Nordic/Baltic Regional ESTH Hub e-Letter

Welcome to the latest e-Letter, our *unclassified* electronic publication sharing regional information, news and events. We encourage you to visit the websites of our Embassies throughout the Hub. Feel free to disseminate to your contacts. At the very end of the e-Letter you will find our featured story, offering a background on Rare Earth Elements.

Enjoy the read!
Ed Canuel
Bo Gregersen
Jasper Alblas

AROUND THE REGION…..

DENMARK

Eco-friendly, fast and fun! One year ago California-based electric car manufacturer Tesla Motors opened its offices in Denmark. Tesla has since partnered with the Danish lighting company e3light. Celebrating this cooperation, Ambassador Fulton hosted 100 guests at an August 5th reception. Guests were afforded the unique chance to experience Tesla roadsters first-hand. Ambassador Fulton cited Tesla and e3light as innovative businesses that prove eco-friendly solutions can compete in the open marketplace. Since its launch in Denmark, Tesla Motors has sold 100 roadsters in Scandinavia. (photo: Department of Commerce, more information available here).

Greenland Oil Spill Contingency Plan Made Public. The Greenland government recently published Cairn Energy's oil spill contingency plan. The government stresses that approved hydrocarbon extraction activities must meet strong safety and spill preparedness standards. Background information on the plan available here, with the entire plan available here.

Vestas U.S. headquarters to install city's largest rooftop solar system. Vestas is currently building its U.S. headquarters in Portland, Oregon. The company intends to install the city's largest rooftop solar power system. SolarWorld, a U.S. solar technology manufacturer, will supply the solar panels. Read more here.

An Arctic Climate Change Lab. On the highest point of Greenland's vast ice sheet**,** the National Science Foundation runs a renowned research station. The Summit Camp is a magnet for scientists seeking to answer important Arctic climate questions, including monitoring the effects of black carbon. Read a report from Climate Wire in the New York Times.

ESTONIA

Estonian-American Innovation Award announced.
U.S. Ambassador to Estonia, Michael C. Polt announced a new award to highlight innovation in Estonia and U.S.-Estonia collaboration. The award is sponsored by the U.S. Embassy in Tallinn, the American Chamber of Commerce in Estonia and the Baltic-American Freedom Foundation. The winner will receive €10,000. Read more here. (*Picture:* U.S. Ambassador Michael C. Polt, *U.S. Embassy Tallinn)*

General Electric to supply turbines for wind farm. General Electric Co. (GE) will supply 18 turbines to two power companies that are building a 45-megawatt wind farm in northwest Estonia. GE will begin shipments to Eesti Energia and Nelja Energia in the first half of 2012. Read more here.

FINLAND

Finland grants €3 Million to NDEP Fund. Finland's recent €3 million grant to the Northern Dimension Environmental Partnership Support Fund (NDEP) is in addition to the country's current support of €18 million to the fund. The grant will be used to support and coordinate funding for priority cross-border environmental projects, primarily in northwest Russia and Kaliningrad. Read more here.

Fennovoima invites bids for new nuclear power plant. Finnish nuclear power consortium Fennovoima Oy has sent bid invitations to France's Areva SA and Japan's Toshiba Corp for a new nuclear power plant-- at a time when many other European countries have decided to halt programs to build such plants. Finland currently has four reactors which are producing almost one third of Finland's total energy demand.
Read more here.

Finnair introduces biofuel flights. Finnair has started flights using a mix of biofuel and regular aviation fuel. The first flight occurred between Amsterdam and Helsinki, and was the longest commercial flight ever that made use of a biofuel mix. Read more here. (photo: *www.yle.fi*)

Finland and Nepal on joint venture forest assessment. Forest Resource Assessment Nepal is a joint venture between the Nepalese and Finnish governments. During the project, a three-dimensional image of a forest can be created by the new technique called lidar. Lidar monitoring may provide a way to monitor forestry carbon stocks. Read more here.

GERMANY

Nord Stream connecting pipeline OPAL completed. After 22 months of construction, the largest natural gas pipeline in Western Europe, OPAL (Ostsee-Pipeline-Anbindungs-Leitung),has now been completed. The pipeline connects the Baltic Sea coast with the German Ore mountains. Read more here. (*Picture:* Construction work OPAL, *http://maritimeandenergy.com*)

Lufthansa starts biofuel flights. Luthansa became the first airline to use biofuels on regular commercial flights. The company will hold a 6 month trial during which CO2 emissions will be reduced by 1,500 tonnes. European airlines are pressing hard on biofuel plans to cut down regular jet fuel use. Read more here.

RWE and Gazprom set to cooperate. Germany's RWE and Russia's Gazprom are negotiating to forge a joint venture for building and operating new power plants across Europe. RWE views the partnership as a means to secure a safe and competitive gas supply. Gazprom sees possibilities for new gas-fired power plants in Germany, given the German government's plans to phase-out nuclear power. Read more here.

ICELAND

U.S. Embassy innovation grant given to Reykjavik University. The U.S. Embassy provided a $43,700 grant to Reykjavik University's underwater vehicle team. The team is participating in the RoboSub 2011, an international submarine design competition in the U.S. Read more here. (*Picture:* Ambassador Arreaga (left) and Dean Bjorn Jonsson (right), *http://iceland.U.S.embassy.gov/*)

Icelandic cleantech companies, government and academic institutions launch the Icelandic Geothermal Cluster. Geothermal energy has been used in Iceland on a significant scale for decades, especially for district heating (since 1930) and electricity supply (since 1969). Icelandic companies developed an extensive knowledge and experience in geothermal utilization. Read more here.

Geothermal Joint Venture. Icelandic Reykjavík Geothermal and Russian energy giant RusHydro formed a joint venture on geothermal energy projects. The cooperation will focus on the construction of geothermal power plants with total installed capacity of up to 200 MW. Read more here.

LATVIA

Eesti Energia to build heat and power plant in Latvia. The Estonia-based national energy company Eesti Energia will build a Combined Heat and Power (CHP) plant in Valka, Latvia. The plant will run on biofuels and is expected to be operational in the summer of 2012. Total costs are expected near $14 million, of which 36% will be covered by EU grants for renewable energy. Read more here.

LITHUANIA

First industrial solar module assembly line opened in Lithuania. The Lithuanian Prime Minister Andrius Kubilius opened the solar assembly line in Vilnius, where it was built with EU financial assistance. Total costs are approximately $4.2 million. Read more here. (Photo: Prime Minister Andrius Kubilius, *http://www.baltic-course.com/*)

Lithuania and Sweden discuss bilateral agenda. On July 27th in Vilnius, Lithuanian Minister of Foreign Affairs Audronius Azubalis and Swedish Ambassador Ulrika Cronberg-Mossberg discussed several issues, including energy security cooperation. Read more here.

NORWAY

Norway's Statoil prepares to open carbon sequestration facility in Mongstad. The facility, which will be the largest carbon capture and storage test facility in the world, is part of the Norwegian government's plan to become an international leader in reducing power plant emissions. Read more here.

Norwegian nano-satellite celebrates one year in space. The AISSat-1 investigates the feasibility and performance of a spacecraft-based Automatic Identification System to track maritime assets. Read more here.

Norway's Petroleum and Energy Minister hosts German Economics/Technology Minister. The visit resulted in a joint ministerial statement on the highest bilateral energy priorities: energy security (Germany's interest in continuing natural gas imports from Norway), cooperation in advancing carbon storage and electricity exchange. The joint statement is posted on the Norwegian Petroleum/Energy Ministry's website.

Ferry funded. Norwegian SES Europe obtained EU funding to develop the first-ever battery-powered Air Supported Vessel (ASV). The ASV, a 30–35 knot commuter ferry, is capable of carrying 70–100 passengers. Read more here (Photo: *www.cleanindex.net*)

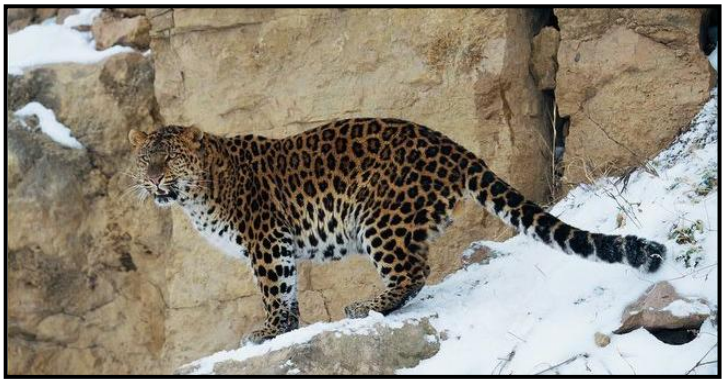
POLAND

Call for GOP To Defend Shale Gas. A Polish EU-parliamentarian and colleagues from the Europe, Security, Energy portal (EBE) claimed shale gas opponents in the EU are using ideological arguments in opposing shale gas, avoiding a substantive discussion. The parliamentarian, Pawel Kowal, appealed to the Polish government to get involved in the positive lobbying of shale gas

New Shale Gas Discovery. Polish media have reported that PGNiG (the Polish leader in the natural gas market) discovered huge new shale gas deposits. PGNiG experts believe that this is the tip of a "gas iceberg," and that shale gas deposits will greatly exceed conventional gas in Poland. Currently, only PGNiG and American FX Energy own concessions for drilling in the area, but others are lining up for licenses. The Ministry of Environment has given away 99 concessions for gas exploration, and over 20 companies are actively drilling shale gas exploratory wells in Poland today.

RUSSIA

Saving the Far Eastern Leopard: The Far Eastern (or Amur) leopard is the world's rarest big cat: there are only about 40 left in the wild. In July, State Department Deputy Assistant Secretary Reifsnyder traveled to the Russian Far East to better understand Russia's plans regarding the leopards, to observe the efficacy of U.S. NGO and USAID programs in the area and to find out more about the potential for U.S. cooperation. The U.S. Government currently cooperates with Russia on several initiatives, including a fire prevention program run by the Ministry of Natural Resources and Environment, and an upgraded patrolling system to combat



poaching. *(Photo: Lynn M. Stone/ Auscape International)*

Draft Oil Spill Law Approved by GOR Presidium: In June 2011, the GOR introduced a draft law aimed at addressing offshore oil spills. Russian policymakers drafted the bill, based in part on information regarding the damages caused by the Deepwater Horizon spill in the Gulf of Mexico. Among other things, the draft law requires companies to develop a consequence management plan and have the equipment and funding needed to enact it.

2011 Expedition to Support Russian Arctic Shelf Claims: From June 23 to September 17, the ship *Academician Fedorov* is undertaking seismic studies in the Arctic to buttress Russia's Arctic territorial claims of 1.2 million km^2. The scientific lead on the expedition stated that Russian scientists will be able to complete the research needed to prove the claim that the sea floor is part of the continental shelf by the end of next year. Russia plans to provide the data to the UN in early 2014.

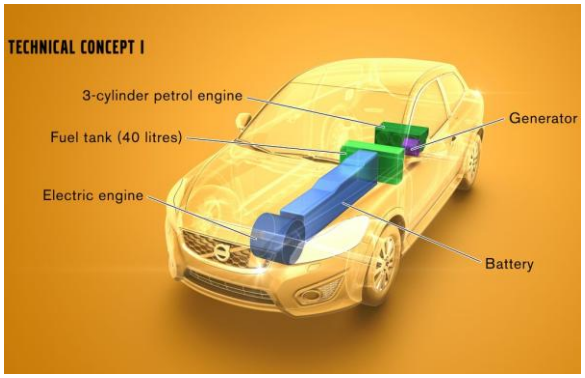
SWEDEN

Jacobs wins contract for biomass gasification and methanation plant. U.S. company Jacobs Engineering Group Inc. received a contract from Göteborg Energi AB for the GoBiGas-project, a 20 megawatt biomass gasification and methanation project in Göteborg, Sweden. The plant will produce biomethane from biomass, to be distributed in the existing Göteborg gas grid. Officials estimate the contract value at $19 million. The plant is the first of its kind on this scale in Europe.

Alfa Laval to provide heat exchangers. Alfa Laval – a Swedish company that produces products for heat transfer, centrifugal separation and fluid handling – received an order in the U.S. to provide heat exchangers to the world's largest concentrated solar power plant. Heat from solar power is stored in molten salt, enabling electricity production even on rainy days or at night. This allows the plant to operate for an additional 6 hours on stored energy--an increase of about 50%.

Two communities and nuclear waste. Two Swedish communities, Oskarshamn and Osthammar, have offered to store nuclear waste. The nuclear industry encouraged public participation in this discussion, including guided facility tours. If a repository is approved in Osthammer, the community will receive benefits from a negotiated $80 million long-term economic development plan. Read more here.

Volvo develops range extenders for electric cars. Volvo is currently producing test cars with range extenders. These electric cars have a combustion engine to increase their effective range by up to 1,000 kilometers. The projects are supported by the Swedish Energy Agency and the EU. Read more here (photo: *www.theautochannel.com/*)



EUROPEAN UNION

European Parliament approves legislation on new food labels. The deal on compulsory new food labels seeks to provide European citizens clearer and harmonized information on the nutritional and energy content of products, as well as the products' country of origin. The new label is seen as key to fighting obesity. Read more here.

EU dissatisfied with China's eased rare earth metals export limits. China reduced rare earth mineral exports to near 2010 levels following a WTO ruling. The EU has publicly encouraged Chinese authorities to ensure nondiscriminatory access to the minerals. Read more here and in our feature story below .

EU fisheries reform debate. EU Fisheries Commissioner Maria Damanaki called for a sector overhaul to keep fishing stocks at a sustainable level, which includes individual fishing quotas to reduce the size of EU fishing fleets. Environmentalists and industry representatives voice concerns. Read more here. (*Picture:* EU fisheries commissioner Maria Damanaki (right), *GoogleNews.)*

EU Commissioner optimistic about new energy efficiency rules for shipping sector. The International Maritime Organization (IMO) has approved universal rules on energy efficiency and carbon emissions from the shipping sector. Every ship built in the future will have to reduce pollution from today's average. EU Commissioner Connie Hedegaard called the decision an "important first step" for a global binding measure to reduce CO_2 emissions. It has been suggested that this agreement may not be strong enough to dissuade the EU from imposing its own limits. Read more here, here and here.

Tougher EU rules on nuclear waste. The European Council has adopted a radioactive waste directive that sets binding standards for managing radioactive waste in the EU. The directive will come into force this September, at the latest. Read more here.

European Wind Energy Association predicts tripling of wind power by 2020. The European Wind Energy Association (EWEA) predicts that wind energy will more than triple its power output by 2020. According to the EWEA, the success is mainly driven by the strong EU's drive to generate 20 percent of its energy consumption by renewable resources. Read more here.

Influential Firms Support Deeper EU GHG Cuts. A group of 72 businesses, including household names such as Coca-Cola and Google, joined forces in support of deeper European cuts to greenhouse gases. The companies represent a wide range of sectors including energy suppliers (i.e. Denmark's DONG Energy) and retailers (i.e. Sweden's IKEA). Read more here.

UNITED STATES

President Obama announces New Fuel Economy Standards. President Obama announced an historic agreement with thirteen major automakers to pursue the next phase in the Administration's national vehicle program, increasing fuel economy to 54.5 miles per gallon for cars and light-duty trucks by Model Year 2025. This will save consumers an estimated $1.7 trillion at gas stations. Read more here or watch the speech on the White House You Tube Channel.

Secretary of Energy announces more than $175 million to accelerate the development and deployment of advanced vehicle technologies. The funding will support 40 projects across 15 states and will help improve the fuel efficiency of next generation vehicles. This will help ensure the technologies are available to help automakers achieve recently announced fuel efficiency standards. Read more.

President seeks coordination of regulatory oversight on Alaskan oil and gas permitting. President Obama called on federal agencies to better coordinate oil and gas permitting as industry looks to expand operations in the Arctic. The White House will set up a new federal working group for this purpose. Read more here.

U.S. Department of Defense presents plan to increase energy efficiency. The plans, which will be described more detailed later this summer, constitute the Pentagon's promise to use more non-oil energy sources and to demand more energy-conscious behavior from the troops. First plans include the installation of fuel cells at 8 military posts. Read more here and here.

U.S. Army Creates Renewable Office: Billions to Be Spent. Secretary of the Army John McHugh announced the Energy Initiatives Office to help the massive government agency centrally plan and deploy renewable energy projects. In all, the Army will seek 25 percent of its power from renewable sources by 2025. The scale of the project will likely require investment of $7.1 billion over the next ten years alone. The power plants purchased with that investment will generate 2.1 million megawatt hours. Read more.

Department of Energy Announces $39 Million to Strengthen University-Led Nuclear Energy Research and Development. The DOE has awarded up to $39 million in research grants aimed at developing cutting-edge nuclear energy technologies and training and educating the next generation of leaders in the U.S. nuclear industry. Read more

U.S. Nuclear Regulatory Commission's Task-Force recommendations. The NRC's Near-Term Task Force has come up with recommendations. The Task-Force reviewed available information from the ongoing nuclear accident at Japan's Fukushima Dai-ichi nuclear power plant. Read about the recommendations here.

Salazar approves 550MW of renewable energy developments. U.S. Secretary of the Interior Ken Salazar has approved four new renewable energy projects on public lands, as well as launching environmental reviews on three others. In addition, Salazar has laid out the next steps in a wide-ranging environmental analysis to identify 'solar energy zones' on public lands. Read more here.

Electronic recycling program to make USG more sustainable. The White House has laid down a plan to increase IT recycling. The release of the "National Strategy for Electronics Stewardship" is designed to promote responsible manufacturing, buying, management and recycling of electronic products within federal agencies. Read more here.

NOAA vessel begins Arctic underwater mapping. The National Oceanic and Atmospheric Administration announced that is has sent its 231-foot-long vessel Fairweather to the waters of Kotzebue Sound, above the Arctic Cicle. The ship will be conducting underseas mapping of the region, something not done in almost 15 years. Read more here. (Photo: NOAA's Fairweather, *www.alaskadispatch.com*
)

Navy to help climate scientists in pirate-infested waters. Climate scientists have turned to the United States and Australian navies to deploy robotic measuring devices in the Indian Ocean where pirates have made the area too dangerous for researchers. Around a quarter of the Indian Ocean is now too dangerous for the scientists gathering data for climate change studies and weather forecasts. Read more here.

DOE report analyzes U.S. wind power potential. According to the report, the expansion of wind power in the United States is confronting some challenges – including: decreasing natural gas prices, low growth of electricity demand and the debate on federal subsidies and incentives. The report is available here.

EPA issues rule to reduce smokestack emissions. The Environmental Protection Agency has issued a rule compelling power plants in 27 states and the District of Columbia to reduce smokestack emissions that pollute the air and poison forests, lakes and streams across the eastern United States. Read more here.

Six new corporations to join National Clean Fleets Partnership. U.S. Energy Secretary Steven Chu announced that Coca-Cola, Enterprise Holdings, General Electric, OSRAM SYLVANIA, Ryder and Staples will join the National Clean Fleets Partnership. These companies operate a total of nearly a million commercial vehicles nationwide. The partnership was announced by President Obama in April to help large companies reduce diesel and gasoline use in their fleets. Read more here.

Volvo Trucks first to reach U.S. Department of Energy target. Volvo Trucks' manufacturing plant in Dublin, Virgina reduced its energy intensity by nearly 30 percent in just one year, making it the first company to meet a 10-year challenge set by the U.S. Department of Energy. The challenge is part of the Save Energy Now LEADER program, launched in 2009, in which major companies pledged to reduce the energy intensity by 25% in a decade. Read more here.

Massachusetts newly-enacted energy efficiency programs pay off. The efficiency measures authorized in the Green Communities Act, a state energy law signed in 2008, have reduced greenhouse gas emissions last year by the equivalent of taking 74,000 cars off the road. The law requires utilities to enter into long-term contracts with renewable energy developers and purchase energy efficiency improvements that cost less than generating power. Read more here.

EV charging stations coming to IKEA in Western United States. ECOtality, a leader in clean electric transportation and storage technologies, has formed a partnership with IKEA to install Blink EV charging stations at IKEA's stores in the western U.S. Customers will soon be able to charge up their electric vehicles while they shop. Read more here. (*Picture:* Blink EV charging station, *GixMag.com)*

The Washington Redskins' stadium to get 8,000 solar panels. The new solar panels will be installed on the Redskins' stadium's parking. The panels will generate 2 megawatts of electricity and reduce the stadium's annual energy use by 15%. Read more here. (*Picture:* Render stadium, *NBCSport.com).*

Green jobs offered 20% higher median wages in 2010. According to a report from the Brookings Institution clean-techs jobs surged twice as fast as other occupations in 2010, while offering 20% higher median wages. According to the report the sector now counts 2.7 million jobs. Read more here.

California delays its carbon-trading program until 2013. The state decided to delay enforcement of the program as it continues to be challenged in court. The cap-and-trade program is a centerpiece of the state's efforts to reduce greenhouse gasses, and was championed by former Governor Arnold Schwarzenegger. Read more here.

EVENTS

September 14, 2011. Copenhagen, Denmark: International seminar on reducing emissions from deforestation and forest degradation: "REDD+ expectations and experiences." Read more here.

September 4-6--"Three Poles" Conference. The National Research Forum (NFR), launched in 1998, facilitates research on issues and problems relevant to the Arctic that have global significance. This year's Open Assembly will take place in Hveragerdi and address the three "poles" – the Arctic, the Antarctic and the Himalayans. Participants include policy-makers, the research community and business people. The event's theme, "Our Ice Dependent World," includes several integrated sub-themes, such as the interface of nature and society, international law and economics. Read more.

April 17 – 28, 2012. University of California Merced, Yosemite NP. Third National Parks Institute Executive Leadership Seminar. Scholarships are available. Read more here

FEATURED STORY

What are Rare Earth Elements?
A rare earth element (REE) is used in a variety of commercial and military applications because of its unique properties. These include cell phones, pesticides, eye-glasses, computer hard drives, LCD screens and automobile parts. REEs are also crucial to new clean energy technologies, compact fluorescent light bulbs, electric cars and wind turbines. Despite their name, REEs are relatively plentiful in the Earth's crust. However, due to geologic processes that selectively dissolve, transport and deposit minerals unevenly throughout the earth, REEs are typically dispersed and not often found in concentrated and economically exploitable forms. Additionally, REEs are more difficult to mine and extract than equivalent sources of transition metals, making them relatively expensive. Note that a rare earth mineral is a mineral which contains one or more REEs as major metal constituents.

Why are Rare Earth Elements Important?
REEs are crucial to the standard of living in modern society, involving extensive economic and political considerations. These elements are essential for a diverse and expanding array of technology applications, which constitute an important part of the industrial economy.

This year, the U.S. House Subcommittee on Energy and Mineral Resources found that mineral production is a key economic driver, describing metals and minerals as essential from everything from agriculture to renewable energy. Private industry and governments depend on a steady supply of imports to meet the mineral demand of its industries, prompting them to look at diverse mineral extraction areas—from seabeds to the moon.

Environmental Consequences
Mining, refining and recycling of rare earths have serious environmental consequences if not properly managed. A particular hazard is mildly radioactive slurry tailings resulting from thorium and uranium in REE ores. Additionally, toxic acids are required during the REE

refining process. Improper handling of these substances may result in extensive environmental damage. Mining and processing REE generally have an impact on land, water, air and biological resources.

Production of Rare Earth Elements

Historically, significant rare earth minerals were extracted in the United States. California's rare earth mine, at Mountain Pass, was a leading global producer. With decreasing mineral prices (and environmental problems), the Californian mine became virtually inactive by 2002. The United States currently imports all of its REE raw materials from foreign sources, primarily China.

China, particularly through Inner Mongolian mines, produces more than 95% of the world's rare earths. In 2009, China sharply reduced export quotas in order to conserve resources and improve on environmental impacts. As a result of the increased demand and tightening restrictions on exports of REE from China, Mountain Pass (the largest REE deposit in the world outside of China) is anticipated to resume full-scale operations in 2012. U.S. domestic reserves and inferred resources of REE are approximately 1.5 million tons, which are large compared with apparent domestic consumption of REE of 10,200 tons in 2007. REE deposits in the exploratory stage exist in Idaho, Missouri, Montana, Colorado, Utah and Wyoming (Map, usgs.gov).

Southern Greenland's Kvanefjeld mine is projected to hold the world's second-largest deposit of REE and the sixth-largest deposit of uranium and sizeable sodium fluoride deposits. Note that the Greenlandic government maintains a "zero tolerance" policy on radioactive mineral exploitation. Greenland's first mining activity in 13 years, the Nalunaq gold mine, was granted a 30-year mineral exploitation license in April. In addition, exploration data from North and East Greenland show a significant potential for mineral resources.

Further Reading

Rare Earth Materials in the Defense Supply Chain: http://www.gao.gov/products/GAO-10-617R
Rare Earth Elements Fact Sheet: http://pubs.usgs.gov/fs/2002/fs087-02/
U.S. Rare Earth Elements: http://pubs.usgs.gov/sir/2010/5220/
Overview on Rare Earths:
http://topics.nytimes.com/top/reference/timestopics/subjects/r/rare_earths/index.html?scp=1-spot&sq=Rare%20Earth%20Minerals&st=cse

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