake School in Spirit Lake, Iowa, researched the feasibility of installing a wind turbine as an educational project and to generate savings for the school, and has since installed two. Provides information about the research and the turbines' performance.

Stop Faking It! ENERGY (Part of "Stop Faking It! - Finally Understanding Science So You Can Teach It" series by National Science Teachers Association). William C. Robertson. NSTA Press, Arlington, VA. ISBN: 0-87355-214-8
Explains what you need to know about the science of energy. Each chapter ends with a summary and explains real-world examples of the concepts. Also, some excellent hands-on experiments using household objects.

Student Energy Competitions and Contests.
<http://www1.eere.energy.gov/education/competitions.html>.
Find resources for students of all ages on competitions and contests that promote awareness about energy technologies and issues, including energy efficiency and renewable energy

The Sun's Joules: What is Renewable Energy? An Introduction to "The Sun's Joules" CD-ROM and Energy Education Program. Weiskopf, Joyce Lowry, 1997.
(available from The Learning Team, 84 Business Park Drive, Armonk, NY 10504; toll-free phone: 1-800-793-8326 (booklet alone: $24.95; CD-ROM alone: $39.95; both: $59.95). "This guide accompanies a compact disk that provides a comprehensive collection of information resources. The compact disk is organized according to energy sources and cross-referenced to issues that must be considered when making decisions about energy. This booklet, designed around questions common to high school students, illustrates how the compact disk can enable students to find answers to their questions and form opinions based on facts. The activities directly support the content and pedagogy in science curricula that address the need for more students to study science and for all students to develop scientific literacy. The six activities focus on the use of renewable resources and the effects on society. Activities are the following: "What Is Renewable Energy?"; "Why Do We Need Options?"; "What Is Energy Efficiency?"; "What Is the Environmental Cost of Energy?"; "How Can Passive Solar Be Used in Home Construction?"; "How Can Motor Vehicles Use Renewable Energy?" (DDR).

Sun Savvy Students: Free Teaching Resources from EPA's SunWise Program (EJ802121). Luke Hall-Jordan. *Science and Children*, v45 n9 p32-35 Jul 2008.

U.S. Department of Energy – Energy Sources. < http://www.energy.gov/energysources/index.htm>.
This site links to different energy sources.

U.S. Department of Energy – Fossil Energy. <http://fossil.energy.gov/education/>.
This site has a wealth of information on energy.

U.S. Department of Energy - Fossil Energy Study Guides and Activities.
<http://fossil.energy.gov/education/energylessons/Study_Guides_and_Activities.html>.
"The U.S. Department of Energy's Office of Fossil Energy is excited to present printable study guides and activities emphasizing the importance of coal, natural gas, and petroleum to our everyday lives. More importantly, we hope to familiarize students with the science and technologies that make using fossil fuels cleaner."

U.S. Department of Energy - Energy Education.
<http://www1.eere.energy.gov/education/index.html>.
Find links to educational and training resources on energy, particularly energy efficiency and renewable energy.

U.S. Department of Energy – Get Smart About Energy Education.
< http://www1.eere.energy.gov/education/index.html>. This is a page for educators; variety of subtopics and links.

U.S. Department of Energy Solar Decathalon. <http://www.solardecathlon.org/for_teachers.html>.
This page offers information about solar-related science project lesson plans and student activities.

What to Do When Your Mom or Dad Says...'Turn Off the Water & Lights!'
(Part of "The Survival Series for Kids") Joy Wilt Berry. Word, Inc., Waco, TX
ISBN: 0-941510-23-9.
Published in 1984, it is now out of print. If you can find a used copy, usually for $2.00 to $5.00, you should consider adding it to your library. This books explains in simple to understand words, with wonderful drawing by "Batholomew," the hows and whys of energy and water conservation.

Wind with Miller. <http://www.windpower.org/en/kids/index.htm>.
Interactive online resource for both teachers and students, 5th grade and up. Provides a teacher's guide, course materials, and activities. Wind With Miller is a feature of the Danish Wind Energy Association Web site. In English, Spanish, and other languages. (recommends using Microsoft IE to view).